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Fire Management Provisions in Federal Wilderness Law

By Erik D. Alnes

Professional Paper

Presented in partial fulfillment of the requirements
for the degree of
Masters of Science in Resource Conservation

The University of Montana

Missoula, MT

2017

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Executive Summary

This professional paper investigates the intersection of federal wilderness law, regulation, and policy, and its impact on fire management in federally designated wilderness areas. The Wilderness Act of 1964 established the National Wilderness Preservation System and mandates the preservation of wilderness character in designated areas. Wilderness is defined in the law as places with untrammeled, natural, and undeveloped qualities, with opportunities for solitude and unconfined types of recreation. The Wilderness Act prohibits temporary roads and the use of motor vehicles, motorized equipment, mechanical transport, and the landing of aircraft, only allowing these uses when deemed the ‘minimum requirement necessary’ for the purpose of preserving wilderness character. Although federally designated wilderness areas are to be managed in an “untrammeled” fashion, Section 4(d)(1) of the Act permits agencies to control wildfire in wilderness. This special provision of the Wilderness Act is discretionary and open-ended, but Congress has since clarified allowable fire management actions in wilderness.

Since 1964, Congress has added areas to the National Wilderness Preservation System through subsequent “enabling legislation.” Congress began including fire management provisions in enabling legislation in 1978, and has included 29 subsequent provisions clarifying what fire management actions are permitted in designated areas. Congress has increasingly used these special provisions related to fire in wilderness legislation. From 2000-2015, two-thirds of designated areas were provided with additional direction for fire management in their enabling legislation. Special fire management provisions focus on pre-suppression and suppression actions for watershed and community protection, aircraft and mechanized equipment use during wilderness fire operations, and prescribed burning. Additionally, they emphasize interagency coordination, timely and efficient responses to wilderness fires, adjacent land protection, and funding authorizations for certain fire programs.

While provisions have been included in legislation for wilderness areas throughout the eastern and western United States, they have been extensively used in California and Nevada. Special provisions are tailored to the place-based challenges of fire management in specific areas. For example, due to Southern California's fire-prone nature, high WUI densities, and community reliance on watersheds, fire provisions in the wilderness legislation of this region clarify that pre-suppression and suppression actions are allowed in wilderness. In attempts to limit invasive species propagation in Nevada, fire provisions in this state clarify that aircraft and mechanized equipment use is permitted during fire management operations in wilderness. Special fire provisions since 1964 have not fundamentally changed the amount of discretion originally granted to managers under section 4(d)(1) of the Wilderness Act, but rather clarify and place greater emphasis on the fire management actions permitted in wilderness.

The paper reviews the regulations and policies for wilderness management by the U.S. Forest Service (USFS), Bureau of Land Management (BLM), National Park Service (NPS) and Fish and Wildlife Service (USFWS). All agencies provide direction for wilderness fire management in their policies, and emphasize allowing wildfire to play its natural role in wilderness. The open-ended discretion of section 4(d)(1) has allowed some differences in agency policy as well. This includes variable procedures for allowing 4(c) prohibited uses on wilderness fires, diverse programmatic emphases, and varying direction for fuel treatments and prescribed burning in wilderness. There are also differences in the way agency policies are conveyed. USFS and BLM policies are very structured, while NPS and USFWS policies provide more deference to local fire programs. Also, the primary use mandates for the NPS and USFWS are more consistent with the Wilderness Act purpose, and both agencies maintain more restrictive policies on fire management actions in designated areas.

The paper then assesses how the special management provisions found in wilderness law are being implemented by federal agencies in three selected cases. This includes a review of Wilderness

Management Plans (WMPs), Fire Management Plans (FMPs), and tertiary planning documents for thirty-nine wilderness areas managed under three distinct provisions including direction for pre-suppression and suppression measures, aircraft and mechanized equipment use during fire operations, and prescribed burning. The Los Padres National Forest in Southern California maintains a full-suppression policy for their wilderness areas and has proposed a fuel break improvement project in the Ventana Wilderness for community and watershed protection. Similarly, the BLM and NPS in southern Nevada maintain aggressive fire suppression policies and emphasize aircraft and mechanized equipment use during wilderness fires to limit the spread of invasive species. While both agencies in southern Nevada are directed by the same provision, NPS planning documents maintain more restrictive policies on aircraft and mechanized equipment use, revealing a contrast in agency implementation. Although prescribed burning is clarified as an allowable action in northwestern Nevada wilderness legislation, the option is not utilized due to the threat of invasive species propagation.

While the additional clarity has provided opportunities for managers, special provisions for fire management are contrary to preserving the “untrammled” character of wilderness. This has created conflicting fire management direction in planning documents and disparities between overarching agency policies and planned fire management actions. To mitigate this issue, agency plans emphasize short-term compromise for long-term preservation of wilderness character. In Los Padres National Forest wilderness areas, for example, the short-term adverse impacts of fuel breaks on the untrammled character of wilderness outweigh the long-term negative impacts of bulldozer use during active fire operations. Similarly, short-term negative impacts resulting from the use of aircraft and mechanized equipment in Nevada wilderness limits the spread of invasive species, thereby decreasing their long-term negative effect on the natural characteristics of wilderness. Due to the interminable nature of adjacent WUI community growth and positive feedback cycles with fire and the spread of invasive species, the paradox of fire management in wilderness remains a challenge.

1. Introduction

The Wilderness Act of 1964 was passed during the post-World War II boom of infrastructure development, automobile use, and expanding westward settlement. In the context of increased roadbuilding and mechanization, Howard Zahniser, among others, began advocating for an official protection of areas with wilderness characteristics. In 1955, Zahniser drafted a bill and submitted it to Congress, arguing that “...there is in our planning a need to also secure the preservation of some areas that are so managed as to be left unmanaged – areas that are undeveloped by man’s mechanical tools and in every way unmodified by his civilization.”¹ After sixty-five variations of the bill were considered, Congress finally passed the Wilderness Act in 1964.²

The overarching purpose of the Act provides that wilderness “...shall be administered for the use and enjoyment of the American people in such a manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, and the *preservation of their wilderness character* (emphasis added).”³ Wilderness character, discussed at length in the Background Section, is defined in reference to five values including “untrammelled,” “natural,” “undeveloped,” “opportunity for solitude or primitive and unconfined recreation,” and “other features of...value.”⁴ This language emphasizes limited management action, where natural processes dominate.

Although the Wilderness Preservation System was established in this spirit, special provisions within the Act permit active management of certain resources. Specific to fire management, section 4(d)(1) of the Wilderness Act grants discretion to agency managers, stating that “...such measures may

¹ Howard Zahniser, “The Need for Wilderness Areas,” *The Living Wilderness* Winter-Spring, no. 57 (1956): 58.

² Michael McCloskey, “The Wilderness Act of 1964: Its Background and Meaning,” *Oregon Law Review* 288, no. 321 (1966): 298.

³ P.L. 88-577 §2(a), (1964).

⁴ See e.g. Peter Landres, Chris Barns, Steve Boutcher, Tim Devine, Peter Dratch, Adrienne Lindholm, Linda Merigliano, Nancy Roeper, and Emily Simpson. “Keeping it Wild 2: An Updated Interagency Strategy to Monitor Trends in Wilderness Character Across the National Wilderness Preservation System.” *Rocky Mountain Research Station General Technical Report*, RMRS-GTR-340, (2015).

be taken as may be necessary in the control of fire, insects, and disease, subject to such conditions as the Secretary deems desirable.”⁵ Fire control on non-designated lands generally includes proactive and reactive actions. “Pre-suppression actions” involve pre-fire vegetation thinning and prescribed fire use to manage fuel loadings. “Suppression actions” occur during fire events and includes creating fire line with mechanized and manual tools as well as the use of aerial resources to contain fires. While this provision permits “measures” to “control fire” in wilderness, the special provision is open-ended.

Since 1964, Congress has added 711 new areas to the National Wilderness Preservation System through the passage of additional legislation.⁶ Within this body of “enabling legislation,” Congress has included twenty-nine special provisions that provide additional direction for fire management. Although some of these provisions simply cite section 4(d)(1) of the Wilderness Act, others contain explicit authorizations for pre-suppression and suppression actions, utilization of aircraft and mechanized equipment for fire operations, and allowing the use of management ignited prescribed fire.⁷ The special provisions clarify section 4(d)(1) by providing additional direction to wilderness fire managers.

Because there is no overarching wilderness management agency, the Forest Service (FS), Bureau of Land Management (BLM), National Park Service (NPS), and the Fish and Wildlife Service (FWS) have individually interpreted and developed policies that guide management in their designated areas. This includes federal regulations, national interagency fire policies, and agency specific handbooks and manuals. To understand wilderness fire management, it is necessary to understand the entire body of federal laws, regulations, and policies that guide fire management in federally designated wilderness areas.

⁵ P.L. 88-577 §4(d)(1), (1964).

⁶ “The Beginnings of the National Wilderness Preservation System,” *Wilderness.net*, (Accessed 1/24/2016), <http://www.wilderness.net/NWPS/fastfacts>.

⁷ See e.g. P.L. 95-237§2(d), (1978); P.L. 107-282 §209, (2002); P.L. 107-63 §135(d), (2002).

The topic of fire management in wilderness has been thoroughly researched, yet little research has addressed the scope and impacts of special provisions for fire management in wilderness. Research on special provisions in wilderness law has identified trends in the use of special provisions, and the language used in such provisions, but goes no further than legislation and congressional intent.⁸ Other academic literature on wilderness fire management has focused on the broad historical context that shaped fire policy in wilderness such as the effects of the 1988 Yellowstone Fires on national wilderness fire management.⁹ Several pieces of literature have analyzed the effectiveness of certain policy changes, such as the wildfire use policies and natural fire programs, comparing the frequency and severity of fires to historic regimes.¹⁰ Others have focused on the challenges associated with allowing fires to burn in wilderness, identifying the complexities of managing fires in wilderness areas.¹¹ Parsons and Landres have done exceptional work relating federal policy changes to quantifiable fire management actions in wilderness, but have focused specifically on prescribed natural fire programs of the 1990's and early 2000's.¹² Although the sum of this research has done an excellent job identifying special provisions broadly, there remains a disconnect between research on the evolution of special provisions for fire

⁸ See e.g., Ross W. Gorte. "Wilderness laws: statutory provisions and prohibited and permitted uses." *Congressional Research Service*, 7-5700 (R41649), (2011).; Chad Dawson, Blake Propst, & John Hendee. "Special provisions of wilderness legislation in the United States, 1964-2009." *International Journal of Wilderness*, 16(2), (2011): 32-34.

⁹ See e.g., Gregory Aplet. "Evolution of wilderness fire policy." *International Journal of Wilderness*, 12(1), (2006): 9-13; Ross W. Gorte, & Kelsi Bracmort, "Forest Fire/Wildfire Protection." *Congressional Research Service*, 7-5700 (RL30755), (2012): 1-27; Jan W. van Wagtenonk. "History and evolution of wildland fire use." *Fire Ecology Special Issue*, 3(2), (2007): 3-18.

¹⁰ See e.g., David Parsons. "The challenge of restoring natural fire to wilderness." *USDA Forest Service Proceedings*, RMRS 15(5), (2002): 276-282; Brandon Collins & Scott Stephens "Managing natural wildfires in Sierra Nevada wilderness areas." *Frontier Ecological Environment*, 5(10), (2007): 523-527.

¹¹ See e.g., Anne Black, Martha Williamson, & Dustin Doane. "Wildland fire use barriers and facilitators." *Fire Management Today*, 68(1), (2008): 10-14; Peter Landres, Mark Brunson, Linda Merilgliano, Charisse Sydorik, & Steve Morton. "Naturalness and wildness: the dilemma and irony of managing wilderness." *USDA Forest Service Proceedings*, RMRS, 15(5), (2008): 377-381; Dustin Doane, Jay O'Laughlin, Penelope Morgan, & Carol Miller. "Barriers to wildland fire use: a preliminary problem analysis." *International Journal of Wilderness*, 12(1), (2006):36-39; Martha Williamson. "Factors in United States Forest Service district rangers' decision to manage a fire for resource benefit." *International Journal of Wildland Fire*, 16, (2007): 755-762.

¹² David Parsons & Peter Landres. "Restoring natural fire to wilderness: how are we doing?" In Pruden, T. L. & Brennan, L. A. (eds.) *Fire in ecosystem management: shifting the paradigm from suppression to prescription. Tall Timbers Fire Ecology Conference Proceedings*, 20, Tall Timbers Research Station, Tallahassee, FL. (1998): 366-373.

management and their effects on management actions taken inside federally designated wilderness areas. Specifically, Dawson and others have asked why this additional direction has been included in wilderness legislation, and “whether these management directions and special provisions are detrimental to wilderness and the natural conditions and processes on the ground.”¹³

The primary objective of this professional paper is to fill this void in the literature and investigate the intersection of federal wilderness law, regulation, and policy, and its impact on fire management in federally designated wilderness areas. By approaching the issue of fire management in wilderness from federal law to wilderness fire management planning, this study reveals the impact of laws, regulations, and policies on fire management in wilderness. This holistic approach summarizes relevant wilderness law, agency regulations, and provides insight to the implementation of this direction in wilderness.

1.1. Research Questions and Organization

This paper is organized with a top-down structure; starting with legislation, regulations, and federal agency policies, and then concluding with examples of fire management in wilderness areas. The paper first explains how the Wilderness Act and subsequent wilderness enabling laws approach the issue of fire management in federally designated wilderness areas. Obtained through a comprehensive wilderness law review, special provisions for fire management included in wilderness enabling legislation subsequent to 1964 are thematically organized and analyzed at length. Second, this paper explains the significance of federal regulations and agency-specific policy regarding fire management in federally designated wilderness. Through a survey of interagency, USFS, BLM, NPS, and USFWS regulations and policies, this paper identifies the commonalities and differences between agency

¹³ Chad Dawson, Blake Propst, & John Hendee. “Special provisions of wilderness legislation in the United States, 1964-2009.” *International Journal of Wilderness*, 16(2). (2011): 34.

policies that guide fire management in designated areas. Third, this paper assesses how special fire management provisions found in wilderness law are being implemented by federal land agencies. The implementation of three special provisions are identified in separate case studies, revealing the opportunities and challenges presented by the legislation. Finally, this professional paper provides an analysis of the themes found from this research, and concludes with overarching recommendations and final insights.

2. Methods

Three main steps were taken to complete this research, including a review of wilderness law, a review of federal agency regulations and wilderness policies, and three individual case studies. The first step involved an examination of wilderness legislation from 1964 to present using Wilderness Connect's Law Library (www.wilderness.net) to identify wilderness legislation containing special provisions for fire management. After an initial review was completed, the findings were cross referenced with a search in another database (provided by www.Congress.gov), and a secondary Congressional Research Service publication to ensure the findings were accurate.¹⁴ These special provisions were then categorized chronologically, and [wilderness.net](http://www.wilderness.net) was used to identify their locations, acreages, and managing agencies. Subsequently, the special provisions were reviewed for substantive content, and common themes within the direction were identified.

The second step involved an examination of regulations and policies relevant to the management of fire in wilderness, including the USFS, NPS, BLM, and FWS. Using the Cornell Law Database, I searched for and recorded all regulations directing wilderness fire management found in the Code of Federal Regulations. Then interagency fire policies, including the Federal Wildland Fire

¹⁴ Ross W. Gorte. "Wilderness Laws: Statutory Provisions and Prohibited and Permitted Uses." *Congressional Research Service Report 41649*. (2011).

Management Policy (1995), Review and Update of the 1995 Federal Wildland Fire Management Policy (2001), Guidance for the Implementation of Federal Wildland Fire Management Policy (2009), National Cohesive Wildland Fire Management Strategy (2014), and Interagency Standards for Fire and Fire Aviation Operations (2017) were vetted for similar content. After this was completed, a review of agency policy was undertaken, including an evaluation of the Handbooks and Manuals of the FS, BLM, and the FWS, as well as an examination of the Management Policies, Directors Order's, and tertiary reference manuals and handbooks of the NPS. These policies were then organized into thematic groups and analyzed for similarities and differences in direction.

To assess how special provisions are being implemented by the federal land management agencies, and understand the impacts of agency relevant regulations and policy on wilderness fire management, three short case studies were selected. Planned fire management actions were reviewed in 10 Southern California wilderness areas that maintain pre-suppression and suppression direction, 19 wilderness areas in southern Nevada that maintain aircraft and mechanized equipment direction, and 10 wilderness areas in the northwest corner of Nevada that maintain prescribed burning direction in their respective special provisions. These cases were selected due to the extensive use of fire management provisions in these two states, as well as the manipulative character of these directives. For each case study, I examined the Fire Management Plans, Wilderness Management Plans, and subsequent planning documents for each wilderness area, to identify fire objectives, goals, and planned fire management actions in the designated lands. I also conducted a brief semi-structured interview with a northwest Nevada fire manager to clarify the direction in wilderness planning documents.

3. Background

3.1. The Wilderness Act Purpose

The Wilderness Act of 1964 established the National Wilderness Preservation System, and mandated that lands designated as wilderness would be administered for two overarching purposes. It states that “[wilderness] shall be administered for the use and enjoyment of the American people in such a manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character...”¹⁵ In clear language, Congress states that wilderness areas are to be managed for the protection and preservation of wilderness character. In *High Sierra Hikers Association v. U.S. Forest Service* (2006), the court stated, “unlike NEPA, or the Clean Air or Great Water Acts, the Wilderness Act emphasizes outcome (wilderness preservation) over procedure.”¹⁶ In contrast to many of the procedurally-oriented environmental laws of the 1960’s, the binding direction to “preserve wilderness character” is the overall mandate of the Wilderness Act.

Although Congress does not explicitly define the term “wilderness character,” the subsequent subsection of the Act defines wilderness as the following:

A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and community of life are *untrammelled by man*, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this chapter 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; 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

¹⁵ P.L. 88-577 §2(a), (1964).

¹⁶ *High Sierra Hikers Ass’n v. U.S. Forest Service*, 436 F. Supp. 2d 1117, 1138 (E.D. Cal 2006) at 1138.

and use in an unimpaired condition; and (4) may also contain ecological, geological, or *other features of scientific, educational, scenic, or historic value* (emphasis added).¹⁷

This definition of wilderness provides qualities that have been deemed the “five qualities of wilderness character.”¹⁸ These include “untrammelled,” “natural,” “undeveloped,” “solitude or primitive and unconfined recreation,” and “other features of...value.” Because the Act so clearly mandates the “preservation of wilderness character,” understanding the meaning of these qualities is significant to understanding the management of fire in wilderness.

The “untrammelled” and “natural” values are often interpreted as being synonymous with the term “wild,” but each carries a distinct definition.¹⁹ Untrammelled means “not confined, limited, or impeded,” whereas natural is synonymous with “native, elemental, and unrefined.”²⁰ Landres and others suggest that the term “wildness’ strongly connotes [the untrammelled] sense of an area... free from human control from conscious, active, intentional manipulation,” and finds that the term “naturalness” captures the biological sense of wilderness.²¹ Other authors state that ‘natural’ may have two connotations, surmised as the “lack of human modification, as in Bob Marshall’s reference to... the essential features of the primitive environment,”²² and communities of life that are “similar to what would have existed in the absence of post-aboriginal humans.”²³ Although ‘untrammelled’ and ‘natural’

¹⁷ P.L. 88-577 §2(c), (1964).

¹⁸ See e.g. Peter Landres, Chris Barns, Steve Boutcher, Tim Devine, Peter Dratch, Adrienne Lindholm, Linda Merigliano, Nancy Roeper, and Emily Simpson. “Keeping it Wild 2: An Updated Interagency Strategy to Monitor Trends in Wilderness Character Across the National Wilderness Preservation System.” *Rocky Mountain Research Station General Technical Report*, RMRS-GTR-340, (2015).

¹⁹ David Cole, “Ecological Manipulation in Wilderness: An Emerging Management Dilemma,” *International Journal of Wilderness* 2, no. 1 (1996).

²⁰ “Untrammelled” and “Natural.” Merriam-Webster.com. Accessed October 9, 2017.

²¹ Peter Landres, Mark Brunson, Linda Merigliano, Charissee Sydoriak, & Steve Morton, “Naturalness and Wildness: The Dilemma and Irony of Managing Wilderness,” *USDA Forest Service Proceedings* 15, Vol. 5 (2000): 377.

²² Gregory Aplet, “On the Nature of Wildness: Exploring What Wilderness Really Protects,” *Denver University Law Review* 76, no. 2 (1999): 354.

²³ David Cole, “Ecological Manipulation in Wilderness: An Emerging Management Dilemma,” *International Journal of Wilderness* 2, no. 1 (1996): 15.

are built on the foundation of anthropogenic absence, the term “untrammeled by man” characterizes areas that are free from deliberate human management, whereas “natural conditions” carries the connotation of a raw, unrefined, and untainted biological setting.

Although these terms appear harmonious in their call to action, authors have noted their contradicting connotations. If human actions of the past have altered the ‘natural’ value of a wilderness area, can managers temporarily discount the ‘untrammeled’ value of wilderness to actively manage and restore natural values? For example, if early 1900’s fire suppression policies altered the historic fire regime of an area, does a manager have the discretion to utilize thinning operations and manager-ignited prescribed fires to restore a natural and historic fire regime?²⁴ Although the purpose of the Wilderness Act is to “preserve wilderness character,” the philosophical rationality of balancing the “untrammeled” and “natural” values of wilderness is not prioritized under the law.²⁵ The overarching premise of the Wilderness Act emphasizes the preservation of natural qualities, perpetuated through limited management actions.

The other wilderness values have more straightforward definitions. “Undeveloped” emphasizes the lack of human development within wilderness areas, including roads, buildings, and installations. “Opportunities for a primitive and unconfined type of recreation” speaks to the other purpose of the Act, that is, allowing public enjoyment that does not impede the untrammeled, natural, and undeveloped values of wilderness.²⁶ Last, wilderness “may also contain ecological, geological, or other features of scientific, educational, scenic, or historic value.” The founders of this Act recognized other

²⁴ David Cole, “Ecological Manipulation in Wilderness: An Emerging Management Dilemma,” *International Journal of Wilderness* 2, no. 1 (1996).

²⁵ Peter Landres, Mark Brunson, Linda Merigliano, Charissee Sydorik, & Steve Morton, “Naturalness and Wilderness: The Dilemma and Irony of Managing Wilderness,” *USDA Forest Service Proceedings* 15, Vol. 5 (2000).

²⁶ Landres, et. al. “Keeping it Wild 2: An Updated Interagency Strategy to Monitor Trends in Wilderness Character Across the National Wilderness Preservation System.” *Rocky Mountain Research Station General Technical Report, RMRS-GTR-340*, (2015).

opportunities within wilderness designation, including the opportunity to study ecological processes in lands managed under a laissez-faire approach. Altogether, the congressional definition of wilderness illustrates landscapes that are free from human impairment, where natural processes dominate the alteration of the landscape.

3.2. *Prohibition of Certain Uses*

The Wilderness Act defines the allowable uses of wilderness and establishes parameters on the actions and developments that may occur within designated areas. Section 4(c) of the Act states:

Except as specifically provided for in this chapter, and subject to existing private rights, there shall be no commercial enterprise and no permanent road within any wilderness area designated by this chapter and, *except as necessary to meet the minimum requirements for the administration of the area for the purpose of this chapter* (including measures required in emergencies involving the health and safety of persons within the area), there shall be no temporary road, no use of motor vehicles, motorized equipment or motorboats, no landing of aircraft, no other form of mechanical transport, and no structure or installation within any such area (emphasis added).²⁷

This section explicitly disallows commercial enterprises and permanent roads, but provides a qualifying statement that allows temporary roads, structures, installations, use of motorized vehicles and equipment, and the landing of aircraft within wilderness areas. The key phrase for the qualifying statement is “except as necessary to meet the minimum requirements for the administration of the area for the purpose of this chapter.” This statement “focuses the administering agency on its unavoidable or imperative responsibilities in an area rather than on optimal performance,” and only authorizes these uses as necessary for *the purposes* of the Wilderness Act.²⁸

²⁷ P.L. 88-577 §4(c), (1964).

²⁸ Michael McCloskey, “The Wilderness Act of 1964: Its Background and Meaning,” *Oregon Law Review* 288, no. 321 (1966): 309.

The courts have clarified the meaning of this section in several cases. Interpreting section 4(c), the *High Sierra Hikers Association* (2004) court held that “the Wilderness Act is framed in general terms and does not specify any particular form or content for such an assessment; therefore the finding of ‘necessity’ requires this court to defer to the agency’s decision under the broad terms of the Act.”²⁹ Although the court granted significant discretion to the agency decision to manage a non-conforming use (commercial pack stock operations) in wilderness, it held that the FS needed to “articulate why the extent of such pack stock services authorized by the permits [was] ‘necessary.’”³⁰ In *Wilderness Watch, Inc. v. U.S. Fish and Wildlife Service* (2010), the court held that although “the Act... provides for some flexibility to address a given situation, even with imperfect information and time and budget constraints... the provision requires the agency to make a finding of necessity.”³¹ This case, in which plaintiffs challenged the legality of water installations for the conservation of bighorn sheep in a wilderness area, the court also stated that “a generic finding of necessity does not suffice; the Service must make a finding that the structures are ‘necessary’ to meet the ‘minimum requirements for the administration of the area for the purpose of [the Act].”³² Similarly, in a case involving the use of helicopters to restore a historic fire lookout in a wilderness area, the court made it clear that actions taken under section 4(c) are only justifiable for the purpose of the Act. It found “...the Forest Service made frequent use of helicopters not to promote wilderness values but rather to further what the Service understands to be a separate purpose of the Wilderness Act, i.e., historic preservation.”³³ In this case, the court conveys that “historic values” refer to ecological or natural historic values of wilderness,

²⁹ *High Sierra Hikers Association v. Blackwell*, 309 F.3d 630 (9th Cir. 2004) at 647.

³⁰ *Id.*

³¹ *Wilderness Watch, Inc. v. U.S. Fish and Wildlife Service*, 629 F. 3d 1024 (Court of Appeals, 9th Circuit, 2010) at 1037.

³² *Id.*

³³ *Wilderness Watch v. Iwamoto* 853 F. Supp. 2d 1063 (D.C. WA 2012) at 1077.

not man-made installations found within the bounds of wilderness, thus holding that the FS justified actions beyond the *purposes* of the Wilderness Act.

These cases make clear that federal agencies must demonstrate that a prohibited use in wilderness is necessary for the minimum requirements for the administration of an area for the *purpose* of the Wilderness Act. Therefore, if the agency can show that an action or installation is the minimum necessary to keep an area “unimpaired for future use and enjoyment as wilderness,” and to “provide for the protection [and] the preservation of their wilderness character,” the action or installation may be acceptable under the Act.³⁴

To ensure compliance with section 4(c) of the Wilderness Act, agencies use the Minimum Requirements Analysis (MRA). The Analysis uses a workbook called the Minimum Requirements Decision Guide (MRDG) to present recommendations to proposed actions involving a prohibited use. This is a two-step process used to decide if a proposed action is *necessary* for wilderness preservation and is the *minimum* activity to reach a goal. Neither the MRA or MRDG is required by law, but agency policy mandates analysis in certain situations.³⁵ This documented process can be used on a case-by-case basis or developed as a programmatic decision guide.³⁶ The outcome of the process is a recommended course of action, providing a comparison of alternative actions and their effects on wilderness character.

3.3. Special Provision for Fire Management

The Wilderness Act includes a provision specifically related to fire management. It states:

Within wilderness areas designated by this chapter the use of aircraft or motorboats, where these uses have already become established, may be permitted to continue subject to such restrictions as the Secretary of Agriculture deems desirable. In addition,

³⁴ P.L. 88-577 §2(a), (1964).

³⁵ Arthur Carhart National Wilderness Training Center. “Minimum Requirements Decision Guide—Process Outline.” (December, 2016): 1-2.

³⁶ Arthur Carhart National Wilderness Training Center. “Minimum Requirements Decision Guide—Overview.” (December, 2016).

such measures may be taken as may be necessary in the control of fire, insects, and diseases, subject to such conditions as the Secretary deems desirable (emphasis added).³⁷

In this “Special Provisions” section, Congress permits certain prohibited activities that were established before the Act, and grants the Secretaries of Agriculture and the Interior significant discretion to “control fire, insects, and disease” in wilderness. Contrary to section 4(c), there is no requirement for actions to “meet the minimum requirements for the administration of the area for the purpose” of the Wilderness Act.

Since there is no qualifying statement in the provision, the discretion afforded by this provision rests on the definition of the term “necessary.”³⁸ In *Sierra Club v. Lyng* (1987), plaintiffs challenged the legality of a FS program that was utilizing tree-cutting and chemical-spraying in wilderness to control a pine beetle outbreak.³⁹ In the court’s decision, the term ‘necessary’ is discussed at length:

The most natural reading of the section focuses on the phrase “necessary in the control.” In this context “necessary” simply embraces measures “needed to achieve a certain result or effect,” *American Heritage Dictionary of the English Language* 877 (1981) – that is, measures that are needed as part of a program designed to control, in the sense of restrain or curb, beetle infestations... The pertinent section of the statute is therefore most reasonably construed as allowing the Secretary to use measures that fall short of full effectiveness so long as they are reasonably designed to restrain or limit the threatened spread of beetle infestations from wilderness land onto the neighboring property, to its detriment.⁴⁰

In this case, the court came to two important conclusions. First, with regard to the FS’s beetle program, the court found that the Service did not need to prove that the program would be fully successful to be “necessary.” The Service only had to prove that the measures they considered “necessary” would be needed to achieve a desired result. Second, the court found that the FS could not justify its programs

³⁷ P.L. 88-577 §4(d)(1), (1964).

³⁸ Michael McCloskey, “The Wilderness Act of 1964: Its Background and Meaning,” *Oregon Law Review* 288, no. 321 (1966): 310.

³⁹ *Sierra Club v. Lyng*, 662 F. Supp. 566 (D.D.C. June 1987).

⁴⁰ *Id.* at 560.

based on the protection of adjacent values, and the Service had to ensure that “the burden of beetle control [did] not fall disproportionately on Wilderness Areas.” Although there is no requirement that 4(d)(1) actions are the “minimum requirement for the administration of the of the area for the purpose of” the Wilderness Act, the court held that actions taken under 4(d)(1) must not “unnecessarily sacrifice” wilderness values “to promote the interest of adjacent landowners.”⁴¹ While this case strictly pertains to a beetle outbreak prevention program, the court provided a deeper understanding of “necessary” in this context, and narrowed the discretionary scope of the provision.

There is still significant ambiguity within this special provision related to fire management. Two years after the passage of the Wilderness Act, McCloskey published a paper that analyzed the language in the Act. Regarding section 4(d)(1), he states “one other problem of interpretation is found in this provision, and it centers on the meaning of the words ‘measures’ and ‘control.’ Are the measures of control which this subsection contemplates merely suppression measures that will be undertaken once an outbreak of fire or disease occurs, or are pre-suppression control programs also allowed?”⁴² It is unclear whether pre-suppression management actions may be taken under the special provision, including the construction and maintenance of fuel breaks, thinning vegetation, or the use of prescribed fire to limit the potential threats of fire to adjacent properties and values. McCloskey concludes by mentioning that these actions could be justified under section 4(c) if they meet “the minimum requirements for the administration of the area for the purpose” of the Act, but it remains unclear if preemptive pre-suppression actions are justified under section 4(d)(1). The subsequent wilderness law review further explores the meaning of section 4(d)(1) and reveals the Congressional and agency interpretations of this language.

⁴¹ *Id.* at 560.

⁴² Michael McCloskey, “The Wilderness Act of 1964: Its Background and Meaning,” *Oregon Law Review* 288, no. 321 (1966): 311.

Researchers have recognized the dilemma regarding fire management and wilderness values, and have raised other ethical questions. If areas have lost their “natural” wilderness values through past suppression actions causing unnatural fuel loadings, and fire regimes that have departed from historic averages, may wilderness fire managers trammel the wilderness to restore their natural values? Some authors point out that managing fire as a means to an end could result in more unnatural conditions because of anthropogenic tampering, undermining the “untrammelled” characteristics of wilderness.⁴³ Other authors recognize this dilemma and argue that short-term losses in wilderness values would lead to long-term preservation of wilderness character.⁴⁴

This original special provision permits agencies to actively manage fire within wilderness through the discretionary power of the Secretaries of Agriculture and the Interior. So, although wilderness areas are established to be managed for their wild and natural characteristics, where “forces of nature” dominate the alteration of the landscape, this provision provides agencies with some discretion to manage wildfire within the boundaries of wilderness.⁴⁵

4. Wilderness Law and Fire Management

Subsequent to the Wilderness Act of 1964, Congress passed “enabling legislation” that added areas to the National Wilderness Preservation System. Newly designated areas are managed according to the direction of the 1964 Wilderness Act as well as their enabling legislation. In some of these laws, Congress has provided additional fire management direction through special provisions within the legislation. Since 1964, twenty-nine special provisions have been included in wilderness legislation, clarifying allowable fire management actions in wilderness.

⁴³ David J. Parsons, “The Challenge of Restoring Natural Fire to Wilderness,” *USDA Forest Service Proceedings* 15, vol. 5 (2000): 280.

⁴⁴ Peter Landres, Mark Brunson, Linda Merigliano, Charissee Sydorik, & Steve Morton, “Naturalness and Wilderness: The Dilemma and Irony of Managing Wilderness,” *USDA Forest Service Proceedings* 15, Vol. 5 (2000): 378.

⁴⁵ P.L. 88-577 §2(c)(1), (1964).

Since 1978, the use of special provisions for fire management in wilderness legislation has increased, and so has the specificity of the direction. This section thematically groups and reviews the special provisions for fire management found in wilderness legislation subsequent to 1964, revealing the similarities and differences of this additional direction. Additionally, Appendix A contains a table that shows the chronological progression of special provisions for fire management from 1964 to 2016.

4.1. Pre-Suppression, Suppression, and Watershed Protection Provisions

The first supplementary special provision for fire management was included in the Endangered American Wilderness Act of 1978.⁴⁶ This Act established thirteen wilderness areas in 11 states. This included the establishment of the Santa Lucia Wilderness and the addition of area to the Ventana Wilderness located in the Los Padres National Forest of Southern California. Both of these wilderness areas received additional direction for fire management.⁴⁷ The special provision for the Santa Lucia Wilderness states:

In order to guarantee the continued viability of the Santa Lucia watershed and to insure the continued health and safety of the communities serviced by such watershed, the management plan for the Santa Lucia area to be prepared following designation as wilderness shall authorize the Forest Service to take whatever appropriate actions are necessary for fire prevention and watershed protection including, but not limited to, acceptable pre-suppression and fire suppression measures and techniques.⁴⁸

The special provision for the Ventana Wilderness is identical, but instead states that the FS may take the same actions to ensure the "...continued viability of the Ventana watershed."⁴⁹ The House Report that accompanies the legislation states that because of the "...extreme hazard of forest fires in the Los Padres National Forest, and at the request of local citizens and two of the region's

⁴⁶ P.L. 95-237 §2(c-d), (1978).

⁴⁷ P.L. 95-237 §2(c-d), (1978).

⁴⁸ P.L. 95-237 §2(c), (1978).

⁴⁹ P.L. 95-237 §2(d), (1978).

Congressmen,”⁵⁰ direction to permit pre-suppression and suppression management actions was included in the legislation to warrant the continuation of these management practices. The House Report also states the authorization of “pre-suppression and suppression measures (including fire roads) are clearly permissible in wilderness areas under sections 4 (a), (b), (c), and (d) of the Wilderness Act... [and] should not be construed by any agency or judicial authority as being precluded in other wilderness areas, but should be considered as direction and reaffirmation of congressional policy.”⁵¹ The added direction for pre-suppression and suppression actions for fire prevention and watershed protection in the provision, coupled with the House Report, clarifies the Wilderness Act’s 4(d)(1) provision and reinforces the approval for such management actions in the wilderness areas of the Los Padres National Forest.

This direction was repeated in wilderness enabling legislation in 1992 and 2002. The Los Padres Condor Range and River Protection Act of 1992 established and added acreage to seven wilderness areas located on the Los Padres National Forest, including the Chumash, Garcia, Matilija, San Rafael, Sespe, Silver Peak, and Ventana Wilderness areas.⁵² The language, almost identical to the Endangered American Wilderness Act, states:

In order to guarantee the continued viability of the watersheds of the wilderness areas designated by this Act and to ensure the continued health and safety of the communities serviced by such watersheds, the Secretary of Agriculture may take such measures as are necessary for fire prevention and watershed prevention and watershed protection, including, but not limited to, acceptable fire pre-suppression and fire suppression measures and techniques.⁵³

⁵⁰ US Congress. House. 1977. Designating Certain Endangered Public Lands for Preservation as Wilderness, Providing for the Study of Additional Endangered Public Lands for Such Designation, Furthering the Purposes of the Wilderness Act of 1964, and for Other Purposes. 95th Cong., 1st sess. H.R. 95-540, 11.

⁵¹ US Congress. House. Designating Certain Endangered Public Lands for Preservation as Wilderness, Providing for the Study of Additional Endangered Public Lands for Such Designation, Furthering the Purposes of the Wilderness Act of 1964, and for Other Purposes. 95th Cong., 1st sess. H.R. 95-540. (1977): 11.

⁵² P.L. 102-301, (1992).

⁵³ P.L. 102-301 §3(b), (1992).

Again in 2002, the Big Sur Wilderness and Conservation Act added acreage to the Silver Peak and Ventana Wilderness areas located in the Los Padres National Forest.⁵⁴ The special provision for fire management in this Act mandated amending the management plans governing these areas “...to authorize the Forest Supervisor of the Los Padres National Forest to take whatever appropriate actions... necessary for fire prevention and watershed protection *consistent with wilderness values, including best management practices* for fire pre-suppression and fire suppression measures and techniques (emphasis added).”⁵⁵ Although the pre-suppression, watershed protection, and suppression language is perpetuated in Los Padres National Forest wilderness legislation, it is important to note that the additional direction ensuring consistency with wilderness values did not appear in Los Padres wilderness legislation until 2002.⁵⁶

California wilderness areas outside of the Los Padres National Forest jurisdiction have similar special provisions in their enabling legislation relating to fire prevention and fuels management. The Northern California Coastal Wild Heritage Wilderness Act of 2006, which established and added acreage to 13 wilderness areas in the northern portion of California, contains a special provision that defines three main directives for fire management. First, it states that “The Secretary may take such measures in the wilderness areas designated by this Act as are necessary *for the control and prevention of fire* (emphasis added),”⁵⁷ which is similar to the fire prevention language found in the Los Padres wilderness areas’ legislation. Second, it directs that fire management will be in accordance with section 4(d)(1) of the Wilderness Act as well as House Report Number 98-40 of the 98th Congress.⁵⁸ This House Report was

⁵⁴ P.L. 107-370, (2002).

⁵⁵ P.L. 107-370 §4(a), (2002).

⁵⁶ Although the phrase “...consistent with wilderness values, including best management practices...” was novel in enabling legislation fire management provisions, the *Fire management* subsection of House Report No. 98-40 (pp. 41) published in 1984 states “...such measures should, to the maximum extent practicable, be implemented consistent with maintaining the wilderness character of areas, while at the same time protecting the public health and safety and protecting private property located immediately adjacent to wilderness areas.”

⁵⁷ P.L. 109-362 §4(e)(1-2), (2006).

⁵⁸ P.L. 109-362 §4(e)(1)(B), (2006).

passed with the California Wilderness Act of 1984 and contains very similar direction to House Report Number 95-540 that accompanies the Endangered American Wilderness Act of 1978. It states:

Due to the arid climate, high seasonal temperatures and buildup of fuel that exists in so many California roadless areas, especially in southern California, fire management is a key concern of many of those who participated in the Committee's field inspections and hearings on California wilderness legislation. In some instances, the Forest Service's past policy of strict fire suppression has led to an unnatural buildup of fuel which presents a fire potential in excess of that which might exist had fire been allowed to burn naturally or prescribed burning been initiated. Not only does the threat of wildfire pose a danger to public safety, but uncontrolled fires can also cause severe damage to watersheds, water quality and other beneficial wilderness values.

To address this concern in the context of H.R. 1437, the Committee reiterated the fire provisions of section 4(d)(1) of the Wilderness Act in section 4(b)(2) of H.R. 1437. As the Committee Stressed in House Report 95-540 in the 95th Congress this provision is intended to grant the Forest Service with the means of utilizing such measures or tools as it deems 'necessary' and 'desirable' in the control of pre-suppression of fire in wilderness areas. In some instances, the Forest Service has exercised this broad authority to let fires burn under pre-planned conditions and allowed the use of livestock within wilderness to control the vegetation in established firebreaks. In other cases, fire roads, fuel breaks or other management techniques have been used. The Committee also believes that prescribed burning could prove to be an especially significant fire pre-suppression method, particularly in cases where a history of past fire suppression policies have allowed "unnatural" accumulations of dead or live fuel (such as chaparral) to build up to hazardous levels. Controlled burning, for example, initiates a process of nature in a prescribed or planned manner and may have the advantage of producing fewer long term adverse impacts (and possibly beneficial impacts) on wilderness values than would the construction of roads or similar intrusions. The major point to be made however, is that the Wilderness Act permits the Forest Service to utilize measures necessary to control wildfire, or the threat of fire, in wilderness areas. Obviously, such measures should, to the maximum extent practicable, be implemented consistent with maintaining the wilderness character of areas, while at the same time protecting the public health and safety and protecting private property located immediately adjacent to wilderness areas.⁵⁹

In this Report, Congress clarifies that fire prevention measures such as fire roads, fuel breaks, prescribed burning, and other management tools are permitted under the Wilderness Act of 1964, and should be implemented for the control and prevention of fire where necessary. Because of the unique

⁵⁹ US Congress. House. Entitled the "California Wilderness Act of 1983." 98th Cong., 1st sess. H.R. 98-40, (1983): 40-41.

challenges of fire management in California, this additional direction has been included in enabling legislation. The third directive in the Northern California Coastal Wild Heritage Wilderness Act of 2006 fire provisions calls for a review of all forest policy to ensure that “...procedures for any fire management measures allow a timely and efficient response to fire emergencies in the wilderness areas.”⁶⁰ This directive was introduced in a provision included in the Colorado Wilderness Act of 1980, but it was the first time Congress emphasized the temporal element of responding to fires within California wilderness areas.⁶¹

Three years later, Congress passed the Omnibus Public Land Management Act of 2009 that added millions of acres in the National Wilderness Preservation System in the western United States.⁶² Within this Act, two identical fire management provisions are included for 17 California wilderness areas.⁶³ Similar to the Northern California Coastal Wild Heritage Wilderness Act of 2006 fire provision, both begin by authorizing the Secretary to control fire in accordance with section 4(d)(1) of the Wilderness Act and House Report Number 98-40 of the 98th Congress.⁶⁴ They then state, “Nothing in this subtitle limits funding for fire and fuels management in the wilderness areas and wilderness additions designated by this subtitle.”⁶⁵ These two provisions are the only wilderness fire provisions to specify that fire and fuels management program funding would not be affected by wilderness designation. This statement reinforces the overarching message for fire management in House Report Number 98-40; pre-suppression and suppression management actions are allowed in wilderness where managers determine it to be “necessary and desirable.”⁶⁶ The provisions also include the “timely and efficient response” language introduced in the Northern California Coastal Wild Heritage Wilderness Act of 2006

⁶⁰ P.L. 109-362 §4(e)(2), (2006).

⁶¹ P.L. 96-560 §109(b), (1980).

⁶² P.L. 111-11, (2009).

⁶³ P.L. 111-11 §1803(e)(1-4), (2009).; P.L. 111-11 §1851(d)(4)(A-D), (2009).

⁶⁴ P.L. 111-11 §1803(e)(1), (2009).; P.L. 111-11 §1851(d)(4)(A), (2009).

⁶⁵ P.L. 111-11 §1803(e)(2), (2009).; P.L. 111-11 §1851(d)(4)(B), (2009).

⁶⁶ US Congress. House. Entitled the “California Wilderness Act of 1983.” 98th Cong., 1st sess. H.R. 98-40. (1983): 40.

fire provision, but conclude with a novel directive. They state “The Secretary shall... establish agency approval procedures...for responding to fire emergencies and... enter into agreements with appropriate State or local firefighting agencies.”⁶⁷ This provision reinforces the direction of House Report Number 98-40, and includes additional assurances and direction regarding funding and pre-incident preparation.

Through these provisions, Congress clarifies that pre-suppression, prevention, and suppression actions are allowed under the discretion of the Wilderness Act’s section 4(d)(1). While this clarification applies to all wilderness areas, the added direction is only found in California wilderness legislation. Spawning from the special provisions for fire management found in the Endangered American Wilderness Act of 1978, Congress has repeated language allowing “...fire pre-suppression and fire suppression measures and techniques,”⁶⁸ to “...guarantee the continued viability of watersheds...”⁶⁹ for wilderness areas in the Los Padres National Forest. House Reports No. 95-540 and No. 98-40 also reaffirm allowable actions under the Wilderness Act’s 4(d)(1) provision, and the latter has been cited in legislation through three distinct provisions.⁷⁰ Over time, Congress has provided supplementary direction to wilderness fire managers regarding pre-suppression and fire prevention, including guarantees for continued fire program funding, instructing reviews of fire management planning to ensure “timely and efficient response to fire emergencies”⁷¹ in wilderness, and mandating federal agencies to enter into “...agreements with appropriate State or local firefighting agencies.”⁷²

4.2. Prescribed Burning Provisions

Although House Report No. 98-40 clarifies that controlled burning is an acceptable pre-suppression method under the Wilderness Act of 1964, there is only one law that references prescribed

⁶⁷ P.L. 111-11 §1803(e)(4), (2009); P.L. 111-11 §1851(d)(4)(D), (2009).

⁶⁸ P.L. 95-237 §2(d), (1978); P.L. 95-237 §2(c), (1978); P.L. 102-301 §3(b), (1992); P.L. 107-370 §4(a-b), (2002).

⁶⁹ P.L. 95-237 §2(d), (1978); P.L. 95-237 §2(c), (1978); P.L. 102-301 §3(b), (1992); P.L. 107-370 §4(a-b), (2002).

⁷⁰ P.L. 109-362 §4(e)(1), (2006); P.L. 111-11 §1803(e)(1), (2009); P.L. 111-11 §1851(d)(4)(A), (2009).

⁷¹ P.L. 109-362 §4(e)(2), (2006); P.L. 111-11 §1851(e)(4), (2009); P.L. 111-11 §1851(d)(4)(D), (2009).

⁷² P.L. 111-11 §1851(e)(4), (2009); P.L. 111-11 §1851(d)(4)(D), (2009).

burning.⁷³ The Department of the Interior and Related Agencies Appropriations Act of 2002⁷⁴ amended section 8 of the Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area Act of 2000,⁷⁵ adding a special provision specifically allowing prescribed burns. Ten BLM-managed wilderness areas in the northwest corner of Nevada, including the Black Rock Desert Wilderness, Calico Mountains Wilderness, and the High Rock Lake Wilderness, were affected by the amendment. The provision included in the 2002 Act states, “Nothing in this Act or the Wilderness Act... precludes a Federal, State, or Local agency from conducting wildland fire management operations (including prescribed burns) within the areas designated as wilderness under subsection (a), subject to any conditions that the Secretary considers appropriate.”⁷⁶

This special provision is distinct in its exclusivity to Nevada legislation. California wilderness legislation includes explicit pre-suppression and prevention direction, and cites House Reports reinforcing the availability of controlled burning as a fire management tool. However, the specific prescribed fire direction is not found in any other special provision for fire management in wilderness law. Also, the preface of this special provision is interesting. The statement “Nothing in... the Wilderness Act... precludes...” provides that the discretion of the Wilderness Act’s section 4(d)(1) allows prescribed burning in wilderness, and clarifies the availability of this management tool.

4.3. Aircraft and Mechanized Equipment Fire Provisions

Similar to the prescribed burning direction in Nevada legislation, other wilderness areas in the state have direction that is not found in any other legislation. Three laws, exclusive to Nevada, clarify that fire managers may use aircraft and mechanized equipment during wilderness fire operations. The

⁷³ US Congress. House. Entitled the “California Wilderness Act of 1983.” 98th Cong., 1st sess. H.R. 98-40. (1983): 40.

⁷⁴ P.L. 107-63 §135(d), (2002).

⁷⁵ P.L. 106-554 Appendix D-1-S. 2273, (1999).

⁷⁶ P.L. 107-63 §135(d), (2002).

language first appeared in the Clark County Conservation of Public Land and Natural Resources Act of 2002, which established and added acreage to 18 BLM, NPS, and USFS wilderness areas in Nevada.⁷⁷ The special provision states, “Consistent with section 4 of the Wilderness Act... nothing in this title precludes a Federal, State, or local agency from conducting wildfire management operations (including operations using aircraft or mechanized equipment) to manage wildfires in the wilderness areas designated by this title.”⁷⁸ Similar to the Department of the Interior and Related Agencies Appropriations Act of 2002, it prefaces the provision with “Consistent with section 4 of the Wilderness Act,” again clarifying the use of aircraft and mechanized equipment during wilderness fires is permitted under the 4(d)(1) provision.

This language was replicated in the Lincoln County Conservation, Recreation, and Development Act of 2004, which established 14 wilderness areas in the Ely District of the BLM in Nevada.⁷⁹ Eleven years later, a provision was passed in the National Defense Authorizations Act of Fiscal Year 2015 with similar language, providing the same direction for the BLM administered Pine Forest Range Wilderness in Nevada.⁸⁰ The provision states:

In accordance with section 4(d)(1) of the Wilderness Act... the Secretary may take such measures in the Wilderness as are necessary for the control of fire, insects and diseases (including, as the Secretary determines to be appropriate, the coordination of the activities with a State or local agency) ...Nothing in this section precludes a Federal, State, or local agency from conducting wildfire management operations (including operations using aircraft or mechanized equipment).⁸¹

These three special provisions referencing the use of aircraft and mechanized equipment have language that is replicated from its first use in the Clark County Conservation of Public Land and Natural Resources Act of 2002.⁸² This clarification is unique in its geographic exclusivity and is found only in

⁷⁷ P.L. 107-282 §202, (2002).

⁷⁸ P.L. 107-282 §209, (2002).

⁷⁹ P.L. 108-424 §210, (2004).

⁸⁰ P.L. 113-291, (2015).

⁸¹ P.L. 113-291 §3064(c)(5-6), (2015).

⁸² P.L. 107-282 §209, (2002).

Nevada wilderness legislation. Although the language for aircraft and mechanized equipment has been replicated in Nevada wilderness legislation since 2002, Congress has added supplemental direction in subsequent enabling legislation, including the instruction to coordinate fire management activities with non-federal fire management agencies.⁸³

4.4. Coordination Provisions

The provision calling for “the coordination of the activities with a state or local agency...” found in the National Defense Authorization Act for Fiscal Year 2015 was first used in 2006.⁸⁴ A title in the Tax Relief and Health Care Act of 2006 established 14 wilderness areas in the Ely District of the BLM and the Humboldt-Toiyabe National Forest.⁸⁵ Remarkably, even though two other wilderness laws clarify the acceptability of aircraft and mechanized equipment use in this region, the provision in the 2006 Act does not mention these actions at all.⁸⁶ It simply states, “Consistent with section 4(d)(1) of the Wilderness Act... the Secretary may take such measures as may be necessary in the control of fire, insects, and diseases, *including coordination with a State or local agency*, as the Secretary deems desirable (emphasis added).”⁸⁷ Although Congress may have concluded that the statement “such measures as may be necessary...”⁸⁸ incorporated the use of aircraft and mechanized equipment in these wilderness areas, it is important to note the absence of aircraft and mechanized equipment direction in Nevada wilderness legislation between 2004 and 2015.⁸⁹

While the direction to coordinate activities with other agencies initially applied only to wilderness areas in Nevada, subsequent legislation expanded this direction to other geographic areas. In

⁸³ P.L. 113-291 §3064(c)(5), (2015).

⁸⁴ P.L. 113-291 §3064(c)(5), (2015).

⁸⁵ P.L. 109-432 §330, (2006).

⁸⁶ See Clark County Conservation of Public Land and Natural Resources Act of 2002 (P.L. 107-282 §135(d)) and Lincoln County Conservation, Recreation, and Development Act of 2004 (P.L. 108-424 §210).

⁸⁷ P.L. 109-432 §330, (2006).

⁸⁸ P.L. 109-432 §330, (2006).

⁸⁹ P.L. 113-291 §3064(c)(6), (2015).

2009, with the passage of the Omnibus Public Land Management Act, Congress provided two special provisions applying to wilderness areas in Utah and Idaho identical to the provision in the Tax Relief and Health Care Act of 2006.⁹⁰ These two provisions apply to BLM administered wilderness areas in the southwest corners of both Idaho and Utah, and one FS administered area northwest of St. George, Utah.⁹¹

Identical direction for coordination with other agencies is found in three distinct fire management provisions within the National Defense Authorizations Act for Fiscal Year 2015.⁹² The Bob Marshall and Scapegoat Wilderness areas in Montana, as well as the Wovoka Wilderness in Nevada are provided with direction to coordinate fire control measures with State or local agencies “...as the Secretary determines to be appropriate.”⁹³ Also in this Act, the previously discussed provision for the Pine Forest Range Wilderness in Nevada includes this coordination language, coupled with the explicit inclusion of aircraft and mechanized equipment direction for wilderness fires.⁹⁴ While the Wovoka and Pine Forest Range Wildernesses of Nevada have identical direction calling for coordination, it is important to call attention to the additional direction permitting aircraft and mechanized equipment use in the Pine Forest Range Wilderness. Although they are both located in Nevada, and have special provisions in the same Act, they have distinct direction.⁹⁵

⁹⁰ P.L. 111-11 §1972(b)(3), (2009); P.L. 111-11 §1502(b)(9), (2009).

⁹¹ The 2,000-acre Cottonwood Forest Wilderness (USFS) is attached to the northwest corner of the 11,000-acre Cottonwood Canyon Wilderness (BLM) outside of St. George, Utah.

⁹² P.L. 113-291 §3064(c)(5), (2015); P.L. 113-291 §3065(c)(4), (2015); P.L. 113-291 §3066(c)(6), (2015).

⁹³ P.L. 113-291 §3065(c)(4), (2015); P.L. 113-291 §3066(c)(6), (2015).

⁹⁴ P.L. 113-291 § 3064(c)(5-6), (2015).

⁹⁵ Although the direction “*including operations using aircraft or mechanized equipment*” was not found to have a theme based on jurisdiction or size of wilderness, it may be important to note that the Wovoka Wilderness is a 48,000-acre wilderness under BLM administration, and the Pine Forest Range Wilderness is a 26,000-acre wilderness under USFS administration.

4.5. Adjacent Land Provisions

Along with directing coordination with adjacent fire management agencies, Congress has instructed the protection of adjacent federal, state and private non-wilderness lands from fire. The Colorado Wilderness Act of 1980 contains two main directives, one of which has been replicated in subsequent legislation. The special provision in this legislation states:

The Secretary of Agriculture is directed to review all policies, practices, and regulations of the Department of Agriculture regarding disease or insect outbreaks, forest fires, and the use of modern suppression methods in the National Forest System components of the National Wilderness Preservation System in the State of Colorado, to insure that – a) such policies, practices, and regulations fully conform with and implement the intent of Congress regarding forest fire, disease and insect control, as such intent is expressed in the Wilderness Act and this Act; and (b) *policies, practices and regulations are developed to allow timely, and efficient fire, insect and disease control, to provide, to the extent practicable, adequate protection of adjacent Federal, State, and private nonwilderness lands from forest fires and disease or insect infestations* (emphasis added).⁹⁶

The “timely and efficient” direction for fire control has been utilized in three subsequent fire provisions for wilderness areas in California, but none contain the unique direction for protection of adjacent lands.⁹⁷ The Colorado Wilderness Act of 1980 established and added acreage to 20 FS administered wilderness areas throughout Colorado, many of which are proximal to large cities in the State.⁹⁸ Some examples include the South San Juan Wilderness which is roughly 15 miles from Pagosa Springs, the Mount Evans and Lost Creek Wilderness areas which are proximal to Evergreen, and the Cache La Poudre and Comanche Peak Wilderness areas that border Highway 14, just west of Fort Collins. The direction within this special provision articulating the protection of adjacent non-wilderness lands is unique, and has not been replicated in legislation subsequent to 1980.

⁹⁶ P.L. 96-560 §109(a-b), (1980).

⁹⁷ P.L. 109-362 §4(e)(1-2), (2006); P.L. 111-11 §1803(e)(1-4), (2009); P.L. 111-11 §1851(d)(4)(A), (2009).

⁹⁸ This special provision applies to the Cache La Poudre, Collegiate Peaks, Comanche Peak, Holy Cross, La Garita, Lizard Head, Lost Greek, Maroon Bells-Snowmass, Mount Evans, Mount Massive, Mount Sneffels, Mount Zirkel, Never Summer, Raggeds, Rawah, South San Juan, Uncompahgre, Weminuche, and West Elk Wilderness areas.

There is, however, one special provision that reassures the continuation of fire management operations in the Otay Mountain Wilderness area due to its proximity to the United States-Mexico border.⁹⁹ The Otay Mountain Wilderness Act of 1999 states:

Because of the proximity of the Wilderness Area to the United States-Mexico international border, drug interdiction, border operations, and wildland fire management operations are common management actions throughout the area encompassing the Wilderness Area. This Act recognizes the need to continue such management actions so long as such management actions are conducted in accordance with the Wilderness Act... and are subject to such conditions as the Secretary considers appropriate.¹⁰⁰

The Otay Mountain Wilderness is located 20 miles southeast of San Diego, with its southern border touching the United States-Mexico border. Although there are other wilderness areas that border the United States-Mexico Border, this is the only wilderness area with this specific direction. The Jacumba Wilderness¹⁰¹ of California, as well as the Organ Pipe,¹⁰² Pajarita,¹⁰³ and Cabeza Prieta¹⁰⁴ Wilderness areas of Arizona share borders with Mexico, but do not possess fire management direction in their enabling legislation. These areas were designated before the Otay Mountain Wilderness in 1999, revealing an increase in direction for fire management in this region.

4.6. Non-Substantive Provisions

Although Congress has used special provisions to clarify allowable fire management actions in wilderness, the Wilderness Act's 4(d)(1) language has been cited or paraphrased in 11 provisions subsequent to 1964.¹⁰⁵ Unlike the provisions discussed previously, these provisions do not provide

⁹⁹ P.L. 106-145 §6(b), (1999).

¹⁰⁰ P.L. 106-145 §6(b), (1999).

¹⁰¹ California Desert Protection Act of 1994, (P.L. 103-433).

¹⁰² National Parks and Recreation Act of 1978, (P.L. 95-625).

¹⁰³ Arizona Wilderness Act of 1984, (P.L. 98-406).

¹⁰⁴ Arizona Desert Wilderness Act of 1990, (P.L. 101-628).

¹⁰⁵ P.L. 98-425 §103(b)(2), (1984); P.L. 100-184 §10, (1987); P.L. 100-499 §16, (1988); P.L. 101-401 §7, (1990); P.L. 101-633 §8, (1990); P.L. 111-11 §2405(e), §192(g)(1-2), §1405(c)(2), §1202(h), (2009); P.L. 113-290 §3062(c)(3), (2015); P.L. 114-46 §102(d), (2015).

additional clarification regarding allowable fire management actions in wilderness. Many of these provisions were passed in large state-wide wilderness bills, and the majority of these laws apply to wilderness areas in the eastern United States where wildfire management is not a significant issue.¹⁰⁶ While the California Wilderness Act of 1984 simply restates the language of section 4(d)(1), this Act was passed with a very influential House Report that defines the allowable fire management actions in wilderness.¹⁰⁷ Two other special fire provisions reference laws related to the administration of wilderness areas, but these references do not contain any substantive fire management direction.¹⁰⁸

The diverse direction of special provisions contained in omnibus public land bills is intriguing. While Congress includes detailed direction in some of these provisions, there are special fire provisions that simply restate the language of the Wilderness Act's original provision. For example, the Omnibus Public Land Management Act of 2009 contains fire provisions mandating coordination in Idaho and Utah wilderness areas as well as provisions citing House Report 98-40 and assuring funding in California wilderness areas. In the same law however, provisions for 12 wilderness areas in Oregon, Idaho, and Colorado simply quote section 4(d)(1) of the Wilderness Act.¹⁰⁹ Similarly, the National Defense Authorizations Act for Fiscal Year 2015 includes provisions clarifying aircraft and mechanized equipment use in Nevada and calls for coordination in Montana and Nevada wilderness areas, yet provides no substantive direction for the Hermosa Creek Wilderness in Colorado.¹¹⁰ While Congress has merely repeated the direction of section 4(d)(1) in some special provisions, they have continued to include detailed fire provisions for other areas within the same acts.

¹⁰⁶ See *eg.* The California Wilderness Act of 1984 (P.L. 98-425 §103(b)(2)), Michigan Wilderness Act of 1987 (P.L. 100-499 §16), Maine Wilderness Act of 1990 (P.L. 101-401 §7), and Illinois Wilderness Act of 1990 (P.L. 101-633 §8).

¹⁰⁷ US Congress. House. Entitled the "California Wilderness Act of 1983." 98th Cong., 1st sess. H.R. 98-40. (1983): 40.

¹⁰⁸ P.L. 111-11 §1952(g)(1-2), (2009) cites "laws applicable to the Park," and P.L. 111-11 §1202(h), (2009) cites "Presidential Proclamation Number 7318."

¹⁰⁹ P.L. 111-11, (2009).

¹¹⁰ P.L. 113-291, (2015).

4.7. Summary

Since the passage of the Wilderness Act in 1964, Congress has increasingly utilized special provisions for fire management in subsequent enabling legislation. The inclusion of special provisions has become increasingly common and has evolved to be very specific in its direction.¹¹¹ Nie and Barns state that the increased congressional direction is an outcome of political discourse, compromise, and polarization, and is often included to facilitate the passage of proposed legislation.¹¹² Congress has not provided additional allowances under the Act, but rather uses special provisions to clarify the fire management actions allowed under section 4(d)(1). Throughout this legislation, several chronological trends and geographical themes have emerged, regarding repetition of language and direction provided in special provisions for fire management.

From 1964 to 1977, Congress expanded the acreage of the National Wilderness Preservation System through the passage of 29 laws but did not include any special provisions for fire management.¹¹³ In 1977, the Marble-Cone fire burned over 90% of the Ventana Wilderness of Southern California, prompting managers to use bulldozers and aircraft in the wilderness to protect adjacent communities and the Carmel Valley watershed.¹¹⁴ The following year, the Endangered American Wilderness Act added acreage to the Ventana Wilderness and designated the Santa Lucia Wilderness. This enabling law included special provisions clarifying the acceptability of using “pre-suppression and

¹¹¹ Ross W. Gorte. “Wilderness Laws: Statutory Provisions and Prohibited and Permitted Uses.” *Congressional Research Service Report* 41649. (2011): 11.

¹¹² Martin Nie & Christopher Barns. “The Fiftieth Anniversary of the Wilderness Act: The Next Chapter in Wilderness Designation, Politics, and Management.” *Arizona Journal of Environmental Law & Policy* 5, no. 237. (2014): 296.

¹¹³ See P.L. 90-271, (1968); P.L. 90-318, (1968); P.L. 90-532, (1968); P.L. 90-544, (1968); P.L. 90-548, (1968); P.L. 91-58, (1969); P.L. 91-82, (1969); P.L. 91-504, (1970); P.L. 92-230, (1972); P.L. 92-241, (1972); P.L. 92-364, (1972); P.L. 92-395, (1972); P.L. 92-400, (1972); P.L. 92-476, (1972); P.L. 92-493, (1972); P.L. 92-510, (1972); P.L. 92-521, (1972); P.L. 93-429, (1974); P.L. 93-550, (1974); P.L. 93-622, (1974); P.L. 93-623, (1974); P.L. 94-146, (1975); P.L. 94-199, (1975); P.L. 94-268, (1975); P.L. 94-357, (1975); P.L. 94-352, (1976); P.L. 94-544, (1976); P.L. 94-557, (1976); P.L. 94-567, (1976).

¹¹⁴ James R. Griffin. “The Marble-Cone Fire Ten Months Later.” *Fremontia* 6, no. 2. (July, 1978): 8-14.

fire suppression measures” in these Southern California wilderness areas.¹¹⁵ This Act catalyzed the inclusion of special provisions for fire management in subsequent wilderness legislation. Large statewide wilderness acts were passed throughout the 1980’s, including the Colorado Wilderness Act of 1980,¹¹⁶ the California Wilderness Act of 1984,¹¹⁷ and the Michigan Wilderness Act of 1987,¹¹⁸ that contained special provisions for fire management. The special provision in the Colorado Wilderness Act of 1980 introduced the “...timely and efficient fire...control”¹¹⁹ language, which was utilized in three subsequent provisions.¹²⁰ Although the California Wilderness Act of 1984 and the Michigan Wilderness Act of 1987 plainly cited the 4(d)(1) provision of the Wilderness Act,¹²¹ the California Wilderness Act was passed with an influential House Report that was cited in three subsequent fire provisions (which happen to be the same Acts that recycled the “timely and efficient fire control” language).¹²²

After the year 2000, there was a significant increase in special fire provision inclusion.¹²³ From 2001 to 2015, two thirds of all newly designated wilderness areas contained special fire management provisions that went beyond the direction provided in the 1964 Wilderness Act. In 2002, Congress included direction clarifying the acceptability of prescribed burning in specific Nevada wilderness areas.¹²⁴ That same year, Congress included a special provision clarifying aircraft and mechanized equipment use during fire management operations in southern Nevada wilderness areas,¹²⁵ language

¹¹⁵ P.L. 95-237 §2(c-d), (1978).

¹¹⁶ P.L. 96-560, (1980).

¹¹⁷ P.L. 98-425, (1984).

¹¹⁸ P.L. 100-184, (1987).

¹¹⁹ P.L. 96-560 §109(a-b), (1980).

¹²⁰ P.L. 109-362 §4(e)(1-2), (2006); P.L. 111-11 §1803(e)(1-4), (2009); P.L. 111-11 §1851(d)(4)(A), (2009).

¹²¹ P.L. 98-425 §103(b)(2), (1984); P.L. 100-184 §10, (1987).

¹²² P.L. 109-362 §4(e)(1-2), (2006); P.L. 111-11 §1803(e)(1-4), (2009); P.L. 111-11 §1851(d)(4)(A), (2009).

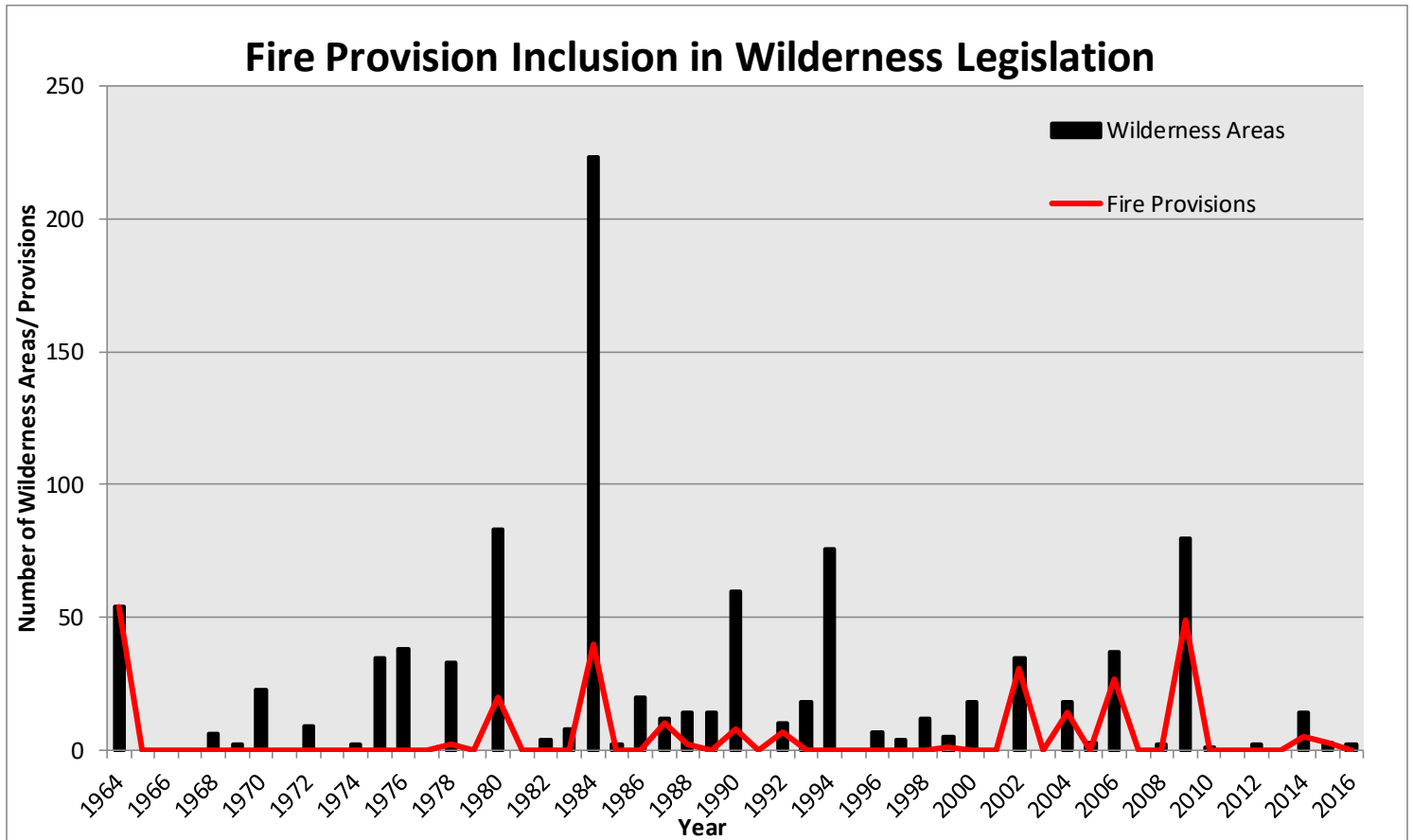
¹²³ Over 7 million acres were burned during the 2000 wildfire season, which prompted more aggressive prescribed burning and mechanical fuels treatment policies. See e.g. *“Managing the Impacts of Wildfires on Communities and the Environment: A Report to the President in Response to the Wildfires of 2000.”* (September, 2000).

¹²⁴ P.L. 107-63 §135(d), (2002).

¹²⁵ P.L. 107-282 §209, (2002).

that appeared again in 2004 and 2015 enabling laws.¹²⁶ In the Tax Relief and Health Care Act of 2006, Congress began utilizing the phrase “coordination with a State or local agency...”¹²⁷ which was used in five subsequent fire provisions for wilderness areas throughout Nevada, Utah, Idaho, and Montana.¹²⁸

Figure 1. Special Fire Provisions in Wilderness Law



Geographic trends have also emerged within the special provisions for fire management. First, all wilderness areas in the Los Padres National Forest of southern California have special provisions that emphasize community and watershed protection, and clarify the availability of pre-suppression and

¹²⁶ P.L. 108-424 §210, (2004); P.L. 113-291 §3064(c)(6), (2015).

¹²⁷ P.L. 109-432 §330, (2006).

¹²⁸ P.L. 111-11 §1502(b)(9), (2009); P.L. 111-11 §1972(b)(3), (2009); P.L. 111-291 §3064(c)(5), (2009); P.L. 113-291 §3065(c)(4), (2015); P.L. 113-291 §3066(c)(6), (2015).

suppression management actions in wilderness areas.¹²⁹ As expressed in House Reports 95-540 and 98-40, fire management is a preeminent concern in southern California, and Congress explained that the use of fire breaks, prescribed burning, and full suppression policies are permissible under the Wilderness Act.¹³⁰ In the same vein, many of the wilderness areas in California have special provisions referencing House Report Number 98-40, emphasizing the permissibility of fire and fuels management within wilderness areas in the state.¹³¹ This additional direction repeated in California wilderness legislation is unique and specific to the fire activity and management of fire of the region. Similarly, Nevada wilderness legislation exclusively contains aircraft and mechanized equipment use direction in special provisions.¹³² Also, the only special provision to include language with prescribed burning direction in wilderness is the Department of the Interior and Related Agencies Appropriations Act of 2002, whose provision is specific to wilderness areas in the northwest corner of Nevada.¹³³

Overall, Congress' use of special provisions for fire management has provided increased direction to fire managers, but has not fundamentally changed the amount of discretion found in the Wilderness Act's original fire management provision. Although there has been significantly more direction provided by additional language, the broad discretion provided under the 4(d)(1) provision encompasses all of the unique directives in subsequent legislation. As stated in House Report Number 95-540, "The uses authorized by such special management language should not be construed by any agency or judicial authority as being precluded in other wilderness areas, but *should be considered as a*

¹²⁹ P.L. 95-237 §2(c-d), (1978); P.L. 102-301 §3(b), (1992); P.L. 107-370 §4(a-b), (2002).

¹³⁰ US Congress. House. Designating Certain Endangered Public Lands for Preservation as Wilderness, Providing for the Study of Additional Endangered Public Lands for Such Designation, Furthering the Purposes of the Wilderness Act of 1964, and for Other Purposes. 95th Cong., 1st sess. H.R. 95-540. (1977): 11; US Congress. House. Entitled the "California Wilderness Act of 1983." 98th Cong., 1st sess. H.R. 98-40. (1983): 40.

¹³¹ P.L. 109-362 §4(d)(1-2), (2006); P.L. 111-11 §1803(e)(1-4), (2009); P.L. 111-11 §1851(d)(4)(A-D), (2009).

¹³² P.L. 107-282 §209, (2002); P.L. 108-424 §210, (2004); P.L. 113-291 §3064(c)(5-6), (2015).

¹³³ P.L. 107-63 §135(d), (2002).

direction and reaffirmation of congressional policy (emphasis added).”¹³⁴ Special provisions provide additional clarity for certain fire management actions, but do not provide any special authorizations to manage outside the discretion of the Wilderness Act’s original fire provision.

5. Federal Agency Regulations and Policies Related to Fire Management in Wilderness

Four federal land management agencies have responsibilities to administer wilderness areas including the United States Forest Service (FS) under the United States Department of Agriculture (USDA), and the National Park Service (NPS), Bureau of Land Management (BLM), and the United States Fish and Wildlife Service (FWS) under the Department of the Interior (DOI). Although the FS and BLM are directed by multiple-use statutes and the NPS and FWS lands are governed under dominant use statutes, lands that are federally designated as wilderness are to be administered as such, regardless of the agency that manages them. Because there is no overarching wilderness management agency, each of these four agencies has individually interpreted the Wilderness Act of 1964 and established agency specific regulations and/or policies that guide management actions in wilderness areas they manage. The FS, BLM, and FWS have direction for wilderness fire management in the Code of Federal Regulations (C.F.R.), and maintain manuals and handbooks that guide management actions in wilderness areas. Agency manuals generally contain broad overarching direction, objectives, and guidance for management. Agency handbooks provide specialized guidance for implementing the manual direction.

The NPS is different, deriving direction from the 2006 NPS Management Policies, Director’s Orders, and tertiary documents including reference manuals and handbooks, with no wilderness fire direction found in federal regulations. The 2006 Policies are similar to the FS, BLM, and FWS manuals, containing broad guidance to inform wilderness management decisions. Director’s Orders supplement

¹³⁴ US Congress. House. Designating Certain Endangered Public Lands for Preservation as Wilderness, Providing for the Study of Additional Endangered Public Lands for Such Designation, Furthering the Purposes of the Wilderness Act of 1964, and for Other Purposes. 95th Cong., 1st sess. H.R. 95-540. (1977): 11.

this direction and provide specific instructions regarding certain management decisions. The tertiary guidance in NPS reference manuals and handbooks provide further instruction and technical assistance concerning specific management actions.

With regard to fire management in wilderness, interagency policies and department-wide policies also guide management actions. The DOI Manual, Federal Wildland Fire Management Policy of 1995, Review and Update of the 1995 Federal Wildland Fire Management Policy (2001), Guidance for Implementation of Federal Wildland Fire Management Policy (2009), and the 2017 Interagency Standards for Fire and Fire Aviation Operations provide broad overarching direction in line with national wildland fire goals. To highlight the similarities and differences in wilderness fire management direction between agencies, this section organizes these regulations and policies by agency and topic. The first subsection summarizes overarching wilderness and fire program objectives, providing a broad understanding of the agency programs. The second subsection summarizes the planning and decision-making, pre-suppression, suppression, and post-fire rehabilitation policies for wilderness fire management. This section then concludes with a summary of the similarities and differences in wilderness fire management direction between the four agencies.

5.1. Overall Fire Program and Wilderness Management Objectives

Three tables were created to analyze the similarities and differences in overall fire program and wilderness management objectives. Regulations and policy found in the C.F.R., interagency policies, and agency manuals that provide overarching direction to fire management and wilderness management were organized to provide insight to the principal objectives of each agency program. Table 3, “General Wilderness Fire Direction,” outlines the terminology used by each agency, and provides the responses and actions fire managers may take on wilderness fires.

5.1.1. Wilderness Management Objectives

Table 1	Overall Wilderness Objectives	
	Agency Policy	Code of Federal Regulations
USFS Policy	<p>“1. Maintain and perpetuate the enduring resources of wilderness as one of the multiple uses of National Forest System land.</p> <p>2. Maintain wilderness in such a manner that ecosystems are unaffected by human manipulation and influences so that plants and animals develop and respond to natural forces.</p> <p>3. Minimize the impact of those kinds of uses and activities generally prohibited by the Wilderness Act, but specifically excepted by the Act or subsequent legislation.</p> <p>4. Protect and perpetuate wilderness character and public values including, but not limited to, opportunities for scientific study, education, solitude, physical and mental challenge and stimulation, inspiration, and primitive recreation experiences.</p> <p>5. Gather information and carry out research in a manner compatible with preserving the wilderness environment to increase understanding of wilderness ecology, wilderness uses, management opportunities, and visitor behavior.”ⁱ</p>	<p>“Except as otherwise provided in the regulations in this part, National Forest Wilderness <i>shall</i> be administered to meet the public purposes of recreational, scenic, scientific, educational, conservation, and historical uses; and it <i>shall</i> also be administered for such other purposes of which it may have been established in such a manner as to preserve and protect its wilderness character. In carrying out such purposes, the National Forest Wilderness resources <i>shall</i> be managed to promote, perpetuate, and, where necessary, restore the wilderness character of the land and its specific values of solitude, physical and mental challenge, scientific study, inspiration, and primitive recreation. To that end:</p> <p>(a) Natural ecological succession <i>will</i> be allowed to operate freely to the extent possible.</p> <p>(b) Wilderness <i>will</i> be made available for human use to the optimum extent consistent with the maintenance of primitive conditions.</p> <p>(c) In resolving conflicts in resource use, wilderness values <i>will</i> be dominant to the extent not limited by the Wilderness Act, subsequent establishing legislation, or the regulations in this part.”ⁱⁱ</p>

<p>NPS Policy</p>	<p>“The National Park Service <i>will</i> manage wilderness areas for the use and enjoyment of the American people in such a manner as will leave them unimpaired for future use and enjoyment as wilderness. Management <i>will</i> include the protection of these areas, the preservation of their wilderness character, and the gathering and dissemination of information regarding their use and enjoyment as wilderness. The purpose of wilderness in the national parks includes the preservation of wilderness character and wilderness resources in an unimpaired condition and, in accordance with the Wilderness Act, wilderness areas <i>shall</i> be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use.”ⁱⁱⁱ</p>	<p>No Direction in C.F.R.</p>
<p>BLM Policy</p>	<p>“The BLM’s objectives for implementing this policy are to:</p> <p>A. Manage and protect BLM wilderness areas in such a manner as to preserve wilderness character.</p> <p>B. Manage wilderness for the public purposes of recreational, scenic, scientific, education, conservation, and historic use while preserving wilderness character.</p> <p>C. Effectively manage uses permitted under Section 4(c) and 4(d) of the Wilderness Act of 1964 while preserving wilderness character.”^{iv}</p>	<p>“A BLM wilderness area is an area of public lands that Congress has designated for BLM to manage as a component of the National Wilderness Preservation System in accordance with the Wilderness Act of 1964. The Wilderness Act provides a detailed definition of wilderness that applies to BLM wilderness areas.”^v</p>
<p>USFWS Policy</p>	<p>“A. Accomplish Administration Act purposes, refuge purposes, including Wilderness Act purposes, and the Refuge System mission. The Administration Act, refuge purposes, and Wilderness Act purposes tell us what to accomplish on a refuge. The Wilderness Act, however, may affect how we accomplish these purposes, and the Refuge System mission.</p> <p>B. Secure “an enduring resource of wilderness” by maintaining and, where appropriate, restoring, a wilderness area’s biological integrity, diversity, environmental health, and wilderness character.</p> <p>C. Administer wilderness areas to provide a wide variety of public benefits ‘for the use and enjoyment of the American people’ (Wilderness Act, section 2(a)) in a manner that is appropriate and compatible with the Administration Act, refuge purposes, including Wilderness Act</p>	<p>“(a) Units of the National Wildlife Refuge System have been established by drivers legal means and are administered for a variety of wildlife program purposes. The establishment of each wilderness unit is within and supplemental to the purposes for which a specific unit of the National Wildlife Refuge System was established and administered. Each wilderness <i>shall</i> be administered for such other purposes for which the national wildlife refuge was established and shall be also administered to preserve its wilderness character.</p> <p>(b) Except as otherwise provided by law, wilderness areas <i>shall</i> be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use and <i>shall</i> be administered in such a manner as will leave them unimpaired for future use and enjoyment as wilderness.”^{vii}</p>

<p>USFWS Policy Cont.</p>	<p>purposes, and the Refuge System mission; retains wilderness character; is consistent with the nondegradation principle; and leaves the areas 'unimpaired for future use and enjoyment as wilderness.'</p> <p>D. Use restraint in our administration of wilderness. As a place 'where the earth and its community of life are untrammelled by man,' we minimize actions for administration of wilderness areas. We <i>may</i> allow exceptions to the generally prohibited uses if the uses are the minimum requirement for administering the area as wilderness and are necessary to accomplish the purposes of the refuge, including Wilderness Act purposes. We <i>may</i> limit even nonmotorized refuge management activities to protect wildness.</p> <p>E. Provide opportunities for primitive recreation, giving priority to compatible wildlife-dependent activities that are enhanced by a wilderness setting. Provide physical, social, and administrative settings that are conducive to experiencing opportunities for solitude, adventure, challenge, inspiration, and other aspects of wilderness character that the American people can use and enjoy."^{vi}</p>	
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All agency regulations and policies regarding wilderness management objectives emphasize the preservation of wilderness values, limiting the use and effects of prohibited uses in wilderness, and state that management be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historic uses. FS regulation includes unique direction calling for the restoration of wilderness character where necessary, and mandates that "natural ecological succession will be allowed to operate freely to the extent possible."¹³⁵ Although implied in all other agency policy, FS regulations are very explicit in their direction regarding wilderness management. Another distinction is found in

¹³⁵ Forest Service, Department of Agriculture—Wilderness, Objectives. 36 CFR Chapter II, §293.2.

FWS regulations and policy. FWS wilderness regulation states that “the establishment of each wilderness unit is within and supplemental to the purposes for which a specific unit of the National Wildlife Refuge System was established and administered.”¹³⁶ Policy clarifies that although the Administration Act and Refuge missions are prioritized over the Wilderness Act, the Wilderness Act affects *how* the Service will accomplish their goals in wilderness areas.¹³⁷

¹³⁶ United States Fish and Wildlife Service, Department of the Interior — The National Wildlife Refuge System, Wilderness Preservation and Management: Objectives. 50 CFR Chapter I, Subchapter C, Part 35, Subpart A §35.2

¹³⁷ DOI Fish and Wildlife Service. Fish and Wildlife Manual Title 610, Section 1.14(A-E), General Overview of Wilderness Stewardship Policy – What are the principles for administering wilderness. Washington, D.C. (2008).

5.1.2. Fire Program Objectives

Table 2	Overall Fire Program Objectives
	Primary Direction
Interagency Policy	<p>“1. Firefighter and public safety is the first priority in every fire management activity. 2. The role of wildland fire as an essential ecological process and natural change agent <i>will be</i> incorporated into the planning process. 3. Fire Management Plans, programs, and activities support land and resource management plans and their implementation. 4. Sound risk management is a foundation for all fire management activities. 5. Fire management programs and activities are economically viable, based upon values to be protected, costs, and land and resource management objectives. 6. Fire Management Plans and activities are based upon the best available science. 7. Fire Management Plans and activities incorporate public health and environmental quality considerations. 8. Federal, State, tribal, local, interagency, and international coordination are essential. 9. Standardization of policies and procedures among federal wildland fire management agencies is an ongoing objective.”^{viii}</p>
USFS Policy	<p>“1. The protection of human life is the preeminent objective in our wildland fire program. 2. In cooperation with partners, strategically plan and implement risk-informed and cost-effective wildfire response strategies to attain management objectives identified in Land and Resource Management Plans, to protect, sustain, and enhance resources and, where appropriate, sustain the ecological role of natural fire. 3. Use risk management principles to respond safely, effectively, and efficiently to wildfire, align wildfire response with Federal, State, and local laws, make risk-based decisions, and implement actions commensurate with identified values. 4. Take actions to align effective wildfire response to protect lives, protect communities, conserve natural resources, and restore ecological health. 5. Collect accurate information in a timely fashion and disseminate information on fire conditions and wildfire activity to interested parties. 6. Continue to improve fire management practices through learning and accountability.”^{ix}</p>
DOI Policy	<p>“A. Firefighter and public safety is the first priority in every fire management activity. B. The role of wildland fire as an essential ecological process and natural change agent will be incorporated into the planning process. C. Fire Management Plans, programs, and activities support land and resource management plans and their implementation. D. Sound risk management is a foundation for all fire management activities. E. Fire management programs and activities are economically viable, based upon values to be protected, costs, and land and resource management objectives. F. Fire Management Plans and activities are based upon the best available science. G. Fire Management Plans and activities incorporate public health and environmental quality considerations. H. Federal, State, tribal, local, interagency, and international coordination and cooperation are essential. I. Standardization of policies and procedures among federal wildland fire management agencies is an ongoing objective.”^x</p>

NPS Policy	“Naturally ignited fire, including the smoke it produces, is part of many of the natural systems that are being sustained in the parks... Wildland fires occur from both natural and human sources of ignition. Wildland fires may contribute to or hinder the achievement of park management objectives, and management response to each wildland fire is determined by whether or not the fire occurs within prescription as identified in the park’s fire management plan... Park fire management programs designed specifically to meet park resource management objectives – including allowing fire to perform its natural role as much as practicable – will ensure that firefighter and public safety are not compromised.” ^{xi}
BLM Policy	“The objective of this direction and guidance is to guide the philosophy, direction and implementation of fire management planning, activities and projects, on BLM lands, and to ensure compliance with Federal wildland fire management policy.” ^{xi}
USFWS Policy	“1. We base our response to wildfire on: (a) The likely consequences to firefighter and public safety and welfare; (b) Ecological, social, and legal consequences of the fire; (c) The circumstances under which a fire occurs; and (d) Cost-effectiveness. 2. Wildfires can be managed wholly or in part to benefit resource objectives if these strategies are addressed in the FMP and associated land management plans.” ^{xiii}

Interagency, departmental, and agency policies provide that the protection of firefighter and public safety is the preeminent objective on all wildland fire incidents. The direction found in the 2009 Guidance for Implementation of Federal Wildland Fire Management Policy, which is identical to the direction found in the Department of the Interior’s Manual,¹³⁸ emphasizes fire as a natural process, and the importance of planning, use of the best available science, coordination and cooperation, and the standardization of policies and practices among federal agencies. FS policy is similar, but additionally emphasizes learning and accountability within the fire program.¹³⁹

The NPS, BLM, and FWS also provide additional direction to the DOI Manual guidelines. The NPS fire program is very context dependent, deferring much direction to park planning documents. Although

¹³⁸ The only difference between these two policies is the use of the word “cooperation” in reference to federal, state, tribal, local, interagency, and international coordination in DOI policy.

¹³⁹ USDA Forest Service. Forest Service Manual Title 5100, Chapter 5130, Section 5130.2, Fire Management – Wildfire Response, Objectives. Washington, D.C. (2017).

firefighter and public safety are always the preeminent objective, NPS policy emphasizes the importance of allowing natural fire to play its ecological role on NPS managed lands.¹⁴⁰ BLM policy provides little additional direction to the Interagency and DOI policies for fire program management, and simply mandates compliance with Federal wildland management policy.¹⁴¹ FWS policy directs that responses to wildfire are based on very consequential themes, including firefighter and public safety, as well as ecological, social, legal, circumstantial, and financially based effects.¹⁴²

¹⁴⁰ DOI National Park Service. National Park Service Management Policies Chapter 4, Section 5, Natural Resource Management – Fire Management. Washington, D.C. (2006).

¹⁴¹ DOI Bureau of Land Management. Bureau of Land Management Manual Title 9200, Section 1.1, Fire Program Management—Purpose and Objectives. Washington, D.C. (2015).

¹⁴² DOI United States Fish and Wildlife Service. Fish and Wildlife Manual Title 621, Section 1.14 (A)(1-2), Fire Management—What are the requirements for wildfire response. Washington, D.C. (2012).

5.1.3. General Wilderness Fire Direction

Table 3	General Wilderness Fire Direction	
<p>USFS Policy</p>	<p>“<u>Wildfire</u>: Any wildland fire not designated and managed as a prescribed fire.”^{xiv}</p> <p>Wildfire Direction: “No fire may be ignited or allowed to burn without documented, preplanned, specified conditions.”^{xv} “Suppress all wildfires within wilderness in accordance with the direction FSM 5130.”^{xvi}</p>	<p>“<u>Prescribed Fire</u>: A wildland fire burning under preplanned, specified conditions, to accomplish specific, planned resource management objectives.”^{xvii}</p> <p>Prescribed Fire Direction: “Two types of prescribed fires <i>may be approved</i> for use within wilderness: those <i>ignited by lightning</i> and allowed to burn under prescribed conditions and those <i>ignited by Forest Service officers</i>.”^{xviii}</p>
<p>NPS Policy</p>	<p>“<u>Wildland Fires</u>: Fires that burn natural or landscape vegetation in parks. Wildland fires occur from both natural and human sources of ignition.”^{xix}</p> <p>Wildfire Direction: “Guidance on the need to suppress wildland fire or to use some wildland fires to achieve desired future conditions should appear in the park’s planning documents (for example, in the wilderness management plan and fire management plan) ... <i>The park’s fire management plan will provide guidance</i> for responses to natural and human-caused wildland fires... Actions taken to suppress wildfires [in wilderness] <i>must</i> use the minimum requirement concept unless the on-site decision-maker determines in his professional judgement that conditions dictate otherwise.”^{xx}</p>	<p>“<u>Prescribed Fires</u>: The deliberate ignition of fires under prescribed circumstances to accomplish resource management objectives in predefined areas outlined in approved fire management plans.”^{xxi}</p> <p>Prescribed Fire Direction: “Fire management...activities conducted within wilderness... <i>will be</i> consistent with the ‘minimum requirement’ concept.”^{xxii}</p> <p>“...augmenting natural ignitions with prescribed fire... may be necessary to restore or maintain ecological function if that is a goal identified in the park’s Wilderness Stewardship Plan or FMP.”^{xxiii}</p>

Table 3	General Wilderness Fire Direction - Continued	
BLM Policy	<p>“Wildfires: These are unplanned ignitions or prescribed fires that are subsequently declared to be wildfires because they exceed the prescription parameters.”^{xxiv}</p> <p>Wildfire Direction: “Wildfires <i>can be controlled</i> under section 4(d)(1) of the Wilderness Act, which dictates that ‘such measures may be taken as may be necessary in the control of fire... subject to such conditions as the Secretary deems desirable.’ [ABC Omitted]”^{xxv} “The management response to a wildfire within a wilderness may vary along a continuum from monitoring to suppression according to objectives outlined in the applicable Resource Management Plan, Wilderness Management Plan, or Fire Management Plan...”^{xxvi}</p>	<p>“Prescribed Fires: These are fires – otherwise known as “planned ignitions” – that are ignited by the BLM. The goal of prescribed fires is to make conditions to possible for natural wildfire to return to wilderness.”^{xxvii}</p> <p>Prescribed Fire Direction: “Prescribed fires <i>can be used</i> in wilderness only to clearly enhance the land’s wilderness values, including restoring natural vegetative communities...”^{xxviii}</p>
USFWS Policy	<p>“Wildfire: An unplanned, unwanted wildland fire including unauthorized human-caused fires, escaped wildland fire use events, escaped prescribed fire projects, and all other wildland fires where the objective is to put the fire out.”^{xxix}</p> <p>General Management Direction: “Three types of wildland fire <i>may occur</i> in our wilderness areas: Wildfire, wildland fire use,^{xxx} and prescribed fire. We manage all wildland fires to achieve wilderness objectives in accordance with an approved fire management plan (FMP) that is developed or reviewed in concert with the WSP. In the WSP we must identify and address wilderness character and the values to be protected, desired fire regime, condition class, ecological conditions, and specific fire management considerations.”^{xxxi}</p>	<p>“Prescribed Fire: Any fire intentionally ignited by management actions in accordance with applicable laws, policies and regulations to meet specific objectives.”^{xxx}</p>

All agency policy states that planning will dictate the response to all wildfire ignitions on wilderness lands. When approved in a management plan, naturally ignited fires may be permitted to burn in FS, NPS, BLM, and FWS managed wilderness areas. The fire terminology for each agency is slightly different, but policy provides agency managers with the discretion to actively manage and suppress wildland fires, allow natural ignitions to burn when consistent with planning documents, and

utilize management-ignited prescribed fire within wilderness. Although FWS policy includes “wildland fire use” as a type of fire that may occur in wilderness areas, FWS wilderness policy has not been updated since 2008.¹⁴³ This term was removed from interagency fire vocabulary with the 2009 publication of the Guidance for Implementation of Federal Wildland Fire Management Policy.¹⁴⁴

5.2. Wilderness Fire Management Policies and Regulations

Seven tables were created to analyze policy direction for management activities and programs within wilderness. These topics include Wilderness Fire Objectives, Fire Planning and Decision-Making in Wilderness, Management-Ignited Prescribed Fire in Wilderness, Fuel Treatment in Wilderness, 4(c) Prohibited Uses on Wilderness Fires, Fire Management Activities, and Burned Area Rehabilitation in Wilderness. These tables highlight the similarities and differences of direction found in the CFR and agency specific policy.

The regulations and policies are organized by agency, identifying pertinent direction to the topic. Most of the language in the tables is from the overarching FS, BLM, and FWS Manuals, NPS Management Policies, and the C.F.R. The NPS does not have any direction in the C.F.R regarding fire management in wilderness. Any citations under “Secondary Direction” references supplementary direction from FS, BLM, and FWS Handbooks, and NPS Director’s Orders, Reference Manuals, and Handbooks. This organizational structure highlights the overarching policy and direction accompanied with secondary and tertiary guidance for implementing the general policy.

The tables also contain a variety of typographical emphasis. Any direction found in the CFR is underlined, and major differences in agency policy is highlighted in bold. Additionally, specific words

¹⁴³ DOI Fish and Wildlife Service. Fish and Wildlife Manual Title 610, Section 2.21, Wilderness Administration and Resource Stewardship – What is the Service’s general policy for managing wilderness fires. Washington, D.C. (2008).

¹⁴⁴ Wildland Fire Leadership Council. Guidance for Implementation of the Federal Wildland Fire Management Policy, Appendix C, What Changed from 2004-2009. Washington, D.C. (2009).

have been italicized to highlight the discretionary or mandated nature of the policy. The terms “must” and “shall” are often used to depict mandatory compliance with direction; “should” and “ought” are also mandatory terms, but carry discretionary weight when circumstances justify another action; and the terms “may” and “can” convey that the action is optional.¹⁴⁵ Italicizing these terms augments the understanding of the direction by showing the degree of compliance mandated in each policy.

5.2.1. Wilderness Fire Objectives

Table 4	Wilderness Fire Objectives
<p>USFS Policy</p>	<p><u>“To the extent not limited by the Wilderness Act, subsequent legislation establishing a particular unit, or the regulations in this part, the Chief, Forest Service, <i>may</i> prescribe measures necessary to control fire...”^{xxxiii}</u></p> <p>“1. Permit lightning caused fires to play, as nearly as possible, their natural ecological role within wilderness. 2. Reduce, to an acceptable level, the risks and consequences of wildfire within wilderness or escaping from wilderness.”^{xxxiv}</p> <p>“Maintain wilderness in such a manner that ecosystems are unaffected by human manipulation and influences so that plants and animals develop and respond to natural forces.”^{xxxv}</p>
<p>NPS Policy</p>	<p>“All fire management activities conducted in wilderness areas <i>will</i> conform to the basic purposes of wilderness. Actions taken to suppress wildfires <i>must use</i> the minimum requirement concept <i>unless</i> the on-site decision-maker determines in his professional judgement that conditions dictate otherwise... Fire suppression activities <i>should</i> be managed in ways that protect natural and cultural resources and minimize the lasting impacts of suppression actions.”^{xxxvi}</p> <p><u>Secondary Direction:</u> “Firefighter and public safety are the first priorities on every fire management activity. However, wilderness character <i>must</i> be fully considered during all fire management actions beginning with the development of the Fire Management Plan (FMP) and continuing through the management of individual wildfires and implementation of fuel treatments and post-fire actions. In many NPS wilderness areas, fires resulting from natural ignitions are considered a natural process that contributes to ecosystem function and is necessary to maintain wilderness in an unimpaired condition.”^{xxxvii}</p>
<p>BLM Policy</p>	<p><u>“BLM <i>may</i> prescribe measures to control fire, noxious weeds, non-native invasive plants, insects, and disease. BLM <i>may</i> require restoration concurrent with or as soon as practicable upon completion of such measures.”^{xxxviii}</u></p>

¹⁴⁵ USDA Forest Service. Forest Service Manual Title 1900, Chapter 1909, Section 1909.12.05.1, Land Management Planning Handbook—Zero Code, Exhibit 01. Washington, D.C. (2015).

<p>BLM Policy Cont.</p>	<p>“The overall goal of managing fire in wilderness is to allow the frequency and intensity of an ecosystem’s natural fire regime to play its inherent role in that ecosystem. This means both allowing fire where ecosystems evolved in the presence of fire and preventing unnatural spread of fire in ecosystems that evolved without broad-scale fires. The overall goal <i>may be affected</i> by management constraints including budgets and national fire management demands.”^{xxix}</p> <p>“In general, there <i>will be no interference</i> with broad-scale ecological processes (e.g. fire or erosion) to preserve cultural resources in wilderness unless those ecological processes are outside their range of historical variability due to past human intervention”^{xi}</p> <p>“Whenever possible, the BLM <i>will</i> rely on natural processes to maintain native vegetation and to influence natural fluctuations in populations within wilderness. Natural disturbance processes, including fire... are important shapers of the ecosystem.”^{xi}</p> <p><u>Secondary Direction:</u></p> <p>“The BLM allows fire, insects, and disease to play a natural role in the wilderness ecosystem, except where these activities threaten human life, property, or high value resources on adjacent non-wilderness lands, or where these would result in unacceptable change to the wilderness resource. In order to return some wilderness ecosystems to a more natural state, it <i>may</i> be appropriate to allow natural fire to burn, but only in conformity with an approved FMP and the overriding fire guidance.”^{xii}</p>
<p>USFWS Policy</p>	<p><u>“To the extent necessary, the Director <i>shall</i> prescribe measures to control wildfires... to prevent unacceptable loss of wilderness resources and values, loss of life, and damage to properties.”^{xiii}</u></p> <p>“Wildland fire and their effects are inherent parts of the ecological processes of wilderness. The principle wildland fire use objective in wilderness is to allow fire to play its natural role in the ecosystem. <i>We will not</i> interfere with the wilderness ecosystem’s recovery response to these effects. A wildland fire implementation plan is developed for each wildland fire used to achieve wilderness objectives. If we decide to suppress a wildland fire, we select the appropriate management response that preserves wilderness character and values as well as accomplishes suppression objectives. <i>We will</i> identify the appropriate minimum impact suppression tactics in the FMP and develop them in conjunction with the fire management officer.”^{xiv}</p> <p>“<i>We will not</i> interfere with these processes or the wilderness ecosystem’s response to such natural events [including wildfire] unless necessary to accomplish refuge purposes, including Wilderness Act purposes, or in cases where these processes become unnatural,” including excessive fuel loads from past fire suppression activities.”^{xiv}</p>

Table 4 shows the main objectives for fire management in wilderness. All agency policy recognizes that fire as a natural process should be allowed to play its natural role in wilderness areas. There are several distinctions within the policies. First, the NPS policy is very vague in its objectives. The FS, BLM, and FWS policies contain explicit goals emphasizing the importance of allowing natural fires to

play their natural roles in wilderness areas. Contrary to this, the NPS policy focuses on fire management activities, and defers objectives to local fire management plans (FMPs) that govern individual areas. Although NPS policy states that “...fires resulting from natural ignitions are considered a natural process that contributes to ecosystem function and is necessary to maintain wilderness in an unimpaired condition,”¹⁴⁶ NPS policy is very discretionary compared to the objectives outlined in FS, BLM, and FWS policy.

BLM policy includes two distinct phrases that are not found in other overarching agency wildfire objectives for wilderness. The BLM policy states that although “the overall goal of managing fire in wilderness is to allow the frequency and intensity of an ecosystem’s natural fire regime to play its inherent role in that ecosystem... [the] goal may be affected by management constraints, including budgets and national fire management demands.”¹⁴⁷ This is the only policy to highlight that although the Bureau will strive to permit fire to play its natural role in wilderness ecosystems, external monetary and resource availability factors may impede this goal. Also, BLM policy is the only policy to articulate fire management goals when cultural resources are threatened, stating that unless fire is “outside of [its] range of historical variability due to past human intervention,” the BLM will not take action on fires to preserve cultural resources.¹⁴⁸

¹⁴⁶ DOI National Park Service. Directors Order #41, Chapter 6.7, Wilderness Stewardship—Fire Management. Washington D.C. (2013).

¹⁴⁷ DOI Bureau of Land Management. Bureau of Land Management Manual Title 6340, Section C(7)(a), Managing Resources and Resource Uses in Wilderness – Fire Background. Washington, D.C. (2012).

¹⁴⁸ DOI Bureau of Land Management. Bureau of Land Management Manual Title 6340, Section C(5)(f), Managing Resources and Resource Uses in Wilderness – Control of Natural Processes. Washington, D.C. (2012).

5.2.2. Wildfire Planning and Decision-Making in Wilderness

Table 5	Wildfire Planning and Decision-Making in Wilderness
<p>Interagency Policy</p>	<p>“Actions taken in wilderness <i>will be</i> conducted to protect life and safety, to meet natural and cultural resource objectives, and to minimize negative impacts of the fire management actions and the fires themselves. In evaluating fire management actions, the potential degradation of wilderness character <i>will be considered before, and given significantly more weight than, economic efficiency and convenience. Unless human life or private property is immediately threatened, only those actions that preserve wilderness character and/or have localized, short-term adverse impacts to wilderness character will be acceptable.</i> Any Delegation of Authority to Incident Management Teams will convey appropriate emphasis on the protection of wilderness character and resources and will ensure interaction with local wilderness resource advisors.”^{xlvi}</p>
<p>USFS Policy</p>	<p>“For all wilderness fire management actions proposing the use of any Wilderness Act 4(c) prohibitions, a minimum requirements analysis <i>is recommended.</i>”^{xlvii}</p> <p>“Where there are alternatives among management decisions, wilderness values <i>shall</i> dominate over all other considerations except where limited by the Wilderness, subsequent legislation, or regulations.”^{xlviii}</p> <p>“Document specific objectives, standards, and guidelines for the control of wildfire and the use of prescribed fire within each wilderness in a forest plan or, where the forest planning has not been completed, in either an interim wilderness management or fire management area plan. Document specific direction for fire program implementation.”^{lix}</p> <p>“Response to wildfire in Wilderness focuses on the natural ecological role of fire and activities <i>are</i> conducted in a manner compatible with overall wilderness management objectives as defined in FSM 2320.”^l</p>
<p>NPS Policy</p>	<p>“For all wilderness fire management actions proposing the use of any of the Wilderness Act 4(c) prohibitions, a minimum requirements analysis <i>will be completed.</i>”^{li}</p> <p>“...All management decisions affecting wilderness <i>will</i> further apply the concept of ‘minimum requirement’ for the administration of the area regardless of wilderness category.”^{lii}</p> <p>“All fire management activities conducted in wilderness areas <i>will conform</i> to the basic purposes of wilderness. Actions taken to suppress wildfires must use the minimum requirement concept unless the on-site decision-maker determines in his professional judgement that conditions dictate otherwise. Preplanning is critical to ensure that emergency response incorporates minimum requirements to the greatest extent possible.”^{liii}</p> <p>“All management decisions affecting wilderness <i>must</i> be consistent with the minimum requirement concept. This concept is a documented process used to determine if administrative actions, projects, or programs undertaken by the Service or its agents and affecting wilderness character, resources, or the visitor experience are necessary, and if so how to minimize impacts. The minimum requirement concept <i>will</i> be applied as a two-step process that determines:</p>

<p>NPS Policy Cont.</p>	<ul style="list-style-type: none"> • whether the proposed management action is appropriate or necessary for administration of the area as wilderness and does not cause a significant impact to wilderness resources and character, in accordance with the Wilderness Act; <i>and</i> • the techniques and types of equipment needed to ensure that impacts on wilderness resources and character are minimized.”^{liv} <p>“When determining minimum requirements, the potential disruption of wilderness character and resources <i>will be</i> considered before and given significantly more weight than, economic efficiency and convenience.”^{lv}</p> <p><u>Secondary Direction:</u> “To ensure adequate consideration of wilderness resources, a programmatic MRA must be completed as part of the development of the park’s FMP and companion environmental compliance document. The programmatic MRA <i>must</i> address management strategies for wildfires and fuel treatments in wilderness. The programmatic statement <i>will</i> establish the need for potential fire management actions in wilderness and <i>will</i> provide guidance for implementing initial wildfire responses. The analysis <i>should</i> specify the minimum activities (strategies, methods, and tools) that are generally permitted for managing wildfires, implementing fuels treatments, and conducting post-fire activities. For management of long-duration wildfires, an incident specific minimum requirement analysis <i>should</i> be considered to evaluate the methods and tools being applied to manage the event. The analysis <i>should</i> be periodically reviewed throughout the incident to ensure that appropriate strategies, methods, and tools are being used to protect wilderness character.”^{lvi}</p>
<p>BLM Policy</p>	<p>“For all wilderness fire management actions proposing the use of any of the Wilderness Act 4(c) prohibitions, a minimum requirements analysis <i>will be completed.</i>”^{lvi}</p> <p>“Wilderness management plans, which are implementation-level plans that tier to allocation decisions in resource management plans, <i>will</i> be written as soon as is practicable after designation. Where a number of wilderness areas are in close proximity and have similar wilderness character and issues, they may be addressed in a single plan.”^{lviii}</p> <p>“The legislation establishing each wilderness area <i>may</i> include management provisions in addition to the basic management authority in the Wilderness Act. In some cases, special provisions have been incorporated into the legislation that provide specific direction to manage an activity in a way that would normally not be allowed under the Wilderness Act... Such provisions override the general management provisions of the Wilderness Act and must be regarded as specific direction for management of the area in question.”^{lix}</p> <p>“An analysis using the MRDG must be made in non-urgent situations to determine whether or not any restoration action within a wilderness is warranted. The MRDG must also be used to determine the most appropriate method to use in order to minimize impacts to wilderness qualities.”^{lx}</p>

<p>BLM Policy Cont.</p>	<p><u>Secondary Direction:</u> “The following considerations <i>must</i> be covered in an FMP for areas of designated wilderness: wilderness management objectives, historic fire occurrence, natural role of fire, proposed degree of suppression, expected fire behavior and characteristics, acceptable suppression techniques, smoke management, and effects on adjacent landowners. The FMP <i>must</i> establish criteria to define the limits of acceptable fire weather, fire behavior, fire effects, and FMP decisions <i>must</i> conform to the Wilderness Management Plan for the area it addresses. When planning fire management strategies, consideration <i>must</i> emphasize actions that are the minimum necessary for wilderness administration.”^{lxi}</p>
<p>USFWS Policy</p>	<p>“For all wilderness fire management actions proposing the use of any of the Wilderness Act 4(c) prohibitions, a minimum requirements analysis <i>will be completed.</i>”^{lxii}</p> <p>“We <i>will</i> consider three main priorities in the following order when administering refuge wilderness areas: The Administration Act, the Endangered Species Act, and the Wilderness Act. We initially determine what needs to be accomplished to meet refuge purposes, then ensure that these activities comply with the Endangered Species Act, and then ensure that these activities comply with the Wilderness Act.”^{lxiii}</p> <p>“We adhere to a much stricter standard than usual for approving actions in wilderness so that we maintain the natural and untrammelled condition of the wilderness. We do not authorize generally prohibited uses in refuge wilderness except when use is:</p> <ol style="list-style-type: none"> (1) Allowed under the terms of area-specific wilderness legislation and the Wilderness Act; (2) The minimum requirement for administering the area as wilderness and necessary to accomplish the purposes of the refuge, including wilderness act purposes; <i>or</i> (3) An emergency involving the health and safety of a person or people within the area.”^{lxiv} <p>“We conducted and document a minimum requirement analysis (MRA) for all proposed refuge management activities that involve a generally prohibited use. The MRA clarifies the need for and the use of a proposed action. We authorize an activity only if we demonstrate that it is necessary to meet the minimum requirement for administering the area as wilderness and necessary to accomplish the purposes of the refuge, including the Wilderness Act purposes”^{lxv}</p> <p>“We <i>will</i> conduct fire management planning, preparedness, wildland fire operations, monitoring, and research on an interagency basis with the involvement of all partners.”^{lxvi}</p>

Table 5 organizes policies that are relevant to the planning and decision-making processes of fire managers on wildfire incidents in wilderness areas. Interagency policy provides an overarching guideline for all wilderness fire managers, prioritizing the preservation of wilderness character over the cost and

convenience of wildfire management activities.¹⁴⁹ This prioritization of wilderness values over all other management considerations is echoed throughout all four agency policies.¹⁵⁰ Additionally, interagency policy mandates that “...a minimum requirements analysis will be completed” for NPS, BLM, and FWS managers that propose the use of any Wilderness Act 4(c) prohibitions.¹⁵¹ Although policy mandates a minimum requirement analysis (MRA) for the DOI land management agencies, it merely recommends that the FS completes an analysis.¹⁵²

The Wilderness Act of 1964 section 4(c) states “...except as necessary to meet the minimum requirements for the administration of the area for the purposes of this chapter (including measures required in emergencies involving the health and safety of persons within the area), there shall be no temporary road, no use of motor vehicles, motorized equipment or motorboats, no landing of aircraft, no other form of mechanical transport, and no structure or installation within any such area.”¹⁵³ The premise of this section led to the creation of the MRA and the Minimum Requirements Decision Guide (MRDG) that is required by DOI agencies when employing a prohibited use in wilderness. As discussed in the Background Section, this two-step process helps land managers determine if actions are necessary

¹⁴⁹ Interagency Standards for Fire and Fire Aviation Operations Group. Interagency Standards for Fire and Fire Aviation Operations Chapter 11, Incident Management and Response Fire Management in Wilderness. Boise, ID. (2017).

¹⁵⁰ USDA Forest Service. Forest Service Manual Title 2300, Chapter 2320, Section 2320.3, Wilderness Management – Policy. Washington, D.C. (2006); DOI National Park Service. National Park Service Management Policies Chapter 6, Section 3(5), Wilderness Resource Management – Minimum Requirement. Washington, D.C. (2006); DOI Bureau of Land Management. BLM Handbook Title 9211-1, Chapter II, Section (E)(5), Fire Planning Handbook—Fire Planning Requirements, BLM Program Compliance, Wilderness. Washington, D.C. (2012); DOI Fish and Wildlife Service. Fish and Wildlife Manual Title 610, Section 1.17(B), General Overview of Wilderness Stewardship Policy – How do refuge managers accomplish both the establishing purpose(s) of a refuge and the purposes of the Wilderness Act. Washington, D.C. (2008).

¹⁵¹ Interagency Standards for Fire and Fire Aviation Operations Group. Interagency Standards for Fire and Fire Aviation Operations Chapter 11, Incident Management and Response Fire Management in Wilderness. Boise, ID. (2017).

¹⁵² Interagency Standards for Fire and Fire Aviation Operations Group. Interagency Standards for Fire and Fire Aviation Operations Chapter 11, Incident Management and Response Fire Management in Wilderness. Boise, ID. (2017).

¹⁵³ P.L. 88-577 §4(c), (1964).

and if actions are the minimum tool that can achieve desired outcomes.¹⁵⁴ This concept is the basis for DOI agency decision making on wilderness fires.¹⁵⁵ Additionally, NPS policy mandates the completion of a “programmatic MRA” to “...address management strategies for wildfires and fuel treatments in wilderness.”¹⁵⁶ All agencies mandate wildfire planning in wilderness management plans and fire management plans, but the NPS is the only agency to mandate a programmatic MRA.

The FWS policy prioritizes the Administration Act and the Endangered Species Act over the Wilderness Act.¹⁵⁷ Furthermore, although it sets this priority, FWS policy claims to “adhere to a much stricter standard than usual for approving actions in wilderness,” allowing 4(c) prohibited uses only if they are allowed under enabling legislation, the minimum requirement for administration of a wilderness area, or during an emergency.¹⁵⁸ Although it claims a stricter standard to approving prohibited uses, FWS policy uses the same qualifiers found in NPS and BLM policy.

¹⁵⁴ Arthur Carhart National Wilderness Training Center. Minimum Requirements Decision Guide Instructions. Missoula, MT. (2016).

¹⁵⁵ DOI National Park Service. National Park Service Management Policies Chapter 6, Section 3(1), Wilderness Resource Management – General Policy. Washington, D.C. (2006); DOI Bureau of Land Management. Bureau of Land Management Manual Title 6340, Section 1.6(C)(15)(b), Managing Resources and Resource Uses in Wilderness – Restoration and Vegetation Management, Use of Minimum Requirements Decision Guide. Washington, D.C. (2012); DOI Fish and Wildlife Service. Fish and Wildlife Manual Title 610, Section 1.18, General Overview of Wilderness Stewardship Policy – How does the Service determine if a proposed refuge management activity is the minimum requirement for administering the area as wilderness and necessary to accomplish the purposes of the refuge, including the Wilderness Act purposes. Washington, D.C. (2008).

¹⁵⁶ DOI National Park Service. Directors Order #41, Chapter 6.7, Wilderness Stewardship—Fire Management. Washington D.C. (2013).

¹⁵⁷ DOI Fish and Wildlife Service. Fish and Wildlife Manual Title 610, Section 1.4, General Overview of Wilderness Stewardship Policy – What are the priorities in implementing this policy. Washington, D.C. (2008).

¹⁵⁸ DOI Fish and Wildlife Service. Fish and Wildlife Manual Title 610, Section 1.17(B), General Overview of Wilderness Stewardship Policy – How do refuge managers accomplish both the establishing purpose(s) of a refuge and the purposes of the Wilderness Act. Washington, D.C. (2008).

5.2.3. Management-Ignited Prescribed Fire in Wilderness

Table 6	Management-Ignited Prescribed Fire
<p>USFS Policy</p>	<p>“Forest Service managers <i>may</i> ignite a prescribed fire in wilderness to reduce unnatural buildups of fuels only if it is necessary to meet at least one of the wilderness fire management objectives set forth in FSM 2324.21 [outlined in Table 1] and if <i>all</i> of the following conditions are met: (a) The use of prescribed fire or other fuel treatment measures outside of wilderness is not sufficient to achieve fire management objectives within wilderness; (b) an interdisciplinary team of resource specialists has evaluated and recommended the proposed use of prescribed fire; (c) the interested public has been involved; and (d) lightning-caused fires cannot be allowed to burn because they will pose serious threats to life and/or property within wilderness or to life, property, or natural resources outside of wilderness.”^{lxvii}</p> <p>“<i>Do not</i> use prescribed fire in wilderness to benefit wildlife, maintain vegetation types, improve forage production, or enhance other resource values. Although these additional effects may be result from a decision to use prescribed fire, use fire in wilderness only to meet wilderness objectives. <i>Do not</i> use management ignited fire to achieve wilderness fire management objectives where lightning-caused fires can achieve them.”^{lxviii}</p> <p>“Use management ignited prescribed fire [for nonstructural range improvements within wilderness] <i>only where</i> (a) it is necessary to maintain livestock grazing operations; and (b) it was practiced before the designation of wilderness; and (c) lighting caused prescribed fire does not meet the livestock management purpose.”^{lxix}</p>
<p>NPS Policy</p>	<p>The NPS <i>may</i> use prescribed fires, defined as the “deliberate ignition of fires under prescribed circumstances to accomplish resource management objectives in predefined areas outlined in approved fire management plans.” In wilderness areas, fire management activities, including prescribed fires, <i>must</i> “be consistent with the ‘minimum requirement’ concept.”^{lxx}</p> <p><u>Secondary Direction:</u></p> <p>“As a result of many of the factors including past fire management practices within wilderness and the need to control wildfires on adjacent lands, fire may not be adequately functioning as a natural change agent. In those cases, augmenting natural ignitions with prescribed fire or other fuel treatments within wilderness <i>may</i> be necessary to restore or maintain ecological function if that is a goal identified in the park’s Wilderness Stewardship Plan or FMP.”^{lxxi}</p>
<p>BLM Policy</p>	<p>“These are fires—otherwise known as ‘planned ignitions’ – that are ignited by the BLM. The goal of prescribed fires is to make conditions possible for natural wildfire to return to the wilderness. Prescribed fires <i>can</i> be used in wilderness only to clearly enhance the land’s wilderness values, including restoring natural vegetative communities. Generally, enhancing wilderness values means reestablishing the natural role of wildfire where both of the following conditions are met: (A) the natural role of wildfire cannot be returned solely by reliance on wildfire, <i>or</i>, relying on wildfires might create unacceptable risks to life, property, or natural resources outside the wilderness; <i>and</i> (B) the use of wildland fire or other fuel reduction treatments outside of wilderness is not sufficient to reduce the risks from wildfire within the wilderness to life, property, or natural resources outside the wilderness.”^{lxxii}</p>

<p>BLM Policy Cont.</p>	<p>“Except as necessary to control exotic species or contribute to the survival of threatened or endangered species... prescribed fire <i>cannot be used</i> to enhance specific wildlife species, specific vegetative types, or forage production... however, prescribed fire <i>may be used</i> to restore natural vegetative communities.”^{lxxiii}</p> <p><u>Secondary Direction:</u> “Where beneficial use of wildland fire does not meet wilderness fire objectives, prescribed fire <i>may be</i> allowed on a case-by-case basis to: reintroduce fire where past strict fire control measures have interfered with natural, ecological processes, where a primary value of a given wilderness will be perpetuated as a result of the burning; or where it will benefit a threatened or endangered species.”^{lxxiv}</p>
<p>USFWS Policy</p>	<p>“We <i>may</i> use prescribed fire within a wilderness area only where fire is a natural part of the ecosystem, and only if prescribed fire is the minimum requirement for administering the area as wilderness and is necessary to accomplish the purposes of the refuge, including the Wilderness Act purposes. In addition, such decisions and actions <i>must</i>: (1) Maintain or restore the biological integrity, diversity, or environmental health of the wilderness area; or (2) Be necessary for the recovery of threatened or endangered species.”^{lxxv}</p> <p>“We <i>should</i> plan prescribed fire to avoid or minimize adverse effects on: (1) Safety of visitors and staff; (2) Biological integrity and diversity; (3) Health of humans, fish, wildlife, plants, and their habitats; (4) Visibility; and (5) Other air-quality-related values.”^{lxxvi}</p> <p>“Controlled burning <i>will be permitted</i> on wilderness units when such burning will contribute to the maintenance of the wilderness resource and values in the unit; however, any fire that poses a threat to resources or facilities outside the unit <i>will be</i> controlled and extinguished.”^{lxxvii}</p>

All agencies permit the use of management-ignited prescribed fire in wilderness, but each has unique qualifiers and authorizations regarding this action. The FS and BLM policies validate this action based on the risks and consequences of wildfire escaping from wilderness and the possibility of threatening life and property.¹⁵⁹ If naturally ignited fire poses a threat to adjacent communities or values, the FS and BLM may utilize prescribed fire preemptively to reduce the risks of an unplanned ignition. The FS and BLM policy also limits the discretion to use management-ignited prescribed fire, stating that it may not be used to improve or benefit resources such as wildlife and vegetation types.¹⁶⁰

¹⁵⁹ USDA Forest Service. Forest Service Manual Title 2300, Chapter 2320, Section 2324.22(6), Wilderness Management – Management of Fire: Policy. Washington, D.C. (2006); USDA Forest Service. Forest Service Manual (2017); DOI Bureau of Land Management. Bureau of Land Management Manual Title 6340, Section C(7)(c)(i)(A-B), Managing Resources and Resource Uses in Wilderness – Prescribed Fires. Washington, D.C. (2012).

¹⁶⁰ USDA Forest Service. Forest Service Manual Title 2300, Chapter 2320, Section 2324.22(7-8), Wilderness Management – Management of Fire: Policy. Washington, D.C. (2006); DOI Bureau of Land Management. Bureau of Land Management Manual Title 6340, Section C(5)(f)(ii), Managing Resources and Resource Uses in Wilderness – Prescribed Fires. Washington, D.C. (2012).

Although prescribed fire may provide secondary benefits to these resources, decisions to utilize this tool must be based solely on meeting wilderness objectives. While BLM policy explicitly states this, it contains additional direction that permits prescribed fire to be used to *restore* natural communities.¹⁶¹ BLM and FWS policies are unique in their approval for prescribed burning for the recovery of threatened and endangered species in wilderness areas.¹⁶² BLM policy also allows management-ignited fire to control exotic species in wilderness areas.¹⁶³ Emphasis on vegetation restoration, threatened and endangered species, invasive vegetation management in BLM and FWS policy is relevant to the context of their administration.

In line with the context of land management, FS policy contains explicit guidelines in its policy regarding the use of prescribed fire for nonstructural range improvements in wilderness. Stemming from the Congressional Grazing Guidelines,¹⁶⁴ the FS permits the use of prescribed fire where “it is necessary to maintain livestock grazing operations, it was practiced before the designation of wilderness, and lightning caused prescribed fire does not meet the livestock management purpose.”¹⁶⁵ This is the only agency with specific direction that permits managers to use fire justified by an exception to the Wilderness Act’s purposes.

NPS policy does not contain explicit qualifiers for management-ignited prescribed fire use, but discretionarily permits fire management activities that are “consistent with the ‘minimum requirement’

¹⁶¹ DOI Bureau of Land Management. Bureau of Land Management Manual Title 6340, Section C(5)(f)(ii), Managing Resources and Resource Uses in Wilderness – Prescribed Fires. Washington, D.C. (2012).

¹⁶² DOI Bureau of Land Management. Bureau of Land Management Manual Title 6340, Section C(5)(f)(ii), Managing Resources and Resource Uses in Wilderness – Prescribed Fires. Washington, D.C. (2012); DOI Fish and Wildlife Service. Fish and Wildlife Manual Title 610, Section 2.23(A)(1-2), Wilderness Administration and Resource Stewardship – May the Service use prescribed fire in wilderness. Washington, D.C. (2008).

¹⁶³ DOI Bureau of Land Management. Bureau of Land Management Manual Title 6340, Section C(5)(f)(ii), Managing Resources and Resource Uses in Wilderness – Prescribed Fires. Washington, D.C. (2012).

¹⁶⁴ US Congress. House. Congressional Grazing Guidelines. 96th Cong., 1st sess. H.R. 96-617. (1979).

¹⁶⁵ USDA Forest Service. Forest Service Manual Title 2300, Chapter 2320, Section 2323.26(b)(5), Wilderness Management – Nonstructural Range Improvements. Washington, D.C. (2006).

concept.”¹⁶⁶ In Director’s Order #41, NPS policy clarifies that when fire is not “adequately functioning as a natural change agent... augmenting natural ignitions with prescribed fire... may be necessary to restore or maintain ecological function if that is a goal identified in the park’s Wilderness Stewardship Plan or FMP.”¹⁶⁷ Again, NPS policy defers decisions to utilize prescribed fire in a very discretionary way, stating that it may be used if identified in wilderness or fire planning documents. Also, the statement “...augmenting natural ignitions...” found in the Director’s Order implies that the NPS may allow managers to utilize prescribed fire where lightning caused fires may burn. This is in contrast to FS policy which provides that prescribed fire may not be used where natural fire may burn.¹⁶⁸

¹⁶⁶ DOI National Park Service. National Park Service Management Policies Chapter 4, Section 4(5), Natural Resource Management – Fire Management. Washington, D.C. (2006).

¹⁶⁷ DOI National Park Service. Directors Order #41, Chapter 6.7, Wilderness Stewardship—Fire Management. Washington D.C. (2013).

¹⁶⁸ USDA Forest Service. Forest Service Manual Title 2300, Chapter 2320, Section 2324.22(6), Wilderness Management – Management of Fire: Policy. Washington, D.C. (2006).

5.2.4. Fuel Treatment in Wilderness

Table 7	Fuel Treatment in Wilderness
USFS Policy	“Only allow vegetation to be cut or sold when necessary for wilderness purposes... or emergency conditions like fire... or protecting public safety make it necessary.” ^{lxxviii}
NPS Policy	<p><u>Secondary Direction:</u></p> <p>“As a result of many of the factors including past fire management practices within wilderness and the need to control wildfires on adjacent lands, fire may not be adequately functioning as a natural change agent. In those cases, augmenting natural ignitions with prescribed fire or other fuel treatments within wilderness <i>may</i> be necessary to restore or maintain ecological function if that is a goal identified in the park’s Wilderness Stewardship Plan or FMP.”^{lxxix}</p> <p>“Project plans for fuels treatment in wilderness <i>must</i> address the minimum requirement. Project plans <i>should</i> refer to the programmatic MRA developed for the FMP that establishes the necessity for such treatments. If the proposed treatment is confirmed to be within the framework of the programmatic MRA, the project plan is not required to revisit that decision. However, each project plan <i>must</i> contain an analysis of the minimum methods and techniques necessary to accomplish the specific action with the least negative impact to wilderness character.”^{lxxx}</p>
BLM Policy	<p>Fuel treatments, defined as “thinning or removing native vegetation, either mechanically or chemically, in advance of or as a replacement for, wildland fire,” are “not allowed in wilderness, except in rare circumstances...to make conditions possible for wildfire to return to the wilderness where past management practices have reduced the historic frequency and intensity of wildfire.” Fuel treatments <i>may only be used</i> “to remove non-native vegetation,” or “when prescribed fire without pretreatment... will inevitably cause unacceptable risk to life, property, or wilderness character,” or “when any wildland fire will inevitably cause unacceptable risk to life, property, or wilderness character.”^{lxxxi}</p> <p>“Repeated low intensity prescribed fires are preferable in most circumstances where fuel treatment is contemplated. This is true even if this increases the time and cost of treatment.”^{lxxxii}</p>
USFWS Policy	“All decisions and actions to modify ecosystems, species populations, or natural processes <i>must be</i> : (a) Required to respond to a human emergency, or (b) the minimum requirement for administering the area as wilderness and necessary to accomplish the purposes of the refuge, including the Wilderness Act purposes. In addition, such decisions and actions <i>must</i> : (i) Maintain or restore the biological integrity, diversity, or environmental health of the wilderness area; or (ii) Be necessary for the recovery of threatened or endangered species.” ^{lxxxiii}

FS, NPS, and BLM each have explicit guidelines for allowing fuel treatments in wilderness. FS policy includes a single sentence that allows fuel treatments when “necessary for wilderness purposes...

or emergency conditions like fire... or protecting public safety make it necessary.”¹⁶⁹ The NPS does not have overarching fuels fuel treatment policy in the 2006 NPS Management Policies, but maintains direction in a Director’s Order which permits fuel treatments when identified as a goal in planning documents, and, is the minimum tool necessary for administering a wilderness area.¹⁷⁰ In contrast, BLM policy does not allow fuel treatments in wilderness, “except in rare circumstances,” and articulates that prescribed fire is the preferable method for managing fuel loading in wilderness areas, even when prescribed fires may be more costly and time consuming.¹⁷¹ Although FWS policy does not explicitly mention fuels treatment for fire management purposes, it does permit the “modification of ecosystems... or natural processes.”¹⁷² Similar to BLM policy, it provides a list of prerequisites, and allows ecosystem modification for “maintain[ing] or restor[ing] the biological integrity, diversity, or environmental health of the wilderness area,” or if it is “necessary for the recovery of threatened and endangered species.”¹⁷³ These policies are very contextual to their respective agencies; NPS policy is very discretionary and plan dependent; BLM policy emphasizes non-native vegetation management and risks to life and property; and FWS policy emphasizes biological integrity and threatened and endangered species.

¹⁶⁹ USDA Forest Service. Forest Service Manual Title 2300, Chapter 2320, Section 2323.52, Wilderness Management – Management of Forest Cover. Washington, D.C. (2006).

¹⁷⁰ DOI National Park Service. Directors Order #41, Chapter 6.7, Wilderness Stewardship—Fire Management. Washington D.C. (2013).

¹⁷¹ DOI Bureau of Land Management. Bureau of Land Management Manual Title 6340, Section C(7)(d)(i-ii), Managing Resources and Resource Uses in Wilderness – Fuel Treatment. Washington, D.C. (2012).

¹⁷² DOI Fish and Wildlife Service. Fish and Wildlife Manual Title 610, Section 1.22, General Overview of Wilderness Stewardship Policy – What effects do emergencies involving the health and safety of people have on the uses generally prohibited by the Wilderness Act. Washington, D.C. (2008).

¹⁷³ DOI Fish and Wildlife Service. Fish and Wildlife Manual Title 610, Section 1.22, General Overview of Wilderness Stewardship Policy – What effects do emergencies involving the health and safety of people have on the uses generally prohibited by the Wilderness Act. Washington, D.C. (2008).

5.2.5. 4(c) Prohibited Uses on Wilderness Fires

Table 8	4(c) Prohibited Uses on Wilderness Fires
<p>USFS Policy</p>	<p>“1. Accomplish management activities with nonmotorized equipment and nonmechanical transport of supplies or personnel. 2. Exclude the sight, sound, and other tangible evidence of motorized equipment or mechanical transport within wilderness except where they are needed and justified.”^{lxxxiv}</p> <p>“Allow the use of motorized equipment or mechanical transport <i>only for</i>:</p> <ol style="list-style-type: none"> 1. Emergencies where the situation involves inescapable urgency and temporary need for speed beyond that available by primitive means. Categories include fire suppression... 5. To meet minimum needs for protection and administration of the areas as wilderness, <i>only as follows</i>: <ol style="list-style-type: none"> a) A delivery or application problem necessary to meet wilderness objectives cannot be resolved within reason through the use of nonmotorized methods. b) An essential activity is impossible to accomplish by nonmotorized means because of such factors as time or season limitations, safety, or other material restrictions. c) A necessary and continuing program was established around the use of motorized equipment before the unit became a part of the National Wilderness Preservation System, and the continued use of motorized equipment is essential to continuation of the program. d) Removal of aircraft wreckage when nonmotorized methods are unsuitable.”^{lxxxv} <p>“Approve the use of motorized equipment, aircraft, or mechanical transport by other government agencies in National Forest wilderness in the same manner and under the same conditions stipulated for Forest Service use (sec. 2326.1).”^{lxxxvi}</p> <p>“Construct or maintain lookouts for fire detection purposes when:</p> <ol style="list-style-type: none"> 1. They are necessary to achieve wilderness management objectives and where it is not feasible to accomplish such objectives by means more compatible with wilderness values; or 2. They are necessary to protect values outside the wilderness.”^{lxxxvii} <p>“Construct or maintain heliports at existing administrative and airfield sites where essential for wilderness purposes. Require justification for continued use of existing heliports or for constructing new ones. Unless otherwise approved by the Chief, do not locate other heliports within any wilderness... The Regional Forester may approve the construction of nonemergency individual helispots or systems of helispots.”^{lxxxviii}</p>
<p>NPS Policy</p>	<p>“Administrative use of motorized equipment or mechanical transport <i>will be authorized only</i>:</p> <ul style="list-style-type: none"> • if determined by the superintendent to be the minimum requirement needed by management to achieve the purposes of the area, including the preservation of wilderness character and values, in accordance with the Wilderness Act; or • in emergency situations (for example, search and rescue, homeland security, law enforcement), involving the health or safety of persons actually within the area.”^{lxxxix} <p>“Managers contemplating the use of aircraft or other motorized equipment or mechanical transportation within wilderness <i>must consider</i> the impacts to the character, esthetics, and traditions of wilderness before considering the costs and efficiency of the equipment.”^{xc}</p>

<p>NPS Policy Cont.</p>	<p>“No permanent heliports, helipads, or airstrips will be allowed in wilderness unless specifically authorized by statute or legislation. Temporary landing facilities <i>may</i> be used to meet the minimum requirements of emergency situations. Site improvements determined to be essential for safety reasons during individual emergency situations <i>may</i> be authorized.”^{xci}</p> <p><u>Secondary Direction:</u> “Administrative facilities (e.g.... fire lookouts...) <i>may</i> be allowed in wilderness only if they are determined to be the minimum requirement necessary to carry out wilderness management objectives and are specifically addressed within the park’s wilderness management plan or other supporting environmental compliance documents. New roads <i>will not</i> be built in wilderness. Temporary vehicular access <i>may</i> be permitted only to meet the minimum requirements of emergency situations, and will be restored, per an approved restoration plan, as rapidly as possible. Where abandoned roads have been included within wilderness, they <i>may</i> be used as trails, restored to natural conditions, or managed as a cultural resource.”^{xcii}</p>
<p>BLM Policy</p>	<p><u>“As necessary to meet minimum requirements for the administration of the wilderness area, the BLM <i>may</i>:</u> (a) <u>Use...motor vehicles, motorized equipment, mechanical transport, and land aircraft in designated wilderness.”^{xciii}</u></p> <p>“Use of motor vehicles <i>may only</i> be allowed in wilderness areas if it is... necessary to meet minimum requirements for the administration of the area for the purpose of the Wilderness Act, including measures required in emergencies involving the health and safety of persons within the area, allowed under a special provision of section 4(d) of the Act, or explicitly identified in the legislation designating a particular wilderness.”^{xciv}</p> <p>“Use of motorized equipment <i>may only</i> be allowed in wilderness areas if it is... necessary to meet minimum requirements for the administration of the area for the purpose of the Wilderness Act, including measures required in emergencies involving the health and safety of persons within the area, allowed under a special provision of section 4(d) of the Act, or explicitly identified in the legislation designating a particular wilderness.”^{xcv}</p> <p><u>Secondary Direction:</u> “Acceptable fire-related tools, equipment, and structures in wilderness areas <i>may include</i> but are not limited to: fire towers, patrol cabins, pit toilets, temporary roads, spraying equipment, hand tools, fire-fighting equipment caches, fencing, and prescribed fire. In special or emergency cases involving the health and safety of wilderness visitors, or protection of wilderness values, aircraft motorboats, and motorized vehicles <i>may be used</i>.”^{xcvi}</p> <p>“Management <i>must use</i> the minimum tool, equipment, or structure, necessary to successfully, safely, and economically accomplish fire objectives. The chosen tool, equipment, or structure must be the one that least degrades the wilderness values temporarily or permanently.”^{xcvii}</p>

USFWS Policy	<p><u>"...except as necessary to meet the minimum requirements for the administration of the area (including measures required in emergencies involving the health and safety of persons within the area), there shall be no temporary road, no use of motor vehicles, motorized equipment or motorboats, no landing of aircraft, no other form of mechanized equipment, and no structure or installation within any such area."</u>^{xcviii}</p> <p>"In an emergency involving the health and safety of people, <i>we may use</i> or authorize the use of motorized vehicles and equipment, mechanical transport, or aircraft. An MRA is not required, but <i>we will</i> take all reasonable measures to minimize impacts on the wilderness character."^{xcix}</p> <p>"We <i>may allow</i> exceptions to the generally prohibited uses for refuge management activities if the prohibited uses are the minimum requirement for administering the area as wilderness and are necessary to accomplish the purposes of the refuge, including Wilderness Act purposes. Area-specific wilderness legislation may permit uses that the Wilderness Act generally prohibits, and we comply with the provisions of those laws."^c</p>
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All agency policy states that motor vehicle and motorized equipment will not be used in wilderness except where there is an emergency, or it is the minimum requirement or "minimum need" for administering the wilderness area.¹⁷⁴ FS policy expands on the use of helicopters, and allows for the continued maintenance and construction of heliports within wilderness areas "where essential for wilderness purposes." Further, it grants discretionary power to the Chief of the FS to approve new construction of heliport in wilderness, and grants discretionary power to Regional Foresters to approve the construction of nonemergency helispots, when necessary for wilderness purposes.¹⁷⁵ This is in contrast to NPS policy that explicitly prohibits permanent heliports, helipads and airstrips in wilderness

¹⁷⁴ USDA Forest Service. Forest Service Manual Title 2300, Chapter 2320, Section 2326.1, Wilderness Management – Use of Motorized Equipment or Mechanical Transport in Wilderness, Conditions Under Which Use May be Approved. Washington, D.C. (2006); DOI National Park Service. National Park Service Management Policies Chapter 6, Section 3(5), Wilderness Resource Management – Minimum Requirement. Washington, D.C. (2006); DOI Bureau of Land Management. Bureau of Land Management Manual Title 6340, Section 6(1)(B)(2)(d), Managing Resources and Resource Uses in Wilderness – Prohibited Uses, Motor Vehicles. Washington, D.C. (2012); DOI Fish and Wildlife Service. Fish and Wildlife Manual Title 610, Section 1.22, General Overview of Wilderness Stewardship Policy – What effects do emergencies involving the health and safety of people have on the uses generally prohibited by the Wilderness Act. Washington, D.C. (2008).

¹⁷⁵ USDA Forest Service. Forest Service Manual Title 2300, Chapter 2320, Section 2324.33(e), Wilderness Management—Structures and Improvements Needed for Administration, Heliports and Helispots. Washington, D.C. (2006).

areas, “unless specifically authorized by statute or legislation.”¹⁷⁶ Although NPS policy permits the use of temporary landing facilities to meet the “minimum requirements of emergency situations,” FS policy is much more liberal in its permission to construct and maintain helicopter landing sites. BLM and FWS policy does not provide additional direction regarding the use of helispots and heliports.

The FWS is the only agency without policy authorizing the construction and maintenance of fire lookouts. FS policy permits the construction and maintenance when “necessary to achieve wilderness management objectives,” or necessary to protect values adjacent to wilderness areas.¹⁷⁷ Similar to much of its other policy, NPS allows fire lookouts in wilderness when they are the minimum requirement for administration, and addressed in planning documents.¹⁷⁸ BLM policy qualifies fire towers as “acceptable fire-related tools” that may be used in wilderness areas.¹⁷⁹

¹⁷⁶ DOI National Park Service. National Park Service Management Policies Chapter 6, Section 3(4), Wilderness Resource Management – Wilderness Related Planning and Environmental Compliance. Washington, D.C. (2006).

¹⁷⁷ USDA Forest Service. Forest Service Manual Title 2300, Chapter 2320, Section 2324.33(b), Wilderness Management—Structures and Improvements Needed for Administration, Fire Lookouts. Washington, D.C. (2006).

¹⁷⁸ DOI National Park Service. National Park Service Management Reference Manual 41, Part III, Chapter 6(3)(10)(1), Wilderness Preservation and Management—Management Policies, Administrative Facilities. Washington, D.C. (1999).

¹⁷⁹ DOI Bureau of Land Management. BLM Handbook Title 9211-1, Chapter II, Section (E)(5), Fire Planning Handbook—Fire Planning Requirements, BLM Program Compliance, Wilderness. Washington, D.C. (2012).

5.2.6. Fire Management Activities in Wilderness

Table 9	Fire Management Activities in Wilderness
Interagency Policy	<p>“Actions taken in wilderness <i>will be</i> conducted to protect life and safety, to meet natural and cultural resource objectives, and to minimize negative impacts of the fire management actions and the fires themselves. In evaluating fire management actions, the potential degradation of wilderness character will be considered before, and given significantly more weight than, economic efficiency and convenience. Unless human life or private property is immediately threatened, only those action that preserve wilderness character and/or have localized short term adverse impacts to wilderness character will be acceptable. Any Delegation of Authority to Incident Management Teams will convey appropriate emphasis on the protection of wilderness character and resources and will ensure interaction with local wilderness resource advisors.”^{ci}</p>
USFS Policy	<p>“Conduct all fire management activities in a manner compatible with overall wilderness management objectives. <i>Give preference</i> to using methods and equipment that cause the least: (1) Alteration of the wilderness landscape. (2) Disturbance to the land surface. (3) Disturbance to visitor solitude. (4) Reduction of visibility during periods of visitor use. (5) Adverse effect on other air quality related values. Locate fire camps, helispots, and other temporary facilities or improvements outside of the wilderness boundary whenever feasible. Rehabilitate disturbed areas within wilderness to as natural an appearance as possible.”^{ci}</p>
NPS Policy	<p>“All fire management activities conducted in wilderness areas <i>will</i> conform to the basic purposes of wilderness. Actions taken to suppress wildfires <i>must use</i> the minimum requirement concept unless the on-site decision-maker determines in his professional judgement that conditions dictate otherwise... Fire suppression activities <i>should be managed</i> in ways that protect natural and cultural resources and minimize the lasting impacts of suppression actions.”^{ciii}</p> <p><u>Secondary Direction:</u> “Management actions, including restoration of...altered natural fire regimes... <i>should be</i> attempted only when the knowledge and tools exist to accomplish clearly articulated goals.”^{civ}</p> <p>“Actions taken to suppress wildfires <i>will</i> use the minimum requirement concept, and <i>will</i> be conducted in such a way as to protect natural and cultural features and to minimize the lasting impacts of the suppression actions and the fires themselves.”^{cv}</p> <p>“Actions taken to manage wildland fire in wilderness using the appropriate minimum requirement concept <i>will be conducted</i> to protect life and safety and natural and cultural resources and to minimize the lasting impacts of the management actions and the fires themselves. The potential disruption of wilderness character and resources will be considered before, and given significantly more weight than, economic efficiency and convenience. If a compromise of wilderness resources or character is unavoidable, <i>only</i> those actions that preserve wilderness character and/or have localized, short-term adverse impacts <i>will be acceptable, unless</i> human life is threatened.”^{cvi}</p>
BLM Policy	<p>“To the extent possible, all fires in wilderness <i>will</i>: (A) be managed using minimum impact suppression techniques wherever possible while providing for the safety of firefighters and the public and meeting fire management objectives. (B) be managed, if feasible, without equipment that would ordinarily be prohibited by section 4(c) of the Wilderness Act. (C) have a resource advisor with knowledge and experience in wilderness stewardship assigned to the firefighting team to assist in the protection of wilderness character.”^{cvi}</p>

BLM Policy Cont.	<p><u>Secondary Direction:</u> “The minimum tool concept, or minimum impact suppression techniques (MIST) will apply to emergency situations as well as non-emergency projects such as fuel treatments. Tools, equipment, or structures <i>may</i> be used in wilderness areas when they are the minimum necessary for protection of the wilderness resource, or when necessary in emergency situations for the health and safety of the visitor.”^{cviii}</p>
USFWS Policy	<p>“If we decide to suppress a wildland fire, we select the appropriate management response that preserves wilderness character and values as well as accomplishes suppression objectives. We <i>will</i> identify the minimum impact suppression tactics in the FMP and develop them in conjunction with the fire management officer.”^{ciix}</p> <p>“Firefighter and public safety is always the first priority on all wilderness fire operations.”^{cx}</p>

Table 9 summarizes policy that describes agency preferences to fire management tactics that occur during wildland fire incidents. Interagency policy stresses that actions taken in wilderness “will be conducted to protect life and safety, to meet natural and cultural resource objectives, and to minimize negative impacts of the fire management actions and the fires themselves.”¹⁸⁰ Furthermore, it emphasizes that the preservation of wilderness character is paramount, and prioritizes preservation over economic efficiency and convenience. This theme is echoed throughout agency policy regarding fire management activities in wilderness areas.

The minimum requirement concept is utilized by the NPS to ensure fire management activities “conform the basic purposes of wilderness” and policy directs that fire suppression activities should be managed to minimize lasting negative impacts on wilderness.¹⁸¹ BLM and FWS policy mandates that minimum impact suppression techniques and tactics (M.I.S.T.) will be used whenever possible on wilderness fire incidents.¹⁸² These techniques and tactics are guidelines that emphasize minimal fire line

¹⁸⁰ Interagency Standards for Fire and Fire Aviation Operations Group. Interagency Standards for Fire and Fire Aviation Operations Chapter 11, Incident Management and Response Fire Management in Wilderness. Boise, ID. (2017).

¹⁸¹ DOI National Park Service. National Park Service Management Policies Chapter 6, Section 3(9), Wilderness Resource Management – Fire Management. Washington, D.C. (2006).

¹⁸² DOI Fish and Wildlife Service. Fish and Wildlife Manual Title 610, Section 2.22, Wilderness Administration and Resource Stewardship – May the Service use manage wildland fire in wilderness. Washington, D.C. (2008); DOI

construction, cutting of trees, and use of mechanized tools that may impact wilderness values on wilderness fire incidents. Although the FS does not cite M.I.S.T. in its manuals or handbooks, it similarly directs FS fire managers to use tactics that are “compatible with overall wilderness management objectives,” and cause the least disturbance to wilderness values.¹⁸³

Bureau of Land Management. Bureau of Land Management Manual Title 6340, Section 1.6(C)(7)(b)(i)(A-C), Managing Resources and Resource Uses in Wilderness – Fire, Wildfires. Washington, D.C. (2012).

¹⁸³ USDA Forest Service. Forest Service Manual Title 2300, Chapter 2320, Section 2324.23, Wilderness Management—Management of Fire: Fire Management Activities. Washington, D.C. (2006).

5.2.7. Burned Area Rehabilitation in Wilderness

Table 10	Burned Area Rehabilitation in Wilderness
USFS Policy	<p>“Permit emergency burned area rehabilitation <i>only if necessary to prevent an unnatural loss of the wilderness resource</i> or to protect life, property, and other resource values outside of wilderness. Normally use hand tools and equipment to install selected land and channel treatments.”^{cxix}</p>
NPS Policy	<p><u>Secondary Direction:</u> “A MRA <i>must</i> also be developed as part of a Burned Area Emergency Response (BAER) plan for actions in wilderness that are proposed to restore, stabilize, or rehabilitate an area following a wildfire.”^{cxix}</p> <p>“Qualified wildland fire Resource Advisors <i>should</i> be utilized throughout wildfire incidents, and post-fire activities including emergency stabilization and BAER.”^{cxix}</p>
BLM Policy	<p>“Stabilization, rehabilitation, and restoration of impacts to wilderness from wildfires <i>should be</i> conducted as part of the fire incident. Where wildfires have been managed for resource benefits, most stabilization, rehabilitation, and restoration activities are expected to be limited to the effects from suppression actions. Any stabilization, rehabilitation, and restoration activities are likely to be more intensive where the effects of the fire were greater than would be expected from the natural fire regime. Any stabilization, rehabilitation, and restoration <i>should seek to establish, or reestablish, the natural vegetative community</i>.”^{cxiv}</p> <p>“Natural processes <i>should always</i> be favored to restore disturbed vegetation in order to maintain the Untrammeled, Natural, and Undeveloped qualities of wilderness character, as well as outstanding opportunities for Solitude or Primitive and Unconfined Recreation. <i>However</i>, in some cases, restoration management activities <i>may</i> be needed to restore vegetation and to preserve or enhance the area’s wilderness character, despite the impacts of such activities on the Untrammeled quality of wilderness character. The need for active restoration and the alternatives available for conducting restoration activities <i>must</i> be analyzed using the MRDG.”^{cxv}</p> <p>“Re seeding or planting of native species <i>may be undertaken</i> following a wildfire or other natural disasters <i>if natural seed sources are not adequate</i> to compete with non-native vegetation or substantial unnatural soil loss is expected.”^{cxvi}</p> <p><u>Secondary Direction:</u> “Before seeding equipment is used, a determination <i>must</i> be made that this method is necessary to meet the minimum requirements for the administration of the area as wilderness. If ES&R treatments are determined to be necessary, consideration <i>must</i> be given first to achieving the recovery objectives using non-motorized equipment. Overland-motorized equipment <i>will only</i> be considered in cases where the objectives cannot be accomplished with non-motorized equipment, and there is a threat to wilderness values if no action is taken.”^{cxvii}</p>
USFWS Policy	<p>“Consistent with applicable guidelines, <i>we may</i> prepare a Burned Area Emergency Response (emergency stabilization) or Rehabilitation Plan [in wilderness areas].”^{cxviii}</p>

Burned Area Emergency Rehabilitation or Response (BAER), and Emergency Stabilization and Rehabilitation (ES&R) are treatments to burned areas after a catastrophic wildfire to prevent unnatural levels of soil degradation, runoff, and water contamination. Mulching, seeding, and water channel treatments are often used to prevent soil erosion and are implemented as soon as possible after an area is deemed suitable for rehabilitation.¹⁸⁴ All four land management agencies permit BAER and ES&R treatments in wilderness areas, but provide distinct guidelines regarding the approval of such treatments. FS policy only permits BAER when “necessary to prevent an unnatural loss of the wilderness resource or to protect life, property, and other resource values outside of wilderness.”¹⁸⁵ The NPS does not provide any overarching guidance for BAER in its 2006 Policies, but direction in the Director’s Order 41 provides that when BAER occurs, a MRA must be developed, and wilderness Resource Advisors should be utilized throughout BAER implementation.¹⁸⁶ BLM policy is extremely thorough in its guidelines for ES&R treatments, and stresses that “natural processes should always be favored to restore disturbed vegetation” to preserve wilderness values.¹⁸⁷ If the BLM uses ES&R treatments in wilderness, policy provides rigorous guidelines to approve reseeding and planting of native species, and mandates the use of an MRA when deciding the methods of rehabilitating an area.¹⁸⁸ FWS provides the

¹⁸⁴ DOI and USDA. Interagency Burned Area Emergency Response Guidebook. Washington, D.C. (2006).

¹⁸⁵ USDA Forest Service. Forest Service Manual Title 2300, Chapter 2320, Section 2323.43(b), Wilderness Management – Management of Other Resources in Wilderness, Emergency Burned Area Rehabilitation. Washington, D.C. (2006).

¹⁸⁶ DOI National Park Service. Directors Order #41, Chapter 6.7, Wilderness Stewardship—Fire Management. Washington D.C. (2013).

¹⁸⁷ DOI Bureau of Land Management. Bureau of Land Management Manual Title 6340, Section 1.6(C)(15)(a), Managing Resources and Resource Uses in Wilderness – Restoration and Vegetation Management, General Principles. Washington, D.C. (2012).

¹⁸⁸ DOI Bureau of Land Management. Bureau of Land Management Handbook Title 1742-1, Section 3(b)(39), Burned Area Emergency Stabilization and Rehabilitation Handbook – Treatment Guidance, Wilderness Areas. (2017); DOI Bureau of Land Management. Bureau of Land Management Manual Title 6340, Section 1.6(C)(15)(f)(i), Managing Resources and Resource Uses in Wilderness – Restoration and Vegetation Management, General Principles. Washington, D.C. (2012).

least amount of direction in its policy, and simply states the Service “may prepare a Burned Area Emergency Response or Rehabilitation Plan” in wilderness areas.

5.3. Summary

These tables provide insight to the commonalities and differences within the agency regulations and policies regarding fire management in wilderness. In summary, natural ignitions may be allowed to burn, and agencies may actively manage fires and ignite prescribed fires throughout all wilderness areas. The decisions made while actively managing fires, including the operational tactics that are utilized by all agency managers, is rooted in the “minimum requirement” concept.¹⁸⁹ Although formal minimum requirement analyses are only mandated for NPS, BLM, and FWS actions that utilize 4(c) prohibited uses in wilderness on wildland fires,¹⁹⁰ the general context of FS policy and the agency’s tertiary documents support the use of this concept.¹⁹¹

Overall, NPS and FWS policies are similar in that they direct a place-based approach to management. NPS policy for fire management is very vague and often defers direction to management plans and manager judgement based on the minimum requirement concept. Although FWS policy contains more explicit guidelines, references to refuge purposes and planning documents provide similar place-based direction. Because of this organization, the FWS interprets the designation of an area as a curtailment to *how* managers will perform management actions in refuge areas, rather than a prioritization of administering areas for the protection and perpetuation of wilderness character. Contrarily, FS and BLM policies provide more structured guidelines for fire management actions in their wilderness areas, with less deference to localized management. Although the BLM uses the minimum

¹⁸⁹ P.L. 88-577 §4(c), (1964).

¹⁹⁰ Interagency Standards for Fire and Fire Aviation Operations Group. Interagency Standards for Fire and Fire Aviation Operations Chapter 11, Incident Management and Response Fire Management in Wilderness. Boise, ID. (2017).

¹⁹¹ See *e.g.* Arthur Carhart National Wilderness Training Center. Minimum Requirements Decision Guide: U.S. Forest Service Guidelines. Missoula, MT. (2008).

requirement concept as the baseline for decision-making, it provides additional detailed directions to managers regarding fire management in wilderness areas. Likewise, FS policy provides unambiguous guidelines and qualifiers for fire managers directing fire management actions in wilderness areas.

Along with these differences, agencies provide unique emphasis on issues that are relevant to agency specific mandates: FWS policy permits certain management actions when justified for threatened and endangered species and biological diversity and integrity of an area;¹⁹² BLM policy repeatedly references exotic species management and provides justification for actions to benefit threatened and endangered species;¹⁹³ and FS policy maintains special direction for prescribed burning for livestock grazing in wilderness.¹⁹⁴ These emphases are rooted in the multiple and primary use statutes governing the agencies, as well as the contextual challenges of managing for wilderness character in different land types.

FS policy allows for the most manipulation in wilderness. Two prominent examples involve the justification for fire lookouts and BAER treatments in wilderness. Under FS policy, these may be established and implemented for the purposes of protecting resources and values *outside* of wilderness.¹⁹⁵ Although BAER treatments can be accomplished by traditional manual tools, the

¹⁹² DOI Fish and Wildlife Service. Fish and Wildlife Manual Title 610, Section 2.23(A)(1-2), Wilderness Administration and Resource Stewardship – May the Service use prescribed fire in wilderness. Washington, D.C. (2008); DOI Fish and Wildlife Service. Fish and Wildlife Manual Title 610, Section 1.22, General Overview of Wilderness Stewardship Policy – What effects do emergencies involving the health and safety of people have on the uses generally prohibited by the Wilderness Act. Washington, D.C. (2008).

¹⁹³ DOI Fish and Wildlife Service. Fish and Wildlife Manual Title 610, Section 1.22, General Overview of Wilderness Stewardship Policy – What effects do emergencies involving the health and safety of people have on the uses generally prohibited by the Wilderness Act. Washington, D.C. (2008); DOI Bureau of Land Management. Bureau of Land Management Handbook Title 9211, Chapter II, Section (E)(5), Fire Planning Handbook – BLM Program Compliance, Wilderness. Washington D.C. (2012).

¹⁹⁴ USDA Forest Service. Forest Service Manual Title 2300, Chapter 2320, Section 2323.26(b)(5), Wilderness Management – Nonstructural Range Improvements. Washington, D.C. (2006).

¹⁹⁵ USDA Forest Service. Forest Service Manual Title 2300, Chapter 2320, Section 2323.43(b), Wilderness Management – Management of Other Resources in Wilderness, Emergency Burned Area Rehabilitation. Washington, D.C. (2006); USDA Forest Service. Forest Service Manual Title 2300, Chapter 2320, Section 2324.33(b), Wilderness Management—Structures and Improvements Needed for Administration, Fire Lookouts. Washington, D.C. (2006).

authorization for a fire lookout structure for the purpose of protecting values outside the wilderness is contrary to the judicial interpretations of section 4(c) of the Wilderness Act.¹⁹⁶ Because a fire lookout qualifies as a “structure,” it must be “necessary to meet the minimum requirements for administration of the area for the *purpose*” of the Wilderness Act. The protection of values adjacent to wilderness is not one of the purposes of the Act, yet FS policy provides that fire lookouts may be constructed or maintained for this purpose.

These differences in policy suggest largely heterogeneous fire programs among wilderness areas located in NPS administered parks and FWS managed refuges, contrasted to more standardized fire management programs in FS and BLM administered wilderness areas. Interagency policy reinforces homogeneous goals and objectives nationally but, on smaller spatial scales, NPS and FWS policy provides more deference to specific area plans and programs. Despite this deference, the NPS and FWS overall agency mandates are more consistent with the Wilderness Act purposes. Although the BLM and FS policies are more structured than the deferential policies of the NPS and FWS, the two multiple-use agencies provide more opportunities for manipulation.

¹⁹⁶ See e.g. *High Sierra Hikers Association v. Blackwell*, 309 F.3d 630 (9th Cir. 2004); *Wilderness Watch, Inc. v. U.S. Fish and Wildlife Service*, 629 F.3d 1024 (Court of Appeals, 9th Circuit, 2010); *Wilderness Watch v. Iwamoto* 853 F. Supp. 2d 1063 (D.C. WA 2012).

6. Implementation of Special Fire Management Provisions in Wilderness Law

To assess how special fire provisions are being implemented by federal agencies, this section analyzes the fire management of wilderness areas under three distinct special provisions. This includes an assessment of fire operations under pre-suppression and suppression direction in Los Padres National Forest wilderness areas, aircraft and mechanized equipment direction in southern Nevada wilderness areas, and prescribed burning direction in northwest Nevada wilderness areas. Each study provides background information on the characteristics of the wilderness areas, a synopsis of the local fire program and planned management actions, and concludes with an analysis of the impacts that the special provision has had on management. These studies reveal the opportunities and challenges provided by the legislation and illustrate the effects of the additional direction.

6.1. Case 1: Special Provisions Related to Pre-suppression and Suppression Measures in Los Padres National Forest Wilderness Areas

The Los Padres National Forest (LPNF) is located in southern California, stretching from Monterey Bay to just north of Los Angeles paralleling the Pacific coastline. Ten wilderness areas are managed within this National Forest, occupying 48% of the forest area.¹⁹⁷ These include the Chumash, Dick Smith, Garcia, Machesna Mountain, Matilija, San Rafael, Santa Lucia, Sespe, Silver Peak, and Ventana Wildernesses. These wilderness areas maintain unique direction in their enabling legislation for fire management. Except for the Machesna Mountain and Dick Smith Wilderness, all of these areas have special provisions in their enabling legislation that state the Forest Service “may take such measures as are necessary for fire prevention and watershed protection including, but not limited to, acceptable pre-suppression and fire suppression measures and techniques.”¹⁹⁸ Although the Machesna Mountain and

¹⁹⁷ USDA Forest Service. Land Management Plan: Part 2 Los Padres National Forest Strategy. (September, 2005): 9.

¹⁹⁸ P.L. 95-237 §2(c-d), (1978); P.L. 102-103 §3(b), (1992); P.L. 107-370 §4(a-b), (2002).

Dick Smith Wildernesses do not have this explicit language, they were established under the California Wilderness Act of 1984. House Report 98-40 accompanied this legislation and clarifies the acceptability of pre-suppression and suppression measures for wilderness fire management under the Wilderness Act.¹⁹⁹

6.1.1 Background

The 1.75 million-acre LPNF is divided into two main areas; the northern section containing the Ventana and Silver Peak Wildernesses, and the southern section containing a majority of the Forest acreage.²⁰⁰ The landscape is characterized by its dramatic elevation changes from the Pacific coastline to 6,000-foot peaks in the Santa Lucia, Sierra Madre, and San Rafael Mountains. This rugged and steep terrain is dominated by chaparral, coastal sage scrub, and grasses, but stands of coastal redwoods, evergreen forests, and riparian vegetation are also found throughout the wilderness areas. Soil erosion is a significant issue along the Highway 1 corridor that borders much of the Ventana and Silver Peak Wilderness areas, and similar soil types border the watersheds within the LPNF.²⁰¹ The watersheds support much of the domestic and agricultural water supply of surrounding communities, as well as 468 species of fish and wildlife including the endangered southern steelhead trout and red-legged frog.²⁰² The Carmel, Salinas, Cuyama, Sisquoc, Santa Ynez, Sespe, and Piru rivers add to the rugged nature of this place, carving jagged canyons through the mountains down to the sea.²⁰³

¹⁹⁹ US Congress. House. 1983. Entitled the "California Wilderness Act of 1983." 98th Cong., 1st sess. H.R. 98-40, 40-41.

²⁰⁰ USDA Forest Service. Land Management Plan: Part 2 Los Padres National Forest Strategy. (September, 2005): 13.

²⁰¹ USDA Forest Service. Land Management Plan: Part 2 Los Padres National Forest Strategy. (September, 2005): 42.

²⁰² USDA Forest Service. Land Management Plan: Part 2 Los Padres National Forest Strategy. (September, 2005): 51.

²⁰³ USDA Forest Service. Ecological Restoration Implementation Plan: Los Padres National Forest. (January, 2013): 67.

Figure 2. Los Padres National Forest Wilderness Areas²⁰⁴



Due to the high population of southern California, there are many large communities that border the LPNF and rely on the watersheds within the Forest. The northern section of the Forest is located in Monterey County, with borders close to the coastal communities of Big Sur, Carmel Highlands, Lucia, Plaskett, and Gorda. In the Monterey County Community Wildfire Protection Plan, 60% of the County’s land is defined as “Wildland Urban Interface,” bordering the LPNF.²⁰⁵ The southern section of the Forest is adjacent to the large communities of San Luis Obispo and Santa Barbara, but the wilderness areas are surrounded by buffers of undesignated Forest lands.

²⁰⁴ USDA Forest Service. Los Padres National Forest: Fire Management Plan. (April, 2014): 3.

²⁰⁵ Monterey Fire Safe Council. Monterey County Community Wildfire Protection Plan. (2010): 47.

The combination of steep terrain, flashy fuels, and substantial populations surrounding the LPNF produces a significant challenge for fire managers. Coupled with these factors, this Forest periodically experiences Santa Ana and Sundowner winds that can blow in excess of 40 mph toward the ocean.²⁰⁶ These factors have led to significant fire events including the Santa Ana-driven Day fire of 2006 that ran 9 miles in a 24-hour period; the Basin Complex fire of 2008 that burned 58 structures and consumed over 160,000 acres; and the Soberanes fire of 2016 that destroyed 68 structures and was recorded as the most expensive wildfire in U.S. history.²⁰⁷ These recent fires exemplify the volatile landscape of the Forest and the destruction wildfires can bring to the highly populated communities surrounding the LPNF. Although there is a mix of anthropogenic and natural causes of fire on the Forest, the majority of wilderness area ignitions are lightning-caused.²⁰⁸

Historically, the LPNF has used fuel breaks along ridges to contain fires and keep them from threatening surrounding communities. A fuel break is swath of cleared vegetation, often down to mineral soil, that reduces the probability of fire spreading to the other side of the break. Although they are often built with bulldozers, fuel breaks can be constructed with or without mechanized equipment, and can vary in size and amount of vegetation that remains.²⁰⁹ After the passage of the Flood Control Act of 1944, the Forest Service bulldozed fuel breaks along many of the ridges in the LPNF to proactively prevent post-fire runoff and soil erosion around the watersheds within this area.²¹⁰ With almost half of the LPNF now designated as wilderness, some of the ridges that were historically maintained as fuel

²⁰⁶ USDA Forest Service. Los Padres National Forest: Fire Management Plan. 3.2.3.2(b) Weather. (April, 2014): 22.

²⁰⁷ www.inciweb.org. Accessed on 10/13/2017.

²⁰⁸ USDA Forest Service. Los Padres National Forest: Fire Management Plan. 3.2.1(b) Fire Management Unit Guidance. (April, 2014): 22.

²⁰⁹ USDA Forest Service. Land Management Plan: Part 2 Los Padres National Forest Strategy. (September, 2005): 32.

²¹⁰ AMSET. Strategic Fuel Break Assessment: Establishing Priorities for Maintaining Fuel Breaks on the Los Padres National Forest. (2016): 12.

breaks are now within these protected areas.²¹¹ The significant potential for large, fast-moving fire, coupled with the expansive wilderness designations in this area, create issues for fire and wilderness managers attempting to balance watershed and adjacent community protection with the preservation wilderness values.

6.1.2. Fire Management in Wilderness

The LPNF Fire Management Plan provides overarching direction for fire management on the Forest. The direction states that “all wildland fires on the Los Padres National Forest will be suppressed,”²¹² and “unplanned ignitions managed for resource benefit, formally known as ‘wildland fire use’ are not an approved fire management strategy within the...Forest.”²¹³ Justified by the significant risks associated with the vegetation and topography of the forest, and the threats fires pose to public and private property, no fire is allowed to burn on the LPNF. Although general Forest Service policy does permit natural ignitions to burn in wilderness, and emphasizes “[Permitting] lighting caused fires to play, as nearly as possible, their natural role in wilderness,”²¹⁴ ignitions that occur in LPNF wilderness areas are immediately suppressed.

Under the fire management guidance specific to wilderness areas in the Forest, there are several contradictory statements. For example, the “goal of fire management in wilderness is best achieved when the effects of fire as a natural agent are observed and not the effects of fire management activities,” yet “fire suppression will continue to focus on aggressive initial attack in attempts to protect overall wilderness values as well as to mitigate the potential risk of a fire exiting a

²¹¹ Monterey District, Los Padres National Forest. Minimum Requirements Decision Guide Workbook: Proposed — Strategic Community Fuelbreak Improvement Project (May 2016): 13-14.

²¹² USDA Forest Service. Los Padres National Forest: Fire Management Plan. 3.1 Fire Management Considerations Applicable to All Forest Fire Management Units. (April, 2014): 8.

²¹³ USDA Forest Service. Los Padres National Forest: Fire Management Plan. 3.1.2 Physical Characteristics that Apply to All Fire Management Units. (April, 2014): 10.

²¹⁴ USDA Forest Service. Forest Service Manual Title 2300, Chapter 2320, Section 2323.21, Wilderness Management – Management of Fire: Objectives. Washington, D.C. (2006).

wilderness and impacting local communities and other resource values, such as watersheds.”²¹⁵ The plan uses the protection of wilderness values as a justification for fire suppression, which in itself undermines the ‘untrammelled’ and ‘natural’ qualities of wilderness. Further, the Plan states that “limited access to [wilderness] requires that the forest rely on aerial firefighting and detection methods to operate within this unit.”²¹⁶ Even though the plan emphasizes observing the natural effects of fire, the full suppression mandate and emphasis on aircraft use to manage fire events undermines this goal.

A guideline within the LMP states that it is necessary to “protect and manage wilderness to improve the capability to sustain a desired range of benefits and values, and so that changes in ecosystems are primarily a consequence of natural forces.” To achieve this goal, the Plan allows management-ignited prescribed fire to “retain wilderness values” or “where community protection needs exist due to development on private lands near wilderness.”²¹⁷ More consistent with preserving wilderness character, it also emphasizes the use of M.I.S.T. tactics, wilderness resources advisors, and the ‘minimum tool’ decision making process for fire operations. Although the Plan highlights these objectives, the overarching goal to allow wilderness to be affected primarily by a “consequence of natural force” is undermined by the forest-wide full suppression mandate.

Surprisingly, neither the Fire Management Plan nor the Land Management Plan reference the special provisions for fire management found in the enabling legislation of wilderness areas. Instead the Fire Management Plan simply states “The Wilderness Act (P.L. 88-577), section 4(d) states, ‘In addition, such measures may be taken as necessary in the control of fire, insects, and diseases, subject to such

²¹⁵ USDA Forest Service. Los Padres National Forest: Fire Management Plan. 3.2.2(b) Fire Management Unit Characteristics—FMU 2. (April, 2014): 20.

²¹⁶ USDA Forest Service. Los Padres National Forest: Fire Management Plan. 3.2.2(b) Fire Management Unit Characteristics—FMU 2. (April, 2014): 20.

²¹⁷ USDA Forest Service. Land Management Plan: Part 2 Los Padres National Forest Strategy. Appendix B—Program Strategies and Tactics. (September, 2005): 124.

conditions as the Secretary deems desirable.”²¹⁸ Although it does not reference the additional special provisions in the Fire Management Plan, the Land Management Plan emphasizes the need for active vegetation management in wildland-urban interface zones specifically within the Ventana, Silver Peak, and Chumash Wilderness areas.²¹⁹ Other parts of the Land Management Plan emphasize reducing the risks of fire to communities and watersheds, including areas of the Sespe and Santa Lucia Wildernesses.²²⁰ Even though the special provisions are not cited, the Forest places a very heavy emphasis on pre-suppression and suppression based fire management, and even includes direction that states: “When wilderness is recommended, include legislative wording that identifies ‘where a wilderness area is adjacent to or is close in proximity to inhabited areas, the Secretary may take appropriate measures to control or prevent wildland fire.’”²²¹ The emphasis on watershed and community protection is omnipresent throughout LPNF planning documents, and this statement perpetuates the language found in special provisions in former enabling legislation.

6.1.3. Current Wilderness Fire Management Actions

The LPNF relies on a preexisting network of fuel breaks to control and contain fires that occur within their Forest. Although many of the fuel breaks are located on non-designated forest lands, the Forest is currently undergoing the NEPA process to re-establish and maintain 10.4 miles of historically used fuel breaks within the Ventana Wilderness. The “Strategic Community Fuelbreak Improvement Project,” was the outcome of a collaborative effort with communities surrounding the Ventana Wilderness, and planning documents supporting this project justify the actions under special provisions

²¹⁸ USDA Forest Service. Los Padres National Forest: Fire Management Plan.3.2.1(b) Fire Management Unit Guidance – FMU 2. (April, 2014): 19.

²¹⁹ USDA Forest Service. Land Management Plan: Part 2 Los Padres National Forest Strategy. (September, 2005): 43, 66, 83.

²²⁰ USDA Forest Service. Land Management Plan: Part 2 Los Padres National Forest Strategy. (September, 2005): 51, 82.

²²¹ USDA Forest Service. Land Management Plan: Part 2 Los Padres National Forest Strategy. Appendix B—Program Strategies and Tactics. (September, 2005): 124.

found in Ventana Wilderness legislation.²²² The Project plans to remove swaths of brush and small trees along ridgelines near the communities of Big Sur, Palo Colorado, Cachuga, and Jamesburg manually with traditional and mechanized equipment.²²³ The vegetation that is removed will then be piled and burned, leaving grasses and forbs in the fuel break. This action will result in several benefits, balancing the protection of communities and watersheds while preserving wilderness values.

Figure 3. The Strategic Community Fuelbreak Improvement Project²²⁴



²²² Monterey District, Los Padres National Forest. Minimum Requirements Decision Guide Workbook: Proposed — Strategic Community Fuelbreak Improvement Project (May 2016): 27.

²²³ USDA Forest Service. Draft Environmental Impact Statement: Strategic Community Fuelbreak Improvement Project. (January, 2017): 24.

²²⁴ USDA Forest Service. Draft Environmental Impact Statement: Strategic Community Fuelbreak Improvement Project. (January, 2017): 24.

First, by constructing fuel breaks that remove brush and trees but leave grasses and forbs, the breaks would “reduce visual contrasts” within the wilderness and favor the use of hand-crews over bulldozers during suppression operations.²²⁵ Although the short-term impacts of mechanized equipment may disturb wilderness qualities, the long-term impacts of, and reliance on bulldozer use would be reduced. Second, planning documents argue that this Project will “effectively protect at-risk communities from fires originating in wilderness” as well as “protect the wilderness resource from human-caused fires originating in at-risk communities.”²²⁶ The large scale of these fuel breaks essentially border the Ventana Wilderness. The big-box approach would allow natural ignitions in the wilderness to burn to these fuel breaks while preventing anthropogenic ignitions from affecting the natural fire ecology of the area. The planning documents also state that the Project would protect watershed resources, natural plant succession, and the scenic qualities of wilderness.²²⁷

While the plans enunciate the balance of wilderness values and fire protection, there are compromises to the preservation of wilderness character. First, since the fuel breaks will contain residual vegetation, succession will occur more rapidly than fuel breaks cleared down to mineral soil. Because of this, the breaks will need to be maintained every 3-5 years.²²⁸ While the long-term impacts of bulldozer use during fire incidents should be minimized by this plan, there may be a continuous use of chainsaws in the Wilderness. Second, although the plans emphasize mitigating the impacts on wilderness character through “preventing straight lines by undulating and feathering edges,” “retaining randomly sized and distributed islands of vegetation... and varying widths” of the fuel breaks, these

²²⁵ Monterey District, Los Padres National Forest. Minimum Requirements Decision Guide Workbook: Proposed — Strategic Community Fuelbreak Improvement Project (May 2016): 13.

²²⁶ Monterey District, Los Padres National Forest. Minimum Requirements Decision Guide Workbook: Proposed — Strategic Community Fuelbreak Improvement Project (May 2016): 5.

²²⁷ USDA Forest Service. Draft Environmental Impact Statement: Strategic Community Fuelbreak Improvement Project. (January, 2017).

²²⁸ Monterey District, Los Padres National Forest. Minimum Requirements Decision Guide Workbook: Proposed — Strategic Community Fuelbreak Improvement Project (May 2016): 13.

actions may generate inadequacies within the fuel breaks.²²⁹ If these fuel breaks are threatened by fire, and hand crews have limited time to prepare fire lines, managers may relapse to rely on bulldozers and aerial support to control fires within the Wilderness.

Overall, this proposed action is a viable option under the legislation that established and added acreage to the Ventana Wilderness. The MRDG and EIS justify this Project by citing the special provisions of the Ventana legislation.²³⁰ Further, the authors of these documents find that this proposal is a “good balance between limiting negative effects on wilderness values and *meeting the intent of the enabling legislation* (emphasis added).”²³¹ The special provisions of the Ventana Wilderness legislation have significantly impacted the ability for the Forest to propose and attempt projects such as this, and reassure the LPNF’s full-suppression policy in wilderness areas.

6.1.4. Conclusion

The special provisions in Los Padres Wilderness legislation has significantly impacted fire management on wilderness areas within the Forests. The importance of watershed protection, highly populated WUI, and fire prone nature of the area is represented in the legislation and agency planning documents. Examples of this include the full-suppression mandate for all fires in the LPNF, including naturally ignited fires in the wilderness areas, the prominence of aircraft and mechanized equipment authorizations to manage wildfire in wilderness, and the currently proposed project to establish fuel breaks within the Ventana Wilderness.²³² Interestingly, the Wilderness Management Plan and the Fire

²²⁹ Monterey District, Los Padres National Forest. Minimum Requirements Decision Guide Workbook: Proposed — Strategic Community Fuelbreak Improvement Project (May 2016): 13.

²³⁰ P.L. 95-237 §2(c-d), (1978); P.L. 102-103 §3(b), (1992); P.L. 107-370 §4(a-b), (2002).

²³¹ Monterey District, Los Padres National Forest. Minimum Requirements Decision Guide Workbook: Proposed — Strategic Community Fuelbreak Improvement Project (May 2016): 35.

²³² USDA Forest Service. Los Padres National Forest: Fire Management Plan. 3.1 Fire Management Considerations Applicable to All Forest Fire Management Units. (April, 2014); Monterey District, Los Padres National Forest. Minimum Requirements Decision Guide Workbook: Proposed — Strategic Community Fuelbreak Improvement Project (May 2016).

Management Plan do not cite the special provisions found in the enabling legislation. Instead, the plans justify these actions under section 4(d)(1) of the Wilderness Act.²³³ While the special provisions in the enabling legislation clarify the actions allowed in these areas, they are permitted under the discretion of section 4(d)(1) of the Wilderness Act. In line with the conclusions of the law review, the special provisions are interpreted as a clarification of actions allowed under the Wilderness Act.

Although they are not cited in the Forest planning documents, the LPNF used the special fire provisions to justify the “Strategic Community Fuelbreak Improvement Project.” Also, the agency argues for implementation of the project by stating it is a “good balance between limiting negative effects on wilderness values and *meeting the intent of the enabling legislation* (emphasis added).”²³⁴ This language demonstrates the influence these special provisions have on fire management decision-making. To justify a very contentious trammeling action in the wilderness, the proposal identifies and uses the special provisions to argue for the project. In this way, these special provisions have increased wilderness manipulation.

In contrast to the opportunities afforded by these special provisions, they also promote exceptional challenges to land managers. For example, the full-suppression mandate and emphasis on aggressive initial attack for all fires in wilderness is not compatible with the overshadowing Forest Service Policy to “permit lightning caused fires to play, as nearly as possible, their natural role in wilderness.”²³⁵ The place-based challenges of fire management in this area trump the mandate of preserving wilderness character, and the special provisions reinforce this notion through the authorizations for pre-suppression and suppression actions. The actions taken to protect communities

²³³ USDA Forest Service. Los Padres National Forest: Fire Management Plan.3.2.1(b) Fire Management Unit Guidance – FMU 2. (April, 2014): 19.

²³⁴ Monterey District, Los Padres National Forest. Minimum Requirements Decision Guide Workbook: Proposed—Strategic Community Fuelbreak Improvement Project (May 2016): 35.

²³⁵ USDA Forest Service. Forest Service Manual Title 2300, Chapter 2320, Section 2323.21, Wilderness Management – Management of Fire: Objectives. Washington, D.C. (2006).

and watersheds of this region are not compatible with the values of wilderness. This challenge is embodied in the contradicting statements of the planning documents that simultaneously direct fire management and wilderness preservation.

6.2. Case 2: Special Provisions Related to Aircraft and Mechanized Equipment Use in Southern Nevada Wilderness Areas

In 2002, 2004, and 2015, Congress passed enabling legislation that established 32 wilderness areas in southern Nevada. These three Acts, the Clark County Conservation of Public Land and Natural Resources Act of 2002, the Lincoln County Conservation, Recreation and Development Act of 2004, and the National Defense Authorizations Act for Fiscal Year 2015, contain special provisions for fire management that state, "...nothing in this title precludes a Federal, State, or local agency from conducting wildfire management operations (including operations using aircraft or mechanized equipment) to manage wildfires in the wilderness areas designated by this title."²³⁶ Due to accessibility issues, coupled with time and resource constraints, planning documents were obtained for 19 of the 32 wilderness areas that are managed under this direction.

Wilderness areas that are affected by these special provisions are located in two main regions of southwestern Nevada. The Big Rocks, Mount Irish, South Pahroc, Clover Mountains, Tunnel Springs, and Far South Egans Wilderness areas are located on the western edge of the state, south of Ely, Nevada in Lincoln County. These areas range in size, from the small 5,000-acre Tunnel Springs Wilderness, to the 85,000-acre Clover Mountain Wilderness, and all are administered by the BLM.²³⁷ The other 13 wilderness areas are located further south in Clark County, Nevada, surrounding Lake Mead and located

²³⁶ P.L. 107-282 §209, (2002); P.L. 108-424 §210, (2004); P.L. 113-291 §3604(c)(6), (2015).

²³⁷ Ely Field Office, BLM. Wilderness Management Plan and Environmental Assessment: Big Rocks, Mount Irish, & South Pahroc Range Wilderness. (December, 2007): 8; Ely Field Office, BLM. Wilderness Management Plan and Environmental Assessment: Highland Ridge, Mount Grafton, South Egan Range, & Far South Egans Wilderness Nevada. (May, 2013): 6; Ely Field Office, BLM. Proposed Wilderness Management Plan and Environmental Assessment: Clover Mountains & Tunnel Spring Wilderness. (February, 2010): 72.

throughout the southwestern corner of the state. These areas include the Arrow Canyon, Jimbilnan, Pinto Valley, Black Canyon, Eldorado, Ireteba Peaks, Nellis Wash, Spirit Mountain, Bridge Canyon, Muddy Mountains, North McCullough, South McCullough, and Wee Thump Joshua Tree Wilderness areas. These areas range from 6,000 to 48,000 acres and are managed by the Las Vegas Field Office of the BLM, and the Lake Mead National Recreation Area Office of the NPS. Four of these areas, including the Eldorado, Ireteba Peaks, Spirit Mountain, and Muddy Mountains Wilderness areas, are jointly managed by the BLM and NPS.²³⁸

This case study analyzes the planning documents of these two areas separately, and refers to these distinct regions as the “Clark County Wilderness Areas” and the “Lincoln County Wilderness Areas.” This separation allows the reader to gain insight to the geographic, vegetative, and contextual variances that effect fire management between the two regions. Then, the Fire Management in Wilderness section identifies management themes found across both of these areas, and reveals insight to the impact the fire management provision has had on all of these areas.

6.2.1. Background: Clark County Wilderness Areas

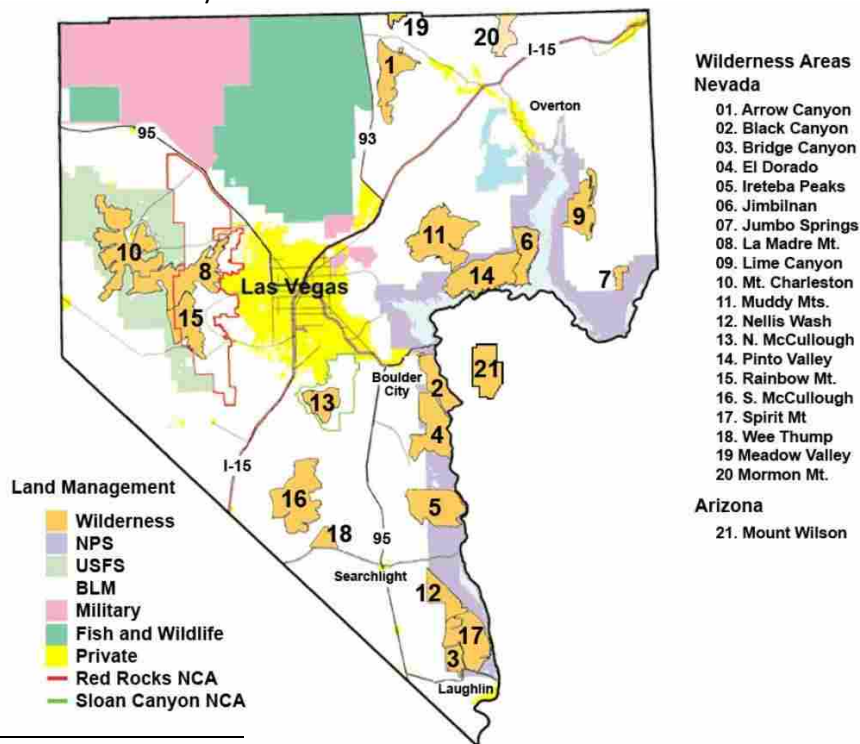
The thirteen wilderness areas of this region were established in 2002 with the passage of the Clark County Conservation of Public Land and Natural Resources Act.²³⁹ The southwestern corner of the state is characterized by the arid desert terrain of the Mojave Desert. This region ranges in elevations in from 2,000 feet to upwards of 7,000 feet, and is home to Lake Mead that sits along the Nevada-Arizona

²³⁸ Southern Nevada District Office, BLM. Arrow Canyon Wilderness Draft Wilderness Management Plan and Environmental Assessment. (April, 2013): 7; BLM & NPS. Jimbilnan, Pinto Valley, Black Canyon, Eldorado, Ireteba Peaks, Nellis Wash, Spirit Mountain, & Bridge Canyon Wilderness Areas: Final Wilderness Management Plan and Environmental Impact Statement. (November, 2014); NPS & BLM. Muddy Mountains Wilderness Management Plan and Environmental Assessment: Final. (April, 2007): 3-4; Las Vegas Field Office, BLM. North McCullough Wilderness Management Plan: Sloan Canyon National Conservation Area. (September, 2005): 3; Las Vegas Field Office, BLM. South McCullough and Wee Thump Joshua Tree Wilderness Management Plan and Environmental Assessment. (September, 2005): 1-2.

²³⁹ P.L. 107-282, (2002).

border.²⁴⁰ These wilderness areas are dominated by the Mojave mixed scrub vegetation type, which includes an abundance of creosote bush, yucca, white bursage, and a variety of cacti species.²⁴¹ The higher elevation Spirit Mountain Wilderness contains an array of Sonoran Desert plant species due to its elevation and southern location.²⁴² Similarly, the South McCullough and Wee Thump Joshua Tree Wildernesses contain stands of Joshua trees and pinyon woodland communities as a result of their higher elevation and southern geography.²⁴³ With an exception to the pinyon woodland communities, fire is not a natural disturbance in Mojave or Sonoran Desert shrub communities.²⁴⁴

Figure 4. Clark County Wilderness Areas²⁴⁵



²⁴⁰ Las Vegas Field Office, BLM. South McCullough and Wee Thump Joshua Tree Wilderness Management Plan and Environmental Assessment. (September, 2005): 1-2.

²⁴¹ Southern Nevada District Office, BLM. Arrow Canyon Wilderness Draft Wilderness Management Plan and Environmental Assessment. (April, 2013): 7.

²⁴² BLM & NPS. Jimbilnan, Pinto Valley, Black Canyon, Eldorado, Ireteba Peaks, Nellis Wash, Spirit Mountain, & Bridge Canyon Wilderness Areas: Final Wilderness Management Plan and Environmental Impact Statement. (November, 2014): 135-136.

²⁴³ Las Vegas Field Office, BLM. South McCullough and Wee Thump Joshua Tree Wilderness Management Plan and Environmental Assessment. (September, 2005): 1-2.

²⁴⁴ Southern Nevada District Office, BLM. Arrow Canyon Wilderness Draft Wilderness Management Plan and Environmental Assessment. (April, 2013): 7.

²⁴⁵ Jim Boone. "Wilderness Areas Around Las Vegas." (2015). Accessed from http://www.birdandhike.com/Wilderness/_Wild_Clickmap.htm.

Although fire is not a natural phenomenon in these wilderness areas, wildland fires occur in this region due to the presence of non-native species. In southern Nevada, tamarisk, red brome, cheatgrass, and Arabian grass, are prevalent, and perpetuate through a positive feedback cycle with fire.²⁴⁶ When these non-native species become established, they alter the fire regime of the area they occupy. Non-native annual grasses increase the fuel loading of areas, augmenting the intensity and frequency of wildfire. When wildfire occurs, the native desert scrub that is not fire adapted is often replaced with expanding non-native communities. Through this expansion, larger areas of unnaturally high fuel loadings and increased frequency of wildfire perpetuate this cycle of invasive plant succession.²⁴⁷

There are other management concerns in these wilderness areas, including the presence of the federally listed desert tortoise (*Gopherus agassizii*). In 1998, before these areas were designated as wilderness, an Area of Critical Environmental Concern (ACEC) was established throughout the southwestern corner of Nevada to protect the habitat of the desert tortoise.²⁴⁸ Since its official listing as a federally threatened species in 1990, the preservation of tortoise habitat has become a paramount objective in this area, including all of the wilderness areas in this region. A key principle identified to protecting the desert tortoise's natural habitat is through the prevention and suppression of wildland fire to limit the spread of invasive species.²⁴⁹

²⁴⁶ BLM & NPS. Jimbilnan, Pinto Valley, Black Canyon, Eldorado, Ireteba Peaks, Nellis Wash, Spirit Mountain, & Bridge Canyon Wilderness Areas: Final Wilderness Management Plan and Environmental Impact Statement. (November, 2014): 139; Southern Nevada District Office, BLM. Arrow Canyon Wilderness Draft Wilderness Management Plan and Environmental Assessment. (April, 2013): 7.

²⁴⁷ Southern Nevada District Office, BLM. Arrow Canyon Wilderness Draft Wilderness Management Plan and Environmental Assessment. (April, 2013): 7.

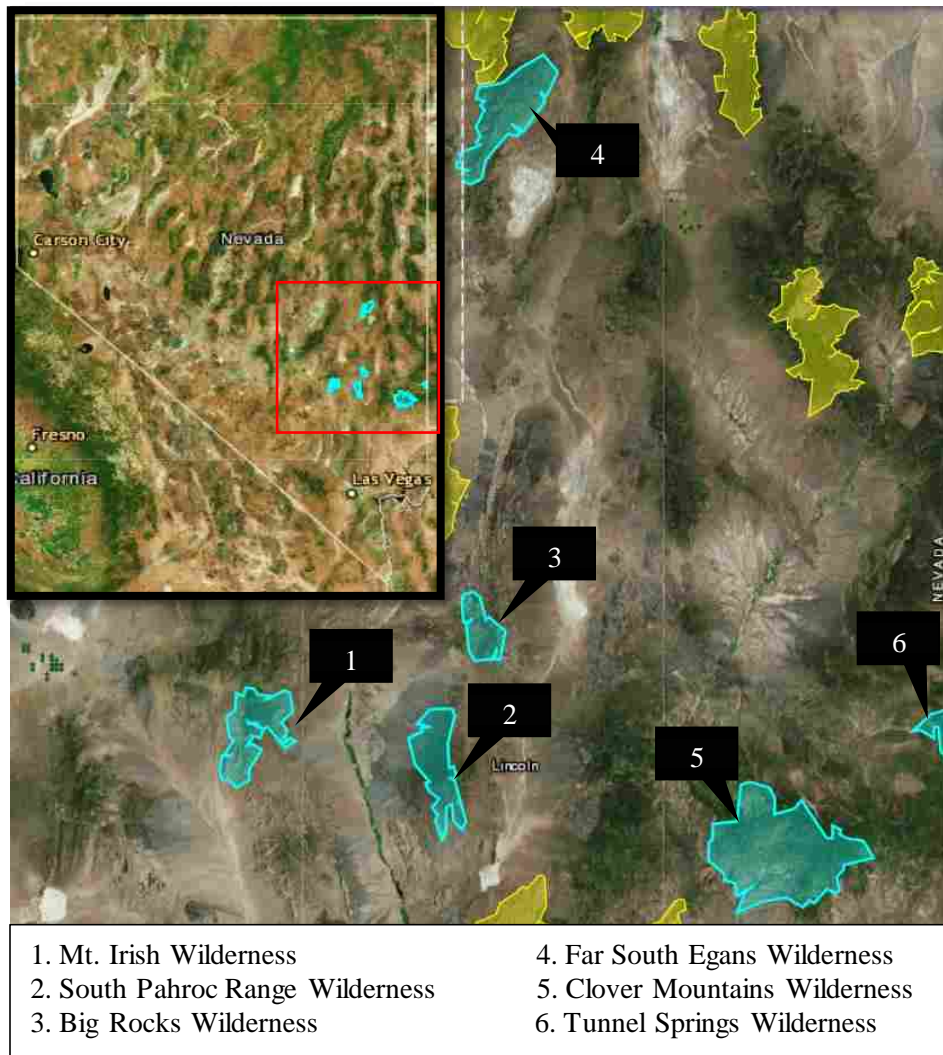
²⁴⁸ Southern Nevada District Office, BLM. Arrow Canyon Wilderness Draft Wilderness Management Plan and Environmental Assessment. (April, 2013): 7.

²⁴⁹ U.S. Fish and Wildlife Service. Revised Recovery Plan for the Mojave Population of the Desert Tortoise (*Gopherus agassizii*). (May, 2011).

6.2.2. Background: Lincoln County Wilderness Areas

The six wilderness areas analyzed in this region are located northeast of Las Vegas and south of Ely, Nevada. All of these areas were designated as wilderness under the Lincoln County Conservation, Recreation and Development Act of 2004.²⁵⁰ These wilderness areas are north of the Mojave Desert and lie in the Great and Intermountain Basins of Nevada, providing slightly more rainfall and vegetational diversity than the Clark County wilderness areas.

Figure 5. Lincoln County Wilderness Areas²⁵¹



²⁵⁰ P.L. 108-424 §210, (2004).

²⁵¹ In the absence of a map showing all six of these areas, a map was created using wilderness.net's Interactive ESRI Map tool (<http://www.wilderness.net/NWPS/maps>). The map was created 11/2/2017 by the author.

The vegetation is characterized by pinyon-juniper woodlands, xeric mixed sagebrush shrublands, and big sagebrush shrublands. Community composition is variable on an altitudinal gradient, with sagebrush and perennial bunch grasses dominating lower elevations and single leaf pinyon pine and Utah juniper at mid-to-higher elevations.²⁵² Also, stands of aspen, as well as bristlecone, limber, and ponderosa pine are found in the higher elevations of the Mount Grafton and Far South Egans Wilderness areas.²⁵³

Although many of these vegetative communities are fire adapted, the wilderness areas in this region have observed an influx of invasive species. Cheatgrass and red brome are prevalent throughout all six of these wildernesses and have altered the vegetational structure and historic fire regimes of these areas.²⁵⁴ Since these non-natives have become established, higher fire intensities and frequencies have favored the succession of the invasive annual grasses through a positive feedback cycle. In 2005, the Clover Mountain Wilderness experienced a fire event fueled by a significant loading of red brome, burning nearly a quarter of the Wilderness acreage.²⁵⁵ Similarly in 2009, the same Wilderness had a fire that burned through a ponderosa pine stand killing 100% of the trees and seed sources. This resulted in an “increased rate of habitat type conversion” favoring non-native species succession.²⁵⁶ Maintaining the natural vegetational structure of these wilderness areas is identified as a significant challenge, and similar to the Clark County wilderness areas, fire prevention and suppression is a principal strategy to maintaining the natural characteristics of these designated areas.

²⁵² Ely Field Office, BLM. Wilderness Management Plan and Environmental Assessment: Big Rocks, Mount Irish, & South Pahroc Range Wilderness. (December, 2007): 6.

²⁵³ Ely Field Office, BLM. Wilderness Management Plan and Environmental Assessment: Highland Ridge, Mount Grafton, South Egan Range, & Far South Egans Wilderness Nevada. (May, 2013): 6.

²⁵⁴ Ely Field Office, BLM. Wilderness Management Plan and Environmental Assessment: Highland Ridge, Mount Grafton, South Egan Range, & Far South Egans Wilderness Nevada. (May, 2013): 6.

²⁵⁵ Ely Field Office, BLM. Proposed Wilderness Management Plan and Environmental Assessment: Clover Mountains & Tunnel Spring Wilderness. (February, 2010): 72.

²⁵⁶ Ely Field Office, BLM. Proposed Wilderness Management Plan and Environmental Assessment: Clover Mountains & Tunnel Spring Wilderness. (February, 2010): 72.

6.2.3. Fire Management in Wilderness

The general fire management direction for the 19 wildernesses in both of these areas is very similar, with plans stressing fire suppression and prevention in areas where fire is “not a natural effect in the ecosystem.”²⁵⁷ Because most of the Clark County wilderness areas are located in non-fire adapted Mojave Desert ecosystems, and are home to the threatened desert tortoise, they possess more stringent suppression guidelines than wilderness areas located in Lincoln County. While there are differences in the suppression standards based on the context of these areas, all of the wildernesses strongly emphasize fire suppression and control.

Accompanying these goals, the planning documents also provide tactical direction as to how agencies may manage fires in these wilderness areas. There is significant emphasis on aircraft and mechanized equipment use to aggressively suppress fires. All of the Clark County wilderness planning documents state that “aerial fire suppression resources including air tankers and helicopters are preferred” to reach suppression and containment goals on fire incidents.²⁵⁸ This preference is justified by the argument that aerial resources cause less harm than ground resources to the desert tortoise and its habitat.²⁵⁹ Although helicopters and air tankers are not prioritized in the Lincoln County areas WMPs, aerial resource use is permitted to “protect wilderness character.”²⁶⁰ Aerial suppression actions include

²⁵⁷ See *e.g.* Ely Field Office, BLM. Wilderness Management Plan and Environmental Assessment: Big Rocks, Mount Irish, & South Pahroc Range Wilderness. (December, 2007): 16.

²⁵⁸ NPS & BLM. Muddy Mountains Wilderness Management Plan and Environmental Assessment: Final. (April, 2007): 23; Las Vegas Field Office, BLM. South McCullough and Wee Thump Joshua Tree Wilderness Management Plan and Environmental Assessment. (September, 2005): 21.

²⁵⁹ NPS & BLM. Muddy Mountains Wilderness Management Plan and Environmental Assessment: Final. (April, 2007): 23.

²⁶⁰ Ely Field Office, BLM. Wilderness Management Plan and Environmental Assessment: Big Rocks, Mount Irish, & South Pahroc Range Wilderness. (December, 2007): 25; Ely Field Office, BLM. Proposed Wilderness Management Plan and Environmental Assessment: Clover Mountains & Tunnel Spring Wilderness. (February, 2010): 36; Ely Field Office, BLM. Wilderness Management Plan and Environmental Assessment: Highland Ridge, Mount Grafton, South Egan Range, & Far South Egan Wilderness Nevada. (May, 2013): 37.

use of fire retardant and aerial water drops, sling loading equipment into or out of the wilderness, aerial reconnaissance, and the landing of helicopters in wilderness for personnel transport.²⁶¹

Motorized equipment use for suppression operations is also allowed in all 19 of these wildernesses. The use of motor vehicles is permitted in all areas but use is restricted to preexisting roads, unless circumstances dictate otherwise. The Big Rocks, Mount Irish, and South Pahroc WMP has a “policy of no motor vehicles...unless necessary to protect human life, property, or wilderness character.”²⁶² Bulldozers and other “earth moving equipment” are also permitted under certain circumstances in the ten BLM managed wilderness areas in both Lincoln and Clark Counties.²⁶³ Heavy equipment use may be approved by the District Manager to stop “large, escaped fires that threaten to convert the native plant community from native vegetation to a dominance of non-native vegetation,” or generally “protecting wilderness characteristics (including the desert tortoise).”²⁶⁴

The BLM-managed wilderness areas also have unique direction permitting aircraft and mechanized equipment use for pre- and post-fire management actions. It is important to note that all of these actions fall under the Wilderness Act’s 4(c) “minimum necessary requirement” for administering the area, and plans state that a Minimum Requirements Decision Guide will be used for these actions. The Arrow Canyon WMP posits “aerial (helicopter) application of herbicide fuel breaks” as a viable option for proactive fire management.²⁶⁵ All 19 of these wildernesses have herbicide programs for the eradication of invasive species, but the Arrow Canyon Wilderness direction is unique in its direction to

²⁶¹ See *e.g.* Ely Field Office, BLM. Wilderness Management Plan and Environmental Assessment: Highland Ridge, Mount Grafton, South Egan Range, & Far South Egans Wilderness Nevada. (May, 2013): 37.

²⁶² Ely Field Office, BLM. Wilderness Management Plan and Environmental Assessment: Big Rocks, Mount Irish, & South Pahroc Range Wilderness. (December, 2007): 25.

²⁶³ Including the Big Rocks, Mount Irish, South Pahroc, Clover Mountains, Tunnel Springs, Far South Egans, Arrow Canyon, North McCullough, South McCullough and Wee Thump Joshua Tree Wilderness areas.

²⁶⁴ Ely Field Office, BLM. Wilderness Management Plan and Environmental Assessment: Big Rocks, Mount Irish, & South Pahroc Range Wilderness. (December, 2007): 25; Las Vegas Field Office, BLM. South McCullough and Wee Thump Joshua Tree Wilderness Management Plan and Environmental Assessment. (September, 2005): 21.

²⁶⁵ Southern Nevada District Office, BLM. Arrow Canyon Wilderness Draft Wilderness Management Plan and Environmental Assessment. (April, 2013): 45.

use herbicides to create fuel breaks. Also, to augment native species succession, aerial seeding after wildfire events is permitted in the Clover Mountains, Tunnel Springs, Far South Egans, and Arrow Canyon Wilderness areas.²⁶⁶ These wilderness areas are all managed by the BLM.

While all of these wilderness areas promote the use of aircraft and mechanized equipment to prevent and suppress fires, all plans emphasize that management actions to stop fires will have the “minimum impact on wilderness characteristics.”²⁶⁷ This includes direction to use Minimum Impact Suppression Tactics while suppressing fires, and statements such as “fires burning in the Pinyon Woodland Zone *will not be fought aggressively* when the fire does not... threaten to cause unnatural impacts to wilderness characteristics (emphasis added).”²⁶⁸ Although minimizing impacts on wilderness values is stressed, the overall fire program emphasizes the use of aircraft and mechanized equipment on wilderness fire incidents to meet suppression goals, and reduce the spread of non-native vegetation.

6.2.4. Conclusion

The special provision “...nothing in this title precludes a Federal, State, or local agency from conducting wildfire management operations (including operations using aircraft or mechanized equipment) to manage wildfires in the wilderness areas designated by this title,” has provided administrators with significant management opportunities in these Nevada wilderness areas.²⁶⁹ In the Mojave Desert ecosystems of the Clark County wildernesses, wildfires are historically uncommon. With the influx of invasive species such as red brome, tamarisk, and cheatgrass, the historic fire regimes have been altered, resulting in unnaturally intense and frequent fire events. This change threatens the natural

²⁶⁶ Ely Field Office, BLM. Proposed Wilderness Management Plan and Environmental Assessment: Clover Mountains & Tunnel Spring Wilderness. (February, 2010): 36; Ely Field Office, BLM. Wilderness Management Plan and Environmental Assessment: Highland Ridge, Mount Grafton, South Egan Range, & Far South Egans Wilderness Nevada. (May, 2013): 38.

²⁶⁷ See e.g. Las Vegas Field Office, BLM. South McCullough and Wee Thump Joshua Tree Wilderness Management Plan and Environmental Assessment. (September, 2005): 21.

²⁶⁸ Las Vegas Field Office, BLM. South McCullough and Wee Thump Joshua Tree Wilderness Management Plan and Environmental Assessment. (September, 2005): 21.

²⁶⁹ P.L. 107-282 §209, (2002); P.L. 108-424 §210, (2004); P.L. 113-291 §3604(c)(6), (2015).

vegetational structure of these wildernesses, and in turn threatens the habitat of the listed desert tortoise.²⁷⁰ Similarly, the Lincoln County wildernesses face the same invasive species issues. Although these wilderness areas possess pinyon-juniper and sagebrush vegetation types that have evolved with the presence of fire, natural plant communities are threatened by the unnatural fire regimes due to the succession of non-native plants.²⁷¹ To preserve the natural quality of these wilderness areas, including the desert tortoise in the Clark County wildernesses, the special fire management provisions have enabled agencies to temporarily trammel the wilderness to preserve wilderness character in the long-term.

This opportunity presents several challenges as well. Although the short-term trammeling of aircraft and mechanized use promotes the long-term preservation of wilderness character, a limit to these uses is absent. The planning documents for all areas command managers to minimize impacts to wilderness character, yet there is no concrete boundary limiting the actions that occur. Direction states that “Full suppression tactics used to limit impacts and prevent spread of non-native grasses may have short-term impacts to wilderness character, but would enhance the natural characteristics of wilderness in the long-term.”²⁷² Essentially robbing Peter to pay Paul, the vicious cycle of trammeling to promote natural vegetative communities in these wildernesses seems to be an interminable management issue.

This case study also reveals differences in agency interpretations of the special provision and the contextual factors that affect the diversity of its implementation. Actions permitted in BLM-administered areas including the use of bulldozers, post-fire aerial seeding treatments, and aerial

²⁷⁰ Southern Nevada District Office, BLM. Arrow Canyon Wilderness Draft Wilderness Management Plan and Environmental Assessment. (April, 2013): 7.

²⁷¹ Ely Field Office, BLM. Wilderness Management Plan and Environmental Assessment: Highland Ridge, Mount Grafton, South Egan Range, & Far South Egans Wilderness Nevada. (May, 2013): 6.

²⁷² Ely Field Office, BLM. Proposed Wilderness Management Plan and Environmental Assessment: Clover Mountains & Tunnel Spring Wilderness. (February, 2010): 73.

application of herbicides for fuel breaks are not allowed in NPS-managed wilderness areas.²⁷³ Even in the co-managed Eldorado, Ireteba Peaks, Spirit Mountain, and Muddy Mountains Wilderness areas, the plans are more conservative in their allowances for aircraft and mechanized equipment use on fires when compared to the areas managed solely by the BLM.²⁷⁴ This theme is similar to the findings of the agency policy review, showing more restrictive policies on fire management in NPS-managed wilderness. This case study also revealed that manipulation is augmented based on the place-based challenges of fire management. There is more emphasis on suppression, aircraft, and mechanized equipment use in wilderness areas that contain desert tortoise habitat.²⁷⁵ The administering agency and context of the area's management concerns impact the implementation of the special provision.

Overall, the special fire management provision has had a significant impact on the fire management planning of these 19 wilderness areas. While the special provision is not referenced in the planning documents, the direction found within the plans emphasizes the use of motorized equipment and aircraft to perpetuate the natural quality of wilderness. The management direction validates these short-term negative impacts as the price for the long-term preservation of natural communities in these areas.²⁷⁶ The preservation of wilderness character in the context of invasive species is problematic, for it forces a reliance on prohibited uses to maintain the natural vegetational communities of the area.

²⁷³ See *e.g.*, Ely Field Office, BLM. Proposed Wilderness Management Plan and Environmental Assessment: Clover Mountains & Tunnel Spring Wilderness. (February, 2010): 36.

²⁷⁴ BLM & NPS. Jimbilnan, Pinto Valley, Black Canyon, Eldorado, Ireteba Peaks, Nellis Wash, Spirit Mountain, & Bridge Canyon Wilderness Areas: Final Wilderness Management Plan and Environmental Impact Statement. (November, 2014).

²⁷⁵ See *e.g.*, NPS & BLM. Muddy Mountains Wilderness Management Plan and Environmental Assessment: Final. (April, 2007): 23.

²⁷⁶ Ely Field Office, BLM. Proposed Wilderness Management Plan and Environmental Assessment: Clover Mountains & Tunnel Spring Wilderness. (February, 2010): 73.

6.3. Case 3: Special Provisions Related to Prescribed Burning in Northwestern Nevada Wilderness Areas

In 2000, Congress passed the Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area Act, establishing ten wilderness areas in the northwest corner of Nevada.²⁷⁷ Two years after this designation occurred, the Department of the Interior and Related Agencies Appropriations Act of 2002 amended the 2000 Act, adding a special provision for fire management.²⁷⁸ It states “Nothing in this Act or the Wilderness Act... precludes a Federal, State, or local agency from conducting wildland fire management operations (including prescribed burns) within the areas designated as wilderness... subject to any conditions that the Secretary considers appropriate.”²⁷⁹ Planning documents were obtained for all ten wilderness areas managed under this direction to analyze the implementation of this special provision.

6.3.1. Background

The ten wilderness areas that are impacted by this amendment are clustered within the Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area (NCA), in northwest Nevada. The NCA was originally established in 1984 to protect significant geological and cultural resources in the area.²⁸⁰ Designated wilderness in this area include the North Jackson Mountain, South Jackson Mountain, Black Rock Desert, Pahute Peak, North Black Rock Range, Calico Mountains, High Rock Lake, High Rock Canyon, East Fork High Rock Canyon, and Little High Rock Canyon Wilderness areas, all managed by the Winnemucca Office of the BLM.²⁸¹ The 300,000 acre Black Rock Desert Wilderness is the largest designated area in Nevada, yet little fire management occurs in the wilderness due to the

²⁷⁷ P.L. 106-554, (2000).

²⁷⁸ P.L. 107-63 §135, (2002).

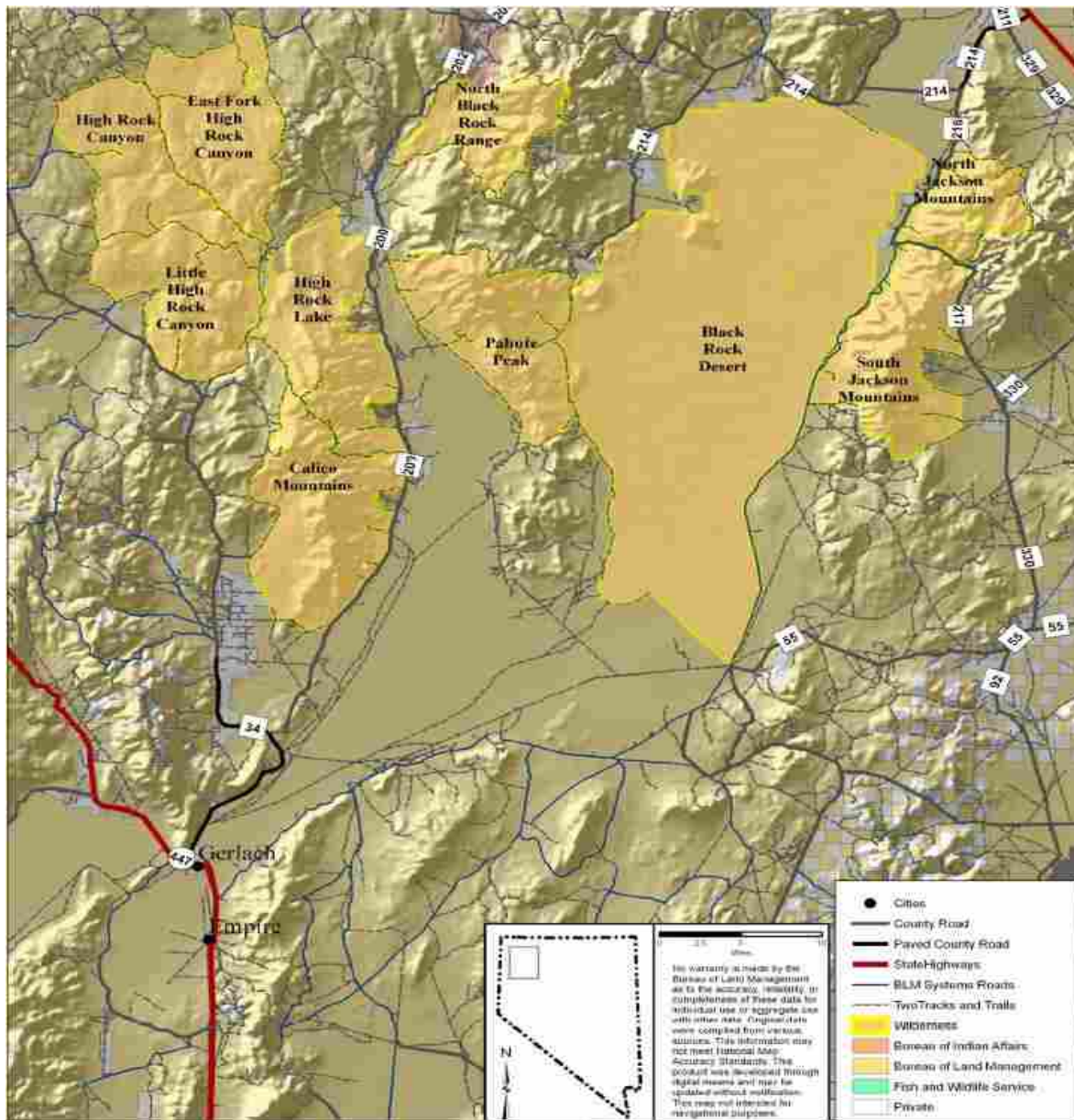
²⁷⁹ P.L. 107-63 §135(d), (2002).

²⁸⁰ BLM. Black Rock Desert High Rock Canyon Emigrant Trails National Conservation Area: High Rock Canyon Area of Critical Environmental Concern. (March, 2010).

²⁸¹ P.L. 107-63 §135(a).

expansive dry lakebed that occupies most of the area. The other wilderness areas are adjacent to and surround the Black Rock Desert Wilderness, ranging from 60,000 to 23,000 acres in size.²⁸²

Figure 7. Black Rock Desert-High Rock Canyon NCA Wilderness Areas²⁸³



²⁸² Winnemucca District Office, BLM. Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area Wilderness Management Plan. (December, 2012): 2.

²⁸³ Winnemucca District Office, BLM. Winnemucca Fire Management Plan: Winnemucca District. (June, 2016): 129.

The elevation of the area ranges from 4,000 to 9,000 feet, and includes expansive desert flats surrounded by the jagged topography of the Jackson, Calico, and Black Rock Mountain Ranges.²⁸⁴ Over 900 perennial springs are located in the wilderness areas which supply water to the regional wildlife, including a large population of wild horses and burros. There are also several historic and cultural resources in the area, including two historic homesteads.²⁸⁵ The flora of the area is characteristic of northern Great Basin vegetation and varies along altitudinal gradients. In the lower elevations, saltbrush scrub and grass communities are dominant. At higher elevations, communities of pinyon juniper and sagebrush are dominant, and stands of aspen, white bark pine, and mountain mahogany can be found. A majority of the sagebrush communities are designated as “priority habitat management areas” and are managed to protect the greater sage-grouse ecosystems through a full suppression policy for wildfire.²⁸⁶ Non-native plants including tamarisk, Russian knapweed, cheatgrass, and tall whitetop have become established in the wilderness areas, and are a growing concern for land managers.²⁸⁷

The natural vegetation types of this region are classified as high severity fire regimes. On average, the lower elevation grass and scrub communities experience fire frequencies of 0-35 years, while the higher elevation sagebrush and juniper communities experience fire every 35-100 years.²⁸⁸ There is no wildland-urban interface bordering any of these wilderness areas, and 90% of the ignitions of the area are lightning-caused. As a result of the discontinuous nature of the vegetation in the wildernesses, wildfires in these areas are small, and the wildernesses experienced only two fires over

²⁸⁴ Winnemucca District Office, BLM. Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area Wilderness Management Plan. (December, 2012): 4.

²⁸⁵ Winnemucca District Office, BLM. Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area Wilderness Management Plan. (December, 2012): 30.

²⁸⁶ Winnemucca District Office, BLM. Winnemucca Fire Management Plan: Winnemucca District. (June, 2016): 37.

²⁸⁷ Winnemucca District Office, BLM. Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area Wilderness Management Plan. (December, 2012): 6.

²⁸⁸ Winnemucca District Office, BLM. Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area Preliminary Environmental Assessment. (May, 2012): 82.

100 acres from 1992-2012.²⁸⁹ Due to the encroachment of invasive plants, as well as drought and past fire suppression practices, the vegetational composition of 89% of the area has been classified as having a “high departure from the natural (historic) Fire Regime Condition Class.”²⁹⁰ Because of the significant changes to the historic vegetational structure of these wilderness areas, planning documents emphasize restoring the natural fire regimes of these wildernesses.

6.3.2. Fire Management in Wilderness

The overall goal for fire management in these areas is to “preserve the primeval character and influence of the wilderness by allowing fire as a natural process of disturbance and succession where the ecosystem is fire dependent; manage fire where it threatens wilderness character and/or natural ecological conditions or processes; and prevent and suppress wildfire where it threatens human life or property.”²⁹¹ Because of the elevational diversity of native plants, and the variable location of non-native plant invasions, the fire management direction fluctuates based on the context of the area. Overall, the WMP promotes wildfire in wilderness where it is a natural process, and urges managers to suppress fire where non-native species threaten to convert natural vegetation.

Past fire suppression actions in this area diminished the size of natural meadows in some of these areas, and has promoted the encroachment of juniper and sagebrush communities. To restore these native meadow communities, the WMP stresses the use of prescribed burning in the East Fork High Rock Canyon, High Rock Canyon, and Little High Rock Canyon Wildernesses.²⁹² The objective of these prescribed fires is to maintain the natural variability of sagebrush cover, a limited 0-15%, while

²⁸⁹ Winnemucca District Office, BLM. Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area Preliminary Environmental Assessment. (May, 2012): 82.

²⁹⁰ Winnemucca District Office, BLM. Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area Preliminary Environmental Assessment. (May, 2012): 83.

²⁹¹ Winnemucca District Office, BLM. Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area Wilderness Management Plan. (December, 2012): 23.

²⁹² Winnemucca District Office, BLM. Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area Wilderness Management Plan. (December, 2012): 36.

increasing the native grass cover in the understory. As a result of this burning, the meadows would be restored to natural conditions resembling an environment preceding the impacts of suppression.²⁹³

Although the Plan articulates the use of prescribed burning to restore the natural and primeval characteristics of wilderness, it only permits 100 acres to be burned each year.

Other than the meadow restoration program, “prescribed fire has rarely been used” in these wilderness areas. In totality, prescribed fire for meadow restoration and fuel treatments have averaged less than 30 acres per year throughout all ten of these areas.²⁹⁴ While manager-ignited prescribed fire has been limited, the WMP permits this action to “correct and maintain natural conditions” and “reduce fuel in wilderness,” where necessary.²⁹⁵ In addition, the WMP allows manager-ignited fire to improve other primary wilderness values, promote the preservation of listed species, and protect the natural and cultural resources found throughout these areas. To use this tool, the plans state that a Minimum Requirement Decision Guide must be used.²⁹⁶ To reduce the density of brush stands and replace them with native grasslands, prescribed fire is an option for managers, but this opportunity has not been utilized.

In an interview with the Supervisory Fire Management Specialist of the area, the rationale was explained. Due to the expanding presence of cheatgrass in these areas, prescribed fire is not a practical tool to maintain natural vegetation.²⁹⁷ Prescribed burning would augment the expansion of invasive species in sagebrush and juniper communities. Although the manager explained that burning in white

²⁹³ Winnemucca District Office, BLM. Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area Wilderness Management Plan. (December, 2012): 36.

²⁹⁴ Winnemucca District Office, BLM. Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area Preliminary Environmental Assessment. (May, 2012): 84.

²⁹⁵ Winnemucca District Office, BLM. Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area Wilderness Management Plan. (December, 2012): 39.

²⁹⁶ Winnemucca District Office, BLM. Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area Wilderness Management Plan. (December, 2012): 39.

²⁹⁷ Derek Messmer, Winnemucca BLM. Interview by author, Phone. (October 27, 2017).

bark pine and aspen stands could be used to maintain natural communities, the BLM has not used fire in these areas. Instead, they give preference to natural disturbances.

In lieu of an emphasis on prescribed burning, the WMP and FMP primarily stresses fire suppression in these wilderness areas to prevent the spread of invasive species. The presence of non-native species such as cheatgrass, tamarisk, Russian knapweed, and tall whitetop have altered the natural fire regimes of the native grass and scrub communities, resulting in more frequent and intense fires. This cycle favors non-native succession, and has resulted in an expansion of invasive annual grass communities.²⁹⁸ In addition to non-native species concerns, the lower elevations contain higher densities of cultural and historic resources. In these areas, “fire managers may implement aggressive suppression actions” to mitigate the negative effects of wildland fire on wilderness and historic values.²⁹⁹

Even though planning documents for these areas stress allowing fire to play its natural role in the higher elevation areas, where fire is a natural occurring disturbance, the EIS states that “nearly all naturally caused fires within the Planning Area received active suppression.”³⁰⁰ This is due to two factors. First, much of the area is designated “priority habitat management areas” for the greater sage-grouse habitat.³⁰¹ In these areas, aggressive suppression is mandated. Second, in areas outside of the “priority habitat management areas,” invasive species concerns have increased emphasis on active fire management. This includes a direction for “less than full suppression for lightning caused fire to meet desired outcomes.” The phrase “less than full suppression” refers to minimal containment actions, such

²⁹⁸ Winnemucca District Office, BLM. Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area Wilderness Management Plan. (December, 2012): 25.

²⁹⁹ Winnemucca District Office, BLM. Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area Preliminary Environmental Assessment. (May, 2012): 15.

³⁰⁰ Winnemucca District Office, BLM. Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area Preliminary Environmental Assessment. (May, 2012): 83.

³⁰¹ Derek Messmer, Winnemucca BLM. Interview by author, Phone. (October 27, 2017).

as burning fuels between a fuel break and a wildfire, or implementing fire lines on certain sections of a fire to control where it grows.³⁰² The FMP states that “While all wildland fires will receive a suppression response, that response will not always be full suppression.”³⁰³ Even though fire is allowed to play some natural role in designated areas, suppressive management actions are emphasized.

6.3.3. Conclusion

The special provision found in the enabling legislation, explicitly authorizing the use of prescribed burning for fire management, appears to have little effect on the management of these wilderness areas. Although there is an active meadow restoration program in the East Fork High Rock Canyon, High Rock Canyon, and Little High Rock Canyon Wildernesses, prescribed fire has not been significantly utilized.³⁰⁴ In this case, there is a disconnect between the place-based challenges of fire management and the direction of the special fire provision. Fire suppression, rather than prescribed burning, is the preferred tool for fire management in these areas in attempt to disrupt the positive feedback cycle between fire and invasive species expansion.³⁰⁵

In the non-designated BLM lands in the Winnemucca District, prescribed fire has been heavily used. Over 4,000 acres outside of wilderness were treated with prescribed fire in 2016 to reduce fuel loadings and augment native grass growth where invasives are not a concern. The Supervisory Fire Management Specialist of the area was aware of the special provision, and believed that it was included in the enabling legislation because of the prominence of prescribed fire use in the BLM lands of the

³⁰² Scott L. Stephens, Brandon M. Collins, Eric Biber, & Peter Z. Fule. “U.S. Federal Fire and Forest Policy: Emphasizing Resilience in Dry Forests.” *Ecosphere* 7, Issue 11. (November, 2016).

³⁰³ Winnemucca District Office, BLM. Winnemucca Fire Management Plan: Winnemucca District. (June, 2016): 46.

³⁰⁴ Winnemucca District Office, BLM. Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area Wilderness Management Plan. (December, 2012): 36.

³⁰⁵ Winnemucca District Office, BLM. Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area Wilderness Management Plan. (December, 2012): 25.

Winnemucca District.³⁰⁶ But because prescribed fire does not help to restore or perpetuate native communities in a majority of the wilderness areas, it is not used.

This case study reveals a disconnect between the special provision for fire management and the context of the area. Historically, the District's fire management program has extensively used prescribed fire for fuels and range management on non-designated lands.³⁰⁷ This program emphasis was included in the special provision for the wilderness areas within this district, but the primary management challenge of the wilderness areas is invasive species management. Instead of accentuating the use of prescribed fire in the WMP, fire suppression is highlighted as the primary tool to maintain the natural vegetation in these wildernesses. Due to this disconnect, the special provision for fire management in this area has provided nominal opportunities for managers. Prescribed fire in these wilderness areas is the wrong tool for the job. While the special provision provides opportunities for maintaining the white bark pine and aspen stands of the area, management has expressed preference to natural processes.³⁰⁸

7. Conclusion

Since the establishment of the Wilderness Preservation System in 1964, Congress has provided additional wilderness fire management direction through 29 special provisions in wilderness enabling legislation. The additional direction has clarified the fire management actions allowed under section 4(d)(1) of the Wilderness Act. While the special provisions confirm the availability of tools and practices for fire management, they establish a paradox. The Wilderness Act of 1964 mandates that designated areas shall be managed to preserve wilderness character, including its untrammeled quality, yet section 4(d)(1) and subsequent special provisions for fire management allow manipulation in wilderness.³⁰⁹

³⁰⁶ Derek Messmer, Winnemucca BLM. Interview by author, Phone. (October 27, 2017).

³⁰⁷ Winnemucca District Office, BLM. Winnemucca Fire Management Plan: Winnemucca District. (June, 2016).

³⁰⁸ Derek Messmer, Winnemucca BLM. Interview by author, Phone. (October 27, 2017).

³⁰⁹ P.L. 88-577 §2(a), (1964).

While agency policies and regulations emphasize allowing fire to play its natural ecological role in wilderness, place-based challenges affect the obtainability of this goal. For example, fire suppression may be necessary to preserve the natural value of wilderness in places like the Mojave Desert, yet the untrammled character of these places is sacrificed when fire managers take action. Similarly, the social pressure instilled by dense adjacent community populations and obligations to protect high-value watersheds motivates agency actions that are incongruent with wilderness preservation. These pressures, coupled with the broad discretion afforded by section 4(d)(1), have resulted in the manipulation of wilderness and the compromise of wilderness values. By analyzing this paradox from legislation to local fire management planning, five main conclusions have emerged regarding the impact of law, regulation, and policy on fire management in federally designated wilderness areas.

7.1. Conclusion 1: Section 4(d)(1) is discretionary and open-ended.

Section 4(d)(1) of the Wilderness Act simply states: “In addition, such measures may be taken as may be necessary in the control of fire, insects, and diseases, subject to such conditions as the Secretary deems desirable.”³¹⁰ While it permits ‘measures’ deemed ‘necessary’ and ‘desirable’ for the ‘control’ of fire, the Act fails to define what ‘measures’ are permitted in wilderness. In contrast to the qualifying statement of section 4(c), which limits specific “prohibited uses” unless “necessary to meet *minimum requirements* for the administration of the area *for the purposes of the*” Wilderness Act, section 4(d)(1) provides no qualifier for fire management actions (emphasis added).³¹¹ This provides managers with broad discretion, and open-ended direction concerning the allowable fire management actions in wilderness.

The open-ended nature of section 4(d)(1) has resulted in heterogeneity among agency policies. Specifically, agency interpretations of allowing pre-suppression fire management actions are diverse. For

³¹⁰ P.L. 88-577 §4(d)(1), (1964).

³¹¹ P.L. 88-577 §4(c), (1964).

example, although all agencies sanction the use of prescribed fire to meet wilderness objectives, NPS and FWS policy mandate a Minimum Requirements Analysis before a decision is made to use prescribed fire.³¹² Drip torches used during prescribed fires are not a 4(c) prohibited use, yet this action is treated as such by the NPS and FWS.³¹³ Similarly, the open-ended nature of section 4(d)(1) has resulted in more manipulative FS and BLM policies, and more restrictive fire management policies for NPS and FWS administered wilderness. Because of the discretionary and open-ended character of this provision, agency interpretation is variable and tailored to the context of their agency background.

7.2. Conclusion 2: Supplemental special provisions clarify fire management actions allowed in wilderness.

Congress has provided additional direction through special fire provisions in enabling legislation that clarifies the broad authority of the original provision. Most special provisions that include additional direction are prefaced with the phrases “As provided in section 4(d)(1) of the Wilderness Act,” “Nothing in this Act or the Wilderness Act precludes,” or “Consistent with section 4 of the Wilderness Act.”³¹⁴ This makes it clear that the additional direction allowing aircraft and mechanized equipment use, prescribed burns, and other fire management actions in wilderness are all permitted under the original special provision for fire management.

While subsequent provisions clarify the allowable actions under section 4(d)(1) of the Wilderness Act, their inclusion is geographically dependent. Because of the importance of WUI and

³¹² DOI Fish and Wildlife Service. Fish and Wildlife Manual Title 610, Section 2.23(A)(1-2), Wilderness Administration and Resource Stewardship – May the Service use prescribed fire in wilderness. Washington, D.C. (2008); DOI National Park Service. National Park Service Management Policies Chapter 4, Section 4(5), Natural Resource Management – Fire Management. Washington, D.C. (2006); Winnemucca District Office, BLM. Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area Wilderness Management Plan. (December, 2012).

³¹³ P.L. 88-577 §4(c), (1964) states “...except as necessary to meet the minimum requirements for the administration of the area for the purpose of this chapter... there shall be no road, no use of motor vehicles, motorized equipment or motorboats, no landing of aircraft, no other form of mechanical transport, and no structure or installation within any such area.”

³¹⁴ See e.g. P.L. 98-425 §103(b)(2), (1984); P.L. 107-63 §135(d), (2002); P.L. 108-424 §210, (2004).

watershed protection in many California wilderness areas, Congress used special provisions to clarify that pre-suppression and suppression actions are allowed under section 4(d)(1). Likewise, because of invasive species concerns in Nevada wilderness areas, Congress used special provisions to clarify aircraft and mechanized equipment uses are allowable fire management actions in wilderness. As Congress stated in House Report 95-540, “The uses authorized by such special management language should not be construed by any agency or judicial authority as being precluded in other areas, but should be considered as a direction and reaffirmation of congressional policy.”³¹⁵ While the additional direction mirrors the place-based challenges of fire management, Congress uses special provisions to clarify the open-ended discretion afforded by section 4(d)(1) of the Wilderness Act.

7.3. Conclusion 3: Special fire provisions have become increasingly common and more descriptive.

Since their first inclusion in 1978, special provisions have become increasingly common and more descriptive. Two-thirds of wilderness areas established from 2000-2015 maintain additional direction in special fire management provisions. Since 2000, Congress has included direction clarifying allowable actions such as prescribed burning, fire operations using aircraft and mechanized equipment, and fire prevention programs.³¹⁶ Provisions since 2000 have also included direction emphasizing interagency coordination and have guaranteed funding for certain fire programs.³¹⁷ The increase in special provision use and the descriptive direction contained in these provisions clarify the allowable fire management actions permitted under the Wilderness Act, and provide reassurances to wilderness fire managers.

³¹⁵ US Congress. House. Designating Certain Endangered Public Lands for Preservation as Wilderness, Providing for the Study of Additional Endangered Public Lands for Such Designation, Furthering the Purposes of the Wilderness Act of 1964, and for Other Purposes. 95th Cong., 1st sess. H.R. 95-540, 11. (1977): 11.

³¹⁶ See eg. P.L. 107-63 §135(d), (2002); P.L. 107-282 §209, (2002); P.L. 108-424 §210, (2004); P.L. 109-362 §4(e)(1-2), (2006).

³¹⁷ See eg. P.L. 109-432 §330, (2006); P.L. 111-11 §1972(b)(3), (2009); P.L. 111-11 §1851(d)(4)(B-D), (2009); P.L. 111-11 §1803(e)(2-4), (2009); P.L. 111-11 §1502(b)(9), (2009); P.L. 113-291 §3066(c)(4-6), (2015).

7.4. Conclusion 4: Supplementary clarification encourages manipulation in wilderness.

As a result of the supplementary clarification, land managers are provided with reassurances to implement controversial fire management options. Additionally, as identified in the cases studied in this paper, there is more manipulation when special provisions correspond to the place-based challenges of fire management. In Los Padres National Forest wilderness legislation, special provisions clarify that pre-suppression and suppression actions are permitted in wilderness for watershed and community protection.³¹⁸ This has allowed the FS to maintain a full suppression policy for wilderness areas and propose the Strategic Community Fuelbreak Improvement Project.³¹⁹ In southern Nevada, special provisions clarify that the use of aircraft and mechanized equipment is allowed.³²⁰ In an attempt to disrupt the positive feedback cycle between fire and spread of invasive species, agencies emphasize the use of aircraft and mechanized equipment to aggressively suppress fires in this region.³²¹ While special provisions for northwest Nevada clarify that prescribed burning is an allowable action in wilderness, there is a disconnect between the legislation and the place-based challenges for fire management.³²² Because prescribed fire is not useful to maintaining natural vegetative communities in this region, this option is not implemented.³²³

The cases also revealed different magnitudes of manipulation based on the administering agency. As the policy review revealed, the dominant use statutes of the FWS and NPS shape more restrictive policies regarding fire management actions in wilderness. This distinction was illustrated in

³¹⁸ P.L. 95-237 §2(c-d), (1978); P.L. 102-301 §3(b), (1992); P.L. 107-370 §4(a-b), (2002).

³¹⁹ USDA Forest Service. Land Management Plan: Part 2 Los Padres National Forest Strategy. (September, 2005); Monterey District, Los Padres National Forest. Minimum Requirements Decision Guide Workbook: Proposed — Strategic Community Fuelbreak Improvement Project (May 2016).

³²⁰ P.L. 107-282 §209, (2002); P.L. 108-424 §210, (2004).

³²¹ See *e.g.* BLM & NPS. Jimbilnan, Pinto Valley, Black Canyon, Eldorado, Ireteba Peaks, Nellis Wash, Spirit Mountain, & Bridge Canyon Wilderness Areas: Final Wilderness Management Plan and Environmental Impact Statement. (November, 2014).

³²² P.L. 107-63 §135(d), (2002).

³²³ Winnemucca District Office, BLM. Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area Wilderness Management Plan. (December, 2012).

the aircraft and mechanized equipment case. While both BLM and NPS manage wilderness under the same special provisions (clarifying the use of aircraft and mechanized equipment during fire management operations), the BLM planning documents permitted more manipulation. This included allowances for bulldozer use, aerial herbicide applications to establish fuel breaks, and post-fire aerial seeding; actions not explicitly allowed in the NPS managed areas.³²⁴ While the supplementary direction reassures the availability of manipulative fire management actions, the administering agency's background effects the implementation of the direction.

7.5. Conclusion 5: Fire management focuses on short-term compromise for long-term preservation of wilderness character.

The case studies revealed a common theme of short-term compromises for long-term preservation of wilderness values. On the Los Padres National Forest, the Strategic Community Fuelbreak Improvement Project proposal argues that the breaks will reduce reliance on bulldozers during fire suppression operations.³²⁵ By trammeling the wilderness through the establishment and maintenance of fuel breaks, the longer-lasting and more destructive consequences of bulldozer use on the untrammeled value of wilderness will presumably be reduced over time. Similarly, the wilderness areas of Lincoln and Clark County Nevada exchange short-term trammeling for long-term preservation of the natural value of wilderness. To reduce the spread of invasive species, perpetuated through a positive feedback cycle with fire, there is a significant reliance on aircraft and mechanized equipment use to suppress fires and disrupt the cycle.³²⁶ Although fire retardant dropped from aircraft temporarily

³²⁴ See e.g. BLM & NPS. Jimbilnan, Pinto Valley, Black Canyon, Eldorado, Ireteba Peaks, Nellis Wash, Spirit Mountain, & Bridge Canyon Wilderness Areas: Final Wilderness Management Plan and Environmental Impact Statement. (November, 2014).

³²⁵ Monterey District, Los Padres National Forest. Minimum Requirements Decision Guide Workbook: Proposed — Strategic Community Fuelbreak Improvement Project (May 2016).

³²⁶ Ely Field Office, BLM. Proposed Wilderness Management Plan and Environmental Assessment: Clover Mountains & Tunnel Spring Wilderness. (February, 2010): 73.

trammels the wilderness, the action limits the long-term and large-scale impacts of invasive species succession on the natural qualities of wilderness.

The short-term impact for long-term wilderness preservation theme has been promoted by Congress as well. In House Report 98-40, Congress states, “Controlled burning, for example, initiates a process of nature in a prescribed or planned manner and may have the advantage of *producing fewer long-term adverse impacts* (and possibly beneficial impacts) on wilderness values than would the construction of roads or similar intrusions (emphasis added).”³²⁷ Fire management actions are not concurrent with the untrammled quality of wilderness, yet actions are often necessary for the perpetual preservation of wilderness character. To balance the necessity of fire management in places “...that are so managed as to be left unmanaged,” fire management focuses on short-term impacts to promote long-term preservation.³²⁸

7.6. Concluding Remarks

Fire management actions are not compatible with the overarching mandate of the Wilderness Act. However, to preserve the natural quality of wilderness and protect adjacent communities, active fire management is often necessary. To provide agencies with a way to confront the issue of fire management, section 4(d)(1) was included in the Act, offering open-ended discretion to wilderness fire managers. Subsequent enabling legislation clarifies the allowable actions under section 4(d)(1), and underscores the place-based challenges of managing fire in specific areas. Special provision use has increased since 2000, and the direction has become more specific. Through the supplemental clarification, agencies are provided with reassurances to implement controversial fire management actions. The magnitude of manipulation is a function of the administering agency and the place-based challenges of fire management in wilderness areas. To counterbalance the negative effects of fire

³²⁷ US Congress. House. 1983. Entitled the “California Wilderness Act of 1983.” 98th Cong., 1st sess. H.R. 98-40, 41.

³²⁸ Howard Zahniser, “The Need for Wilderness Areas,” *The Living Wilderness* Winter-Spring, no. 57 (1956): 58.

management on wilderness values, agency policy and planning documents emphasize short-term impacts for long-term preservation of wilderness qualities. While it remains a challenge to balance the preservation of wilderness character with fire management, special provisions for fire management clarify the opportunities to manage fire under the discretion of section 4(d)(1).

Looking forward, there is a need for research that analyzes the actions wilderness fire managers are taking. While this paper summarizes the effects of law, regulations, and policies on the *planned* fire management actions in wilderness, future research should explore the management actions that have been carried out. Additionally, this paper provides a foundation for future studies to critically examine fire management actions in wilderness. Related questions include, what has research shown us regarding the effectiveness of fuel breaks, retardant use, and invasive species management, and how does this science translate to the preservation of wilderness character? Are there actions that provide proven benefits, and if so, how can we shape laws and policies to improve the management of fire in wilderness areas? In the perpetual setting of “increasing population, accompanied by expanding settlement and growing mechanization,” it is imperative that we continually learn and improve the management of fire in designated areas to preserve their wilderness qualities for future generations.³²⁹

³²⁹ P.L. 88-577 §2(a), (1964).

Appendix A

Special Provisions for Fire Management in Wilderness Legislation

Appendix A		Special Provisions for Fire Management in Wilderness Legislation		
Act	Section	State	Wilderness Areas	Direction
			*Secondary Direction **Tertiary Direction ***Quaternary Direction	<ul style="list-style-type: none"> • Pre-Suppression, Suppression, and Watershed Protection • Prescribed Burning • Aircraft and Mechanized Equipment • Coordination • Adjacent Lands • 4(d)(1) Language
The Wilderness Act of 1964	P.L. 88-577 Sec. 4(d)(1)	AZ CA CO ID MN MT NV NH NM NC OR WA WY	-Anaconda Pintler Wilderness -Ansel Adams Wilderness -Bob Marshall Wilderness -Boundary Waters Canoe Area Wilderness -Bridger Wilderness -Cabinet Mountains Wilderness -Caribou Wilderness -Chiricahua Wilderness -Cucamonga Wilderness -Diamond Peak wilderness -Domeland Wilderness -Eagle Cap Wilderness -Galiuro Wilderness -Gates of the Mountains Wilderness -Gila Wilderness -Glacier Peak Wilderness -Goat Rocks Wilderness -Great Gulf Wilderness -Hoover Wilderness -Jarbridge Wilderness -John Muir Wilderness -Kalmiopsis Wilderness -La Garita Wilderness -Linville Gorge Wilderness -Marble Mountain Wilderness -Maroon Bells-Snowmass Wilderness -Mazatazal Wilderness -Mokelumne Wilderness	(d) The following special provisions are hereby made: (1) Within wilderness areas designated by this Act the use of aircraft or motorboats, where these uses have already become established, may be permitted to continue subject to such restrictions as the Secretary of Agriculture deems desirable. In addition, such measures may be taken as may be necessary in the control of fire, insects, and diseases, subject to such conditions as the Secretary deems desirable.

<p>The Wilderness Act of 1964 (Cont.)</p>		<ul style="list-style-type: none"> -Mount Adams Wilderness -Mount Hood Wilderness -Mount Washington Wilderness -Mount Zirkel Wilderness -Mountain Lakes Wilderness -North Absaroka Wilderness -Pecos Wilderness -Rawah Wilderness -San Gorgonio Wilderness -San Jacinto Wilderness -San Pedro Parks Wilderness -Selway-Bitterroot Wilderness -Shining Rock Wilderness -Sierra Ancha Wilderness -South Warner Wilderness -Strawberry Mountain Wilderness -Superstition Wilderness -Teton Wilderness -Thousand Lakes Wilderness -Three Sisters Wilderness -Washakie Wilderness -West Elk Wilderness -Wheeler Peak Wilderness -White Mountain Wilderness -Yolla Bolly-Middle Eel Wilderness 	
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Endangered American Wilderness Act of 1978	P.L. 95-237 Sec. 2(d)	CA	-Ventana Wilderness	<p>(d) certain lands in the Los Padres National Forest, California, which comprise about sixty-one thousand acres, are generally depicted on a map entitled “Ventana Wilderness Additions—Proposed”, and which are hereby incorporated in, and shall be deemed to be a part of, the Ventana Wilderness as designated by Public Law 91-58. In order to guarantee the continued viability of the Ventana watershed and to insure the continued health and safety of the communities serviced by such watershed, the management plan for the Ventana area to be prepared following designation as wilderness shall authorize the Forest Service to take whatever appropriate actions are necessary for fire prevention and watershed protection including, but not limited to, acceptable fire presuppression and fire suppression measures and techniques. Any special provisions contained in the management plan for the Ventana Wilderness area shall be incorporated in the planning for the Los Padres National Forest.</p>
Endangered American Wilderness Act of 1978	P.L. 95-237 Sec. 2(c)	CA	-Santa Lucia Wilderness	<p>(c) Certain lands in and adjacent to the Los Padres National Forest, California, which comprise about twenty-one thousand two hundred and fifty acres, are generally depicted on a map entitled “Santa Lucia Wilderness Area—Proposed”, shall be known as the Santa Lucia Wilderness: Provided, That the tract identified on said map as “Wilderness Reserve” is designated as wilderness, subject only to the removal of the existing and temporary nonconforming improvement, at which time the Secretary of Agriculture (hereinafter referred to as the “Secretary”) is directed to publish notice thereof in the Federal Register. Pending such notice, and subject only to the maintenance of the existing nonconforming improvement, said tract shall be managed as wilderness in accordance with section 5 of this Act. In order to guarantee the continued viability of the Santa Lucia watershed and to insure the continued health and safety of the communities serviced by such watershed, the management plan for the Santa Lucia area to be prepared following designation as wilderness shall authorize the Forest Service to take whatever appropriate actions are necessary for fire prevention and watershed protection including, but not limited to, acceptable fire presuppression and fire suppression measures and techniques. Any special provisions contained in the management plan for the Santa Lucia Wilderness area shall be incorporated in the planning for the Los Padres National Forest: Provided, That the Forest Service is authorized to continue fire presuppression, fire suppression measures and techniques, and watershed maintenance pending completion of the management plan for the Santa Lucia area.</p>

Colorado Wilderness Act of 1980	P.L. 96-560 Sec. 109(a-b)	CO	<ul style="list-style-type: none"> -Cache La Poudre Wilderness -Collegiate Peaks Wilderness -Comanche Peak Wilderness -Holy Cross Wilderness -La Garita Wilderness* -Lizard Head Wilderness -Lost Creek Wilderness -Maroon Bells-Snowmass Wilderness* -Mount Evans Wilderness -Mount Massive Wilderness -Mount Sneffels Wilderness -Mount Zirkel Wilderness* -Neota Wilderness -Never Summer Wilderness -Raggeds Wilderness -Rawah Wilderness* -South San Juan Wilderness -Uncompahgre Wilderness -Weminuche Wilderness -West Elk Wilderness* 	<p>The Secretary of Agriculture is directed to review all policies, practices, and regulations of the Department of Agriculture regarding disease or insect outbreaks, forest fires, and the use of modern suppression methods and equipment in National Forest System components of the National Wilderness Preservation System in the State of Colorado, to insure that— (a) such policies, practices, and regulations fully conform with and implement the intent of Congress regarding forest fire, disease and insect control, as such intent is expressed in the Wilderness Act and this Act; and (b) policies, practices, and regulations are developed that will allow timely, and efficient fire, insect, and disease control, to provide, to the extent reasonably practicable, adequate protection of adjacent Federal, State, and private nonwilderness lands from forest fires and disease or insect infestations.</p>
California Wilderness Act of 1984	P.L. 98-425 Sec. 103(b)(2)	CA OR	<ul style="list-style-type: none"> -Ansel Adams Wilderness* -Bucks Lake Wilderness -Caribou Wilderness* -Carson-Iceberg Wilderness -Castle Crags Wilderness -Chanelulla Wilderness -Cucamonga Wilderness* -Dick Smith Wilderness -Dinkey Lakes Wilderness -Domeland Wilderness* -Emigrant Wilderness -Granite Chief Wilderness -Hauser Wilderness -Ishi Wilderness -Jennie Lakes Wilderness -John Muir Wilderness* 	<p>(2) as provided in subsection 4(d)(1) of the Wilderness Act, the Secretary concerned may take such measures as are necessary in the control of fire, insects, and diseases, subject to such conditions as he deems desirable.</p> <p>(House Report 98-40 accompanies this legislation)</p>

California Wilderness Act of 1984 (Cont.)			<ul style="list-style-type: none"> -Machesna Mountain Wilderness -Marble Mountain Wilderness* -Mokelumne Wilderness* -Red Buttes Wilderness -Russian Wilderness -San Geronio Wilderness* -San Jacinto Wilderness* -San Mateo Canyon Wilderness -San Rafael Wilderness -Santa Rosa Wilderness -Sheep Mountain Wilderness -Siskiyou Wilderness -Snow Mountain Wilderness -South Sierra Wilderness -South Warner Wilderness* -Trinity Alps Wilderness -Ventana Wilderness* -Yolla Bolly-Middle Eel Wilderness* 	
Michigan Wilderness Act of 1987	P.L. 100-184 Sec. 10	MI	<ul style="list-style-type: none"> -Big Island Lake Wilderness -Delirium Wilderness -Horseshoe Bay Wilderness -Mackinac Wilderness -McCormick Wilderness -Nordhouse Dunes Wilderness -Rock River Canyon Wilderness -Round Island Wilderness -Sturgeon River Gorge Wilderness -Sylvania Wilderness 	As provided in section 4(d)(1) of the Wilderness Act, the Secretary may take such measures as may be necessary to control fire, insects, and diseases within any area designated by this Act.

Winding Stair Mountain National Recreation and Wilderness Area Act of 1988	P.L. 100-499 Sec. 16	AR OK	-Black Fork Mountain Wilderness -Upper Kiamichi River Wilderness	Nothing in this Act shall preclude the Secretary of Agriculture from carrying out such measures in the recreation area, the national scenic and wildlife area, the national scenic area, or in the botanical areas established by this Act as the Secretary, in his discretion, deems necessary in the event of fire, or infestation of insects or disease or for public health and safety. As provided in section 4(d)(1) of the Wilderness Act, the Secretary may take such measures as may be necessary to control fire, insects, and diseases within the wilderness areas designated by this Act.
Maine Wilderness Act of 1990	P.L. 101-401 Sec. 7	ME	-Caribou-Speckled Mountain Wilderness	As provided in section 4(d)(1) of the Wilderness Act, such measures may be taken within wilderness areas designated by this Act as may be necessary in the control of fire, insects, and diseases, subject to applicable laws and such additional reasonable conditions as the Secretary deems desirable.
Illinois Wilderness Act of 1990	P.L. 101-633 Sec. 8	IL	-Bald Knob Wilderness -Bay Creek Wilderness -Burden Falls Wilderness -Clear Springs Wilderness -Garden of the Gods Wilderness -Lusk Creek Wilderness -Panther Den Wilderness	As provided in section 4(d)(1) of the Wilderness Act, the Secretary may take such measures as may be necessary to control fire, insects, and diseases within any area designated by this Act.
Los Padres Condor Range and River Protection Act of 1992	P.L. 102-301 Sec. 3(b)	CA	-Chumash Wilderness -Garcia Wilderness -Matilija Wilderness -San Rafael Wilderness* -Sespe Wilderness -Silver Peak Wilderness -Ventana Wilderness**	(b) FIRE PREVENTION AND WATERSHED PROTECTION. —In order to guarantee the continued viability of the watersheds of the wilderness areas designated by this Act and to ensure the continued health and safety of the communities serviced by such watersheds, the Secretary of Agriculture may take such measures as are necessary for fire prevention and watershed protection including, but not limited to, acceptable fire presuppression and fire suppression measures and techniques.
Otay Mountain Wilderness Act of 1999	P.L. 106-145 Sec. 6(b)	CA	-Otay Mountain Wilderness	(b) BORDER ENFORCEMENT, DRUG INTERDICTION, AND WILDLAND FIRE PROTECTION. —Because of the proximity of the Wilderness Area to the United States-Mexico international border, drug interdiction, border operations, and wildland fire management operations are common management actions throughout the area encompassing the Wilderness Area. This Act recognizes the need to continue such management actions so long as such management actions are conducted in accordance with the Wilderness Act (16 U.S.C. 1131 et seq.) and are subject to such conditions as the Secretary considers appropriate.

Department of the Interior and Related Agencies Appropriations Act of 2002	P.L. 107-63 Sec. 135(d)	NV	<ul style="list-style-type: none"> -Black Rock Desert Wilderness -Calico Mountains Wilderness -East Fork High Rock Canyon Wilderness -High Rock Canyon Wilderness -High Rock Lake Wilderness -Little High Rock Canyon Wilderness -North Black Rock Range Wilderness -North Jackson Mountains -Pahute Peak Wilderness -South Jackson Mountains Wilderness 	<p>(d) WILDLAND FIRE PROTECTION.—Section 8 of the Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area Act of 2000 (16 U.S.C. 460ppp–6) (as amended by subsection (c)) is amended by adding at the end the following:</p> <p>“(f) WILDLAND FIRE PROTECTION.—Nothing in this Act or the Wilderness Act (16 U.S.C. 1131 et seq.) precludes a Federal, State, or local agency from conducting wildland fire management operations (including prescribed burns) within the areas designated as wilderness under subsection (a), subject to any conditions that the Secretary considers appropriate.”</p>
Clark County Conservation of Public Land and Natural Resources Act of 2002	P.L. 107-282 Sec. 209	NV	<ul style="list-style-type: none"> -Arrow Canyon Wilderness -Black Canyon Wilderness -Bridge Canyon Wilderness -Eldorado Wilderness -Ireteba Peaks Wilderness -Jimbilnan Wilderness -Jumbo Springs Wilderness -La Madre Mountain Wilderness -Lime Canyon Wilderness -Mt. Charleston Wilderness -Muddy Mountains Wilderness -Nellis Wash Wilderness -North McCullough Wilderness -Pinto Valley Wilderness -Rainbow Mountain Wilderness -South McCullough Wilderness -Spirit Mountain Wilderness -Wee Thump Joshua Tree Wilderness 	<p>Consistent with section 4 of the Wilderness Act (16 U.S.C. 1133), nothing in this title precludes a Federal, State, or local agency from conducting wildfire management operations (including operations using aircraft or mechanized equipment) to manage wildfires in the wilderness areas designated by this title.</p>

Big Sur Wilderness and Conservation Act of 2002	P.L. 107-370 Sec 4(a-b)	CA	-Silver Peak Wilderness* -Ventana Wilderness***	(a) REVISION OF MANAGEMENT PLANS.—The Secretary of Agriculture shall, by not later than 1 year after the date of the enactment of this Act, amend the management plans that apply to each of the Ventana Wilderness and the Silver Peak Wilderness, respectively, to authorize the Forest Supervisor of the Los Padres National Forest to take whatever appropriate actions in such wilderness areas are necessary for fire prevention and watershed protection consistent with wilderness values, including best management practices for fire presuppression and fire suppression measures and techniques . (b) INCORPORATION INTO FOREST PLANNING. —Any special provisions contained in the management plan for the Ventana Wilderness and Silver Peak Wilderness pursuant to subsection (a) shall be incorporated into the management plan for the Los Padres National Forest.
Lincoln County Conservation, Recreation, and Development Act of 2004	P.L. 108-424 Sec. 210	NV	-Big Rocks Wilderness -Clover Mountains Wilderness -Delmar Mountains Wilderness -Far South Egans Wilderness -Fortification Range Wilderness -Meadow Valley Range Wilderness -Mormon Mountains Wilderness -Mt. Irish Wilderness -Parsnip Peak Wilderness -South Pahroc Range Wilderness -Tunnel Spring Wilderness -Weepah Spring Wilderness -White Rock Range Wilderness -Worthington Mountains Wilderness	Consistent with section 4 of the Wilderness Act (16 U.S.C. 1133), nothing in this title precludes a Federal, State, or local agency from conducting wildfire management operations (including operations using aircraft or mechanized equipment) to manage wildfires in the wilderness areas designated by this title.

<p>Northern California Coastal Wild Heritage Wilderness Act of 2006</p>	<p>P.L. 109-362 Sec. 4(e)(1-2)</p>	<p>CA</p>	<ul style="list-style-type: none"> -Cache Creek Wilderness -Cedar Roughts Wilderness -Elkhorn Ridge Wilderness -King Range Wilderness -Mount Lassic Wilderness -Rocks and Islands Wilderness -Sanhedrin Wilderness -Siskiyou Wilderness* -Snow Mountain Wilderness* -South Fork Eel River Wilderness -Trinity Alps Wilderness* -Yolla Bolly-Middle Eel Wilderness** -Yuki Wilderness 	<p>(e) FIRE, INSECT, AND DISEASE MANAGEMENT ACTIVITIES. — (1) IN GENERAL. —The Secretary may take such measures in the wilderness areas designated by this Act as are necessary for the control and prevention of fire, insects, and diseases, in accordance with— (A) section 4(d)(1) of the Wilderness Act (16 U.S.C. 1133(d)(1)); and (B) House Report No. 98–40 of the 98th Congress. (2) REVIEW. —Not later than 1 year after the date of enactment of this Act, the Secretary shall review existing policies applicable to the wilderness areas designated by this Act to ensure that authorized approval procedures for any fire management measures allow a timely and efficient response to fire emergencies in the wilderness areas.</p>
<p>Tax Relief and Health Care Act of 2006</p>	<p>P.L. 109-432 Sec. 330</p>	<p>NV</p>	<ul style="list-style-type: none"> -Bald Mountain Wilderness -Becky Peak Wilderness -Bristlecone Wilderness -Currant Mountain Wilderness -Goshute Canyon Wilderness -Government Peak Wilderness -High Schells Wilderness -Highland Ridge Wilderness -Mount Grafton Wilderness -Mt. Moriah Wilderness -Red Mountain Wilderness -Shellback Wilderness -South Egan Range Wilderness -White Pine Range Wilderness 	<p>Consistent with section 4(d)(1) of the Wilderness Act (16 U.S.C. 1133(d)(1)), the Secretary may take such measures as may be necessary in the control of fire, insects, and diseases, including coordination with a State or local agency, as the Secretary deems appropriate.</p>

Omnibus Public Land Management Act of 2009	P.L. 111-11 Sec. 1202(h)	OR	<ul style="list-style-type: none"> -Badger Creek Wilderness -Bull of the Woods Wilderness -Clackamas Wilderness -Lower White River Wilderness -Mark O. Hatfield Wilderness -Mount Hood Wilderness* -Roaring River Wilderness -Salmon-Huckleberry Wilderness 	(h) FIRE, INSECTS, AND DISEASES. —As provided in section 4(d)(1) of the Wilderness Act (16 U.S.C. 1133(d)(1)), within the wilderness areas designated by this section, the Secretary that has jurisdiction over the land within the wilderness (referred to in this subsection as the “Secretary”) may take such measures as are necessary to control fire, insects, and diseases, subject to such terms and conditions as the Secretary determines to be desirable and appropriate.
Omnibus Public Land Management Act of 2009	P.L. 111-11 Subtitle E- Sec. 1405(c)(2)	OR	-Soda Mountain Wilderness	(c) ADMINISTRATION (2) FIRE, INSECT, AND DISEASE MANAGEMENT ACTIVITIES. — Except as provided by Presidential Proclamation Number 7318 , dated June 9, 2000 (65 Fed. Reg. 37247), within the wilderness areas designated by this subtitle, the Secretary may take such measures in accordance with section 4(d)(1) of the Wilderness Act (16 U.S.C. 1133(d)(1)) as are necessary to control fire, insects, and diseases, subject to such terms and conditions as the Secretary determines to be desirable and appropriate.
Omnibus Public Land Management Act of 2009	P.L. 111-11 Sec. 1502(b)(9)	ID	<ul style="list-style-type: none"> -Big Jacks Creek Wilderness -Bruneau-Jarbidge Rivers Wilderness -Little Jacks Creek Wilderness -North Fork Owyhee Wilderness -Owyhee River Wilderness -Pole Creek Wilderness 	(9) WILDFIRE, INSECT, AND DISEASE MANAGEMENT. —Consistent with section 4(d)(1) of the Wilderness Act (16 U.S.C. 1133(d)(1)), the Secretary may take any measures that the Secretary determines to be necessary to control fire, insects, and diseases, including, as the Secretary determines appropriate, the coordination of those activities with a State or local agency.

<p>Omnibus Public Land Management Act of 2009</p>	<p>P.L. 111-11 Sec. 1803(e)(1-4)</p>	<p>CA</p>	<ul style="list-style-type: none"> -Ansel Adams Wilderness** -Hoover Wilderness* -John Muir Wilderness** -Magic Mountain Wilderness -Owens River Headwaters Wilderness -Pleasant View Ridge Wilderness -White Mountains Wilderness 	<p>(e) FIRE MANAGEMENT AND RELATED ACTIVITIES. — (1) IN GENERAL. —The Secretary may take such measures in a wilderness area or wilderness addition designated by this subtitle as are necessary for the control of fire, insects, and diseases in accordance with section 4(d)(1) of the Wilderness Act (16 U.S.C. 1133(d)(1)) and House Report 98–40 of the 98th Congress. (2) FUNDING PRIORITIES. —Nothing in this subtitle limits funding for fire and fuels management in the wilderness areas and wilderness additions designated by this subtitle. (3) REVISION AND DEVELOPMENT OF LOCAL FIRE MANAGEMENT PLANS. —As soon as practicable after the date of enactment of this Act, the Secretary shall amend the local fire management plans that apply to the land designated as a wilderness area or wilderness addition by this subtitle. (4) ADMINISTRATION.—Consistent with paragraph (1) and other applicable Federal law, to ensure a timely and efficient response to fire emergencies in the wilderness areas and wilderness additions designated by this subtitle, the Secretary shall— (A) not later than 1 year after the date of enactment of this Act, establish agency approval procedures (including appropriate delegations of authority to the Forest Supervisor, District Manager, or other agency officials) for responding to fire emergencies; and (B) enter into agreements with appropriate State or local firefighting agencies.</p>
<p>Omnibus Public Land Management Act of 2009</p>	<p>P.L. 111-11 Sec. 1851(d)(4)(A)</p>	<p>CA</p>	<ul style="list-style-type: none"> -Agua Tibia Wilderness -Beauty Mountain Wilderness -Cahuilla Mountain Wilderness -Chuckwalla Mountains Wilderness -Joshua Tree Wilderness -Orocopia Mountains Wilderness -Palen/McCoy Wilderness -Pinto Mountains Wilderness -Santa Rosa Wilderness* -South Fork San Jacinto Wilderness 	<p>(4) FIRE MANAGEMENT AND RELATED ACTIVITIES. — (A) IN GENERAL. —The Secretary may take such measures in a wilderness area or wilderness addition designated by this section as are necessary for the control of fire, insects, and diseases in accordance with section 4(d)(1) of the Wilderness Act (16 U.S.C. 1133(d)(1)) and House Report 98–40 of the 98th Congress. (B) FUNDING PRIORITIES. —Nothing in this section limits funding for fire and fuels management in the wilderness areas and wilderness additions designated by this section. (C) REVISION AND DEVELOPMENT OF LOCAL FIRE MANAGEMENT PLANS. —As soon as practicable after the date of enactment of this Act, the Secretary shall amend the local fire management plans that apply to the land designated as a wilderness area or wilderness addition by this section. (D) ADMINISTRATION.—Consistent with subparagraph (A) and other applicable Federal law, to ensure a timely and efficient response to fire emergencies in the wilderness areas and wilderness additions designated by this section, the Secretary shall— (i) not later than 1 year after the date of enactment of this Act, establish agency approval procedures (including appropriate delegations of authority to the Forest Supervisor, District Manager, or other agency officials) for responding to fire emergencies; and (ii) enter into agreements with appropriate State or local firefighting agencies.</p>

Omnibus Public Land Management Act of 2009	P.L. 111-11 Sec. 1952(g)(1-2)	CO	-Rocky Mountain National Park Wilderness	(g) FIRE, INSECT, AND DISEASE CONTROL. —The Secretary may take such measures in the Wilderness as are necessary to control fire, insects, and diseases, as are provided for in accordance with— (1) the laws applicable to the Park ; and (2) the Wilderness Act (16 U.S.C. 1131 et seq.).
Omnibus Public Land Management Act of 2009	P.L. 111-11 Sec. 1972(b)(3)	UT	-Beartrap Canyon Wilderness -Blackridge Wilderness -Canaan Mountain Wilderness -Cottonwood Canyon Wilderness -Cottonwood Forest Wilderness -Cougar Canyon Wilderness -Deep Creek North Wilderness -Deep Creek Wilderness -Doc’s Pass Wilderness -Goose Creek Wilderness -La Verkin Creek Wilderness -Red Butte Wilderness -Red Mountain Wilderness* -Slaughter Creek Wilderness -Taylor Creek Wilderness	(3) WILDFIRE, INSECT, AND DISEASE MANAGEMENT. —In accordance with section 4(d)(1) of the Wilderness Act (16 U.S.C. 1133(d)(1)), the Secretary may take such measures in each area designated as wilderness by subsection (a)(1) as the Secretary determines to be necessary for the control of fire, insects, and diseases (including, as the Secretary determines to be appropriate, the coordination of those activities with a State or local agency).
Omnibus Public Land Management Act of 2009	P.L. 111-11 Sec. 2405(e)	CO	-Dominguez Canyon Wilderness	(e) FIRE, INSECTS, AND DISEASES. —Subject to such terms and conditions as the Secretary determines to be desirable and appropriate, the Secretary may undertake such measures as are necessary to control fire, insects, and diseases— (1) in the Wilderness, in accordance with section 4(d)(1) of the Wilderness Act (16 U.S.C. 1133(d)(1)); and (2) except as provided in paragraph (1), in the Conservation Area in accordance with this subtitle and any other applicable laws.
National Defense Authorizations Act for Fiscal Year 2015	P.L. 113-291 Sec. 3062(c)(3)	CO	-Hermosa Creek Wilderness	(3) Fire, insects, and diseases.--In accordance with section 4(d)(1) of the Wilderness Act (16 U.S.C. 1133(d)(1)), within the wilderness areas designated by section 2(a)(22) of the Colorado Wilderness Act of 1993 (16 U.S.C. 1132 note; 107 Stat. 756; 114 Stat. 1955; 116 Stat. 1055) (as added by paragraph (1)), the Secretary may carry out any measure that the Secretary determines to be necessary to control fire, insects, and diseases, subject to such terms and conditions as the Secretary determines to be appropriate.

National Defense Authorizations Act for Fiscal Year 2015	P.L. 113-291 Sec. 3064(c)(5-6)	NV	-Pine Forest Range Wilderness	(5) Wildfire, insect, and disease management. – In accordance with section 4(d)(1) of the Wilderness Act (16 U.S.C. 1133(d)(1)), the Secretary may take such measures in the Wilderness as are necessary for the control of fire, insects, and diseases (including, as the Secretary determines to be appropriate, the coordination of the activities with a State or local agency). (6) Wildfire management operations. – Nothing in this section precludes a Federal, State, or local agency from conducting wildfire management operations (including operations using aircraft or mechanized equipment).
National Defense Authorization Act for Fiscal Year 2015	P.L. 113-291 Sec. 3065(c)(4)	MT	-Bob Marshall Wilderness* -Scapegoat Wilderness	(4) Wildfire, insect, and disease management. – In accordance with section 4(d)(1) of the Wilderness Act (16 U.S.C. 1133(d)(1)), within the wilderness additions designated by this subsection, the Secretary may take any measures that the Secretary determines to be necessary to control fire, insects, and diseases, including, as the Secretary determines appropriate, the coordination of those activities with a State or local agency .
National Defense Authorization Act for Fiscal Year 2015	P.L. 113-291 Sec. 3066(c)(6)	NV	-Wovoka Wilderness	(6) Wildfire, insect, and disease management. – In accordance with section 4(d)(1) of the Wilderness Act (16 U.S.C. 1133(d)(1)), the Secretary may take any measures in the Wilderness that the Secretary determines to be necessary for the control of fire, insects, and diseases, including, as the Secretary determines to be appropriate, the coordination of the activities with a State or local agency .
Sawtooth National Recreation Area and Jerry Peak Wilderness Additions Act of 2015	P.L. 114-46 Sec. 102(d)	ID	-Hemingway-Boulders Wilderness -Jim McClure-Jerry Peak Wilderness -White Clouds Wilderness	(d) FIRE, INSECTS, AND DISEASE. —Within the wilderness areas, the Secretary may take such measures as the Secretary determines to be necessary for the control of fire, insects, and disease in accordance with section 4(d)(1) of the Wilderness Act (16 U.S.C. 1131(d)(1)).

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