

Reimagining What is Necessary: Using Active Management in Wilderness Areas to Mitigate High-Loss Wildfires

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INTRODUCTION

Denver Water is a water utility that serves a million and a half customers in and around the Denver Metro Area.¹ Much of its supply comes from surface water, which originates as rain and melting snow from the Rocky Mountains and travels through streams and rivers. This gives the utility significant interest in the management and health of large areas of forested land,² which are prone to naturally occurring and human-made wildfires. Issues regarding Denver Water’s assets arose after the 1996 Buffalo Creek Fire, and again after the Hayman Wildfire in 2002.³ On both occasions, the utility experienced significant problems with its water delivery systems. The debris blocked river channels, and extreme sedimentation decreased the holding capacity of downstream reservoirs. Additionally, the destruction impacted Denver Water’s existing obligations to conserve wildlife habitat.⁴ And finally, the quality of its water was significantly reduced. These problems necessitated tens of millions of dollars in recovery efforts, and members of Denver Water’s watershed management team agreed that such catastrophic damage must be prevented in the future.⁵

Instead of waiting for the next fire to occur, Denver Water decided to take an active approach.⁶ In 2010, it formed a partnership with the Forest

¹ *About Us*, DENVER WATER, <https://www.denverwater.org/about-us> (last visited Feb. 21, 2020).

² *Watershed Protection and Management*, DENVER WATER, <https://www.denverwater.org/your-water/water-supply-and-planning/watershed-protection-and-management> (last visited Feb. 21, 2020).

³ *Id.*

⁴ Interview with Madelene McDonald, Watershed Planner, Denver Water, in Denver, Colo. (Nov. 8, 2019).

⁵ *Id.*

⁶ *Id.*

Service to create the Forests to Faucets watershed management program.⁷ Since then, the Colorado State Forest Service and the Natural Resource Conservation Service have joined the agreement.⁸ To prevent future fires gaining the same intensity and destructive capacity as the Buffalo Creek and Hayman fires, these groups have been working together to take proactive measures, such as forest thinning, prescribed burns, and by constructing fuel breaks.⁹ With help from the coalition's members, Denver Water has been able to carry out these activities not just on its own private land, but in state and federal forests as well.¹⁰

However, Denver Water and its partners routinely hit roadblocks when it comes to wilderness areas in the watershed.¹¹ In these areas, laws and regulations based on the Wilderness Act make it difficult to carry out the same types of active management projects.¹² As a result, while threats of severe fires on other types of land are reduced, many forested wilderness areas host a buildup of dry and dense underbrush that can turn them into ticking time bombs. This mismanagement could contribute to fires that will damage Denver Water's assets, the rivers and tributaries the utility relies on, critical species habitat, and nearby communities.

Here lies an issue with the Wilderness Act and the way it is interpreted when entities wish to engage in wildfire management. Wilderness is often protected by agencies and courts to the point that conservation-minded management practices, which can better preserve the character and health of the wilderness area, while preventing billions of dollars in damages, are discouraged. In the eyes of some, wilderness areas are meant to be "untrammelled," free from human influence. Understandably so, there is strong support for letting natural processes dictate the frequency and severity of wildfires that impact or originate in wilderness areas. However, decades of human intervention, despite the goals of the Wilderness Act, have altered wilderness areas beyond what was perhaps "natural" in the eyes of the Wilderness Act's sponsors. Wilderness areas have indeed been trammelled, both through direct human influences such as fire suppression, and indirect influences like climate change. With communities being constructed closer to wilderness than ever before, human proximity is altering wilderness character, and as a result, the "natural" processes that occur in those areas pose an increased threat to people. Now, wildfires that impact wilderness areas do more harm

⁷ *Watershed Protection and Management*, *supra* note 2.

⁸ *Id.*

⁹ Interview with Madelene McDonald, *supra* note 4.

¹⁰ *Id.*

¹¹ *Id.*

¹² *Id.*

than good for the ecosystem due to human influence. They are burning wider swathes of land, more often, and with intensities that firefighters struggle to contain. As Denver Water recognized when creating its Forest to Faucets program, there is a need for change in wildfire management. This need for change extends to the protection of wilderness as well.

In the case of wildfire management, the Wilderness Act is often interpreted by agencies and courts in a way that makes it rigid and inflexible. This interpretation can block preservation of species habitat, maintenance of ecosystem health, and efforts to save human lives. However, provisions within the Wilderness Act can be used to support active management strategies that, while admittedly more intrusive, uphold wilderness goals while simultaneously preventing intense wildfires that are detrimental to wildlife, wildlands, and the human communities to which they are increasingly linked. The designation and protection of wilderness is crucial for recreational, scientific, and environmental reasons, and the inherent value in preserving wilderness should not be abandoned. The Act should not be scrapped, and lengthy legislative sessions or heated court battles are not necessary to change its meaning. If agencies, courts, and land managers can recognize the adaptability of the Wilderness Act and apply this feature in order to comport with active land management practices, it can be used to combat the intense wildfires becoming ever more present and destructive on our public lands.

This Note advocates for a targeted shift in how the objectives of the Wilderness Act are met by arguing that active wildfire management is “necessary” under Section 4(d) to adequately preserve wilderness character. This shift in interpretation will protect the ecological health of wilderness areas and reinvigorate their resiliency to wildfire. It will also have the added benefit of saving billions of dollars in damages and dozens of lives annually, through wildfire management strategies backed by ecosystem management science. Instead of being a barrier to protective management of wilderness areas in the face of the climate change and human induced exacerbations of wildfire damage, the Wilderness Act can become the key to healthy ecosystem management.

I. BACKGROUND

This Section will outline the main provisions of the Wilderness Act, the statute which authorizes Congress to designate wilderness areas. Next, the Note will address how the Wilderness Act has historically been interpreted by agencies with wildfire management duties in wilderness areas. Finally, this Section will explore the development of climatic and

anthropogenic changes to wilderness areas, resulting in increased high-loss wildfire events.

A. The Wilderness Act: Legislative Purpose

Congress passed the Wilderness Act in 1964, primarily as a response to the severely detrimental resource extraction practices of the twentieth century. Congress recognized its responsibility to both preserve and protect nature for the enjoyment and use of future generations.¹³ The Act is well known for its broad and poetic language. Namely, the Act defines “wilderness” as “an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain.”¹⁴ The Act goes on to further define “wilderness” as:

an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.¹⁵

From the statute's language, several important themes emerge. For one, the use of the word “untrammelled” invokes the image of land void of human involvement, intervention, disruption, and damage. Additionally, the concept of “primeval character” suggests that retaining a wilderness area's historical fidelity is of import.

Rather than the Wilderness Act laying out procedural avenues of land management, agencies manage wilderness by using policy goals derived from the Act's verbiage.¹⁶ It is suggested, based on dictionary definitions and speeches from floor debates in Congress, that the idea of “wilderness” within the Act is intended to, on the one hand, keep areas “wild,” where there is a sense that the land is free from human control and

¹³ The Wilderness Act of 1964, 16 U.S.C. § 1131 (1964).

¹⁴ *Id.*

¹⁵ *Id.* § 1131(c).

¹⁶ Erik D. Alnes, Fire Management Provisions in Federal Wilderness Law 10 (2017) (M.S. professional paper, University of Montana) (Scholarworks).

manipulation.¹⁷ But at the same time, the Act's language strives to keep designated lands "natural" which invokes an ecology based meaning of wilderness, in that indigenous, endemic nature is intended to be preserved.¹⁸ These twin purposes are important to keep in mind throughout this Note, as they play a role in the applicability of active management as a valid practice under the law.

Based on the language of the Wilderness Act, Congress has, over the years, mandated the preservation of approximately 109 million acres of land within 760 designated wilderness areas.¹⁹ These wilderness areas encompass countless acres of forested land. In sum, the Wilderness Act was designed to accomplish two distinct goals: one being to set aside land free from human activity, and the other to support the continued existence of a healthy, natural ecology in wilderness areas.²⁰

B. The Wilderness Act: Section 4(d)

Interestingly, particular sections of the Wilderness Act carve out exceptions to the untrammled preservation of wilderness's primeval character. The "Special Provisions" section of the act, Section 4(d), lists several uses of wilderness areas that, at first blush, seem to cut against the Act's overall goal of keeping human intervention out of wilderness. First, Section 4(d)(1) mentions that measures "may be taken as may be necessary in the control of fire, insects, and diseases, subject to such conditions as the Secretary [of Agriculture] deems desirable."²¹ However, this phrase has been interpreted most often to promote expensive reactionary policies rather than proactive conservation measures.²² In addition to Section 4(d)(1), Congress also created an exception allowing the President to permit the construction of hydrological projects within Wilderness Areas, including the construction of roads, dams, transmission lines, and other infrastructure related to water conservation and hydropower production.²³ A final notable provision in Section 4(d) states that "commercial services may be performed within the wilderness areas designated by this Act to

¹⁷ Peter B. Landres et al., *Naturalness and Wildness: The Dilemma and Irony of Managing Wilderness*, USDA FOREST SERV. PROCEEDINGS RMRS-P-15-VOL-5, at 377 (2000), <https://www.fs.usda.gov/treearch/pubs/21888>.

¹⁸ *Id.*

¹⁹ *Wilderness*, U.S. FOREST SERV., <https://www.fs.usda.gov/managing-land/wilderness> (last visited Dec. 26, 2019).

²⁰ Daniel Rohlf & Douglas L. Honnold, *Managing the Balances of Nature: The Legal Framework of Wilderness Management*, 15 *ECOLOGY L. Q.* 249, 255 (1988).

²¹ 16 U.S.C. § 1133(d).

²² *See infra* Section III.

²³ 16 U.S.C. § 1133(d).

the extent necessary for activities which are proper for realizing the recreational or other wilderness purposes of the areas.”²⁴ This and other exceptions in Section 4(d) are important because they create room to justify the alteration and management of wilderness areas to the extent that they help further the overall goals of the Act. The exceptions also show that other forms of development, if seen as adequately beneficial to the public good of the region, can supersede the goal of maintaining an “untrammled” wilderness. Therefore, the Wilderness Act includes provisions that open the door for more intrusive management in wilderness areas.

C. Federal Wildfire Law in Wilderness Areas

The Wilderness Act does not contain any overarching wildfire management policy.²⁵ As a result, the Forest Service, Bureau of Land Management, Fish and Wildlife Service, and National Park Service each maintain their own plans for managing wilderness areas within their respective jurisdictions, largely independent of one another.²⁶ Aside from adhering to the Wilderness Act’s “Special Uses” provision, federal level wildfire management in wilderness areas is directed by a large and varied combination of laws and regulations.

In response to agency confusion following the passage of the Wilderness Act, Congress rolled out several “enabling laws” relevant to wildfire management in specific wilderness areas. Since 1964, there have been twenty-nine wildfire related management provisions included in Congressional legislation designating wilderness areas.²⁷ These special provisions require some level of intrusive wildfire prevention. Take, for example, the Endangered American Wilderness Act of 1978. As a part of this law, Congress designated a portion of California’s Los Padres National Forest as the Santa Lucia Wilderness.²⁸ In addition to the designation came several special provisions specific to the new wilderness area. Among those provisions, Congress included a section permitting the Forest Service to “take whatever appropriate actions are necessary for fire prevention and watershed protection including, but not limited to . . . fire

²⁴ *Id.*

²⁵ John C. Hendee & George H. Stankey, *Biocentricity in Wilderness Management*, 23 AM. INST. BIOLOGICAL SCI. 535, 535 (1993).

²⁶ Alnes, *supra* note 16, at 5.

²⁷ *Id.* at 18.

²⁸ Endangered American Wilderness Act (EAWA), Pub. L. No. 95-237, § 2, 92 Stat. 40, 42 (1978).

suppression measures and techniques.”²⁹ Such a provision mandates action from the Forest Service well beyond what Section 4(d) of the Wilderness Act explicitly permits.³⁰ Drafters of the Act cited watershed health and local citizens’ concerns about the Los Padres Forest’s propensity to burn as reasons for incorporating the special provisions.³¹ This example from the Endangered American Wilderness Act reflects what the Forest Service could use as empowering language to take action in other wilderness areas.³²

All told, twenty-nine of the 760 wilderness areas contain special provisions in their enabling legislation allowing for fire suppression practices.³³ Soon after the Wilderness Act’s inception, Congress began explicitly mandating exemptions to provisions within the Act to ensure that fire management was possible in severely affected wilderness areas. It bears noting that an unfortunate menagerie of statutory special provisions, limiting judicial decisions, financial difficulties, and misguided science have corralled agencies into engaging in fire suppression.³⁴ This is a problematic management technique that will be discussed below.³⁵ On the one hand, these special provisions highlight a perceived conflict between the Wilderness Act and feasible management of wildfires in some areas. Additionally, they show that Congress is not necessarily opposed to more intrusive management in wilderness areas to protect surrounding communities and interests from harm.

D. Impact of Existing Wildfire Policy on Wilderness Areas

Just like the provisions for the Santa Lucia Wilderness, the vast majority of fire management provisions accompanying wilderness designations promoted fire suppression techniques. Fire suppression was first used by the Forest Service in the early twentieth century in an effort to spare timber reserves and watersheds from the damaging effects of wildfires by preventing any burning at all.³⁶ Running with a poor understanding of the ecological importance of naturally occurring fires,

²⁹ *Id.*

³⁰ *See* 16 U.S.C. § 1133(d).

³¹ EAWA § 2.

³² *Id.*

³³ Alnes, *supra* note 16, at 18.

³⁴ *See id.*

³⁵ *See infra* Section I.D.

³⁶ *U.S. Forest Service Fire Suppression*, FOREST HISTORY SOCIETY, <https://forest-history.org/research-explore/us-forest-service-history/policy-and-law/fire-u-s-forest-service/u-s-forest-service-fire-suppression/> (last visited Feb. 17, 2020).

the Forest Service operated under the assumption that any sort of fire was detrimental to the forest and its capacity to bear timber.³⁷ Thus, the Forest Service committed much of its budget and workforce toward preventing fires or immediately suppressing their spread.³⁸ This practice quickly became the predominant fire management method, codified in countless special use provisions.³⁹ Fire suppression as the favored method of management persists to this day; the money needed for the practice currently takes up half of the Forest Service's overall budget, which limits the agency's ability to carry out active management projects such as restoration or forest thinning.⁴⁰

The decades long practice of fire suppression has severely altered the vegetative patterns of many forested wilderness areas, impacting their overall "naturalness."⁴¹ Native species in fire-prone ecosystems adapted to natural burns over millennia, relying on fires to free up space for seed growth, recycle nutrients into the soil, or drive off harmful invasive species.⁴² In fact, modern research shows that naturally occurring wildfires play a crucial ecological role.⁴³ Human intervention affecting the frequency and location of fires has stymied those crucial processes.⁴⁴ Native plants, which previously thrived off of the competitive edge their fire adaptations provided them, are often outflanked by invasive species no longer kept at bay by intermittent slow-burning, low-temperature fires.⁴⁵ These invasive species are often fast-growing and vastly increase the undergrowth in wilderness areas. This drastic uptick in density, often consisting of species without adaptations to fire, provides significantly more fuel for any wildfires that may break out.⁴⁶

³⁷ *Id.*

³⁸ *Id.*

³⁹ Endangered American Wilderness Act (EAWA), Pub. L. No. 95-237, § 2, 92 Stat. 40, 42 (1978).

⁴⁰ *U.S. Forest Service Fire Suppression*, *supra* note 36.

⁴¹ Hendee & Stankey, *supra* note 25, at 535.

⁴² Stephen Pyne, *The Ecology of Fire*, NATURE EDUC. KNOWLEDGE (2010), <https://www.nature.com/scitable/knowledge/library/the-ecology-of-fire-13259892/>.

⁴³ 5 *Big Myths about Wildfire*, THE WILDERNESS SOC'Y (Nov. 19, 2018), <https://www.wilderness.org/articles/article/5-big-myths-about-wildfire>.

⁴⁴ Pyne, *supra* note 42.

⁴⁵ Chris Dinesen Rogers, *Ecological Effects of Fire Suppression*, SF GATE, <https://homeguides.sfgate.com/ecological-effects-fire-suppression-78882.html> (last visited Jan. 6, 2020).

⁴⁶ David E. Calkin et al., *How Risk Management Can Prevent Future Wildfire Disasters in the Wildland-Urban Interface*, 111 PROC. NAT'L ACAD. SCIS. 746, 747 (Jan. 14, 2014).

As a result of fire suppression techniques, when wildfires gain enough force, their intensity and rate of growth often render them impossible to control.⁴⁷ This increases habitat loss, reduction in soil quality, reduction in water quality from sedimentation, and loss of native plant and animal species.⁴⁸ Wildfires are therefore able to cause widespread ecological damage several factors higher than what most naturally occurring fires under original ecological conditions could unleash.⁴⁹ Despite the Wilderness Act's core goal of preserving natural ecosystems free from human intervention, mankind's fire suppression tactics have fundamentally altered many wilderness ecosystems and made them prime fodder for intensely destructive wildfires.⁵⁰

Furthermore, the human landscape has changed significantly since the Forest Service first began implementing fire suppression practices on a large scale, and certainly since the Wilderness Act was signed into law in 1964. Agency policies and regulations, like those of the Forest Service, often consider wilderness to be far removed from areas of human development.⁵¹ As such, these communities are commonly not prioritized for management techniques necessary to protect against their increased susceptibility to wildfire.⁵² However, lands adjacent to wilderness areas that were once unsettled now host towns, suburbs, dams, telecommunications lines, and many more structures and services. The abundance of people, buildings, and infrastructure near wilderness areas has created a new nexus of competing interests called the "Wildland-Urban Interface."⁵³ These are areas where buildings and structures are built near or within fire-prone wildlands, warranting increased protections. In the context of federal wildfire management, the Forest Service defines the Interface as an area within or adjacent to an "at-risk community."⁵⁴ Such a community is further defined as an area where "conditions are

⁴⁷ *Id.*

⁴⁸ *See id.*

⁴⁹ *Id.*

⁵⁰ Stephen Pyne, *Burn, Baby, Burn—If We Say So*, SLATE (July 4, 2014), http://www.slate.com/articles/technology/future_tense/2014/07/box_and_burn_the_future_of_u_s_wildfire_policy.html.

⁵¹ Greg Aplet, *Wildfire and Wilderness: A Brief Primer*, THE WILDERNESS SOCIETY (Dec. 12, 2014), <https://www.wilderness.org/sites/default/files/media/file/Factsheet-Wilderness%20and%20Wildfire-A%20Brief%20Primer.pdf>.

⁵² *Id.*

⁵³ Calkin et al., *supra* note 46, at 746.

⁵⁴ *What is the Wildland Urban Interface?*, U.S. FOREST SERV., https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fsbdev3_053107.pdf.

conducive to a large-scale wildland fire disturbance event, thereby posing a significant threat to human life or property.”⁵⁵

The Wildland-Urban Interface has only been seriously studied over the last twenty years, after several wildfires in the 2000 fire season overpowered suppression efforts across the United States, burning nearly seven million acres of both public and private land.⁵⁶ The widespread damage to natural resources, human communities, and infrastructure prompted then President Bill Clinton to instruct the Secretaries of Agriculture and the Interior to prepare a report, which has been used to identify and list many communities and areas considered to be within the Wildland-Urban Interface.⁵⁷

The capacity for high-intensity fires to cause significant damage to wilderness areas is exacerbated by their ability to cause millions of dollars in damages to areas of human development that have expanded increasingly closer to fire-prone wilderness. The fact that fire suppression techniques are clearly not enough to prevent severe ecological and anthropogenic damage supports a call for a significant change in federal management regimes.

E. Impact of Changing Climate on Wildfires in Wilderness Areas

Wilderness areas have become increasingly susceptible to the impacts of anthropogenic climate change. Studies link climate change to introductions of invasive species, shifting ecosystem dynamics, altered watershed hydrology, and various other disturbances.⁵⁸ One of the most visible and dangerous instances of change to wilderness composition is the increase in the frequency and intensity of wildfires.⁵⁹ Studies have also found links between more extreme climatic events, such as prolonged drought, with a surge in high-intensity wildfires.⁶⁰ These fires, increasingly being referred to as “high-loss events,” have harmed both ecosystem and human communities, causing billions of dollars in

⁵⁵ *Id.*

⁵⁶ Urban Wildland Interface Communities Within the Vicinity of Federal Lands That Are at High Risk From Wildfire, 66 Fed. Reg. 751 (Jan. 4, 2001), <https://www.federalregister.gov/documents/2001/01/04/01-52/urban-wildland-interface-communities-within-the-vicinity-of-federal-lands-that-are-at-high-risk-from>.

⁵⁷ *Id.*

⁵⁸ *Warm and Erratic: Threats to Wilderness from Climate Change*, WILDERNESS CONNECT, <https://wilderness.net/learn-about-wilderness/threats/climate-change.php> (last visited Dec. 26, 2019).

⁵⁹ Karen M. Bradshaw, *A Modern Overview of Wildfire Law*, 21 *FORDHAM ENVTL. L. REV.* 445, 450 (2010).

⁶⁰ *Id.*; Calkin, *supra* note 46, at 746.

damages. Between 2002 and 2011, for example, nationwide wildfire-insured losses totaled \$7.9 billion, which was a \$6.2 billion jump from the previous decade.⁶¹ The western United States, where many wilderness areas are sited, has been hit particularly hard by recent wildfires; the 2020 fire season set records across the region.⁶² Studies show that anthropogenic climate change is responsible for nearly half of the increased dryness in the region, impacting the West's forested public and private lands and increasing the probability of high-loss events.⁶³ Those studies estimate that the increase in severity and frequency of high-loss events due to climate change effectively doubled the area burned in the western United States between 1984 and 2015, which amounts to ten million acres of burned forest,⁶⁴ including various wilderness areas. Though climate change is never cited as the only cause of these high-loss events, it is obviously a primary contributing factor.

Anthropogenic forces also contribute to other changes in wilderness areas. Pollution, disturbance from recreation, overhunting, resource extraction, introduction of invasive species, and habitat fragmentation all contribute to the alteration of wilderness.⁶⁵ These human induced changes in wilderness areas combine with decades of suppression, and an increasing Wildland-Urban Interface, to create an unprecedented risk of high-loss wildfire events with the capacity to damage wilderness areas and neighboring communities alike. Today, the fire season is sixty to eighty days longer than it was several decades ago and fires are burning much larger areas of land.⁶⁶ This new reality is steadily trending toward larger fires and greater costs in damages each year.⁶⁷ Consequently, wilderness areas have undoubtedly become "trammeled" since the inception of the Wilderness Act, not solely by direct human interference as the Act itself

⁶¹ See Bradshaw, *supra* note 59.

⁶² See, e.g., Alex Wigglesworth & Joseph Serna, *California Fire Season Shatters Record with More Than 4 Million Acres Burned*, LA TIMES (Oct. 4, 2020), <https://www.latimes.com/california/story/2020-10-04/california-fire-season-record-4-million-acres-burned>; Charlie Brennan & Rick Rojas, *Colorado Wildfire Grows Into Largest in State History*, NY TIMES (Oct. 27, 2020), <https://www.nytimes.com/2020/10/18/us/colorado-wildfires-cameron-peak.html>.

⁶³ Nicola Jones, *Stark Evidence: A Warmer World is Sparking More and Bigger Wildfires*, YALE ENV'T 360 (Oct. 2, 2017), <https://e360.yale.edu/features/the-evidence-is-clear-a-warmer-world-means-more-wildfires>.

⁶⁴ *Id.*

⁶⁵ Nathan L. Stephenson & Constance I. Millar, *Climate Change: Wilderness's Greatest Challenge*, PARKS SCI., Winter 2011–2012, at 4.

⁶⁶ *5 Big Myths about Wildfire*, *supra* note 43.

⁶⁷ Brad Plumer, *There's a Better Way to Tame Large Forest Fires. So Why Don't We Do It?*, VOX (Sept. 17, 2015), <https://www.vox.com/2015/9/17/9347361/wildfire-management-prescribed-burn>.

contemplates, but also by indirect influence. The result is a loss in historical wilderness character, specifically a loss in “naturalness” that directly conflicts with the spirit of the Wilderness Act. These changes are continuously harming native species and damaging ecosystems beyond recognition. The Wilderness Act charges the government with preserving wilderness character, but this task has clearly been failed continuously. This massive change in historical wilderness character must be seen as a justification for initiating general management policies that focus on the *future* health of wilderness areas, rather than resting on historical notions that have been so obviously violated by human interference.⁶⁸ This is not being said to support an argument that “wilderness” no longer exists. But the way these unique public lands are managed contributes both proverbial and literal fuel to the growing wildfire problem. Leaving wilderness alone may not be the most beneficial way to preserve nature while dealing with the realities of climate change and the growing Wildland-Urban Interface. Instead, embracing practices that actively promote wilderness health can have the added benefit of helping to prevent future high-loss events.

II. CURRENT AGENCY ACTIONS

In response to the growing threat of high-loss events originating in or affecting wilderness areas, federal agencies have somewhat altered their management practices from the days of strict fire suppression. Following a destructive fire season, Congress passed the Healthy Forest Restoration Act in 2003.⁶⁹ The law charged agencies that managed forested public lands to engage in forest thinning to reduce plant density and undergrowth, and to generally update their wildfire management policies to reflect changing climates and ecosystem dynamics. However, the law expressly prohibited this hazardous-fuel-treatment regime in wilderness areas.⁷⁰ So, agency response to wildfire in wilderness is done within the confines of a rigid construction of the Wilderness Act. Because of the Act’s prohibition on the use of motorized vehicles and equipment, coupled with the remoteness of wilderness areas, it is often difficult for agencies to control fires in these areas.⁷¹ Unless Congress included a different management mandate in a wilderness area’s special provisions, the Forest Service’s

⁶⁸ *Id.*

⁶⁹ 16 U.S.C. § 6501 (2003).

⁷⁰ *Id.* § 6512.

⁷¹ Aplet, *supra* note 51.

mission statement, as the agency chiefly responsible for most forested wilderness areas, is to “suppress all wildfires within wilderness.”⁷²

Given the well-documented impacts of climate change on wilderness areas, federal agencies have recently begun to factor it into policy initiatives for their various land management regimes. For example, the Forest Service flagged climate change adaptation as an important part of its overall mission in 2008, and the Department of the Interior did the same in 2009.⁷³ The Forest Service’s wilderness management regime now mentions that managers should “permit lightning caused fires to play, as nearly as possible, their natural ecological role in wilderness.”⁷⁴ However, these general policy calls to action, while recognizing the importance of adapting to the effects of climate change and trying to permit fire’s natural ecological role, do not offer any concrete guidance to agency field offices or local wilderness managers on how to engage with wilderness areas in light of these mission updates.⁷⁵ Thus, the new language rarely leads to actual changes in forest management.

Agency goals to incorporate natural burn regimes seem to be more idealistic than practical. It appears that the opportunities to let fires follow their natural course are largely dependent on their perceived threat to land outside of wilderness areas. The Forest Service refers to any acceptable fires as “windows” of opportunity to let natural burnings take place.⁷⁶ However, the Forest Service’s ability to let fires burn in this way depends on many factors, including their proximity to the wilderness area’s boundaries, and most importantly, their projected size.⁷⁷ If the right conditions are not met, then the fire will be suppressed in a manner consistent with the special provisions laid out in the wilderness area’s enabling legislation, or dealt with as permitted by emergency procedures. Unfortunately, such “windows” are rare. The reality is that roughly 0.4% of wildfires are actually allowed to burn, while firefighters are called in to attempt to extinguish the rest.⁷⁸ It appears that while agency policy may change, putting those policies into practice is a separate issue altogether.

⁷² U.S. FOREST SERV., FOREST SERV. MANUAL CHAPTER 2320: WILDERNESS MANAGEMENT 2324.22(4) (2006), https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fsbdev3_053277.pdf [hereinafter FOREST SERV. MANUAL].

⁷³ Elisabeth Long & Eric Biber, *Wilderness Act and Climate Change Adaptation*, 44 ENVTL. L. 624, 641 (2014).

⁷⁴ FOREST SERV. MANUAL, *supra* note 72, at 2324.21(1).

⁷⁵ Long & Biber, *supra* note 73, at 643.

⁷⁶ See Carol L. Miller et al., *Windows of Opportunity for Allowing Wilderness Fires to Burn*, U.S. DEP’T OF AGRIC. (Sept. 13, 2016), <https://www.fs.usda.gov/rmrs/science-spotlights/windows-opportunity-allowing-wilderness-fires-burn>.

⁷⁷ *Id.*

⁷⁸ Jones, *supra* note 63.

Given the human induced alteration to wilderness areas, the impacts of climate change, and the growing pressures presented by the Wildland-Urban Interface, agencies and land managers are struggling to allow natural fire regimes to play out without posing too great a threat to communities and ecosystems.

III. LEGAL AND ADMINISTRATIVE IMPACTS ON WILDFIRE MANAGEMENT

Judicial intervention has combined with agency regimes to read the Wilderness Act as a rigid statute that promotes reactionary fire suppression over safer, more sustainable, and more cost-effective active management. As will be explained, these legal and administrative roadblocks restrict efficient budgetary and management procedures, preventing agencies from meaningfully combatting high-loss wildfires.

A. Current Legal Limitations on Active Management

In the past, agencies have attempted to focus their attention on proactive fire prevention. Most recreationists who have camped on public lands in the United States are aware of the abundance of Smokey Bear posters which include the charge, “ONLY YOU CAN PREVENT FOREST FIRES.”⁷⁹ Indeed, such public awareness campaigns have been effective, and it is common knowledge among campers nowadays to drown out campfires before turning in for the night. But this campaign alone has obviously not solved the wildfire problem. In fact, there are other, more effective active management strategies which could greatly reduce the probability or intensity of wildfires.⁸⁰ However, environmental laws force agencies to favor fire suppression over fire pre-suppression, the latter otherwise known as active management.

One reason for this is the administrative burden put on agencies as a result of environmental laws. Take, for example, the National Environmental Policy Act (“NEPA”). While designed to ensure that agencies consider their potential impact on the environment before undergoing a major action,⁸¹ it can create drawn-out administrative and

⁷⁹ For more on the Forest Service’s Smokey Bear campaign *see generally* SMOKEY BEAR, <https://www.smokeybear.com/en> (last visited Feb. 5, 2021).

⁸⁰ *See infra* Section IV.A.

⁸¹ *Summary of the National Environmental Policy Act*, EPA, <https://www.epa.gov/laws-regulations/summary-national-environmental-policy-act> (last updated Aug. 15, 2019).

procedural burdens agencies do not have the manpower, time, nor budget to handle.⁸² Alternatively, waiting until a wildfire breaks out to take action supplies a tactic intended to circumvent NEPA and the costly Environmental Impact Statement (“EIS”) required before the agency can take its proposed action.⁸³ This is thanks to NEPA’s “emergency exemption.”⁸⁴ In an “emergency” an agency can quickly consult with the Council on Environmental Quality, which administers guidance relevant to NEPA, to potentially forego the EIS process in order to undertake immediate action.⁸⁵ This is much more attractive for an agency tasked with fighting fires, because it reduces the likelihood of litigation over wildfire management actions in wilderness areas that might otherwise be the subject of lawsuits based on perceived conflicts with the Wilderness Act. While laws such as NEPA are absolutely imperative to the protection of the environment, such legal frameworks, absent reform, inadvertently promote post-fire action over prevention.⁸⁶ This is problematic because of the increased ecological and societal damage resulting from delayed response to recognizable high-loss potential in wilderness areas.

B. Budgetary Limitations

Agencies tasked with wildfire management commit a large amount of their budget to hiring and training firefighters and purchasing the equipment and resources necessary to fight the wildfires.⁸⁷ To deal with the budgetary strain, agencies often take advantage of an emergency funding mechanism. This emergency response fund becomes available when fighting wildfires because the agency can spend federal dollars to attempt to extinguish the fire, and then seek reimbursement from Congress after the fact.⁸⁸ Since these funding mechanisms lend themselves to suppression over active management, a business-as-usual strategy for managing fires poses serious financial concerns.⁸⁹ Financial analyses show that even small increases in the size of a wildfire can massively inflate the budgetary requirements of agencies needed to fight them.⁹⁰ The

⁸² Lauren Wishnie, *Fire and Federalism*, 17 N.Y.U. ENVTL. L. J. 1006, 1009 (2008).

⁸³ *Id.*

⁸⁴ *Id.*

⁸⁵ COUNCIL ON ENVTL. QUALITY, EXEC. OFFICE OF THE PRESIDENT, CEQ-NEPA-2020-1, MEMORANDUM FOR HEADS OF FEDERAL DEPARTMENTS AND AGENCIES: EMERGENCIES AND THE NATIONAL ENVIRONMENTAL POLICY ACT GUIDANCE 2 (2020).

⁸⁶ Bradshaw, *supra* note 59, at 453 n.33.

⁸⁷ *U.S. Forest Service Fire Suppression*, *supra* note 36.

⁸⁸ Wishnie, *supra* note 82, at 1009.

⁸⁹ Calkin, *supra* note 46, at 750.

⁹⁰ Jones, *supra* note 63.

costs of wildfire suppression in the face of climate change will therefore inevitably continue to put financial strain on agencies. In a political climate where agency spending is of constant concern, trending towards management techniques that seek to reduce the intensity and capacity of wildfires to cause damage *before* they break out would end up being more financially favorable in the long run. As will be discussed below, active management provides an answer to reducing the financial strain on agencies as fire seasons increase in length and intensity.

IV. THE NEED TO REFORM MANAGEMENT STRATEGIES

Active management has the ability to serve as a mitigation tool for increased high-loss wildfire events. While active management is not without its critiques, it can better protect the ecological health of wilderness areas, while reducing agency spending and saving communities. Therefore, active management should be favored over wildfire suppression in wilderness areas.

A. *What is Active Management?*

Due to the several far-reaching human induced impacts on federal land, various camps of scientists and legal authorities debate whether and to what extent agencies might be able to interfere with the notion of “wilderness” when protecting and managing wilderness areas. It is clear that the current status quo of wilderness management facilitates the sort of overgrowth and mismanagement that leads to large-scale wildfires with the intensity necessary to defy suppression efforts and wreak havoc on humans and nature alike. It is also clear that climate change is making matters worse, and agency budget allocations and management practices are not up to par. As with Denver Water’s Forest to Faucets program,⁹¹ there are proactive alternatives to fire management, which, when employed properly, are more cost-effective and can reduce the intensity of and damage caused by fires.

In its broadest sense, active management involves “human manipulation of natural systems.”⁹² Passive management, on the other hand, is categorized as a more hands-off, reactionary approach.⁹³ Agencies like the Bureau of Land Management and the Forest Service often support

⁹¹ See *supra* Introduction.

⁹² Long & Biber, *supra* note 73, at 643.

⁹³ *Id.*

passive management practices in their fire plans, such as allowing naturally ignited fires to burn, or suppressing fires once they break out.⁹⁴

Active management for wildfire protection takes several forms. First, forest thinning can reduce underbrush and invasive species that grow in abundance due to historical fire suppression practices, returning the forest to more natural, endemic conditions.⁹⁵ When a fire occurs, there would be less fuel available, thereby reducing the intensity of the fire and its capacity to spread. Thinning can be done using machinery or by hand. While hand thinning is less likely to disturb wilderness areas in ways that might conflict with the Wilderness Act, it can be more time consuming and less cost-effective.⁹⁶ Machine assisted thinning, as an alternative, can be more cost-effective when possible, and can thus more efficiently reduce fuel loads to safer levels. Research is being conducted on machinated forest thinning devices that leave small or non-existent footprints on forested areas, thus potentially quelling fears related to “trammeling” of wilderness by vehicles and machinery.⁹⁷

Fuel breaks are an additional active management tactic. This involves reducing the amount of foliage in certain areas in order to break up fuel availability for fires, create space between forests and areas of human development, and provide physical spaces for firefighters to combat the flames when necessary.⁹⁸ While some forms of fuel breaking remove almost all vegetation from an area (which would undoubtedly conflict with the Wilderness Act), “shaded fuel breaks” do not remove all vegetation.⁹⁹ By carefully selecting which plant species to remove while retaining others (usually native species), shaded fuel breaks allow for fire mitigation without significantly impairing forest health or “naturalness.”¹⁰⁰ Additionally, scientists suggest that forest restoration, including reintroducing native species to altered landscapes, can create natural barriers to wildfire, thereby reducing management costs while improving ecosystem health.¹⁰¹

⁹⁴ *Id.*; see also FOREST SERV. MANUAL, *supra* note 72, at 46.

⁹⁵ Long & Biber, *supra* note 73, at 647.

⁹⁶ Sang-Kyun Han et al., *ThinTool: A Spreadsheet Model to Evaluate Fuel Reduction Thinning Cost, Net Energy Output, and Nutrient Impacts*, 63 FOREST SCI. 118, 118 (2017).

⁹⁷ Darrell J. Pehr, *NMSU Researchers Test Giant, Gentler Tree-Thinning Machine*, NM STATE NEWS CTR. (Feb. 21, 2006), <http://newscenter.nmsu.edu/Articles/view/7305>.

⁹⁸ *Fuel Breaks*, BOULDER MOUNTAIN FIRE PROT. DIST., <https://www.bmfmitcrew.com/fuel-breaks> (last visited Feb. 8, 2020).

⁹⁹ *Id.*

¹⁰⁰ *Id.*

¹⁰¹ 5 *Big Myths About Wildfire*, *supra* note 43.

Lastly, prescribed burns are an extremely beneficial form of active management. These carefully controlled fires can help eliminate invasive species and improve forest health while increasing the area's resilience to future unsuppressed fire events.¹⁰² In sectors that meet the right criteria, prescribed burns can promote species growth, nutrient cycling, and best of all, help to restore wilderness to its true "primeval" state.¹⁰³

There are a variety of other active management techniques, but these examples highlight several of the most efficient and effective methods of pre-suppression. These practices have been proven to provide a variety of benefits to forested areas. Prescribed burns permit natural forest succession processes to play out, promoting species diversity and lowering fuel loads.¹⁰⁴ Restoration of forest ecosystems has the added benefit of helping to protect and restore water quality in watersheds that encompass the managed land.¹⁰⁵ These active management policies, which would help natural processes retake their role in the wake of decades of fire suppression, can also restore and protect important wildlife habitat.¹⁰⁶ Additionally, there are benefits to people. Active management will reduce costs of suppression while increasing firefighter safety, since intense wildfires would be less likely to break out.¹⁰⁷ Lastly, active management would prevent millions of dollars of damages to communities living in the growing Wildland-Urban Interface.¹⁰⁸ Therefore, active management would be useful in fire-prone forested wilderness areas.

B. Active Management Critiques

There certainly are warranted critiques about the use of active management in wilderness areas. Given the higher upfront price tag for active management, the cost-effectiveness related to spending agency money and manpower on actions like thinning and prescribed burns may be one such criticism. As mentioned before, agencies like the Forest Service face significant budget constraints when it comes to wildfire management.¹⁰⁹ Unless more funds are appropriated, it would be difficult

¹⁰² Long & Biber, *supra* note 73, at 648.

¹⁰³ *Id.* at 647.

¹⁰⁴ Aplet, *supra* note 51, at 2.

¹⁰⁵ Long & Biber, *supra* note 73, at 669.

¹⁰⁶ Aplet, *supra* note 51, at 2.

¹⁰⁷ Brandon M. Collins & Scott L. Stephens, *Managing Natural Wildfires in Sierra Nevada Wilderness Areas*, 5 FRONTIERS ECOLOGY & ENV'T 523, 523 (2007).

¹⁰⁸ Calkin et al., *supra* note 46, at 750.

¹⁰⁹ See *supra* Section III.B.

for agencies to secure the financial assistance necessary to implement active management strategies in an effective way.¹¹⁰

Another substantial critique is the uncertainty of issues that wilderness areas may face as a result of climate change. Given the unpredictability of the changing planet, skeptics caution against the potentially detrimental impacts that active management could have on ecosystem regimes.¹¹¹ So much uncertainty may not warrant the allocation of federal dollars for active management programs that are potentially harmful in the long run. Critics could argue that in order to prove that active management was truly helpful, significant funds would need to be spent on research and monitoring programs to ensure that selected wilderness areas are benefitting from those techniques. However, due to budget restraints and a lack of Congressional mandates, it is difficult to secure the resources for such programs.¹¹² As a result, critics argue, active management in all wilderness areas without monitoring would be potentially harmful; implementing practices which seem beneficial in the short term may have unpredictable future consequences in a shifting climate.¹¹³

Lastly, of course, is the concern that active management does not comport with the Wilderness Act at all. Some may argue that relaxing standards to allow for more intrusive actions in wilderness areas does not support an “untrammled” character or allow wilderness areas to evolve naturally. The Wilderness Act further defines “wilderness” as a space where “the imprints of man’s work [are] substantially unnoticeable.”¹¹⁴ Critics can argue that fuel breaks, thinning, and prescribed burns are not “natural” and thus do not fit within the Act. Finally, the lack of standards for how, when, and where to implement active management strategies within the Wilderness Act may mean that a nonexistent definition of “active management” can be co-opted and used for commercial gain.¹¹⁵ Concerns like these can be summarized by saying that regardless of climate change and various forms of previous and ongoing human intervention, the Wilderness Act clearly contemplates leaving wilderness alone.

¹¹⁰ Stephenson & Millar, *supra* note 65, at 3.

¹¹¹ Long & Biber, *supra* note 73, at 662.

¹¹² *Id.* at 663.

¹¹³ Stephenson & Millar, *supra* note 65, at 4–5.

¹¹⁴ The Wilderness Act of 1964, 16 U.S.C. § 1131(c) (1964).

¹¹⁵ Long & Biber, *supra* note 73, at 663.

C. The Case for Active Management in the Face of Climate Change

The global climate change dilemma and humankind's pervasive influence on the matter has become increasingly worrisome. The problem is often referred to as a "climate emergency" with hundreds of governments around the world using that exact language to convey the immanency of resulting harm.¹¹⁶ Recognizing the urgency of the matter, governments have been scrambling to preserve forests, fisheries, fresh water, and other resources using proactive, forward-thinking techniques and policies. Why should preservation of wilderness under the Wilderness Act be any different? Why should a certain type of land use, along with its species, ecosystem services, and neighboring communities, be forced to suffer using inefficient century-old practices while other land designations permit modern mitigation techniques to keep people and resources safe and healthy?

Active management would help improve the resilience of wilderness areas and surrounding communities in the face of climate change.¹¹⁷ Using techniques like the ones mentioned above, fires in wilderness areas would be allowed to burn in ways that provide the rejuvenating ecosystem services that relevant forested areas and their species have evolved to rely upon. The fires would burn at more manageable rates, ensuring that nearby communities would be adequately protected if the need to suppress the flames arose. There are certainly arguments that if climate change is to alter the makeup of wilderness areas, nature should be left to its own devices. Active management can be seen as a method of forcing wilderness to maintain a constant state rather than evolve in the face of climate change.¹¹⁸ But wildfires, made worse by human intervention, pose frequent and costly risks year after year. Wilderness is now connected to surrounding land uses and human communities in ways the Wilderness Act did not contemplate. By finding ways to permit selective active management in wilderness areas when appropriate, the Forest Service would help to restore forests to their natural wildfire responses rather than dealing with unprecedented destruction due to anthropogenic influences. This increased resilience preserves natural forest functions while reducing harmful impacts to surrounding land.

¹¹⁶ Justine Calma, *2019 Was the Year of 'Climate Emergency' Declarations*, THE VERGE (Dec. 27, 2019), <https://www.theverge.com/2019/12/27/21038949/climate-change-2019-emergency-declaration>.

¹¹⁷ Long & Biber, *supra* note 73, at 645.

¹¹⁸ *Id.* at 646.

Active management being used to reduce the intensity of fires would also benefit climate change mitigation goals. Large-scale forest fires have been shown to release large amounts of carbon dioxide into the atmosphere, which contributes to global warming and has widespread impacts on the earth's climate. A National Center for Atmospheric Research study found that wildfires in the United States release an average of 290 million tons of carbon per year, roughly equal to four to six percent of the nation's annual greenhouse gas emissions.¹¹⁹ There is clearly an opportunity for effective land management to better secure carbon stocks in wilderness areas and hopefully lessen the severity of climate change on people and ecosystems globally. Additionally, on the topic of emissions from wildfires, active management tactics that reduce their frequency and intensity would eliminate smoke from the atmosphere, which can impact people's health many miles away.¹²⁰ By reducing the presence of wildfire smoke in the atmosphere, active management can protect health and well-being on a planetary scale.

Most notably, studies and applications show that active management is effective. When the Buffalo Mountain Fire broke out in 2018, Denver Water's active management techniques were put to the test. Because of mechanical thinning and fuel break implementation spearheaded by the Forest to Faucets program, firefighters were able to combat the flames more effectively.¹²¹ Almost a billion dollars in damages were avoided because no homes or buildings were destroyed.¹²² Most importantly, the active management strategies saved lives and prevented additional harm to surrounding ecosystems. Similarly, the agency that manages Canada's national parks system, Parks Canada, has begun implementing mechanical thinning and prescribed burns in forests near populated areas.¹²³ This practice is intended to reduce the likelihood of fires encroaching into communities and makes any fires that get close much more manageable. In addition to protecting people and infrastructure, dealing with potential fires through active management can help restore millions of hectares of forest ecosystems.¹²⁴ These examples serve to show that active management projects that have been put into practice are trusted to help improve forest health while protecting nearby communities. This supports

¹¹⁹ Andrea Thompson, *Wildfires Release as Much CO₂ as Cars*, LIVE SCI. (Oct. 31, 2007), <https://www.livescience.com/1981-wildfires-release-cars.html>.

¹²⁰ Allison Hirschlag, *The Long Distance Harm Done By Wildfires*, BBC FUTURE (Aug. 23, 2020), <https://www.bbc.com/future/article/20200821-how-wildfire-pollution-may-be-harming-your-health>.

¹²¹ *Watershed Protection & Management*, *supra* note 2.

¹²² *Id.*

¹²³ Plumer, *supra* note 67.

¹²⁴ M.P. North et al., *Reform Forest Fire Management*, 349 SCI. 1280, 1281 (2015).

the assertion that wilderness areas can similarly benefit by permitting active management to cancel out ongoing negative human intervention in order to preserve ecosystem health and natural regimes.

V. ACTIVE MANAGEMENT LITIGATION: BARRIERS AND LESSONS

In light of the debate over the efficacy of active management in wilderness areas, it remains to be addressed how courts view these strategies in relation to common interpretations of the Wilderness Act. The “let burn” culture among agencies, inadvertently promoted by procedural and budgetary limitations, is undoubtedly done in part to avoid the uncertainties surrounding Wilderness Act-related litigation. There are examples of drawn-out cases regarding proactive agency action in wilderness areas. In *Sierra Club v. Block*, for example, the Forest Service was sued for approving a clear-cutting program intended to eliminate a pine beetle infestation which was wreaking havoc on trees in a wilderness area.¹²⁵ The Sierra Club argued that the pine beetle outbreak was a natural process and managing against it would violate the Wilderness Act, while the Forest Service argued they had a duty to prevent significant insect infestations per the goals of the Act. Further, the Sierra Club contended that the Forest Service’s EIS was insufficient because it failed to analyze the potential negative consequences of tree-cutting.¹²⁶ While this argument at surface level seems to match the goals of the Wilderness Act, the court refused to grant a full injunction on all tree-cutting efforts, recognizing that allowing the pine beetle infestation to run rampant “could lead to irreparable losses far in excess of those that will occur if the government’s cutting program continues.”¹²⁷ The court, however, limited the Forest Service’s actions to those that fit within the agency’s management guidelines.¹²⁸ The Forest Service had decided to clear-cut sections of affected forest, but the Court shirked the Service’s expertise and ruled that the agency was enjoined from cutting in areas not proven to be particularly at-risk, and prevented the Forest Service from cutting certain hardwood trees, which would not be affected by the pine beetle.¹²⁹ The court relied strongly on two justifications for the tree-cutting program:

¹²⁵ *Sierra Club v. Block*, 614 F. Supp. 134, 135 (E.D. Tex. 1985).

¹²⁶ *Id.* at 136.

¹²⁷ *Id.* at 139.

¹²⁸ *Id.* at 140.

¹²⁹ *Id.*

The first was to protect endangered species, and the second was to prevent the beetle infestation from spreading into other wilderness areas.¹³⁰

This case is relevant to wildfire management for several reasons. First is that there is clearly considerable pushback from interest groups when agencies attempt to use active management strategies in wilderness.¹³¹ This is certainly true for proactive fire management proposals as well.¹³² This pushback, and the procedural hurdles that an agency must confront, can slow down crucial decision-making functions.¹³³ In the case of wildfire management, this further motivates an agency to be reactive rather than proactive.

Interestingly though, *Sierra Club v. Block* reveals that courts will recognize room within the Wilderness Act for active management plans within wilderness areas. An agency can rely on reasoning such as protection of endangered species and defense of other wilderness areas as justifications for active management.¹³⁴ This is directly applicable to wildfire management. Intense, human exacerbated wildfires can cause unnatural harm to endangered species' critical habitat. Further, the increasing intensity of wildfires make them more likely to encroach on lands outside the wilderness area.¹³⁵ Thus, a court that rules similarly to the one in *Sierra Club v. Block* would find that an active management regime geared towards reducing the impact of future high-loss wildfires is justified within the Wilderness Act.

It should be noted that there is a way to distinguish a wildfire management plan from that of the Forest Service's reaction to the pest problem in *Sierra Club v. Block*. The pine beetle was an immediate, present threat. Wildfires on the other hand remain speculative, and thus a party opposing active management in court could argue that the rule from *Sierra Club v. Block* does not apply due to lack of a present threat. So, it would clearly be impractical for an agency to rely on favorable court decisions when sued for every active management proposal. This is because the time constraints of responding to legal action, along with the risk of courts granting temporary injunctions until a case is concluded, could prevent wilderness managers from effectuating any beneficial active

¹³⁰ *Id.* at 141.

¹³¹ *Id.* at 135.

¹³² See, e.g., *BLM Proposes Manipulating Remote Wilderness in Arizona*, WILDERNESS WATCH, <https://wildernesswatch.org/blm-proposes-manipulating-remote-wildernesses-in-arizona> (last visited Feb. 8, 2020).

¹³³ Daniel R. Mandelker, *The National Environmental Policy Act: A Review of Its Experience and Problems*, 32 WASH. U. J. L. & POL'Y 293, 296 (2010).

¹³⁴ *Sierra Club v. Block*, 614 F. Supp. at 141.

¹³⁵ Jones, *supra* note 63.

management projects. Thus, a finding must still be reached that active management is inherently appropriate under the Wilderness Act in order to promote its efficacy.

Even on non-wilderness public lands, there is pushback from environmental groups when agencies propose active management strategies. In *League of Wilderness Defenders v. U.S. Forest Service*, the Ninth Circuit addressed the question of whether the Forest Service's experimental forest thinning and fuel reduction project violated NEPA by adopting an inadequate EIS.¹³⁶ The Petitioner sued partly on the grounds that the Forest Service lacked "scientific integrity" in its assertion of risks of wildfire damage.¹³⁷ More specifically, the Petitioner argued that the data presented did not prove that an active management practice like tree thinning had a net-positive benefit for forests in the face of potential wildfire damages.¹³⁸ In response to these claims, the Court held that the Forest Service took an adequate "hard look" at the science in its EIS, and its decision to move forward with the tree thinning program was adequately supported by the data.¹³⁹ This serves as an example of a judiciary recognizing the ability of active management practices to benefit the environment.

This plan was proposed for an experimental area in a National Forest, and thus cannot be directly paralleled with similar proposals that may eventually be put forward for wilderness areas. However, the important lesson from *League of Wilderness Defenders* is that courts will recognize the validity of an agency relying on data showing that active management, such as tree thinning, can reduce the impact of future wildfires.¹⁴⁰ This case, along with *Sierra Club v. Block*, shows that courts tend to weigh the costs and benefits of intrusive active management practices against the dangers of allowing damages from infestation or wildfire to continue unabated. It is clearly possible for the well-documented benefits of active management to outweigh their alleged intrusiveness in public lands. An issue that remains to be resolved, then, is to explain how these lessons can be applied to future active management plans in wilderness areas. Furthermore, uncovering an avenue for statutory interpretation to support active management could reduce the potential for wilderness managers to be disincentivized by the prospect of lengthy or unfavorable litigation.

¹³⁶ *League of Wilderness Defs.-Blue Mountains Biodiversity Project v. U.S. Forest Serv.*, 689 F.3d 1060, 1064 (9th Cir. 2012).

¹³⁷ *Id.* at 1073.

¹³⁸ *Id.*

¹³⁹ *Id.* at 1077.

¹⁴⁰ *Id.*

VI. INTERPRETING THE WILDERNESS ACT TO SUPPORT ACTIVE MANAGEMENT

In order to promote active management, interpretive and policy changes are necessary to revamp understandings of the Wilderness Act to support strategies capable of benefiting wilderness and surrounding communities. Statutory language and judicial precedent will protect wilderness areas from excessive management regimes, quelling concerns over an elimination of wilderness character altogether.

A. Active Management and the Wilderness Act

Improving wilderness resilience in the face of climate change is not an affront to the goals of the Wilderness Act. Another look at the language of the Act itself shows that active management does not necessarily violate the definition of “wilderness.” This is because of the inherent struggle the Act poses in terms of balancing an area’s “untrammled” characteristics with its primitive and “natural” character.¹⁴¹ Despite calls for the prevention of trammeling, the Act allows for recreation, research, education, and even some extractive uses.¹⁴² Furthermore, Congressional mandates like fire management plans and special use provisions only serve to complicate the way wilderness areas should ideally be managed. Conflicting goals make it difficult for wilderness managers to accomplish everything the Wilderness Act sets out to achieve.¹⁴³ But to inject a sense of optimism into the confusion, these seemingly conflicting provisions actually open up the opportunity to justify active management to meet the goals of the Wilderness Act while protecting ecosystems and communities.

Section 4(b) of the Wilderness Act states that “each agency administering any area designated as wilderness *shall* be responsible for *preserving the wilderness character of an area.*”¹⁴⁴ The use of the word “shall” reveals that Congress intended for there to be an affirmative duty to preserve or even restore wilderness character in addition to prohibiting or preventing harmful activities and events.¹⁴⁵ Agencies are therefore tasked with the responsibility of working to preserve the primitive, natural character of wilderness areas. This language plainly implies that more than

¹⁴¹ The Wilderness Act of 1964 § 2(c), 16 U.S.C. § 1131 (2021).

¹⁴² *Id.* § 4(d).

¹⁴³ Rohlf & Honnold, *supra* note 20, at 258.

¹⁴⁴ The Wilderness Act of 1964 § 4(b) (emphasis added).

¹⁴⁵ Rohlf & Honnold, *supra* note 20, at 259.

just passive management is acceptable. If uses or actions have degraded the wilderness character, an affirmative duty to preserve would imply that agencies must work to counteract those damages.

Given this affirmative duty, it is within an agency's discretion under Section 4(b) of the Wilderness Act to use active management strategies in order to preserve the wilderness character of an area that is under threat. As explained above, many wildfires in modern history have burned with a level of intensity and destruction far outside of what species in wilderness areas evolved to benefit from.¹⁴⁶ In order to preserve the wilderness character of an area, agencies would have to find alternative methods to manage against wildfire, as current passive management or suppression strategies are not always serving a beneficial purpose. Active management would be an effective way to ensure that wilderness areas maintain their naturalness and character in the face of wildfires, intrusive human influence, and climate change. An agency's affirmative duty to preserve through active management would therefore assist wilderness in bolstering resilience against ongoing anthropogenic degradation, which is responsible for high-loss wildfires that damage wilderness character along with nearby communities in the Wildland-Urban Interface.

B. Section 4(d): What is "Necessary?"

Perhaps the most helpful section of the Wilderness Act to promote the case for active management is Section 4(d). There, Congress states that "such measure[s] may be taken as may be necessary in the control of fire, insects, and diseases."¹⁴⁷ Agencies often face an uphill battle to prove that a particular action is indeed "necessary" when producing EISs pursuant to NEPA. Some clarification is needed on what types of agency action may be deemed "necessary."

Courts have been helpful in parsing out the meaning and standards which dictate when an agency action in a wilderness area can be justified as "necessary" under the Wilderness Act. A case that may lend some guidance to promoting active management is *Sierra Club v. Lyng*.¹⁴⁸ Similar to *Sierra Club v. Block*, in *Lyng*, a Texas District Court addressed whether the Forest Service's tree cutting regime to protect wilderness areas in response to an outbreak of southern pine beetle was permissible within the Wilderness Act. However, unlike *Block*, which analyzed a wider Wilderness Act policy purpose, the argument in *Lyng* hinged on whether it could be considered "necessary" under Section 4(d) to control

¹⁴⁶ See *supra* Section I.D.

¹⁴⁷ The Wilderness Act of 1964 § 4(d)(1).

¹⁴⁸ *Sierra Club v. Lyng*, 694 F. Supp. 1260, 1262 (E.D. Tex. 1988).

insect infestations. The Sierra Club argued that Congress's use of the word "necessary" implies that a program is only necessary if it is effective.¹⁴⁹ This was in response to the pine beetle outbreak being nearly impossible to stop despite the Forest Service mandating clear cutting around some afflicted areas of forest. The court did not agree with the Sierra Club, holding instead that the Wilderness Act's use of "necessary" in Section 4(d) should be interpreted as including "measures needed to achieve a certain result or effect," including "measures that are needed as part of a program designed to control, in the sense of restrain or curb, beetle infestations."¹⁵⁰ In making this decision, the court condoned the Forest Service's active management practices, showing that active management techniques deemed "necessary" under Section 4(d) do not upend the goals of the Wilderness Act. It bears reminding that Section 4(d) mentions not only exceptions necessary to deal with insects like the pine beetle, but also fires.¹⁵¹ Therefore, *Lyng* provides proof that provisions of the Wilderness Act can be used to promote active management in certain circumstances, when deemed "necessary."

However, courts will always be wary of the commercial overtones of a proposed active management strategy. In *Wilderness Society v. U.S. Fish and Wildlife Service*, the Ninth Circuit addressed whether the Fish and Wildlife Service's signing off on a research project in a wilderness area could be considered "necessary."¹⁵² The proposer of the research project was an independent group "comprised of associations representative of commercial fishermen in the region."¹⁵³ According to Fish and Wildlife's environmental assessment, the purpose of the project was to research the salmon fisheries with the intent to rehabilitate those areas.¹⁵⁴ The court decided that "as a general rule both the purpose and the effect of challenged activities must be carefully assessed in deciding whether a project is a 'commercial enterprise' within the wilderness that is prohibited by the Wilderness Act."¹⁵⁵ Despite claims that the management regime would benefit habitat and therefore promote wilderness ideals, the court ruled that the primary purpose of the proposed project was to enhance salmon fisheries for commercial gain, which violated the Wilderness

¹⁴⁹ *Id.* at 1274.

¹⁵⁰ *Id.*

¹⁵¹ The Wilderness Act of 1964 § 4(d)(1).

¹⁵² See *Wilderness Soc'y v. U.S. Fish & Wildlife Serv.*, 353 F.3d 1051, 1057 (9th Cir. 2003), *amended on reh'g en banc in part sub nom. Wilderness Soc'y v. U.S. Fish & Wildlife Serv.*, 360 F.3d 1374 (9th Cir. 2004).

¹⁵³ *Id.* (citing ALASKA STAT. § 16.10.380(a) (2003)).

¹⁵⁴ *Id.*

¹⁵⁵ *Id.* at 1064.

Act.¹⁵⁶ Thus, the court set aside the permit granted by the Fish and Wildlife Service.¹⁵⁷

The holding in *Wilderness Society* creates a rule implying that proposed projects in wilderness areas that carry commercial overtones will be denied, even if they are technically beneficial to the ecosystem.¹⁵⁸ Such a rule could serve as a strong barrier to active management strategies which the agency justifies primarily on the basis of commercial improvement. For example, if the Forest Service in *Lyng* had justified removing pine beetle-infested trees as a way to protect commercial timber harvesting enterprises, the *Wilderness Society* rule could have warranted an injunction. However, if the relevant agency supports its “necessary” action claim by explaining its importance in preserving the character and naturalness of a wilderness area, a justification for affirmative action in the face of human induced climate change can arise, even if commercial interests, such as businesses in nearby communities, may inadvertently benefit as well.¹⁵⁹

If the “necessary” component is satisfied, and the purpose and effects of the agency action is sufficiently intended to preserve the wilderness character of an area, then action otherwise prohibited by the policy statements of the Wilderness Act is permissible.¹⁶⁰ This provides a way for an agency to get around listed prohibitions, such as the use of machinery or temporary roads, that are necessary to carry out active management projects that benefit the wilderness area, and in turn, help prevent wildfires from ravaging the landscape.

C. Mitigating the Impacts of Wildfires is “Necessary”

Wildfires have been growing in intensity, frequency, and destructive capacity in recent decades, causing destruction of habitat, species, and communities sited in the ever-growing Wildland-Urban Interface. Science proves that these fires are burning beyond what is natural, made worse by decades of fire suppression, budgetary constraints, and climate change.¹⁶¹ It is also clear that the conflicting goals of the Wilderness Act have frequently created barriers to actions that could help wilderness areas

¹⁵⁶ *Id.* at 1065.

¹⁵⁷ *Id.* at 1070.

¹⁵⁸ Long & Biber, *supra* note 73, at 679.

¹⁵⁹ *Id.* at 679–680.

¹⁶⁰ Rohlf & Honnold, *supra* note 20, at 260.

¹⁶¹ See *supra* Sections I.D-E & III.B.

regain the ecosystem health necessary to benefit from fires while also protecting habitat and communities.¹⁶²

The Act's general interpretation has promoted passive management strategies that contribute to the growing wildfire problem rather than helping to solve it. But just as the Wilderness Act can be interpreted as a barrier, it holds the key to positive change. It is entirely possible to argue that active management to prevent high loss wildfires is a "necessary" action, within an agency's authority under the Wilderness Act.

Active management for the purpose of conservation could be explained as a way to rectify the "imprint of man's work," as the Wilderness Act refers to it.¹⁶³ In other words, active management should be seen as a "necessary" process to counteract the negative effects of human intervention, whether through fire suppression or climate change. This can be done to fight the wildfires that are made worse by these human interventions, to protect the wilderness area's ecological value.¹⁶⁴ If an agency can follow the right procedural steps, justifying its actions as they apply within the Wilderness Act, active management is entirely permissible.¹⁶⁵ Furthermore, many proponents of better wildfire management suspect that a change in attitude toward wildfires and how agencies deal with them is imperative.¹⁶⁶ Embracing the flexibility of the Wilderness Act can help motivate that shift in thinking, where suppression and its consequences give way to a preference for restrained, well-planned active management.

D. The Wilderness Act Includes Sufficient Restraints Against Overzealous Management

While the Wilderness Act can clearly be interpreted more flexibly, Congress made sure to include provisions that promote restraint in agency actions. Some of those concepts have already been explored, such as the importance of justifying an action as "necessary," and showing that the purposes and effects of any action in wilderness is to promote the preservation of wilderness character.¹⁶⁷ In carrying out an action, wilderness managers are required to do so using a "minimum tool standard."¹⁶⁸ The Act states that agencies may only use the "minimum

¹⁶² See *supra* Section VI.A.

¹⁶³ Long & Biber, *supra* note 73, at 686.

¹⁶⁴ *Id.*

¹⁶⁵ *Id.* at 689.

¹⁶⁶ Plumer, *supra* note 67.

¹⁶⁷ See *supra* Section VI.C.

¹⁶⁸ Rohlf & Honnold, *supra* note 20, at 261.

requirements” to carry out the purposes of the Act.¹⁶⁹ These components of the Act therefore put a sufficient amount of restraint on agencies so that they would not go too far with active management policies. Agencies would have to use their time, manpower, and budgets wisely, doing their due diligence to ensure that the active management tactics they select will have the most bang for their buck. They would have to provide the greatest benefit to the wilderness area while using the minimum amount of intrusion necessary to meet the goal of the project. This would incentivize targeted, localized projects that serve the greatest benefit rather than generalized, understudied projects that have a wider and more uncertain impact on wilderness.

CONCLUSION

Denver Water’s Forests to Faucets program is one of many examples showing the success of proactive management for reducing the potential strength and destruction of wildfires. The costs avoided and lives saved during the Buffalo Mountain Fire prove that these strategies work; they are necessary to protect infrastructure and communities in the ever-growing Wildland-Urban Interface, and to promote forest health and resilience in the face of detrimental anthropogenic influences. However, these actions were only possible because the surrounding forests existed in public and private lands that allowed for active management. There are other mountain towns closer to wilderness areas where the Forest to Faucets program has not been able to implement its management goals. These are towns, like Breckenridge, who have reached out to the Forest to Faucets program expressing concern that they will face an uneven risk of harm if a wildfire broke out.¹⁷⁰ If land managers had the ability to justify using similar active management techniques in wilderness areas, then the nearby communities could rest assured knowing that they are as protected as towns bordering land where active management is readily implemented.

Due to climate change and human interference, wilderness has become a contributor to numerous intense wildfires in recent history. Wilderness has and will continue to be altered in ways that harm its “naturalness.” A body of legal scholars and scientists support leaving wilderness alone and letting it adapt, however it will, to the changing environment.¹⁷¹ However, this concept ignores the very real and severe threat of wildfires and their capacity to cause destruction to communities

¹⁶⁹ The Wilderness Act of 1964 § 4(c), 16 U.S.C. § 1133(c) (2021).

¹⁷⁰ Interview with Madelene McDonald, *supra* note 4.

¹⁷¹ See *supra* Section IV.B.

and ecosystems, far outweighing the benefit that natural fires once offered. With increased drought, fuel loads, and proximity to communities, naturally occurring fires that can burn without causing more harm than good are exceedingly rare. Thus, letting wilderness processes run unchecked is not always safe or healthy. Luckily, there is a way to harness wilderness as a tool for preventing more catastrophe. Though just a piece of the puzzle in the greater wildfire problem, wilderness areas offer opportunities for selective active management that can be used as a way to both preserve naturalness and enhance wilderness character while acting as barriers against disaster for communities and species. Best of all, it can be done within the purview of the Wilderness Act. Active management can save ecosystems, economies, and lives. Over fifty years from the inception of the Wilderness Act, its interpretation must adapt to changing climatic and socioenvironmental challenges.