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REIMAGINING EXCEPTIONAL EVENTS: REGULATING WILDFIRES THROUGH THE CLEAN AIR ACT

Emily Williams*

Abstract: Wildfires are increasing in both frequency and severity due to climate change. Smoke from these fires causes serious health problems. Land managers agree that prescribed burns help mitigate these negative consequences. Prescribed burns are lower-intensity fires that are intentionally ignited and managed for an ecological benefit. They reduce the amount of smoke produced and limit wildfire damage to natural systems and human property.

The Clean Air Act (CAA) is designed to regulate air pollution to protect public health, yet it exempts wildfire smoke through the exceptional events designation while imposing strict regulations on prescribed burns. Congress and the Environmental Protection Agency must change the exceptional event designation to hold states accountable for smoke caused by improper land management. These changes will prioritize exempting fire that fulfills ecological roles and realigning the exceptional event designation with the public health goals of the CAA.

INTRODUCTION

Wildfire smoke is a public health crisis in the western United States.¹ During the summer of 2020, Los Angeles, San Francisco, Portland, and Seattle recorded some of the worst air quality in the world.² Air quality will continue to worsen in coming years as the frequency and severity of

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1. D. W. Schweizer & R. Cisneros, *Forest Fire Policy: Change Conventional Thinking of Smoke Management to Prioritize Long-Term Air Quality and Public Health*, 10 AIR QUALITY ATMOSPHERE & HEALTH 33, 33 (2016); G. J. Williamson, D. M. J. S. Bowman, O. F. Price, S. B. Henderson & F. H. Johnston, *A Transdisciplinary Approach to Understanding the Health Effects of Wildfire and Prescribed Fire Smoke Regimes*, ENV'T RSCH. LETTERS, Dec. 6, 2016, at 1, 1; U.S. GLOB. CLIMATE CHANGE RSCH. PROGRAM, THE IMPACTS OF CLIMATE CHANGE ON HUMAN HEALTH IN THE UNITED STATES: A SCIENTIFIC ASSESSMENT 110 (Allison Crimmins et al. eds., 2016) [hereinafter THE IMPACTS OF CLIMATE CHANGE ON HUMAN HEALTH], https://health2016.globalchange.gov/low/ClimateHealth2016_FullReport_small.pdf [<https://perma.cc/5QJ6-VFLC>]; James R. Laing & David A. Jaffe, *Wildfires Are Causing Extreme PM Concentrations in the Western United States*, EM MAG., June 2019, at 3.

2. Heather Kelly & Samantha Schmidt, *As Wildfire Smoke Becomes a Part of Life the West Coast, So Do Its Health Risks*, WASH. POST (Sept. 16, 2020), <https://www.washingtonpost.com/nation/2020/09/16/smoke-air-west/> [<https://perma.cc/BC4P-TYBZ>].

wildfires in the western United States increases.³ In the past forty years, the annual area burned by wildfire has quadrupled.⁴ On the West Coast, twelve of the top fifteen most destructive fires ever recorded have occurred since 2015.⁵ Scientists predict that deaths from wildfire smoke inhalation could double by 2050.⁶

The increased frequency and severity of wildfires are linked to climate change, but a long history of wildfire suppression and poor forest management have exacerbated the problem.⁷ In the West, scientists predict that climate change will lead to increased temperatures, longer fire seasons, and drought, all of which contribute to the severity and frequency of wildfires.⁸ Even if the world meets its carbon emission reduction goals in the next year, the climate will continue to change and the risk of

3. See Laing & Jaffe, *supra* note 1, at 2.

4. Marshall Burke, Anne Driscoll, Sam Heft-Neal, Jiani Xue, Jennifer Burney & Michael Wara, *The Changing Risk and Burden of Wildfire in the United States*, PROC. NAT'L ACAD. SCIS. U.S., Jan. 11, 2021, at 1, 1.

5. Blacki Migliozi, Scott Reinhard, Nadja Popovich, Tim Wallace & Allison McCann, *Record Wildfires on the West Coast Are Capping a Disastrous Decade*, N.Y. TIMES (Sept. 24, 2020), <https://www.nytimes.com/interactive/2020/09/24/climate/fires-worst-year-california-oregon-washington.html> [<https://perma.cc/K6P4-74RK>].

6. Daniel A. Jaffe, Susan M. O'Neill, Narasimhan K. Larkin, Amara L. Holder, David L. Peterson, Jessica E. Halofsky & Ana G. Rappold, *Wildfire and Prescribed Burning Impacts on Air Quality in the United States*, 70 J. AIR & WASTE MGMT. ASS'N 583, 585 (2020); Mara Kardas-Nelson, *Wildfire Smoke's Health Impacts Have Only Just Begun*, CROSSCUT (Sept. 21, 2020), <https://crosscut.com/focus/2020/09/wildfire-smokes-health-impacts-have-only-just-begun> [<https://perma.cc/7Y8R-M992>].

7. Tania Schoennagel, Jennifer K. Balch, Hannah Brenkert-Smith, Philip E. Dennison, Brian J. Harvey, Meg A. Krawchuk, Nathan Mietkiewicz, Penelope Morgan, Max A. Moritz, Ray Rasker, Monica G. Turner & Cathy Whitlock, *Adapt to More Wildfire in the Western North American Forests as Climate Changes*, 114 PROC. NAT'L ACAD. SCIS. U.S. 4582, 4583 (2017); Laing & Jaffe, *supra* note 1, at 2. Not all wildfires are directly attributable to climate change. See Jaffe et al., *supra* note 6, at 585 (“[T]he relationship between climate and human influences [on wildfires] is complex.”). Uncertainty is an inherent part of the scientific process, especially in climate change modeling, and the relationships between climate change and specific fires depends on the specific ecosystem. See *id.* at 585–87. However, there is scientific consensus that climate change will increase wildfire frequency and intensity. M.F. Wehner, J.R. Arnold, T. Knutson, K.E. Kunkel & A.N. LeGrande, *Droughts, Floods, and Wildfires*, in 1 U.S. GLOB. CHANGE RSCH. PROGRAM, CLIMATE SCIENCE SPECIAL REPORT 231, 243 (D.J. Wuebbles et al. eds., 2017).

8. Wehner et al., *supra* note 7, at 243–45 (“Modeled increases in temperatures and vapor pressure deficits due to anthropogenic climate change have increased forest fire activity in the western United States by increasing the aridity of forest fuels during the fire season. Increases in these relevant climatic drivers were found to be responsible for over half the observed increase in western U.S. forest fuel aridity from 1979 to 2015 and doubled the forest fire area over the period 1984–2015 . . . [The climate models that predict increased fire] are based on climate variables that are closely linked to fire risk and that, in most cases, have a detectable human influence, such as surface air temperature and snow melt timing.” (footnotes omitted)).

extreme wildfires will increase.⁹ Humans must adapt to this new reality and take steps to reduce the risk of catastrophic wildfires.¹⁰

In addition to climate change, record-breaking fires occur in the West because of a long history of total wildfire suppression.¹¹ Until the 1970s, federal land management agencies, which collectively manage the largest percentage of land in the West, aimed to completely extinguish wildfires.¹² This left western ecosystems—many of which are adapted to natural, recurring wildfires—overgrown, unhealthy, and vulnerable to larger, more destructive wildfires.¹³ Federal and state land management agencies no longer engage in complete fire suppression because they recognize that wildfires are beneficial for many ecosystems.¹⁴ However, a large percentage of western land is still in need of restoration to increase its resilience to extreme wildfires.¹⁵

Research indicates that reintroducing fire into landscapes through prescribed burns is the most effective way to reduce the severity of wildfires.¹⁶ Prescribed burns are small, planned fires that burn managers intentionally ignite and control in a confined area.¹⁷ These burns may mimic the low intensity fires that historically burned in the West.¹⁸ They

9. INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, SPECIAL REPORT: GLOBAL WARMING OF 1.5°C 51 (2018), <https://www.ipcc.ch/sr15/chapter/chapter-1/> [<https://perma.cc/4G9A-MM45>] (“Human-induced warming reached approximately 1°C (*likely* between 0.8°C and 1.2°C) above pre-industrial levels in 2017” (emphasis in original)).

10. See Schoennagel et al., *supra* note 7, at 4583.

11. See Laing & Jaffe, *supra* note 1, at 2.

12. Kimiko Barrett, *Reducing Wildfire Risk in the Wildland-Urban Interface: Policy, Trends, and Solutions*, 55 IDAHO L. REV. 3, 10 (2019).

13. Mark Melvin & Dennis Haddow, *The Need for Prescribed Fire*, in NAT’L WILDFIRE COORDINATING GRP., NWCG SMOKE MANAGEMENT GUIDE FOR PRESCRIBED FIRE 11, 12 (Janice Peterson et al. eds., 2020) (“In the absence of fire, natural vegetation succession has been altered; thus, changing forest structure and increasing the risk of catastrophic wildfire.”).

14. See Barrett, *supra* note 12, at 7.

15. Crystal A. Kolden, *We’re Not Doing Enough Prescribed Fire in the Western United States to Mitigate Wildfire Risk*, FIRE, May 29, 2019, at 8; see also MARK A. MELVIN, 2018 NATIONAL PRESCRIBED FIRE USE SURVEY REPORT, at iii (2018) (describing that even though land managers recognized the harm caused by fire suppression, “prescribed burning . . . has not thrived as an informing practice” in the West).

16. Kolden, *supra* note 15, at 1.

17. Melvin & Haddow, *supra* note 13, at 11 (“Today, prescribed fire is the surrogate for historical fire and is necessary for maintaining the ecological integrity and sustainability of many landscapes. Prescribed fire is a fire intentionally ignited by management actions in accordance with applicable laws, policies, and regulations to meet specific objectives. It is applied in a professional manner to fuels on a specific land area under selected weather conditions to meet predetermined, well-defined objectives.”).

18. *Id.*; WILDLAND FIRE LEADERSHIP COUNCIL, THE NATIONAL STRATEGY: THE FINAL PHASE IN THE DEVELOPMENT OF THE NATIONAL COHESIVE WILDLAND FIRE MANAGEMENT STRATEGY 26, 29

burn for a set amount of time and produce less smoke.¹⁹ Ironically, to address the wildfire smoke public health crisis and reduce the risk of extreme wildfires, burn managers need to use more prescribed burns that will produce smoke.²⁰ Despite widespread acceptance of the benefits of prescribed burns, most regions in the United States do not use them often enough because federal air quality laws do not recognize this smoke paradox.²¹

The Clean Air Act (CAA),²² the primary law that regulates air pollution in the United States, provides a liberal exception for wildfire smoke.²³ Since Congress passed the CAA in 1970, air quality in the United States has improved dramatically.²⁴ Many have lauded the CAA for its success in improving air quality in the United States.²⁵ The Environmental Protection Agency (EPA), which administers the CAA, broadly designates wildfire smoke as an “exceptional event” under the CAA.²⁶ This means that wildfire smoke is usually exempt from the CAA’s national air quality standards, despite the fact that land managers can take measures to reduce the severity of wildfires.²⁷

On the other hand, the CAA regulates smoke from prescribed burns and only grants exceptional event designations in narrow circumstances.²⁸ Although the EPA has promulgated regulations to extend the exceptional events rule to cover prescribed burns,²⁹ the current rule is ineffective and

(2014) [hereinafter THE NATIONAL STRATEGY] (“One universally accepted point is that nearly all of the natural vegetation communities across North America historically burned—many quite frequently. The intensity with which they burned was a function of both the biophysical environment (climate, topography, and vegetation) and the frequency of ignition, both natural and human caused.”).

19. Melvin & Haddow, *supra* note 13, at 13.

20. *See* Kolden, *supra* note 15, at 1.

21. *Id.*

22. *See* 42 U.S.C. §§ 7401–7671; *see also* *Clean Air Act Text*, ENV’T PROT. AGENCY, <https://www.epa.gov/clean-air-act-overview/clean-air-act-text#toc> [<https://perma.cc/RWC6-VUWJ>] (describing where the various provisions of the CAA are codified in Title 42, Chapter 85 of the United States Code).

23. *See* Treatment of Data Influenced by Exceptional Events, 40 C.F.R. § 50.14(b)(4) (2019).

24. *See* Brigham Daniels, Andrew P. Follett & Joshua Davis, *The Making of the Clean Air Act*, 71 HASTINGS L.J. 901, 903–04 (2020).

25. *See id.*; JOSEPH E. ALDY, MAXIMILLIAN AUFFHAMMER, MAUREEN CROPPER, ARTHUR FRAAS & RICHARD MORGENSTERN, RESOURCES FOR THE FUTURE, LOOKING BACK AT 50 YEARS OF THE CLEAN AIR ACT 1–2 (2020).

26. 42 U.S.C. § 7619(b)(2) (directing the EPA to promulgate regulations to enforce the exceptional events rule); 40 C.F.R. § 50.14(b)(4).

27. *See* 40 C.F.R. § 50.14 (b)(4).

28. *Id.* § 50.14(b)(3).

29. *See* Treatment of Data Influenced by Exceptional Events, 81 Fed. Reg. 68216, 68217 (Oct. 3, 2016) (to be codified at 40 C.F.R. pt. 50, 51).

likely goes beyond the EPA's statutory authority.

This Comment argues that to protect human health, the exceptional events rule must change. The CAA should only exempt pollution from wildfire smoke when states take steps to mitigate extreme and increasing wildfire risk through effective land management with prescribed burns. This Comment proceeds in five Parts. Part I outlines the relationship between the increasing frequency and severity of wildfires and climate change. It then discusses the problem with fire suppression and the ecological benefits of prescribed burns. Last, it examines the health problems associated with wildfire smoke exposure. Part II gives an overview of the CAA. It focuses on the exceptional events statute, section 319(b) of the CAA, which creates an exception from CAA regulation for national air quality standard violations caused by exceptional events, such as wildfires. Next, this Part describes how the EPA has interpreted the exceptional events statute in its regulations. Part III provides an administrative law background on how courts interpret agency regulations, then turns to how courts have interpreted the exceptional events regulations. Part IV discusses the problems with applying the exceptional events designation to prescribed burns and the legal vulnerabilities with the exceptional event regulations—specifically, the application of the exceptional event rule to prescribed burns. Part V suggests statutory and regulatory changes for the exceptional event rule that reflect the nuance of smoke management.

I. THE PROBLEMS WITH WILDFIRES AND BENEFITS OF PRESCRIBED BURNS

Wildfires are increasing in intensity and frequency, and wildfire smoke raises major public health concerns across the United States.³⁰ Paradoxically, research suggests that the most effective way to reduce the severity of wildfires, and thus decrease smoke exposure, is by intentionally lighting small, low intensity fires, known as prescribed burns.³¹ This Part explores the causes of catastrophic wildfires and

30. Schweizer & Cisneros, *supra* note 1, at 33; Williamson et al., *supra* note 1, at 1; *see also* THE IMPACTS OF CLIMATE CHANGE ON HUMAN HEALTH, *supra* note 1, at 110 (“Wildfire can have health impacts well beyond the perimeter of the fire. Populations near the fire or even thousands of miles downwind may be exposed to a complex smoke mixture containing various substances including carbon monoxide, ozone, toxic chemicals, and both fine and coarse particles, presenting a serious health risk for the exposed populations.” (citation omitted)).

31. Kolden, *supra* note 15, at 1 (“One of the primary hazard reduction strategies identified in the scientific literature is prescribed burning—the intentional ignition of controlled fire, which is also referred to as prescribed fire or controlled burning in the US. Prescribed fire not only reduces the biomass available to burn in a subsequent uncontrolled wildfire, it also supports carbon sequestration,

explains some of the problems associated with these types of fires. It then discusses the public health concerns with smoke pollution. This Part then looks at how prescribed fire can be used as a tool to mitigate the risk of catastrophic fires and extreme smoke events. Even though smoke is harmful to public health at any level, smoke pollution is inevitable. This Part shows that prescribed burns should be prioritized as a way to reduce pollution from wildfire smoke.

A. *The “Era of Megafire”: Factors that Contribute to Catastrophic Wildfires*

Many ecosystems rely on wildfire, but in the past forty years wildfires have increased in severity and frequency around the world.³² Some experts have called the increase in severe wildfire the “Era of Megafire.”³³ Megafires burn hotter than historic, ecologically beneficial wildfires and burn larger areas.³⁴ The size and intensity of these exceptionally large wildfires are problematic for humans and ecosystems.³⁵ The western United States is especially susceptible to large scale fires; in the past five years, almost “every western state has seen a wildfire of record-breaking size.”³⁶ Two leading causes of megafires are climate change and the history of fire suppression in the United States.³⁷

Many aspects of climate change contribute to the severity of wildfires, including drought, changing insect and disease patterns that kill large areas of forest, and longer fire seasons due to warmer, drier weather that

facilitates ecological resilience, and is critical in restoring ecological function in regions where decades of fire exclusion pushed fire-adapted ecosystems outside their historic range of variability and degraded such function.”).

32. See Schoennagel et al., *supra* note 7, at 4583 (“Three primary factors have produced gradual but significant change across western North American landscapes in recent decades: the warming and drying climate, the build-up of fuels, and the expansion of the wildland-urban interface (WUI; the zone where houses meet or intermingle with undeveloped wildland vegetation.”); Laing & Jaffe, *supra* note 1, at 2 (“Since the 1980s, the frequency and duration of large wildfires and the total area burned have increased in the Northwest United States. This increase in wildfires has been strongly linked with increased temperatures, enhanced fuel aridity, the earlier arrival of spring, and longer fire seasons. Past forest management practices also play an important role in explaining the current fire regime.” (footnotes omitted)).

33. Rachel White, Paul Hessburg, Sim Larkin & Morgan Varner, *Smoke in a New Era of Fire*, 24 SCI. UPDATE 1, 3 (2017).

34. *Id.*

35. *Id.* An ecosystem is “the complex of living organisms, their physical environment, and all their interrelationships in a particular unit of space.” *Ecosystem*, BRITANNICA.COM, <https://www.britannica.com/science/ecosystem> [https://perma.cc/9MZY-2E4S].

36. White et al., *supra* note 33, at 3.

37. See Kolden, *supra* note 15, at 1.

lasts later into the fall.³⁸ The world must reduce greenhouse gas emissions immediately to mitigate these impacts. However, stopping emissions is not enough.³⁹ The impacts of climate change, including rising sea levels, ocean acidification, extreme weather events, and megafires, are already perceptible.⁴⁰ The Paris Climate Agreement, an international treaty on climate change,⁴¹ calls on countries to enact policies to adapt to the changing climate to protect people from the harm of climate-change-induced disasters.⁴² In the context of wildfires, the western United States can adapt to the increased risk of wildfires through better land management.⁴³

Since the inception of the Forest Service at the beginning of the twentieth century, federal land managers followed a policy of total wildfire suppression.⁴⁴ Suppression was seen as a way to protect timber from destructive wildfires.⁴⁵ In 1935, the Forest Service adopted the “10 a.m. policy,” which required that all wildfires on federal land had to be

38. Wehner et al., *supra* note 7, at 241, 243–44.

39. K. Hayhoe, J. Edmonds, R.E. Kopp, A.N. LeGrande, B.M. Sanderson, M.F. Wehner & D.J. Wuebbles, *Climate Models, Scenarios, and Projections*, in U.S. GLOB. CHANGE RSCH. PROGRAM, CLIMATE SCIENCE SPECIAL REPORT 133, 135 (D.J. Wuebbles et al. eds., 2017); *Executive Summary*, in U.S. GLOB. CHANGE RSCH. PROGRAM, CLIMATE SCIENCE SPECIAL REPORT 1, 3 (D.J. Wuebbles et al. eds., 2017) (“The last few years have also seen record-breaking, climate-related weather extremes, the three warmest years on record for the globe, and continued decline in arctic sea ice. These trends are expected to continue in the future over climate (multidecadal) timescales.”).

40. *Executive Summary*, *supra* note 39, at 3.

41. The Paris Climate Agreement is a binding international treaty adopted by 196 countries and to which the United States is a signatory. U.N. Framework Convention on Climate Change, Adoption of the Paris Agreement, U.N. Doc. FCC/CP/2015/L.9/Rev.1 (Dec. 12, 2015).

42. *What Do Adaptation to Climate Change and Climate Resilience Mean?*, U.N. FRAMEWORK CONVENTION ON CLIMATE CHANGE, <https://unfccc.int/topics/adaptation-and-resilience/the-big-picture/what-do-adaptation-to-climate-change-and-climate-resilience-mean> [<https://perma.cc/2GJG-CGTS?type=image>] (“[C]ountries and communities need to develop adaptation solution and implement action to respond to the impacts of climate change that are already happening, as well as prepare for future impacts.”).

43. Schoennagel et al., *supra* note 7, at 4583 (“Adaptive resilience to wildfire means recognizing the limited impact of past fuels management, acknowledging the important role of wildfire in maintaining many ecosystems and ecosystem services, and embracing new strategies to help human communities live with fire.”).

44. Michelle M. Steen-Adams, Susan Charnley & Mark D. Adams, *Historical Perspective on the Influence of Wildfire Policy, Law, and Informal Institutions on Management and Forest Resilience in a Multiownership, Frequent-Fire, Coupled Human and Natural System in Oregon, USA*, 22 *ECOLOGY & SOC'Y* 3, 9–10 tbl.5 (2017).

45. Barrett, *supra* note 12, at 7. When Gifford Pinchot became the first leader of the United States Forest Service, he “sought to promote the efficient use of natural resources through coordinated, centrally directed decisions made by forestry professionals. An early focus of this strategy was to protect natural resources from damages caused by wildfire.” *Id.* The Forest Service is still the main federal land management agency that fights wildfire. *Id.*

extinguished by 10 a.m. the day after the fire was discovered.⁴⁶ After the second world war, new fire suppression tools, such as helicopters and chemical fire retardant, became widely available to land managers in the United States.⁴⁷ Because of these tools, wildfire suppression was extremely successful by the middle of the twentieth century.⁴⁸

In the 1960s, ecological research indicated that suppression techniques caused fires that were harder to control, burned hotter, and were more destructive.⁴⁹ Many western ecosystems are adapted to frequent, low intensity wildfires.⁵⁰ Without regular fire, forests become overgrown and more susceptible to larger “crown fire[s]” that use the overgrown underbrush as fuel to reach the crowns of trees.⁵¹ Federal policy around fire suppression changed in the 1970s and federal land managers allowed wildfires to burn in some circumstances.⁵² Federal and state wildfire suppression policies have continued to evolve over the years.⁵³ Wildfire policy grapples with the tension between the ecological necessity of fire and the need to protect human lives, property, and natural resources from wildfire.⁵⁴ Today, the federal land management agencies manage

46. *Id.* at 10; DIANE M. SMITH, SUSTAINABILITY AND WILDLAND FIRE: THE ORIGINS OF FOREST SERVICE WILDLAND FIRE RESEARCH 38 (2017), https://www.fs.usda.gov/sites/default/files/fs_media/fs_document/sustainability-wildlandfire-508.pdf [<https://perma.cc/S6UE-6XUA>].

47. Barrett, *supra* note 12, at 10 (“Following World War II, wildfire suppression efforts were heavily bolstered by the addition of equipment surplus from the war. Applying similar military tactics on wildfires as in combat, wildfire suppression became mechanized by the use of airplanes, trucks, and tanks.” (footnote omitted)); Smith, *supra* note 46, at 72.

48. Barrett, *supra* note 12, at 10.

49. *Id.*

50. For example, mature ponderosa pines have thick, fire resistant bark and thrive in open, multigenerational forests where underbrush and smaller trees are periodically cleared by fire. *Wildland Fire in Ponderosa Pine: Western United States*, NAT’L PARK SERV. (June 30, 2020), <https://www.nps.gov/articles/wildland-fire-in-ponderosa-pine.htm> [<https://perma.cc/8XWM-7HF6>]. Mature lodgepole pines burn more easily than ponderosa, but some of their cones are specifically adapted to only open after the heat from a fire melts the cone’s resin. *Wildland Fire in Lodgepole Pine*, NAT’L PARK SERV. (Jan. 22, 2021), <https://www.nps.gov/articles/wildland-fire-lodgepole-pine.htm> [<https://perma.cc/Z2YS-5C69>]. Young lodgepole pines thrive in the direct sunlight after the forest is cleared by fire. Without fire, these trees are outcompeted by other species. *Id.* When more intense fires occur or when fires occur too frequently, older ponderosa pines are wiped out and the forest cannot regenerate successfully. Michael Elizabeth Sakas, *As Wildfires Grow More Intense, Iconic Western Forests May Not Come Back*, NAT’L PUB. RADIO (Sept. 13, 2020, 7:00 AM), <https://www.npr.org/2020/09/13/911935457/as-wildfires-grow-more-intense-iconic-western-forests-may-not-come-back> [<https://perma.cc/67BD-GBAQ>].

51. Steen-Adams et al., *supra* note 44, at 14.

52. Barrett, *supra* note 12, at 10–11.

53. *Id.*

54. *See, e.g.*, Colin Hardy & Janice Peterson, *Foreword* to NAT’L WILDFIRE COORDINATING GRP., SMOKE MANAGEMENT GUIDE FOR PRESCRIBED FIRE 1 (Janice Peterson et al. eds., 2020) (“The challenge of minimizing the impacts of smoke on the public while expanding the role of fire in land

wildfires by suppressing them in some areas and allowing them to burn in others.⁵⁵ Wildland firefighters suppress wildfires when they threaten human life and property.⁵⁶

Despite the change in policy, wildfire suppression is still the main focus of land managers because of megafires and increased development in wildfire prone areas called the wildland-urban interface.⁵⁷ In 2017, the Forest Service spent over two billion dollars—around 55% of its budget—on wildfire suppression, at the expense of other forest management such as prescribed burns that could increase forests’ resiliency to wildfire.⁵⁸ In 2018, it spent 2.6 billion dollars.⁵⁹ That same year, Congress passed a “wildfire fix” to protect the Forest Service budget from being taken over by wildfire fighting costs.⁶⁰

The long history of fire suppression has left the western United States at extreme risk for catastrophic wildfires.⁶¹ The increase in wildfires draws resources away from risk mitigation and forces land managers to spend the majority of their resources fighting wildfires after they start, instead of working to fix the conditions that fuel the fires.⁶²

B. *Prescribed Burns: A Solution Through Smoke*

Prescribed burning is one of the most effective techniques for reducing wildfire risk.⁶³ Prescribed burns are planned and controlled fires that are

management has never been greater, as air quality standards tighten and the wildland urban interface expands with people looking to live in natural environments with clean air.”).

55. See Memorandum from Nat’l Wildfire Coordinating Grp. Chair to the Nat’l Wildfire Coordinating Grp. Exec. Bd. (Jan. 10, 2009), <https://calfire.blogspot.com/2009/01/nwgc-update-of-federal-wildland-fire.html> [<https://perma.cc/P647-C2E8>] (issuing an update on the Modifications to the Interagency Strategy for the Implementation of Federal Wildland Fire Management Policy).

56. *Id.*

57. Schoennagel et al., *supra* note 7, at 4583.

58. Press Release, U.S. Dep’t. of Agric., Forest Service Wildland Fire Suppression Costs Exceed \$2 Billion (Sept. 14, 2017), <https://www.usda.gov/media/press-releases/2017/09/14/forest-service-wildland-fire-suppression-costs-exceed-2-billion> [<https://perma.cc/C3GS-AHDZ>]; Barrett, *supra* note 12, at 14; see also Karen M. Bradshaw, *Backfired! Distorted Incentives in Wildfire Suppression Techniques*, 31 UTAH ENV’T L. REV. 155, 157–59 (2011) (discussing the way that federal and state governments spend money on fighting wildfires).

59. *Suppression Costs*, NAT’L INTERAGENCY FIRE CTR., <https://www.nifc.gov/fire-information/statistics/suppression-costs> [<https://perma.cc/MG58-8VYJ>].

60. Barrett, *supra* note 12, at 14.

61. Kolden, *supra* note 15, at 1.

62. Barrett, *supra* note 12, at 14.

63. THE NATIONAL STRATEGY, *supra* note 18, at 30 (“Prescribed fire is one of the more effective and cost-efficient means of managing vegetation for multiple purposes, including hazard reduction, ecosystem restoration or maintenance, silviculture, and others.”). This national strategy is a

carried out for ecological purposes.⁶⁴ Many ecosystems have adapted to frequent, low-intensity fires.⁶⁵ Research suggests that historically, small fires burned regularly—sometimes naturally and sometimes stewarded by Indigenous people who carried out prescribed burns.⁶⁶ These low-intensity fires burned small plants and underbrush, while leaving the main canopy intact.⁶⁷ Fires spread more quickly, are more destructive to the ecosystem, and are harder to contain when excessive underbrush accumulates.⁶⁸ This accumulation allows wildfire to climb from the forest floor to burn the crowns of trees.⁶⁹ Prescribed burns mimic historic fires to reduce underbrush.⁷⁰ Thus, when another fire sparks, there is less fuel for it to grow.

In most of the United States, federal, state, and private land managers still underutilize prescribed burns, despite strong evidence that prescribed

collaboration between federal, state and local agencies created at the direction of congress in the 2009 FLAME Act. *Id.* at 1; *see also* Kolden, *supra* note 15, at 1 (“As anthropogenic ignitions and climate change have enabled the expansion of the fire season and larger and more disastrous wildfires, many of the recent high-profile scientific syntheses and perspectives have specifically advocated for increased use of prescribed fire.”). In addition to prescribed burns, land managers restore forest health and reducing fire danger through hand clearing and mechanical clearing. THE NATIONAL STRATEGY, *supra* note 18, at 29 (“The three primary means of managing fuels are prescribed fire, managing wildfire for ecological purposes and resource objectives, and non-fire treatments involving mechanical, biological, or chemical methods. Treatments can occur in isolation or in combination, depending on management objectives and resource availability.”). The appropriate technique greatly depends on the specific ecosystem and the restoration needs of the area. *Id.* Clearing is easier to carry out because it requires less planning. *Id.* at 35. However, it is also less effective than prescribed burns because it cannot restore the ecological benefit of fires. *Id.*

64. Melvin & Haddow, *supra* note 13, at 11. It is important to distinguish the prescribed fires discussed in this Comment from agricultural burns and forestry pile burns, both of which are used because of convenience, not primarily for ecological benefit. *Id.*

65. THE NATIONAL STRATEGY, *supra* note 18, at 26.

66. *Prescribed Fire and Smoke Management*, U.S. DEP’T OF AGRIC., FOREST SERV., https://www.fs.usda.gov/detail/okawen/landmanagement/resourcemanagement/?cid=fsbdev3_053643 [<https://perma.cc/CAG2-T4NK>]; Levi Pulkkinen, *Intentional Burns, Key to Preventing Megafires, Slow to Start in WA*, CROSSCUT (Oct. 19, 2020), <https://crosscut.com/focus/2020/10/intentional-burns-key-preventing-megafires-slow-start-wa> [<https://perma.cc/AK2X-7QAF>].

67. *See* Pulkkinen, *supra* note 66.

68. *Id.*

69. *Id.*

70. *See Prescribed Fire*, U.S. DEP’T OF AGRIC FOREST SERV., <https://www.fs.usda.gov/managing-land/prescribed-fire> [<https://perma.cc/79HW-NJNB>] (underbrush is a type of fuel). Prescribed fire is also beneficial because it:

[r]educes hazardous fuels, protecting human communities from extreme fires; [m]inimizes the spread of pest insects and disease; [r]emoves unwanted species that threaten species native to an ecosystem; [p]rovides forage for game; [i]mproves habitat for threatened and endangered species; [r]ecycles nutrients back to the soil; and [p]romotes the growth of trees, wildflowers, and other plants

Id.

burns are the “most effective means of reducing” the risk of megafires.⁷¹ The annual number of prescribed burns in the western states has not increased since measurement began in 1998.⁷² Political will to implement more prescribed burns has increased in recent years.⁷³ However, measures at the state and federal level are small steps that have made little difference.⁷⁴

A wide variety of factors contribute to the lag in prescribed burns. Research indicates that the barriers to conducting more prescribed burns are widespread, systemic, and hard to fix with a single “silver bullet” solution.⁷⁵ Some reports point to the large amount of federal land in the West and Forest Service’s budgetary focus on fire suppression instead of forest management.⁷⁶ One study notes that “[t]he proportion of federal money available for prescribed burns compared to wildfire suppression has declined over the past five years.”⁷⁷ Studies have found that public opinion in the West disfavors all smoke pollution, even when it is minor

71. See Kolden, *supra* note 15, at 8.

72. *Id.* at 5 fig.b. Kolden’s paper analyzes areas by region. In this paper, “the Western US” generally refers to the Northwest, Northern California, Southern California, Great Basin, Northern Rockies, Rockies and the Southwest. *Id.* These are the regions that the National Interagency Fire Center has designated. *Id.* at 4. However, these regions are an imperfect measure because they are not drawn based on state lines and state regulations have a significant impact on prescribed burns. See *id.* at 6 (noting that 93% of the increase in prescribed burns was done by states and other entities). Sometimes selective logging is used in conjunction with prescribed burns. See, e.g., *Prescribed Fire and Smoke Management*, *supra* note 66 (“[T]hinning is often done with commercial timber sales to alter species composition and reduce the amount of excess fuels.”). This mixed-use scheme on Forest Service and Bureau of Land Management land is beyond the scope of this Comment but presents problems when considering how these agencies prioritize in the face of mixed mandates of conservation and economic benefit. By bringing wildfire risk mitigation into the purview of the CAA, the suggested changes may force land managers to prioritize long term adaption and health in land management decisions.

73. See Barrett, *supra* note 12, at 13–14.

74. See, e.g., MELVIN, *supra* note 15, at ii (“The national total [of prescribed burns] is down 12% from 12.8 million acres in 2011; only fourteen states (28%) increased their prescribed fire activity from 2011 to 2017.”); Kolden, *supra* note 15, at 3 (“This trend towards increased understanding of prescribed fire should theoretically support its increased application, and such application is sorely needed. In the US Pacific Northwest, [one study] reported that for the thirty-one-year period between 1984 and 2015, wildfire burned just 1.6 mill ha across a subset of forests in Washington and Oregon. This total was an order of magnitude less than the 15–21 mill ha expected under historical fire regimes and in the absence of fire suppression and exclusion. This deficit included 7–10 mill ha of the type of low-severity fire that prescribed burning can replace or be used to restore ecological function.” (footnote omitted)).

75. Courtney Schultz, Heidi Huber-Stearns, Sarah McCaffrey, Douglas Quirke, Gwen Ricco & Cassandra Moseley, *Prescribed Fire Policy Barriers and Opportunities: A Diversity of Challenges and Strategies Across the West* 26 (Ecosystem Workforce Program, Working Paper No. 86, 2018).

76. *The Burning Solution: Prescribed Burns Unevenly Applied Across U.S.*, CLIMATE CENT. (May 29, 2019), <https://www.climatecentral.org/news/report-the-burning-solution-prescribed-burns-unevenly-applied-across-us> [https://perma.cc/72LG-9G5K].

77. *Id.*

pollution from prescribed burns.⁷⁸ Prescribed burning occurs more often in the southeast where there is more broad public acceptance of smoke pollution from prescribed burns.⁷⁹ However, underlying all of these smaller barriers is the fact that the EPA, which administers the CAA, automatically exempts wildfires from air quality measurements, while subjecting most air quality measurements from prescribed burns to the federal air quality standards—even though prescribed burns reduce the air pollution from wildfires in the long run.

C. *Wildfire Smoke Is a Public Health Crisis*

Exposure to smoke is the most pressing public health problem caused by air pollution today.⁸⁰ Wildfire smoke inhalation causes numerous health problems, which are worsened by more severe smoke events and more frequent exposure.⁸¹ Smoke inhalation has been linked to early death, low infant birth weight, and severe respiratory problems, especially for the young, pregnant, elderly, and people with asthma and Chronic Obstructive Pulmonary Disease (COPD).⁸² In addition, smoke inhalation may be linked to an increased risk of cardiovascular problems.⁸³

Small particulate matter is the most common harmful pollutant in smoke.⁸⁴ Studies have found that “exposure to large amounts of [particulate matter] can shorten life expectancies by up to two years by causing and exacerbating lung and heart conditions. Exposure to pollution-related [particulate matter] is a leading environmental risk factor for early death worldwide.”⁸⁵ Particulate matter is microscopic pieces of burned objects, dust, dirt, and soot.⁸⁶ Particulate matter can travel as little

78. MELVIN, *supra* note 15, at 23 fig.27. Public perception as a barrier to prescribed burns was higher in the West than the national average. *Id.*

79. Kolden, *supra* note 15, at 7.

80. See Crystal D. McClure & Daniel A. Jaffe, *US Particulate Matter Air Quality Improves Except in Wildfire-Prone Areas*, 115 PROC. NAT’L ACAD. SCIS. 7901, 7901 (2018) (“These results indicate a decrease in PM_{2.5} over most of the country but a positive trend in the 98th quantile PM_{2.5} across the Northwest due to wildfires.”); Jaffe et al., *supra* note 6, at 583 (“While the overall trend in U.S. air quality has been improving for decades, largely due to implementation of the Clean Air Act, seasonal wildfires threaten to undo this in some regions of the United States. Our understanding of the health effects of smoke is growing with regard to respiratory and cardiovascular consequences and mortality.”).

81. Jaffe et al., *supra* note 6, at 610.

82. THE IMPACTS OF CLIMATE CHANGE ON HUMAN HEALTH, *supra* note 1, at 111.

83. *Id.*

84. *Id.*

85. Kardas-Nelson, *supra* note 6.

86. *Particulate Matter Pollution*, ENV’T PROT. AGENCY, <https://www.epa.gov/pm-pollution/particulate-matter-pm-basics> [<https://perma.cc/9FV4-AEMA>].

as a couple hundred yards, to many hundreds of miles.⁸⁷ The risks described here are compounded in the West, where air quality continues to decline due to increased frequency and severity of wildfires.⁸⁸

II. REGULATIONS OF SMOKE: A FREE PASS FOR WILDFIRES AND ROADBLOCKS TO PRESCRIBED BURNS

The CAA requires states to meet health-based air quality standards.⁸⁹ However, pollution from wildfire smoke is exempt from the EPA's assessment of whether a state has met the standards.⁹⁰ This exemption is called the exceptional events rule.⁹¹ This Part first looks at how the CAA directs both the EPA and states to regulate air pollution. It then looks at how the exceptional events statute, section 319(b) of the CAA, creates an opening to exempt smoke from regulation. This Part then explores how the EPA has promulgated regulations under the section 319(b) that exempt wildfire smoke when the smoke exceeds air quality standards. These regulations also extend the exemption to prescribed burns, but with a much more limited scope.

A. *The Clean Air Act Regulates Air Pollution Through Cooperative Federalism*

The CAA regulates air pollution with a complex framework that is administered through cooperation between states and the federal government, called cooperative federalism.⁹² At the federal level, the EPA administers the CAA and adopts air quality standards, known as National Ambient Air Quality Standards (NAAQS).⁹³ States then implement the CAA through local laws and are responsible for any air quality violations of NAAQS.⁹⁴ The CAA is a purpose-driven statute that was enacted “to

87. See THE IMPACTS OF CLIMATE CHANGE ON HUMAN HEALTH, *supra* note 1, at 110.

88. See Laing & Jaffe, *supra* note 1, at 2.

89. See 42 U.S.C. § 7409(b)(1).

90. See *id.* § 7619(b).

91. See *id.*

92. Jonathan H. Adler & Nathaniel Stewart, *Is the Clean Air Act Unconstitutional? Coercion, Cooperative Federalism and Conditional Spending After NFIB v. Sebelius*, 43 ECOLOGY L.Q. 671, 672–73 (2016).

93. 42 U.S.C. § 7408(a).

94. 40 C.F.R. § 51.100–05, .230 (2020). Major sources of air pollution and energy facilities are permitted by the federal government, although the state is still responsible for the pollutants from those facilities in its State Implementation Plan. Adler & Stewart, *supra* note 92, at 685–86. Note that the Federal government's power to compel states to comply is not absolute. See U.S. CONST. amend. X. Instead, states are incentivized to participate through the granting or withholding of federal

encourage or otherwise promote reasonable Federal, State, and local governmental actions . . . for pollution prevention.”⁹⁵

The CAA directs the EPA⁹⁶ to create a list of air pollutants, known as criteria pollutants, that “cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare.”⁹⁷ The EPA has identified six criteria pollutants.⁹⁸ Particulate matter is the most common criteria pollutant generated by wildfire smoke.⁹⁹ Once identified, the CAA requires the EPA to set NAAQS for each criteria pollutant at levels requisite “to protect and enhance the quality of the Nation’s air resources so as to promote the public health and welfare and the productive capacity of its population.”¹⁰⁰ The standards vary among the different criteria pollutants depending on how much exposure the EPA determines is sufficiently detrimental to public health.¹⁰¹ NAAQS are flexible, statistically derived standards that set the maximum

highway funds. Adler & Stewart, *supra* note 92, at 686. The EPA also threatens non-compliant states with economic sanctions for NAAQS violations. *Id.* At various times states have pushed back against this power by challenging the constitutionality of the CAA. *Id.* at 689. This is beyond the scope of this Comment and while it is interesting, realistically, most states endeavor to follow the CAA most of the time. The biggest variant is that some states, like Washington and California, have developed complex systems of their own for regulating air quality. *See, e.g.*, Washington Clean Air Act, WASH. REV. CODE § 70A.15.1005–9004 (2020) (establishing Washington’s version of the federal CAA). The Washington Clean Air Act enacts the federal CAA and creates more stringent requirements for air quality. *See id.* In this way, the CAA acts as a regulatory floor, but states are generally free to enact more protective legislation in the regulation of wildfire smoke. *See id.*

95. 42 U.S.C. § 7401(c).

96. The CAA, like many other administrative statutes, specifically delegates authority to the EPA Administrator. *See e.g.*, 42 U.S.C. § 7619(a) (“[T]he Administrator shall promulgate regulations establishing an air quality monitoring system . . .”). This Comment uses “EPA” in place of “Administrator” or “EPA Administrator” for ease of use, consistent with the way courts and scholars discuss the administrative delegations in the CAA. *See* Kirsten H. Engel, *Perverse Incentives: The Case of Wildfire Smoke Regulation*, 40 *ECOLOGY L.Q.* 623, 647 (2013); *Whitman v. Am. Trucking Ass’ns*, 531 U.S. 457, 465 (2001) (explaining that “[s]ection 109(b)(1) instructs the EPA to set primary ambient air quality standards” when the statute specifically instructs the Administrator to promulgate regulations).

97. 42 U.S.C. § 7408(a)(1)(A).

98. These include Sulfur Dioxide (SO₂), Lead (Pb), Nitrogen Dioxide (NO₂), Carbon Monoxide (CO), Ozone (O₃), and Particulate Matter (PM_{2.5} & PM₁₀). 40 C.F.R. § 50.4–19 (2020); *NAAQS Table*, ENV’T PROT. AGENCY, <https://www.epa.gov/criteria-air-pollutants/naqs-table> [<https://perma.cc/6EEJ-J63K>]; *see also* 42 U.S.C. § 7409 (providing the statutory authority for regulations and EPA guidance).

99. Susan Lyon Stone, Martha Sue Carraway, Wayne E. Cascio, Scott Damon & Paul Garbe, *Public Health and Exposure to Smoke*, in NAT’L WILDFIRE COORDINATING GRP., *SMOKE MANAGEMENT GUIDE FOR PRESCRIBED FIRE* 32 (Janice Peterson et al. eds., 2020).

100. 42 U.S.C. § 7401(b)(1).

101. *Id.* § 7408(b)(1) (“National primary ambient air quality standards . . . shall be ambient air quality standards the attainment and maintenance of which in the judgment of the Administrator, based on such criteria and allowing an adequate margin of safety, are requisite to protect the public health.”).

concentration of a criteria pollutant in the air over a certain period of time and exclude a small number of peak monitored concentrations when determining whether a particular NAAQS has been achieved.¹⁰²

The EPA may not take compliance costs into consideration when setting these standards.¹⁰³ In addition, the CAA directs the EPA to adopt a margin of safety¹⁰⁴ at a level that the EPA Administrator deems necessary to protect public health and welfare.¹⁰⁵ This focus on health demonstrates the Act's endemic ordering of human health above economic development.¹⁰⁶

The CAA delegates some monitoring, permitting, and enforcement powers to the states.¹⁰⁷ In implementing the CAA, states create a State Implementation Plan (SIP) that details how the state will meet NAAQS through statutes, regulations, permits, and various programs.¹⁰⁸ States must submit SIPs to the EPA for approval.¹⁰⁹ If the EPA does not approve, the state must modify its SIP to meet the statutory requirements and resubmit.¹¹⁰ The SIP approval process often takes many years to complete.¹¹¹ Some states delegate authority for air management to local clean air agencies as a part of the SIP.¹¹²

102. 40 C.F.R. § 50.6. The standards allow air quality measurements to fluctuate over time. For example, the concentration of PM₁₀ cannot exceed 150 milligrams per square meter in twenty-four hours, but the EPA allows measurements of PM₁₀ to exceed the standard no more than once per year on average over three years. *Id.*

103. *See* *Whitman v. Am. Trucking Ass'ns*, 531 U.S. 457, 465 (2001).

104. 42 U.S.C. § 7409(b)(1) (“National primary ambient air quality standards . . . shall be ambient air quality standards the attainment and maintenance of which in the judgment of the Administrator, based on such criteria and allowing an adequate margin of safety, are requisite to protect the public health.”).

105. *Lead Indus. Ass'n v. EPA*, 647 F.2d 1130, 1161 (D.C. Cir. 1980) (“[T]he statutory requirement of a margin of safety . . . indicates the precautionary orientation the Administrator is to bring to bear on the task of setting air quality standards. How conservative he must be in making particular judgments must, the Agency maintains, depend on such factors as the amount of uncertainty involved, the size of the population affected, and the severity of the effect.”).

106. *See Am. Trucking Ass'ns*, 531 U.S. at 466.

107. *See* DAVID R. WOOLEY & ELIZABETH M. MORSS, *CLEAN AIR ACT HANDBOOK* § 1:31 (13th ed. 2020).

108. 40 C.F.R. §§ 52.01–39 (2020).

109. 42 U.S.C. § 7410(k).

110. *Id.*

111. *See, e.g., Washington SIP: EPA Approved Regulations*, ENV'T PROT. AGENCY (Feb. 26, 2020), <https://www.epa.gov/sips-wa/washington-sip-epa-approved-regulations-table-1-statewide> [<https://perma.cc/7P9T-YS25>] (illustrating the delay between submission of various aspects of Washington's SIP and approval by the EPA). Washington submitted its original Smoke Management Plan to the EPA in 1990 and the EPA did not approve the plan until 1993. *Id.*

112. 42 U.S.C. §§ 7407, 7619(a); *cf. Washington Clean Air Agencies*, WASH. STATE DEP'T OF ECOLOGY, <https://ecology.wa.gov/About-us/Our-role-in-the-community/Partnerships-committees/>

States and local agencies set up and manage EPA-approved monitors to gather air quality data.¹¹³ States then report the data to the EPA and make a recommendation about whether or not the area attained NAAQS.¹¹⁴ The EPA takes this recommendation and the data collected at these monitors to determine whether an area is in “attainment” with NAAQS.¹¹⁵ If air quality in a certain area exceeds NAAQS, the Administrator may designate an area as “nonattainment.”¹¹⁶ Once an area is designated as nonattainment, the state must submit additional SIP materials to show how the state will meet NAAQS.¹¹⁷ In addition, the EPA may subject large polluters to additional, stringent requirements.¹¹⁸ These nonattainment requirements are “a powerful incentive for state air quality regulators, as well as the owners and operators of large sources of the subject air pollutant, to keep pollution levels low.”¹¹⁹ All the measured air

Clean-air-agencies [<https://perma.cc/6VAV-P7A4>] (showing the local air agencies in Washington). For example, in Washington, the state monitors and reports on air quality in the rural, eastern part of the state through its Department of Ecology, while it delegates that authority to local agencies such as the Puget Sound Clean Air Agency in more populated areas. *Id.*; see also WASH. REV. CODE § 70A.15.1005 (2020); Puget Sound Clean Air Agency Reg. I, art. 1, § 1.01 (1999).

113. See *Managing Air Quality—Ambient Air Monitoring*, ENV’T PROT. AGENCY, <https://www.epa.gov/air-quality-management-process/managing-air-quality-ambient-air-monitoring> [<https://perma.cc/2P2Y-44NZ>] (“Most of the ambient air monitoring networks supporting air quality management are designed and operated by tribal, state, or local governments. EPA develops requirements and guidance for various aspects of these networks”); see also WOOLEY & MORSS, *supra* note 107, § 1:5 (describing how the EPA and states maintain monitoring stations and how the collected data is used). EPA’s AirNow interactive map shows the location of each air quality monitor in the country. See *Interactive Map of Air Quality*, AIRNOW, <https://gispub.epa.gov/airnow/> [<https://perma.cc/2W3X-CTYM>]. Washington’s Department of Ecology interactive map allows people to see photos of the physical location of the air quality monitors, in addition to the point on the map. *Washington’s Air Quality Monitoring Network*, WASH. STATE DEP’T OF ECOLOGY, <https://enwiwa.ecology.wa.gov/home/map> [<https://perma.cc/T2CH-SRJB>]. However, it is important to note that these maps are meant for the general public and do not reflect the complicated data collection behind these air quality monitors.

114. 42 U.S.C. § 7407(d)(1); see also *NAAQS Table*, *supra* note 98 (providing current standards for different air pollutants).

115. 42 U.S.C. §§ 7410 (a)(3)(B); see also WOOLEY & MORSS, *supra* note 107, § 1:31 (describing how states must adopt SIPs sufficient to meet their obligations under NAAQS).

116. *NAAQS Table*, *supra* note 98. Note that per the 1990 amendments to the CAA, there is a “graduated program for achieving compliance with the NAAQS. This program classifies nonattainment areas for these contaminants based on the severity of their pollution problems and imposes specific SIP requirements based on that classification—the higher the nonattainment classification, the greater the number of control measures imposed.” WOOLEY & MORSS, *supra* note 107, § 2:1.

117. 42 U.S.C. § 7502(b).

118. See *id.* § 7502.

119. Engel, *supra* note 96, at 648 n.167 (“The regulatory requirements applicable to nonattainment areas are much more onerous than those applicable to areas in attainment. Within a nonattainment area, the state must submit a plan demonstrating that it will attain the NAAQS by the statutory

quality data generally goes into the calculation for an attainment designation.¹²⁰ However, an exception allows the EPA to exempt certain air quality monitoring data that was influenced by an exceptional event.¹²¹

B. The Statutory Exception to Smoke Pollution: Exceptional Events Designation

If smoke causes a NAAQS exceedance, a state can ask the EPA to exempt the air quality data from that event when determining whether an area is in attainment.¹²² This exemption is called the exceptional event rule.¹²³ Section 319(b) of the CAA defines an exceptional event as “an event that (i) affects air quality; (ii) is not reasonably controllable or preventable; (iii) is an event caused by human activity that is unlikely to recur at a particular location or a natural event; and (iv) is determined by the Administrator . . . to be an exceptional event.”¹²⁴ There must be “a clear causal relationship” between the measured NAAQS exceedances and the event for the EPA to designate something as an exceptional event.¹²⁵

When an exceptional event occurs, a state must prepare an exceptional event demonstration to apply to the EPA to receive an exemption for air quality data that was impacted by the event.¹²⁶ If the EPA concurs in the state’s exceptional event demonstration, the data influenced by the exceptional event are excluded from the data that EPA uses to determine if the area is in attainment.¹²⁷ This means that an area that would otherwise be in danger of nonattainment designation would be able to keep its attainment status. Even though the exceptional event designation allows the EPA to exclude certain data from attainment determinations, these decisions must be grounded in the guiding principle of protecting public health.¹²⁸ The public health goal in the exceptional event statute reflects the bedrock principal of the CAA that human health is the number

deadline, making reasonable further progress each year. Major sources of nonattainment pollutants are subject to stringent technology standards. Finally, any federal approval of a major source of pollutants must demonstrate ‘conformity’ to the state implementation plan.” (citing 42 U.S.C. § 7502)).

120. WOOLEY & MORSS, *supra* note 107, § 1:6.

121. 42 U.S.C. § 7619(b).

122. *See id.* § 7619(b)(3)(B)(iv).

123. *See id.* § 7619(b).

124. *Id.* § 7619(b)(1)(A).

125. *Id.* § 7619(b)(3)(B)(ii).

126. *See id.* § 7619(b).

127. *See id.* § 7619(b)(3)(B)(iv).

128. *Id.* § 7619(b)(3)(A)(i).

one priority.¹²⁹

Although Congress codified the exceptional events rule in 2005 through an amendment to section 319 of the CAA,¹³⁰ the EPA has issued various guidance policies around the treatment of data influenced by exceptional events since 1970.¹³¹ This history guides modern interpretation of the statute. The EPA adopted the early exceptional event policy partially in response to changes in federal land management policy away from total fire suppression.¹³² In 1986, the EPA laid out a definition of exceptional events that became the foundation for the statute.¹³³ The EPA wrote that “[t]hese events are considered exceptional for two reasons: they are not expected to recur routinely at a given location, or they are possibly uncontrollable or unrealistic to control through the SIP process.”¹³⁴ The policy was created for air pollution from “severe recurring dust storms, forest fires, [and] volcanic activity.”¹³⁵ This guidance suggested that not all forest fires should be exempt; instead the exemption should apply because “[s]ome forest fires are unpreventable.”¹³⁶

In 1998, the EPA adopted specific guidance around exceptional events rule for smoke from wildfires and prescribed burns if states adopted Smoke Management Programs (SMP).¹³⁷ The guidance encouraged all states that allowed wildfires to burn to adopt an SMP.¹³⁸ Before the statute, state implementation of an SMP was sufficient to earn an exemption under the exceptional event rule.¹³⁹ While the policy has been replaced by the

129. *Id.*

130. *Id.* § 7619.

131. See ENV’T PROT. AGENCY, EPA-450/4-86-007, GUIDELINE ON THE IDENTIFICATION AND USE OF AIR QUALITY DATA AFFECTED BY EXCEPTIONAL EVENTS (1986) [hereinafter GUIDELINE ON THE IDENTIFICATION AND USE OF AIR QUALITY DATA AFFECTED BY EXCEPTIONAL EVENTS], <https://nepis.epa.gov/Exe/ZyPDF.cgi/00002N4C.PDF?Dockey=00002N4C.PDF> [<https://perma.cc/8P4M-EE8X>]; ENV’T PROT. AGENCY, INTERIM AIR QUALITY POLICY ON WILDLAND AND PRESCRIBED FIRES (1998) [hereinafter INTERIM AIR QUALITY POLICY ON WILDLAND AND PRESCRIBED FIRES], <https://nepis.epa.gov/Exe/ZyPDF.cgi/9100JSKT.PDF?Dockey=9100JSKT.PDF> [<https://perma.cc/888U-FH3U>].

132. See Ben Richmond, *Beyond the Exceptional Events Rule: How the Local Implementation of Air Quality Regulations Affects Wildlife Air Policy*, 46 *ECOLOGY L.Q.* 343, 359 (2019).

133. GUIDELINE ON THE IDENTIFICATION AND USE OF AIR QUALITY DATA AFFECTED BY EXCEPTIONAL EVENTS, *supra* note 131, at 12–14.

134. *Id.* at 1.

135. *Id.* at 2.

136. *Id.* at 17.

137. INTERIM AIR QUALITY POLICY ON WILDLAND AND PRESCRIBED FIRES, *supra* note 131, at 22.

138. *Id.* at 2.

139. *Id.*

current statute, the 1998 guidance still provides direction for SMPs.¹⁴⁰ The policy stresses that “[s]tate and tribal air quality managers [should] collaborate with wildland owners and managers to mitigate the air quality impacts that could be caused by increase of fires managed to achieve recourse benefits.”¹⁴¹

Today, every western state has a SMP to regulate burning in the state, including prescribed burns.¹⁴² SMPs document how the states will permit various burns to maintain air quality standards.¹⁴³ They vary from state to state, but generally, “each burn must be preapproved by air quality regulators upfront, and burns must be consistent with state smoke management programs or policies.”¹⁴⁴ In Washington,¹⁴⁵ the Department of Natural Resources (DNR) grants burn permits for prescribed burns based on smoke modelling.¹⁴⁶ If models suggest that the burn will violate NAAQS or degrade air quality in a populated area, the DNR will not grant

140. Michael George, *State Smoke Management Programs*, in NAT’L WILDFIRE COORDINATING GRP., *SMOKE MANAGEMENT GUIDE FOR PRESCRIBED FIRE* 106 (Janice Peterson et al. eds., 2020).

141. INTERIM AIR QUALITY POLICY ON WILDLAND AND PRESCRIBED FIRES, *supra* note 131, at 2.

142. Kirsten Engel and Andrew Reeves, *When “Smoke Isn’t Smoke”: Missteps in Air Quality Regulation of Wildfire Smoke*, in WILDFIRE POLICY: LAW AND ECONOMICS PERSPECTIVES 127 (Dean Lueck & Karen M. Bradshaw eds., 2011).

143. REBECCA BATTYE, BARBARA BAUER & GLENN MACDONALD, *FEATURES OF PRESCRIBED FIRE AND SMOKE MANAGEMENT RULES FOR WESTERN AND SOUTHERN STATES* 1 (1999), <https://www.wrapair.org/forums/fejf/documents/woodard.pdf> [<https://perma.cc/YJ74-B3UD>]; Engel & Reeves, *supra* note 142, at 133.

144. Engel & Reeves, *supra* note 142, at 133.

145. The State of Washington is an informative case study because it is beginning to change its approach to prescribed burns. *See, e.g.*, WASH. STATE DEP’T NAT. RES. & WASH. PRESCRIBED FIRE COUNCIL, *THE FOREST RESILIENCY BURNING PILOT PROJECT: REPORT TO THE LEGISLATURE*, at iii, 1 (2018) [hereinafter *FOREST RESILIENCY BURNING PILOT PROJECT*], https://www.dnr.wa.gov/publications/rp_2018_forestry_resiliency_burning_pilot_program_report.pdf [<https://perma.cc/6QKD-ZFQV>] (reporting to the Washington State legislature the results of the Forest Resiliency Burning Pilot Project, which the legislature ordered in 2016, and recommending steps to increase the number of prescribed burns in the state); WASH. STATE DEP’T OF NAT. RES., *2019 SILVICULTURAL SMOKE MANAGEMENT PLAN 1* (2019) [hereinafter *2019 SILVICULTURAL SMOKE MANAGEMENT PLAN*], https://www.dnr.wa.gov/publications/amp_sepa_other_smpupdate_smp.pdf [<https://perma.cc/CP8F-5JR3>] (updating Washington’s Smoke Management Plan and incorporating some the suggestions from the Forest Resiliency Burning Pilot Project report). In addition, Washington is in the process of reshaping the way that Washington Clean Air Act functions to adapt and respond to climate change. *See* Craig Gannett & Walker Stanovsky, *Carbon Trading Comes to Washington State as Supreme Court Partially Restores Climate Regulation*, DAVIS WRIGHT TREMAINE ENERGY & ENV’T L. BLOG (Jan. 23, 2020), <https://www.dwt.com/blogs/energy—environmental-law-blog/2020/01/washington-state-clean-air-rule> [<https://perma.cc/E4LM-AMPC>] (discussing the way that Washington is using the WCAA to regulate greenhouse gases beyond the federal regulations, including the proposed regulations that would expand the WCAA).

146. *See* WASH. REV. CODE § 76.04.205 (2020).

a permit.¹⁴⁷

Recognizing the importance of prioritizing prescribed burns, some states are changing their SMPs to streamline permitting for prescribed burns.¹⁴⁸ In 2019, Washington completed a new SMP that directs DNR to grant permits one day before the burn instead of the morning of.¹⁴⁹ This increases the risk of smoke intrusion and NAAQS exceedances¹⁵⁰ slightly but helps incentivize prescribed burns by allowing permittees to plan ahead.¹⁵¹ When permits are revoked the morning of, money and resources are lost because permittees, who were prepared to work on a prescribed burn that day, can no longer carry out their work.¹⁵²

This history of the exceptional event statute informs the way that the EPA enforces the statute and speaks to Congress's legislative intent when it codified the exception.¹⁵³ Since the inception of the exceptional event rule, the EPA has prioritized smoke management of prescribed burns to control air quality.¹⁵⁴

After Congress codified historical policies on exceptional event rule in the 2005 amendment to the CAA, the EPA promulgated regulations on exceptional events rule first in 2007 and again in 2016.¹⁵⁵ The 2016

147. WASH. STATE DEP'T NAT. RES., SMOKE MANAGEMENT PLAN 20 (1998), https://www.dnr.wa.gov/publications/rp_bum_smptoc.pdf [<https://perma.cc/CPZ2-BT7N>].

148. Ed Keith, *How Do You Want Your Smoke? Why Oregon Is Exploring a New Smoke Management Plan*, FIRE ADAPTED CMTYS. LEARNING NETWORK (Oct. 18, 2018), <https://fireadaptednetwork.org/why-oregon-is-changing-how-it-manages-smoke/> [<https://perma.cc/DJ6N-5A7R>]; *Air Quality: Docket No. 58-0101-1901*, IDAHO DEP'T ENV'T QUALITY, <https://www.deq.idaho.gov/public-information/laws-guidance-and-orders/rulemaking/air-quality-docket-no-58-0101-1901/> [<https://perma.cc/YR84-R5K5>] (The Idaho "DEQ initiated this rulemaking to update the rules applicable to prescribed burning to ensure that smoke from this type of burning is properly managed and public health is protected. With the increase in the use of prescribed fire, the management of smoke from it is becoming more important.").

149. 2019 SILVICULTURAL SMOKE MANAGEMENT PLAN, *supra* note 145, at 7.

150. FOREST RESILIENCY BURNING PILOT PROJECT, *supra* note 145, at 2 (explaining that the risks of prescribed burning "include smoke impacts from burn operations").

151. *See* 2019 SILVICULTURAL SMOKE MANAGEMENT PLAN, *supra* note 145, at 10.

152. *See, e.g.*, FOREST RESILIENCY BURNING PILOT PROJECT, *supra* note 145, at 36 ("Twenty-four-hour burn decisions contribute to significantly more efficient mobilization of resources, saves money, improves trust and relationships between regulators and implementers, and contributes to improved planning prior to ignition.").

153. *See* Safe Accountable Flexible Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) of 2005, Pub. L. No. 109-59, § 6013, 119 Stat. 1144, 1882-84 (amending 42 U.S.C. § 7619).

154. *See* INTERIM AIR QUALITY POLICY ON WILDLAND AND PRESCRIBED FIRES, *supra* note 131, at 2; GUIDELINE ON THE IDENTIFICATION AND USE OF AIR QUALITY DATA AFFECTED BY EXCEPTIONAL EVENTS, *supra* note 131, at 23.

155. SAFETEA-LU § 6013; Treatment of Data Influenced by Exceptional Events, 40 C.F.R. §§ 50-51 (2020); Treatment of Data Influenced by Exceptional Events, 81 Fed. Reg. 68,216 (Oct. 3, 2016).

regulations provided a definition of prescribed burns, created more details on the exemptions for wildfires and added a mitigation plan requirement.¹⁵⁶ The EPA released additional agency guidance around exceptional events determinations for wildfires in 2016¹⁵⁷ and prescribed fires in 2019.¹⁵⁸ States use on these guidance documents when preparing a request for an exceptional event designation.¹⁵⁹

C. The Exceptional Event Regulations Broadly Exempt Wildfire Smoke and Narrowly Exempt Prescribed Burn Smoke

The CAA delegates authority to the EPA to create regulations for the exceptional event rule.¹⁶⁰ The statute sets out principles that the EPA must follow in creating the regulations.¹⁶¹ The EPA must be guided by the principle that protecting “public health is the highest priority.”¹⁶² The regulations must reflect the principles that the public should be informed in a timely manner when air quality is unhealthy and the states “must take necessary measures to safeguard public health regardless of the source of the air pollution.”¹⁶³ The EPA must consult with federal land managers and state air pollution agencies in the development of the regulations.¹⁶⁴

In 2016, the EPA promulgated regulations that detailed how it would administer the exceptional events rule. The regulations address how the EPA will determine whether wildfires and prescribed burns qualify as exceptional events.

1. Exceptional Event Definition

The definition of an exceptional event in the regulations mirrors the

156. Treatment of Data Influenced by Exceptional Events, 81 Fed. Reg. at 68,217–18.

157. OFF. OF AIR QUALITY PLAN. STANDARDS, ENV'T PROT. AGENCY, GUIDANCE ON THE PREPARATION OF EXCEPTIONAL EVENTS DETERMINATIONS FOR WILDFIRE EVENTS THAT MAY INFLUENCE OZONE CONCENTRATIONS (2016) [hereinafter GUIDANCE ON THE PREPARATION OF EXCEPTIONAL EVENT DETERMINATIONS FOR WILDFIRE EVENTS THAT MAY INFLUENCE OZONE CONCENTRATIONS].

158. OFF. OF AIR QUALITY PLAN. STANDARDS, ENV'T PROT. AGENCY, EXCEPTIONAL EVENTS GUIDANCE: PRESCRIBED FIRE ON WILDLAND THAT MAY INFLUENCE OZONE AND PARTICULATE MATTER CONCENTRATIONS (2019) [hereinafter EXCEPTIONAL EVENTS GUIDANCE: PRESCRIBED FIRE ON WILDLAND THAT MAY INFLUENCE OZONE AND PARTICULATE MATTER CONCENTRATIONS].

159. *Id.*

160. 42 U.S.C. § 7619(b)(2)–(3).

161. *Id.*

162. *Id.* § 7619(b)(3)(A)(i).

163. *Id.* § 7619(b)(3)(A)(iv).

164. *Id.* § 7619(b)(2)(A).

statutory definition.¹⁶⁵ To prove that something is an exceptional event, states must show that (1) there is a “clear causal relationship” between the event and the exceedance; (2) the event “is not reasonably controllable or preventable,” and (3) “is caused by human activity” and is “unlikely to recur at a particular location,” or (4) a natural event.¹⁶⁶ The EPA applies a “weight of evidence” test to assess whether an event meets the exceptional event criteria.¹⁶⁷ Each designation is on a case-by-case basis and the EPA resists creating bright line rules for exceptional event determinations.¹⁶⁸ This means that the EPA retains broad discretion in whether to extend the exceptional event exception to certain data.

Wildfire is defined in the regulations as “any fire started by an unplanned ignition” caused by various acts of nature, “unauthorized activity[,] or accidental, human-caused actions, or a prescribed fire that has developed into a wildfire.”¹⁶⁹ These wildfires are considered natural even when humans ignite the fire, as long as the wildfire burns out of human control.¹⁷⁰ The regulations presume that wildfires on wildlands have met the “not reasonably controllable or preventable” standard unless there is compelling evidence to the contrary.¹⁷¹

The regulations define prescribed fire as “any fire intentionally ignited . . . in accordance with applicable laws . . . to meet specific land or resource management objectives.”¹⁷² Prescribed fires are defined in the regulations as human-caused events that must be “unlikely to recur” at a specific place, despite the fact that prescribed fires are regularly applied to the same areas.¹⁷³ Different ecosystems require various intervals

165. 40 C.F.R. § 50.1(j) (2019); 42 U.S.C. § 7619(b)(1)(A).

166. 40 C.F.R. § 50.1(j).

167. EXCEPTIONAL EVENTS GUIDANCE: PRESCRIBED FIRE ON WILDLAND THAT MAY INFLUENCE OZONE AND PARTICULATE MATTER CONCENTRATIONS, *supra* note 158, at 3–4.

168. *See* Treatment of Data Influenced by Exceptional Events, 81 Fed. Reg. 68,216, 68,255–57 (Oct. 3, 2016).

169. 40 C.F.R. § 50.1(n).

170. *Id.*; *see also* GUIDANCE ON THE PREPARATION OF EXCEPTIONAL EVENT DETERMINATIONS FOR WILDFIRE EVENTS THAT MAY INFLUENCE OZONE CONCENTRATIONS, *supra* note 157, at 30–31 (explaining that the EPA treats all wildfires as natural events, regardless of the cause of the fire).

171. 40 C.F.R. § 50.14(b)(4) (“[T]he Administrator will determine every wildfire occurring predominantly on wildland to have met the requirements . . . regarding the not reasonably controllable or preventable criterion.”).

172. *Id.* § 50.1(m).

173. *See id.* § 50.14(b)(3)(iii) (discussing that prescribed fire must meet the “unlikely to recur” standard, which only applies to human caused exceptional events); *see also* *Sycan Marsh Preserve: A Living Laboratory for Fire Research*, NATURE CONSERVANCY (Feb. 10, 2020), <https://www.nature.org/en-us/about-us/where-we-work/united-states/oregon/stories-in-oregon/oregon-research-informing-fire-management-forest-restoration/> [https://perma.cc/72G3-WFF8] (explaining that researchers burn the land every five years at Sycan Marsh Preserve in Oregon).

between burns. For example, at Sycan Marsh Preserve in Eastern Oregon, scientists are experimenting with a burn interval of five years.¹⁷⁴ Regardless of the interval, it is important that burns are conducted regularly to avoid the problems that arise from wildfire suppression.¹⁷⁵

The EPA defines “unlikely to recur” as no more than three events in three years, but prescribed burns are not subject to the three-year rule.¹⁷⁶ Rather, the state must present a multi-year land or resource management plan specifically for prescribed fire that “describe[s] the actual frequency with which a burn was conducted” and shows the number of prescribed burns does not exceed either the “natural fire return interval” or the frequency required to maintain a resilient wildland ecosystem.¹⁷⁷ The natural fire return interval is the historic frequency of fire and “can range from once every year to less frequently than once in more than 200 years.”¹⁷⁸

Fires must also be used for forest health purposes. Fires for logging and agriculture will not qualify for an exceptional event determination.¹⁷⁹ The only fires that are exempt are those that mimic the effect and frequency of natural fires.¹⁸⁰

To show that smoke from prescribed fire was not reasonably controllable, states must either adopt a SMP that covers the burn that caused the exceedance or demonstrate that the burn manager used “Basic Smoke Management Practices.”¹⁸¹ If a state uses basic smoke

174. *Sycan Marsh Preserve*, *supra* note 173.

175. *See supra* section I.B.

176. EXCEPTIONAL EVENTS GUIDANCE: PRESCRIBED FIRE ON WILDLAND THAT MAY INFLUENCE OZONE AND PARTICULATE MATTER CONCENTRATIONS, *supra* note 158, at 14.

177. 40 C.F.R. § 50.14(b)(3)(iii).

178. Treatment of Data Influenced by Exceptional Events, 72 Fed. Reg. 13,560, 13,566–67 (Mar. 22, 2007). The 2016 regulations incorporate the definition of natural fire return interval from the preamble to the 2007 regulations. Treatment of Data Influenced by Exceptional Events, 81 Fed. Reg. 68,216, 68,250 (Oct. 3, 2016). Interestingly, the 2007 preamble goes on to note in the next sentence that “[i]n many, though not all cases, it may be possible to demonstrate that the likelihood of recurrence is sufficiently small enough to show that a prescribed fire under these conditions meets the ‘unlikely to recur at a particular location’ requirement of the statutory language.” Treatment of Data Influenced by Exceptional Events, 72 Fed. Reg. at 13,567.

179. *See* 40 C.F.R. § 50.14(b)(3)(ii)(C) (requiring states to prove the “not reasonably preventable” prong of the test by relying on a land or resource management plan “with a stated objective to establish, restore and/or maintain a sustainable and resilient wildland ecosystem and/or to preserve endangered or threatened species through a program of prescribed fire,” meaning that smoke from burns for the purpose of agriculture and forestry would not qualify).

180. *See id.*

181. *Id.* § 50.14(b)(3)(ii)(A) tbl. 1. The EPA recommends that SMPs have at least six components: (1) some type of permitting or burn authorization, (2) provisions to encourage land managers “to consider and evaluate alternative treatments to fire” and to encourage burn managers to undertake

management practices, the state and the burn manager must engage in a post-burn review of the practices used during the fire.¹⁸² States with qualifying SMPs do not need to undertake this review. The state must also show that the exceedance from the prescribed fire was not reasonably preventable.¹⁸³ They can do this through the same resource management plan used in the “unlikely to recur” prong.¹⁸⁴

When EPA added prescribed burns to the exceptional event regulations in 2016, it recognized that “adverse effects [of wildfire] can be mitigated through management of wildland vegetation, including planned prescribed fires and letting some wildfires proceed naturally.”¹⁸⁵ However, as of March 1, 2020, no state had submitted an exceptional event demonstration for a prescribed burn.¹⁸⁶ While the regulations extend the applicability of the exceptional events rule to prescribed burns, there is no guarantee that the EPA would concur on a state’s exceptional event demonstration for a prescribed burn.¹⁸⁷ The state bears the burden of creating a resource management plan that meets the EPA criteria.¹⁸⁸ In addition, by complying with the SMP, states require that prescribed fires are permitted when they are not likely to cause NAAQS exceedance.¹⁸⁹ Thus, while the regulations around prescribed burns may seem permissive on their face, they are not effective because states only allow prescribed burns that are not likely to cause a NAAQS exceedance.

“appropriate emission reduction techniques;” (3) burn plans that require: “actions to minimize . . . emissions, approaches to evaluate smoke dispersion, public notification and exposure reduction procedures, and air quality monitoring;” (4) “criteria for issuing health advisories,” and notifying the public about the burn; (5) surveillance to ensure compliance; (6) periodic program evaluation with stakeholder involvement. EXCEPTIONAL EVENTS GUIDANCE: PRESCRIBED FIRE ON WILDLAND THAT MAY INFLUENCE OZONE AND PARTICULATE MATTER CONCENTRATIONS, *supra* note 158, at 21.

182. 40 C.F.R. § 50.14(b)(3)(ii)(A).

183. *Id.* § 50.14(b)(3)(ii)(C).

184. *Compare id.* § 50.14(b)(3)(iii), *with id.* § 50.14(b)(3)(ii)(C) (using the same language to reference the resource management plan required).

185. Treatment of Data Influenced by Exceptional Events, 81 Fed. Reg. 68,216, 68,247 (Oct. 3, 2016).

186. Letter from Jennifer Noonan Edmonds, Pol’y Analysis & Commc’n Dir., Env’t Prot. Agency, to author (Mar. 1, 2020) (on file with author).

187. *See* Treatment of Data Influenced by Exceptional Events, 81 Fed. Reg. at 68,274 (describing the EPA’s broad discretion in carrying out its duties under section 319(b) of the CAA).

188. *See* 40 C.F.R. § 51.930 (2020) (placing the burden of creating a mitigation plan on the states).

189. *See, e.g.*, 2019 SILVICULTURAL SMOKE MANAGEMENT PLAN, *supra* note 145, at 9 (describing how prior to permitting large burns, Washington’s Department of Ecology predicts whether the burn will violate NAAQS).

2. *Mitigation Plans*

The regulations also require states to submit a mitigation plan along with the exceptional events demonstration if the exceedance is caused by an “historically documented or known seasonal event” that causes exceedances three times in a three-year period.¹⁹⁰ This is required for all types of exceptional events, including wildfires and prescribed burns.¹⁹¹ The EPA’s 2019 guidance document on exceptional event demonstrations for prescribed burns indicated that an SMP could satisfy the mitigation plan requirement.¹⁹² The mitigation plan must include public notice and education, as well as “[s]teps to identify, study and implement mitigating measures” including abating or minimizing “contributing controllable sources of identified pollutants.”¹⁹³ The states must periodically review the plan.¹⁹⁴

While the EPA reviews mitigation plans for completeness when they are required, it only considers whether the plans meet the basic requirements contained in regulations and does not consider the content of the plan.¹⁹⁵ This means that the EPA does not consider whether the plan does enough prevent air quality problems.¹⁹⁶ Further, these mitigation plans need not be federally enforceable.¹⁹⁷ The EPA justifies this mitigation plan requirement without teeth by claiming that it “maximizes the flexibility of the air agency” and other provisions of the CAA protect public health adequately.¹⁹⁸ The research into the increasing public health tells a different story; scientist and public health experts maintain that the CAA fails to protect people from wildfire smoke.¹⁹⁹

As written, the regulations could require that mitigation plans consider land management strategies, such as prescribed burns, to reduce incidents of extreme wildfire.²⁰⁰ However, the EPA currently does not require such

190. 40 C.F.R. § 51.930(b)(1).

191. *See id.*

192. EXCEPTIONAL EVENTS GUIDANCE: PRESCRIBED FIRE ON WILDLAND THAT MAY INFLUENCE OZONE AND PARTICULATE MATTER CONCENTRATIONS, *supra* note 158, at 22.

193. 40 C.F.R. § 51.930(b)(2).

194. *Id.* § 51.930(b)(2)(iii).

195. Treatment of Data Influenced by Exceptional Events, 81 Fed. Reg. 68,216, 68,271 (Oct. 3, 2016).

196. *Id.* at 68,271.

197. *Id.* at 68,274 (“Mitigation plans developed under 40 CFR 51.930 are not required to be included in a SIP or to be otherwise federally-enforceable.”).

198. *Id.* at 68,271.

199. Jaffe, *supra* note 6, at 587.

200. 40 C.F.R. § 51.930(b)(2)(ii)(A) (2020). In the plans, states must show how they will take “[m]easures to abate or minimize contributing controllable sources of identified pollutants.” *Id.*

strategies, and in practice most mitigation plans for wildfire smoke do not address them.²⁰¹ For example, in Oregon's 2017 application for an exceptional event determination for wildfire smoke, the state included a mitigation plan that only discussed wildfire fighting efforts and air quality alerts to the public.²⁰² The EPA approved the mitigation plan and granted Oregon's request.²⁰³ Similarly, the EPA-approved mitigation plans for the State of Montana and Sacramento, California do not address land management strategies to reduce the risk of wildfire smoke pollution.²⁰⁴ These plans only discuss limiting prescribed burning during a wildfire event to reduce the immediate smoke impact.²⁰⁵ These mitigation plans do not consider land management strategies that could decrease smoke pollution.²⁰⁶ States, local air agencies, and the EPA take a short-term view of air pollution when regulating wildfires smoke and consider only the immediate causes of the pollution instead of the systematic problem of forest mismanagement.

However, land management is not foreign to mitigation plans. Washington's mitigation plan for addressing particulate matter from dust describes specific efforts to reduce the risk of dust pollution by working with farmers "to implement appropriate measures to minimize soil erosion."²⁰⁷ This shows that specific land management strategies can be implemented through mitigation plans to reduce the future risk of

201. See Letter from Timothy B. Hamlin, Region 10 Dir., Env't Prot. Agency, to Richard Whitman, Dir., Or. Dep't of Env't Quality (July 6, 2017) (on file with author) (concurring with Oregon DEQ's request to exempt certain air quality data from a wildfire under the exceptional event rule).

202. RACHEL SAKATA & ANTHONY BARNACK, OR. STATE DEP'T. OF ENV'T QUALITY, KLAMATH FALLS 2014 AND 2015 EXCEPTIONAL EVENT EPA CONCURRENCE REQUEST 46-47 (2017).

203. Letter from Timothy B. Hamlin to Richard Whitman, *supra* note 201 (granting Oregon's request).

204. YOLO-SOLANO AIR QUALITY MGMT. DIST., SACRAMENTO METRO. AIR QUALITY MGMT. DIST., PLACER CNTY. AIR POLLUTION CONTROL DIST. & EL DORADO CNTY. AIR QUALITY MGMT. DIST., WILDFIRE MITIGATION PLAN FOR THE SACRAMENTO FEDERAL NONATTAINMENT AREA FOR PM_{2.5}, at 11 (2018) ("When a wildfire event is expected or ongoing, SFNA-PM_{2.5} air districts can use their existing authority to limit prescribed burning."); MONT. STATE DEP'T OF ENV'T QUALITY, STATE OF MONTANA MITIGATION PLAN FOR WILDFIRE EXCEPTIONAL EVENTS 14 (2018) ("A potential source of PM_{2.5} that could overlap with wildfire season is from prescribed burning. Due to the potential to cause or contribute to a NAAQS exceedance, the state of Montana has a strict smoke management plan (SMP).").

205. YOLO-SOLANO AIR QUALITY MGMT. DIST. ET AL., *supra* note 204, at 11; MONT. STATE DEP'T OF ENV'T QUALITY, *supra* note 204, at 16.

206. YOLO-SOLANO AIR QUALITY MGMT. DIST. ET AL., *supra* note 204; MONT. STATE DEP'T OF ENV'T QUALITY, *supra* note 204.

207. AIR QUALITY PROGRAM, WASH. STATE DEP'T OF ECOLOGY, HIGH WIND FUGITIVE DUST MITIGATION PLAN: FOR THE WALLULA PM₁₀ MAINTENANCE AREA, WALLULA, WASHINGTON 17 (2019).

pollution.²⁰⁸ This type of specific mitigation plan currently does not appear in wildfire smoke mitigation plans.²⁰⁹ However, the mitigation plans could require this.

Under the EPA's regulations, pollution from wildfire smoke meets the requirements for an exceptional event simply because it comes from a wildfire.²¹⁰ If the event recurs and a mitigation plan is required, these plans do not require states to consider the underlying cause of wildfires and are generally not federally enforceable; therefore, they do not meaningfully mitigate the risk of harm to human health caused by wildfire smoke.²¹¹ On the other hand, the regulations require complicated procedures to receive an exceptional event designation for prescribed burns.²¹² Further, mitigation plan regulations do not recognize that prescribed burns can reduce the frequency and intensity of wildfires.²¹³

III. LEGAL PROBLEMS WITH APPLYING THE EXCEPTIONAL EVENTS DESIGNATION TO PRESCRIBED BURNS

By automatically exempting wildfire smoke, the exceptional event regulations do not further the public health purpose of the statute. Therefore, these regulations are vulnerable to legal challenge. This Part first discusses basic administrative law principles to explain how courts review agency regulations and actions, and how they may review them in the future. Next, this Part applies these principles to section 319(b) of the CAA and exceptional events rule regulations, focusing specifically on how judicial interpretations of the statute may affect the legality of the exceptional event regulations in the context of wildfires and prescribed burns.

A. *Administrative Law Principles Guides Courts' Analyses of Agency Regulations and Guidance*

When an agency promulgates regulations pursuant to authority granted to the agency by Congress, these regulations necessarily interpret the meaning of the statute. Where there is only one reasonable interpretation because the statute is unambiguous, the court will determine whether the

208. *See id.*

209. *See* YOLO-SOLANO AIR QUALITY MGMT. DIST. ET AL., *supra* note 204; MONT. STATE DEP'T OF ENV'T QUALITY, *supra* note 204.

210. 40 C.F.R. § 50.14(b)(4) (2019).

211. 40 C.F.R. § 51.930(b)(2) (2020).

212. *Id.* § 50.14(b)(3).

213. *Id.* § 51.930.

regulation faithfully follows that interpretation.²¹⁴ On the other hand, when a statute is ambiguous, then courts will generally defer to the agency's interpretation of the statute, as long as the interpretation is reasonable.²¹⁵ This is called *Chevron* deference.²¹⁶ The Supreme Court has narrowed agency deference in recent years.²¹⁷ In addition, Justices Thomas, Gorsuch, and Kavanaugh have all criticized agency deference.²¹⁸ However, circuit courts still give broad deference to agencies and the Supreme Court declined to overrule *Auer* deference in 2019.²¹⁹

1. Agency Deference: Applying *Chevron*

In *Chevron U.S.A. Inc. v. Natural Resource Defense Council, Inc.*²²⁰ the Court created a two-step test to determine whether to grant deference to an agency's interpretation of a statute.²²¹ *Chevron* deference applies when Congress delegates authority to the agency to interpret the statute and the agency's interpretation has the force of law.²²²

In the first step of *Chevron*, the court determines whether the meaning of the statute is unambiguous.²²³ A statute is unambiguous if Congress has "directly spoken to the precise question at issue" and congressional intent is clear.²²⁴ When a statute is unambiguous, courts do not grant deference

214. *Chevron U.S.A. Inc. v. Nat. Res. Def. Council, Inc.*, 467 U.S. 837, 843 (1984).

215. *Chevron*, 467 U.S. at 844–45.

216. *Id.*

217. *See, e.g.*, *Nat'l Cable & Telecomms. Ass'n v. Brand X Internet Servs.*, 545 U.S. 967 (2005) (holding that *Chevron* deference is not appropriate where a court had already held that the regulations were unambiguous); *United States v. Mead Corp.*, 533 U.S. 218 (2001) (holding that *Chevron* only applies where Congress delegated the agency to promulgate rules that carry the force of law).

218. *Michigan v. EPA*, 576 U.S. 743, 760 (2015) (Thomas, J., concurring) ("I write separately to note that its request for deference raises serious questions about the constitutionality of our broader practice of deferring to agency interpretations of federal statutes."); *Gutierrez-Brizuela v. Lynch*, 834 F.3d 1142, 1149–54 (10th Cir. 2016) (Gorsuch, J., concurring); Brett M. Kavanaugh, *Fixing Statutory Interpretation*, 129 HARV. L. REV. 2118, 2153–54 (2016).

219. *See* Kent Barnett & Christopher J. Walker, *Chevron in the Circuit Courts*, 116 MICH. L. REV. 1, 6 (2017); *Kisor v. Wilkie*, 588 U.S. ___, 139 S. Ct. 2400, 2416 (2019).

220. 467 U.S. 837 (1984).

221. *Id.* at 843–45.

222. *See Mead*, 533 U.S. 218.

223. *Chevron*, 467 U.S. at 843–44.

224. *Id.* The ambiguity standard at step one of *Chevron* is often applied inconsistently. Professor Lawson identified two approaches that courts may take in determining whether a statute is ambiguous: (1) "clarity as a degree of certainty" as laid out in *Dole v. United Steelworkers of America*, 494 U.S. 26 (1990), or (2) "clarity as obviousness" as laid out in *Pauley v. Bethenergy Mines, Inc.*, 501 U.S. 680 (1991). GARY LAWSON, *FEDERAL ADMINISTRATIVE LAW* 686–87 (8th ed. 2019). Lower courts more often apply the *Dole* standard, although many opinions declare a statute as ambiguous or unambiguous without significant analysis. *Id.* *Chevron* only applies when an agency is interpreting a

to the agency interpretation.²²⁵ However, “if the statute is silent or ambiguous with respect to the specific issue,” then courts move to step two of *Chevron*.²²⁶

At step two, the court determines whether the agency’s interpretation is a reasonable and “permissible construction of the statute”; if it is, that interpretation is granted deference.²²⁷ If a court holds that a statute is unambiguous, the agency is bound by the court’s interpretation.²²⁸ Stare decisis trumps *Chevron* deference and there is no leeway for an agency to reinterpret the statute.²²⁹ On the other hand, if a court holds that the statute is ambiguous at step one, then the agency may reinterpret the statute, subject to the reasonableness standard at step two.²³⁰

2. *The Future of Agency Deference in the Roberts Court*

While *Chevron* deference is well-settled law, members of the bench have criticized it in recent years.²³¹ Justices Thomas criticized *Chevron* in a concurrence in *Michigan v. EPA*²³² in 2015. Justice Kavanaugh and Justice Gorsuch both publicly criticized the doctrine before their appointment to the Supreme Court.²³³ However, in a 2018 opinion

statute that it administers through something like a regulation that has the force of law. *Chevron*, 467 U.S. at 845 (“We have long recognized that considerable weight should be accorded to an executive department’s construction of a statutory scheme it is entrusted to administer.”).

225. *Chevron*, 467 U.S. at 843–44.

226. *Id.* at 844.

227. *Id.*; see also Nat. Res. Def. Council v. EPA (*NRDC*), 896 F.3d 459, 463–64 (D.C. Cir.), petition denied, 735 F. App’x 737 (D.C. Cir. 2018) (“If the Act unambiguously authorizes or forecloses EPA’s . . . rule, step one of the *Chevron* analysis requires that we follow Congress’s express policy choice. If the Act is unclear on the matter, step two of *Chevron* requires that we defer to EPA’s reasonable interpretation.” (quoting *Sierra Club v. EPA*, 536 F.3d 673, 677 (D.C. Cir. 2008))).

228. *Chevron*, 467 U.S. at 843–44.

229. Nat’l Cable & Telecomms. Ass’n v. Brand X Internet Servs., 545 U.S. 967, 982–83 (2005).

230. *Chevron*, 467 U.S. at 843–44.

231. LAWSON, *supra* note 224, 604–05.

232. *Michigan v. EPA*, 576 U.S. 743 (2015).

233. Kavanaugh, *supra* note 218, at 2153–54 (suggesting that *Chevron* deference should be limited to agency interpretation of broad statutory terms such as “‘reasonable,’ ‘appropriate,’ ‘feasible,’ or ‘practicable,’” but “in cases where an agency is instead interpreting a specific statutory term or phrase, courts should determine whether the agency’s interpretation is the best reading of the statutory text”); Gutierrez-Brizuela v. Lynch, 834 F.3d 1142, 1149–54 (10th Cir. 2016) (Gorsuch, J., concurring) (“*Chevron* and *Brand X* permit executive bureaucracies to swallow huge amounts of core judicial and legislative power and concentrate federal power in a way that seems more than a little difficult to square with the Constitution of the framers’ design. Maybe the time has come to face the behemoth. . . . Not only is *Chevron*’s purpose seemingly at odds with the separation of legislative and executive functions, its effect appears to be as well.”); see also LAWSON, *supra* note 224, at 604–05.

authored by Justice Gorsuch, the Court declined to reexamine *Chevron*, stating that “whether *Chevron* should remain is a question we may leave for another day.”²³⁴ In addition, in 2019 the Court declined to overrule the related *Auer* deference.²³⁵ With Justice Barrett’s confirmation to the Court in October 2020, some commentators again suggested that the Court may weaken—or even overturn—this strong agency deference.²³⁶ Some predict that instead of overruling *Chevron*, the Court will limit the applicability of the doctrine by applying a more rigid analysis of the statutory meaning at step one.²³⁷ However, the circuit and district courts continue to apply *Chevron*. A study found that from 2003-2013, courts decided only thirty percent of cases at step one of *Chevron*, while in seventy percent, courts moved to step two.²³⁸ In addition, *Chevron* itself was a case about deference to the EPA’s CAA regulations.²³⁹ *Chevron* would still likely apply to the CAA even if it is limited in other circumstances because *Chevron* is at its strongest when there is a direct agency delegation to develop complicated and expert driven regulations.²⁴⁰

But cf. United States v. Mead Corp., 533 U.S. 218, 256–57 (2001) (Scalia, J., dissenting) (“To decide the present case, I would adhere to the original formulation of *Chevron*. . . . *Chevron* sets forth an across-the-board presumption, which operates as a background rule of law against which Congress legislates: Ambiguity means Congress intended agency discretion. Any resolution of the ambiguity by the administering agency that is authoritative—that represents the official position of the agency—must be accepted by the courts if it is reasonable.”).

234. SAS Inst., Inc. v. Iancu, __ U.S. __, 138 S. Ct. 1348, 1358 (2018).

235. Kisor v. Wilkie, 588 U.S. __, 139 S. Ct. 2400, 2416 (2019).

236. Jeff Overlay, *Chevron Deference’s Future in Doubt If Barrett Is Confirmed*, LAW360 (Oct. 23, 2020, 11:11 PM), <https://www.law360.com/articles/1318381/chevron-deference-s-future-in-doubt-if-barrett-is-confirmed> [<https://perma.cc/QV8C-ZKQV>]; see also James Goodwin, *Will Confirming Justice Barrett Be the Death of Chevron Deference?*, UNION OF CONCERNED SCIENTISTS: BLOG (Oct. 15, 2020, 2:21 PM), <https://blog.ucsusa.org/guest-commentary/will-confirming-judge-barrett-be-the-death-of-chevron-deference> [<https://perma.cc/RL5J-W8SZ>]. On the other hand, Justice Scalia, after whom the three newest justices are said to model their approach, favored a strong interpretation of *Chevron* deference because Congress leaves gaps and ambiguity in statutes with the knowledge that the agency’s interpretation will receive deference. *Mead*, 533 U.S. at 256–57 (Scalia, J., dissenting).

237. Jeffrey Pojanowski, *The Future of Chevron Deference: Of Zombie Fungus and Acoustic Separation*, YALE J. ON REGUL.: NOTICE & COMMENT BLOG (June 21, 2018), <https://www.yalejreg.com/nc/the-future-of-chevron-deference-of-zombie-fungus-and-acoustic-separation-by-jeffrey-pojanowski/> [<https://perma.cc/D72V-PAF4>]; VALERIE C. BRANNON & JARED P. COLE, CONG. RSCH. SERV., LSB10204, DEFERENCE AND ITS DISCONTENTS: WILL THE SUPREME COURT OVERRULE CHEVRON? 2–3 (2018), <https://fas.org/sgp/crs/misc/LSB10204.pdf> [<https://perma.cc/QG75-4NZ5>].

238. See Barnett & Walker, *supra* note 219, at 6.

239. *Chevron U.S.A. Inc. v. Nat. Res. Def. Council, Inc.*, 467 U.S. 837, 842–43 (1984).

240. LAWSON, *supra* note 224, at 647.

B. Courts Interpret the Exceptional Events Statute, Regulations, and Agency Guidance

The Supreme Court has never heard a case challenging the EPA's exceptional events regulations. In fact, the case law around exceptional events designations is sparse. The Tenth and D.C. Circuit Courts of Appeals have each once considered whether the 2016 exceptional events regulations are a proper application of the statute.²⁴¹ In *Natural Resource Defense Council v. EPA (NRDC)*,²⁴² decided by the D.C. Circuit, environmental groups brought a facial challenge²⁴³ to the regulatory definition of "natural events."²⁴⁴ In *Ukeiley v. EPA*,²⁴⁵ decided by the Tenth Circuit, the plaintiff challenged the EPA's definition of exceptional events as applied to high winds that blow dust into the air in Lamar, Colorado.²⁴⁶ Neither deals directly with NAAQS exceedances from wildfires or prescribed burns, but both are instructive to understand how a court may interpret the limits on the exceptional event regulations as applied to prescribed burns.

1. Challenge to the Regulation at Large: NRDC v. EPA

After the EPA promulgated the final exceptional event regulation in 2016, the NRDC and Sierra Club brought a citizen suit²⁴⁷ that challenged

241. *Nat. Res. Def. Council v. EPA (NRDC)*, 896 F.3d 459, 463 (D.C. Cir. 2018); *Ukeiley v. EPA*, 896 F.3d 1158, 1165 (10th Cir. 2018).

242. 896 F.3d 459, 463 (D.C. Cir. 2018).

243. The terms facial challenge and as-applied challenge are traditionally used in constitutional law when a statute is challenged as unconstitutional. See Richard H. Fallon, Jr., *Fact and Fiction About Facial Challenges*, 99 CALIF. L. REV. 915, 922 (2011) (arguing that, while the Court repeats the maxim that facial challenges are rare, it actually decides more facial challenges than as-applied challenges). There is no bright line distinction between these two types of challenges, especially in constitutional cases. This framework has been applied to administrative law challenges and in those cases a facial challenge means that the plaintiff asks the court to strike down every application of the regulation as unreasonable under the statute. *EPA v. EME Homer City Generation, L.P.*, 572 U.S. 489 (2014); *NRDC*, 896 F.3d at 466. In *EPA v. EME Homer City Generation, L.P.*, the Court said, "[t]he possibility that the rule, in uncommon particular applications, might exceed EPA's statutory authority does not warrant judicial condemnation of the rule in its entirety." 572 U.S. 489. In an as-applied challenge, the plaintiff claims that the regulation is impermissible as it applies to the plaintiff's specific circumstances. See Fallon, *supra* note 243, at 923.

244. *NRDC*, 896 F.3d at 463.

245. 896 F.3d 1158 (10th Cir. 2018).

246. *Id.*

247. The CAA has its own citizen suit provision. 42 U.S.C. § 7604. Through a citizen suit, "any person" can sue the federal government, state governments, local governments, or individuals to enforce the CAA. *Id.* § 7604(a). In addition, any person can bring a suit against the EPA Administrator "where there is alleged a failure of the Administrator to perform any act or duty under this chapter which is not discretionary with the Administrator." *Id.* § 7604(a)(2).

a portion of the regulation.²⁴⁸ The plaintiffs challenged the EPA's regulatory definition of "natural events" as an event that humans "play[] little or no direct role."²⁴⁹ The regulation states that "anthropogenic sources that are reasonably controlled" will not be considered to play a "direct role in causing emissions."²⁵⁰ The plaintiffs argued that a natural event cannot, by definition, include human-caused elements, therefore the regulation is unreasonable and exceeds statutory limitations.²⁵¹

In analyzing these regulations, the court applied *Chevron* to determine if the court should afford deference to the EPA's regulatory interpretation of the statute that it was tasked with administering.²⁵²

At *Chevron* step one, the court held that the term "natural events" in the statute was ambiguous.²⁵³ The statute directs the EPA to draw a line between natural events and events caused by human activity, but "the Act provides little guidance beyond establishing that the distinction exists."²⁵⁴ However, the court thought it was clear that Congress did not intend for "natural event" to have its ordinary meaning because the statute paired the term with "an event caused by human activity."²⁵⁵ In the structure of the statute, "natural events" cannot mean an event only caused by nature and "an event caused by human activity" cannot be limited to only human caused activity because then events caused by a combination of the two would not be covered by the statute.²⁵⁶ The court found that this was clearly not Congress's intent.²⁵⁷ Instead, the distinction between human-caused events and natural events in the statute is "blurry at best."²⁵⁸ Therefore, the EPA must fill in the gaps within the guidance provided by the statute. Because of this broad and ambiguous language, the court wrote that "[m]any possible rules for sorting events may be permissible under the statute."²⁵⁹

At step two of *Chevron*, the court held that the distinction the EPA drew

248. *Id.* § 7607(b)(1).

249. 40 C.F.R. § 50.1 (2019).

250. *Id.*

251. *NRDC*, 896 F.3d at 463.

252. *Id.*

253. *Id.* at 464 ("The statutory language is far from unambiguous and is, instead, a classic example of Congress leaving a gap for EPA to fill with reasonable regulations."). The reporter headnotes erroneously say that court found that the statute is unambiguous.

254. *Id.*

255. *Id.*

256. *Id.*

257. *Id.*

258. *Id.*

259. *Id.*

between natural and human-caused events was reasonable.²⁶⁰ The NRDC argued that the rule was unreasonable because, as written, it would exempt situations where a high wind event could transform exceedances from human-caused pollution into a natural event.²⁶¹ In this hypothetical, the NRDC argued that exceedances from industry pollution would be eligible for an exceptional event designation.²⁶² The court agreed with NRDC that in those circumstances any exceedances would not be an exceptional event, but did not strike down the regulations because it was not clear that the EPA would actually grant an exceptional event designation in that case. Because it was a facial challenge to the regulation in all of its applications, the court declined to strike the regulation based on the hypothetical.²⁶³ The court interpreted the regulation to consider an event natural if the “natural” force caused the emissions to enter the air while it is human-caused if human action caused the emission to enter the air.²⁶⁴ The court drew some limitations around a reasonable interpretation of the regulation when it said that “[a]ctivities that cause emissions to behave in a certain way, such as migrating to new areas or concentrating in dangerous amounts, are not events that cause the emissions.”²⁶⁵ Based on the court’s interpretation, NAAQS exceedances from routine emissions would not qualify for an exceptional event designation.²⁶⁶

Although the court found that the agency’s interpretation of the statute was reasonable, it left the door open to future legal challenges to the rule as applied if the “EPA applies the rule in a way that the Act would not permit, an injured party can petition us to review the agency’s action at that time.”²⁶⁷ While coming out of the Tenth Circuit, *Ukeiley v. EPA* dealt with the as-applied question left open by *NRDC v. EPA*.²⁶⁸

2. *Challenge to the Exceptional Event Designation as Applied:* *Ukeiley v. EPA*

In *Ukeiley v. EPA*, the plaintiff brought an as-applied challenge to the EPA’s exceptional event regulations in the context of the EPA’s designation of thirty-four exceedances in Lamar, Colorado as exceptional

260. *Id.*

261. *Id.*

262. *Id.*

263. *Id.*

264. *Id.*

265. *Id.* at 465.

266. *Id.*

267. *Id.* at 466.

268. *Ukeiley v. EPA*, 896 F.3d 1158, 1165 (10th Cir. 2018).

events.²⁶⁹ The exceedances resulted from wind blowing dust into the air.²⁷⁰ The plaintiff challenged the EPA's designation of these wind-caused exceedances as exceptional events.²⁷¹ He argued that the regulations went beyond the statute and were unlawful because an exceptional event, by its very definition, must be unusual and out of the ordinary.²⁷² According to the plaintiff, high winds in Lamar that blow dust into the air are common, making NAAQS exceedances from them not exceptional events.²⁷³

The court applied *Chevron* deference in analyzing the EPA's exceptional event regulations. At *Chevron* step one, the Tenth Circuit held that the statutory definition of an exceptional event is not ambiguous.²⁷⁴ Congress clearly intended to include recurring events in the definition of exceptional events, as indicated by the plain language of the definition.²⁷⁵ The statute defines an exceptional event, in relevant part, as "an event caused by human activity that is unlikely to recur."²⁷⁶ The court then held that the EPA's regulations comply with the "statute's plain meaning."²⁷⁷

While the court held that the exceptional events definition in section 319(b) of the CAA was unambiguous, the court narrowed its holding by noting that natural events may be recurring while human-caused events must be unlikely to recur.²⁷⁸ According to the court, unlikely to recur means that "the event was a one-off that should have no long-term or recurring health-related consequences. For example, human-induced recurring agricultural practices would not be eligible for exclusion as exceptional events."²⁷⁹ This specific example illustrates the court's understanding of the unambiguous meaning of human-caused events that are unlikely to recur, while the dust blown up by the wind serves as the example of a recurring event that fits into the unambiguous

269. *Id.* at 1163.

270. *Id.* at 1160.

271. *Id.* at 1163. The agency action in this case was reviewed under the arbitrary and capricious standard of review laid out in the Administrative Procedure Act, 5 U.S.C. § 706(2)(A). For a discussion on the complex relationship between *Chevron*, which generally speaking is applied to an agency's interpretation of a statute, and the arbitrary and capricious standard of § 706(2)(A), see LAWSON, *supra* note 224, at 845–46.

272. *Ukeiley*, 896 F.3d at 1165.

273. *Id.*

274. *Id.*

275. *Id.*

276. 42 U.S.C. § 7619(b)(1)(A)(iii).

277. *Ukeiley*, 896 F.3d at 1165.

278. *Id.*

279. *Id.*

definition of an exceptional event.²⁸⁰

In the court's analysis, it is unclear what part of this statute is unambiguous—the court writes that parts of the exceptional events definition are merely “guideposts” that “served as a starting point for the EPA’s rulemaking to further define the boundaries of exceptional events.”²⁸¹ In a self-conscious footnote, the court noted that “even if we discerned some ambiguity, we would still uphold the EPA’s decision as a reasonable construction of the statute.”²⁸² In this case, the Tenth Circuit interprets a part of the statute as unambiguous even when it detects some ambiguity.²⁸³ This approach limits the applicability of *Chevron* deference the EPA’s interpretation at step two in future cases and generally reflects a more conservative approach to *Chevron* deference.²⁸⁴

C. *Problems with the Exceptional Events Rule As Applied to Prescribed Burns and Wildfires*

The exceptional events rule as applied to prescribed burns is great in theory but problematic in practice for a few reasons. First, the prescribed burn regulations are legally vulnerable, especially if a court follows *Ukeiley* by taking a conservative approach to *Chevron* step one and finding that the statute is unambiguous.²⁸⁵ Second, the regulations do not actually incentivize more prescribed burns because they impose administrative burdens for prescribed burns.²⁸⁶ These problems—which arise from trying to fit prescribed burns into section 319(b) of the CAA—speak to the larger issue with applying the exceptional events rule to wildfire smoke.²⁸⁷ Last, the way that the regulations apply to wildfires contravenes the purpose of section 319(b) of the CAA and the CAA generally: to protect public health.²⁸⁸

The regulations treat all wildfire smoke as inevitable when in fact some of it may be preventable through techniques such as prescribed burns.²⁸⁹ In addition, the regulations do not require measures to mitigate fire risk

280. *Id.*

281. *Id.*

282. *Id.* at 1165 n.3.

283. *Id.*

284. *See supra* section III.A.ii.

285. *See infra* section III.C.i.

286. *See infra* section III.C.ii.

287. *Infra* section III.C.

288. 42 U.S.C. § 7619(b)(3)(A)(i).

289. *Supra* section I.B.

itself, only public communication after the smoke is already in the air.²⁹⁰ The exceptional event regulations fail to provide a workable exemption for prescribed burns and yet they broadly exempt wildfires. This disconnect in the regulation of prescribed burns and wildfires exemplifies the problems with the CAA's regulation of wildfire smoke: the exceptional event rule statute and regulations do not account for the connection between land management and air quality.

1. *The EPA's Exceptional Event Regulations, As Applied to Prescribed Burns, Are Legally Vulnerable*

The exceptional events regulations as applied to prescribed burns are vulnerable to legal challenges because prescribed burns are designated as human-caused events that are unlikely to recur.²⁹¹ *Ukeiley* and *NRDC* set two different tones in the interpretation of the exceptional events statute.²⁹² The two courts analyzed the same statute but came to very different conclusions about whether it was ambiguous. These seemingly inapposite analyses of the exceptional event statute could be read narrowly together, or they could be read broadly in tension with each other.

The D.C. Circuit held that the exceptional event statute was ambiguous because it left gaps within which the agency could make a variety of reasonable interpretations, while the Tenth Circuit held that the guideposts in the statute were enough to make the meaning unambiguous in the definition of an exceptional event.²⁹³ Read together, these two cases advise that the statutory definition of exceptional events is not ambiguous, while the distinction between natural and man-made exceptional events, which is within the definition of exceptional events, is ambiguous.²⁹⁴ On the other hand, *Ukeiley* can be read broadly to mean that the statutory definition of human-caused exceptional events is unambiguous, which puts it in direct conflict with the finding of ambiguity in *NRDC*. Reading *Ukeiley* broadly also means that if a plaintiff challenges the exceptional events regulations in the Tenth Circuit, a court could not move on to step two of *Chevron* and grant the EPA deference.²⁹⁵ Further, other circuits may decide to follow either *Ukeiley* or *NRDC*, depending on which a court

290. 40 C.F.R. § 51.930 (2020).

291. EXCEPTIONAL EVENTS GUIDANCE: PRESCRIBED FIRE ON WILDLAND THAT MAY INFLUENCE OZONE AND PARTICULATE MATTER CONCENTRATIONS, *supra* note 158, at 14–16.

292. *Supra* section III.B.

293. *Ukeiley v. EPA*, 896 F.3d 1158, 1165 (10th Cir. 2018).

294. *Id.*; *Nat. Res. Def. Council v. EPA (NRDC)*, 896 F.3d 459, 465 (D.C. Cir. 2018).

295. *Nat'l Cable & Telecomms. Ass'n v. Brand X Internet Servs.*, 545 U.S. 967 (2005).

finds more persuasive. The future legality of the exceptional event prescribed burn regulations depends on whether a court reads *Ukeiley* broadly, narrowly, or finds it unpersuasive all together. At *Chevron* step one, under a broad reading of *Ukeiley*, “unlikely to recur” is unambiguous, so the court would inquire into whether the interpretation fits within the plain meaning.²⁹⁶ According to the EPA regulations, a prescribed fire is unlikely to recur if the frequency of burns does not exceed the “natural fire return interval” or the frequency required to maintain a resilient wildland ecosystem.²⁹⁷ This regulation does not fit within the clear meaning of an unambiguous “unlikely to recur” because the EPA applied a different definition for the recurrence of prescribed burns than it applies to every other human-caused event, and natural burns are a recurring event. Further, prescribed burns are recurring by the *Ukeiley* definition because they are not a “one-off” event.²⁹⁸ Effective prescribed burn programs apply fire repeatedly, although the exact frequency depends on the specific ecological needs of the area.²⁹⁹

At step one under a narrow reading of *Ukeiley*, a court could find that the statute is unambiguous as to the fact that human-caused events must be unlikely to recur, but leaves a gap and is ambiguous in defining what unlikely to recur means. By limiting the holding of unambiguity, a court could grant deference to the EPA’s regulations as long as the statute fills the “statutory gap in a reasonable fashion.”³⁰⁰ If a court finds that “unlikely to recur” is ambiguous, the court will move to step two of the *Chevron* test where it must determine whether the statute fills the “statutory gap in a reasonable fashion.”³⁰¹ In this analysis, the court will likely find that the regulation is reasonable based on the court in *NRDC v. EPA*’s holding that it was reasonable to interpret a natural event as a combination of both natural and human activity.

A narrow reading of *Ukeiley* is more compatible with *NRDC*. Although the statutory definition unambiguously demands that human-caused events cannot recur, the definition of exceptional events overall could still be understood as ambiguous because, as laid out in *NRDC*, the language

296. *Ukeiley*, 896 F.3d at 1165.

297. 40 C.F.R. § 50.14(b)(3)(iii) (2020).

298. *See, e.g.*, 72 Fed. Reg. 13,560, 13,567 (Mar. 22, 2007) (noting that prescribed fire can recur in anywhere from one year to 200-year intervals).

299. *See, e.g.*, *Sycan Marsh Preserve*, *supra* note 173 (prescribed burn research in Oregon found that fire applied every five years over a fifteen-year period has made Eastern Oregon Ponderosa Pine Forests healthier and more drought resistant).

300. Nat. Res. Def. Council v. EPA (*NRDC*), 896 F.3d 459, 465 (D.C. Cir. 2018) (quoting *Brand X*, 545 U.S. at 980).

301. *Id.* at 464–65 (first quoting 42 U.S.C. § 7619(b)(1)(A)(iii); and then quoting *Brand X*, 545 U.S. at 980).

of the statute leaves gaps that are open to multiple interpretations by the EPA.³⁰² Further, the legislative history of the statute suggests that in this statute Congress intended to allow the EPA to fill in the statutory gaps in a flexible way.³⁰³

The EPA's regulations applying the exceptional event designation to prescribed burns are vulnerable to legal challenge because prescribed burns are by definition recurring events. To some extent, this analysis will depend on the future of *Chevron* deference in the Roberts Court. Regardless of the legal outcome, these regulations are also ineffective.

2. *The Exceptional Event Regulation Provides a Blank Check to Wildfire Smoke Despite Evidence That It Can Be Mitigated and Causes Extreme Health Problems*

The broad exceptional event exemption for wildfire smoke undermines the purpose of the CAA because it treats harmful pollution from wildfire smoke as if it were uncontrollable and unpreventable.³⁰⁴ However, scientists agree that better land management can reduce the amount of smoke produced by wildfires.³⁰⁵

The EPA's regulations around the "not reasonably controllable or preventable" prong of the statutory definition of an exceptional event let states off the hook for harmful air pollution from wildfires that could have been lessened through proper land management.³⁰⁶ On the other hand, the regulations holding emissions from prescribed burns to extremely high standards.³⁰⁷ In section 319(b), states must show that the NAAQS violation was "not reasonably controllable or preventable."³⁰⁸ A state can meet this controllable and preventable standard for a wildfire simply by showing that the event was a wildfire.³⁰⁹ On the other hand, a state must

302. *Id.*

303. *See generally* INTERIM AIR QUALITY POLICY ON WILDLAND AND PRESCRIBED FIRES, *supra* note 131, at 2 (illustrating how, before Congress enacted section 319(b), the EPA used its discretion to exclude data from managed wildfires fires when states adopted a SMP); GUIDELINE ON THE IDENTIFICATION AND USE OF AIR QUALITY DATA AFFECTED BY EXCEPTIONAL EVENTS, *supra* note 131, at 1–4 (showing how the EPA used its discretion to create a policy to exempt air quality data from exceptional events such as wildfires in 1986).

304. *See supra* section II.B; *see also* 40 C.F.R. § 50.14 (2019).

305. *See supra* section II.A; *see also* Schoennagel et al., *supra* note 7, at 4583.

306. *See supra* section II.C.i.

307. *See supra* section II.C.

308. 42 U.S.C. § 7619(b)(1)(A)(ii). The regulations make this statutory directive into a conjunctive two prong analysis: the violation must be reasonably controllable and reasonably preventable. 40 C.F.R. § 50.14(b)(3)(iv)(D).

309. 40 C.F.R. § 50.14(b)(4) (“[T]he Administrator will determine every wildfire occurring

meet additional requirements when it applies for an exceptional event determination for a prescribed burn. To show that violations from a prescribed burn were not reasonably controllable, the state must either certify to the EPA that it adopted a smoke management program (SMP) and followed it during the prescribed burn or that the state employed “basic smoke management practices (BSMP).”³¹⁰ To show that violations from a prescribed burn were not reasonably preventable, the state must “describ[e] the benefits that would have been foregone if the fire were not conducted” through a multi-year land or resource management plan.³¹¹

This policy fails to hold land managers accountable for the air quality violations that could have been controlled or even prevented simply because the emissions come from a “wildfire.” This is not only bad policy, but it also goes against the exceptional event statute’s policy goal of protecting public health and leaves the regulation vulnerable to legal challenge.

In the case of wildfire smoke exemptions, the administration of the exceptional events rule does not reflect the purpose of the statute because it grants an exception to the health-based NAAQS for wildfire smoke—even when evidence demonstrates that the smoke could have been mitigated. In interpreting comprehensive environmental statutes such as the CAA, courts pay particular attention to the structure and purpose of the statute. For example, in *County of Maui v. Hawaii Wildlife Fund*,³¹² a 2020 Supreme Court case interpreting a section of the Clean Water Act (CWA),³¹³ the Court looked to the CWA’s purpose and structure in rejecting the EPA’s interpretation of the relevant provision because “to follow EPA’s reading would open a loophole allowing easy evasion of the statutory provision’s basic purposes. Such an interpretation is neither persuasive nor reasonable.”³¹⁴

predominantly on wildland to have met the requirements identified in paragraph(c)(3)(iv)(D) of this section regarding the not reasonably controllable or preventable criterion.”).

310. EXCEPTIONAL EVENTS GUIDANCE: PRESCRIBED FIRE ON WILDLAND THAT MAY INFLUENCE OZONE AND PARTICULATE MATTER CONCENTRATIONS, *supra* note 158, at 6.

311. *Id.* at 25.

312. 590 U.S. ___, 140 S. Ct. 1462, 1474 (2020).

313. 33 U.S.C. §§ 1251–388.

314. *Cnty. of Maui*, 140 S. Ct. at 1474. In this case, the Court did not apply *Chevron*, but the less deferential *Skidmore* standard. *Id.*; see also *County of Maui v. Hawaii Wildlife Fund*, HARV. L. REV. ONLINE ARCHIVES: LEADING CASES (Nov. 10, 2020), <https://harvardlawreview.org/2020/11/county-of-maui-v-hawaii-wildlife-fund/> [<https://perma.cc/5B22-GEDV>] (noting that the Court did not apply *Chevron* deference because the government did not invoke it). In this case, the Court further solidified the idea that *Chevron* deference is waived if the agency does not raise it in a timely manner. *Id.* While in this case the court’s unwillingness to apply *Chevron* deference led to a more protective environmental outcome, generally the chipping away at *Chevron* deference is favored by industry,

The *County of Maui* analysis both illustrates and entrenches the importance of ensuring that regulations further environmental statutes overarching goals, namely reducing pollution. While the purpose of the CAA will not change the court's interpretation in all cases, it is always important to analyze CAA regulations through the lens of the statutory purpose. The *County of Maui* decision illustrates the importance that courts place on statutory purpose. In the case of wildfire smoke and the exceptional event designation, it remains clear that the EPA has not administered the statute in accordance with its statutory goals.

Although the EPA's expansion of the exceptional events designation to cover prescribed burns is a step in the right direction, its post hoc approach is vulnerable to legal challenge and does nothing to change the incentive structure by which harmful smoke from wildfires is per se exempt from the CAA, while prescribed burns are closely regulated. As written now, the exceptional event rule only applies as a safety net if the prescribed burn causes more smoke than expected. These problems with the exceptional even designation illustrate that it needs to change.

IV. CHANGES TO THE EXCEPTIONAL EVENTS DESIGNATION PROCESS

Given the evidence that prescribed burns decrease the severity of wildfires and the public health problems associated with smoke, this Comment suggests legislative and regulatory changes to the exceptional events designation. Both proposals aim to bring wildfire smoke into the regulatory purview of the CAA, so that it properly incentivizes land managers to spend sufficient resources on wildfire mitigation techniques—including prescribed burns. The legislative proposal would also remove legal roadblocks to more prescribed burns by expanding the exceptional event rule to include prescribed burns. Both proposals would solve the legal vulnerabilities of the exceptional event rule and move the EPA away from the blanket exception for all wildfire smoke.

A. *Changes to Exceptional Event Rule in the Clean Air Act Will Ensure that States Prioritize Prescribed Burns*

Congress should amend the CAA to create a separate category of exceptional events just for smoke from wildfires and prescribed burns. Smoke from wildfires and ecologically beneficial prescribed burns should be subject to different criteria to qualify for an exceptional event

which resists environmental regulations, while a strong application of *Chevron* is generally favored by environmental advocates. *Id.*

designation. This Comment suggests that states must meet two requirements to receive an exceptional event designation for smoke. These requirements would replace to the current statutory definition of exceptional events that currently guides the EPA's wildfire and prescribed burn regulations.

First, the state must show that it is taking all reasonable steps to encourage proper forest management and mitigate extreme wildfire risk, including prescribed burns. In this showing, the state must set specific land management goals to reducing wildfire risk and detail specific plans to meet the goals. The plans must address plans for state, federal, and private land. States should adopt measures to require or incentivize private land-owners to reduce wildfire risk. Further, states must work with federal agencies to create wildfire risk reduction plans for all land in the state. In the suggested amendment, federal agencies that manage federal lands must work with the states and must meet their obligations under the plan. This prong is stringent and states will have to increase forest management and prescribed burning significantly to meet the requirements.

Second, the state must show that it is taking all reasonable steps to protect the public from the health problems associated with wildfire smoke. Reasonable steps include communication about current air quality and education about the health risks associated with smoke.³¹⁵ Further, states should provide safe public spaces with filtered air where people can go during an extreme smoke event in every community.³¹⁶ Some states and municipalities already do this effectively, but these public health measures should be more uniform across the West.³¹⁷

The EPA must approve the plans for both of these requirements every three years. Once submitted, the EPA must decide on the state's plans within ninety days. Every time a state applies for an exemption under the exceptional events rule, the EPA determines whether the state is following its plan. However, no further showing is necessary beyond compliance and proof that the exceedance came from wildfire or prescribed burn smoke. Therefore, the administrative burden comes before the fire occurs

315. Schoennagel et al., *supra* note 7, at 4583–85; *see also* 40 C.F.R. § 51.930 (2020) (laying out the minimum reasonable steps that states must take to protect public health when there is a NAAQS exceedance, including public notification of air quality concerns and public education on how to reduce exposure to unhealthy air).

316. For example, during the 2020 wildfire season, Seattle created “healthy air center[s]” in available city buildings where people experiencing homelessness could go to escape the smoke pollution. Gregory Scruggs, *Choking on Smoke: U.S. Cities Open Clean Air Shelters for Homeless*, REUTERS (Sept. 21, 2020, 10:02 AM), <https://www.reuters.com/article/usa-wildfires-cities/feature-choking-on-smoke-u-s-cities-open-clean-air-shelters-for-homeless-idUSL8N2GE5CC> [<https://perma.cc/2CPW-PDG6>].

317. *Id.*

instead of after. This encourages states to take the actions to reduce the risk of wildfire instead of post-hoc measures after smoke pollution has already occurred.

This amendment removes barriers for prescribed burns and creates accountability for air pollution from wildfire smoke, instead of a blanket exception for unhealthy air pollution. The CAA was not designed to deal with the complex air pollution challenges of wildfire smoke in the era of climate change; it is structured to effectively regulate air pollution from industries. This amendment to the exceptional events statute would bring land management decisions into the purview of the CAA—forcing land management and environmental regulatory agencies at the state and federal levels to coordinate more effectively. This solution incentivizes states and federal land managers to prioritize fire mitigation.³¹⁸

Some may argue that this blanket exception for prescribed burns would open the floodgates to allow increased air pollution from prescribed burns.³¹⁹ Critics of prescribed burns caution that increasing the number of prescribed burns would significantly degrade air quality.³²⁰ However, these concerns fail to grasp the realities of the projected increased smoke pollution in coming years.³²¹ Further, prescribed burns are, by their very nature, small and rarely cause NAAQS exceedances.³²² While these fires do produce smoke that is harmful to people's health, megafires will produce even more smoke.³²³ Smoke is an inevitable part of the equation, therefore policy makers should work to minimize the impact in the long-term through prescribed burns and other active land management techniques.³²⁴

318. See Schultz, *supra* note 75, at 26; MELVIN, *supra* note 15, at 20.

319. Williamson et al., *supra* note 1, at 1–2 (calling for more research into the different in impact of smoke from prescribed fire versus wildfire).

320. See, e.g., *id.* at 2 (“The population health impacts of PM_{2.5} are observed across all PM_{2.5} concentrations with no safe threshold, which highlights the potential impacts of prescribed fires, even though they produce comparatively less smoke than wildfires.”). This article goes on to note that air quality impacts of prescribed fires are felt more locally, while the air quality impacts of wildfires are less predictable. *Id.*

321. Laing & Jaffe, *supra* note 1, at 2 (“While prescribed burns and wildfires have always been around, their influence on air quality is increasing. Since the 1980s, the frequency and duration of large wildfires and the total area burned have increased in the Northwest United States.”).

322. See, e.g., Letter from Jennifer Noonan Edmonds to author, *supra* note 186 (indicating that no state has ever applied for a NAAQS exceedance from a prescribed burn to be an exceptional event, which indicates that there have been no major NAAQS exceedances from prescribed burns since 2016); FOREST RESILIENCY BURNING PILOT PROJECT, *supra* note 145, at 18 (noting that none of the prescribed burns in the pilot project, which decreased barriers to prescribed burns, violated twenty-four hour PM NAAQS).

323. Schweizer & Cisneros, *supra* note 1, at 35.

324. Schoennagel et al., *supra* note 7, at 4588 (“Patterns of wildfire are changing with rising global

In addition, some scholars suggest that no smoke should be subject to exception under the exceptional events provision.³²⁵ Kirsten Engel, who has written about this issue in various publications, suggested the “smoke is smoke” approach before the EPA promulgated the new regulations and published guidance around the exceptional events determination for prescribed burns.³²⁶ Another recent article on the exceptional events rule suggests a modified version of the “smoke is smoke” rule that would not allow smoke from uncontrolled fires to qualify for the exemption.³²⁷

The “smoke is smoke” rule does not account for the uncontrollable nature of some wildfires, despite best management practices and the migration of smoke from other areas. First it is possible that, because of climate change, wildfires will continue to worsen even if forests are well managed.³²⁸ This could cause a violation of NAAQS even if people were taking all necessary actions. This means that when exceedances from wildfire smoke occur, in some cases a state would be out of attainment even if the state did everything in its power to mitigate wildfire risk. Ultimately, the “smoke is smoke” approach would incentivize states to suppress wildfires more aggressively to reduce smoke pollution. Yet, as this Comment has made clear, wildfire suppression is not a sustainable solution to the wildfire smoke problem.

Wildfire smoke must be treated differently under the CAA because of the unique fact that some smoke from prescribed burns in the short-term decreases smoke from megafires in the long-term. Wildfire smoke management requires effective coordination between land managers and air regulators. Smoke events will increase with climate change, and air quality will continue to violate air quality standards. Instead of giving states an easy exemption for air pollution that creates major public health problems, the CAA should require that states bring their forest management plans and wildfire risk reduction into the CAA exceptional event designation.

This solution would effectively incentivize more prescribed burns and healthy forest management because it decouples the air pollution from the land management, yet still requires effective land management to qualify for the exemption.

temperatures, and will accelerate in the future. What we can do now is focus management efforts on the places where intervention is needed to slow the pace of change and thereby give particular species and ecosystems a chance to adapt.”)

325. See Engel, *supra* note 119, at 664; Engel & Reeves, *supra* note 142.

326. Engel, *supra* note 119, at 623; Engel & Reeves, *supra* note 142, at 128.

327. Richmond, *supra* note 132, at 370.

328. See Wehner, *supra* note 7, at 242–43.

B. The EPA Should Change the Exceptional Events Regulations to Align Them with the Purpose of the Clean Air Act

Even without a statutory fix, the EPA can change its regulations to address some of the problems in its treatment of smoke from wildfires and prescribed burns. Based on the current language of section 319(b), the following proposed regulations will help align the exceptional events rule with its own goals of prioritizing public health, timely informing the public of unhealthy air quality, and requiring states to take necessary “measures to safeguard public health” even when something qualifies as an exceptional event.³²⁹ Further, this proposal will reduce some of the legal vulnerabilities by aligning the wildfire fire exemption with the public health goals of the statute. However, it does not address the legal vulnerabilities with the prescribed burn exceptional event designation.

First, the EPA should increase the requirements for mitigation plans that are already a part of the exceptional events regulations. The regulations currently do not require plans to mitigate future fire risk. The EPA should change the mitigation regulations to require a state to submit a mitigation plan the first time it seeks an exceptional event designation for NAAQS exceedances caused by wildfire smoke. The EPA should not grant exceptional event designations unless the state’s mitigation plan sufficiently addresses land management measures to reduce the risk of megafires before they ignite. In these plans, states must detail steps that they are taking to reduce the risk of megafires through prescribed burns and other forest management techniques. While much of the at-risk land is not managed by the state, states can require private landowners to take steps to reduce wildfire risk and can provide support to federal land management agencies. States can do this by funding programs to increase training for local prescribed burn managers and reducing barriers to obtaining burn permits.

States should submit an updated plan with every subsequent exceptional event demonstration. The updated plans should review the progress that the state has made in implementing its megafire risk mitigation measures. This change to the regulations would align wildfire exceptional event designations with the CAA’s public health purpose by requiring states to do more to reduce the risk of severe wildfires. In addition, they would bring land management decisions into the CAA exceptional events analysis. This is vital, because it is well settled that land managers can reduce the risk of fires and the severity of fires through proper land management—including prescribed burns.

329. 42 U.S.C. § 7619(b)(3)(A)(iv).

Second, the regulations should require a greater showing that the exceedance from a wildfire was not reasonably controllable and not reasonably preventable.³³⁰ Under the current regulations, a state can meet the controllable and preventable prong for a wildfire simply by showing that the event was a wildfire.³³¹ These updated regulations should require states to show that either, before the fire occurred the state took reasonable land management and fire mitigation actions in the areas where the fire occurred, or the state did not have reasonable control over the burned land. These two measures would encourage states to take more action to reduce the risk of megafires through prescribed burns.

While these proposed regulations would reduce the risk of legal challenge to the automatic exception for wildfire smoke, the prescribed burn regulations would still be vulnerable to legal challenges. This is because the statute as written does not lend itself to granting an exceptional event designation to exceedances caused by prescribed burns. No change to the regulations could fix this limitation on the statute, which underscores the need for a statutory fix.

Some may argue that states may revert to historic forestry practices and suppress wildfires to reduce smoke instead of implementing the mitigation measures. However, this regulation change would not encourage land managers to regress to complete fire suppression because prescribed burns are often more cost effective than complete fire suppression³³² and land managers understand the science and ecological benefit of fire.³³³

Both the proposed statute and regulations would predicate the qualification of wildfires as exceptional events on increased efforts by the states to remove roadblocks to prescribed burns and generally incentivize land management practices to reduce wildfire risk.

CONCLUSION

The overarching goal of the CAA is to protect human health from air

330. 40 C.F.R. § 50.1(j) (2019).

331. *Id.* § 50.14(a)(4) (“[T]he Administrator will determine every wildfire occurring predominantly on wildland to have met the requirements identified in paragraph(c)(3)(iv)(D) of this section regarding the not reasonably controllable or preventable criterion.”). On the other hand, when a state applies for an exceptional event determination for a NAAQS violation from a prescribed burn, the state must show that it has a SMP that was followed during the prescribed burn or that it followed “basic smoke management practices.” EXCEPTIONAL EVENTS GUIDANCE: PRESCRIBED FIRE ON WILDLAND THAT MAY INFLUENCE OZONE AND PARTICULATE MATTER CONCENTRATIONS, *supra* note 158, at 6; 40 C.F.R. § 50.14(b)(3)(ii)(A) tbl. 1.

332. Kolden, *supra* note 15, at 1.

333. *See* George, *supra* note 140, at 106.

pollution.³³⁴ The statute has adapted with new science about air pollution and human health,³³⁵ but in the case of wildfire smoke, the exceptional events rule undercuts the goal of protecting public health. The exceptional events regulations exempt wildfire smoke automatically instead of examining the nuance of what land managers can control and what they cannot.³³⁶ The regulations aim to protect human health and encourage more prescribed burns, but they fail on both fronts. In addition, the regulations are vulnerable to legal challenge as applied to both prescribed burns and wildfires. Therefore, Congress should amend the statute to bring land management decisions into the exceptional events rule for wildfires and prescribed burns must be exempted by the same process as wildfires. If Congress does not amend section 319(b), the EPA should promulgate new regulations that incorporate a more robust mitigation plan and require a greater showing that wildfires are reasonably controllable or preventable. As it currently stands, the CAA ignores a major source of air pollution, and the public health crisis associated with it, because of the broad exemptions in the exceptional event rule. Moving forward, this must change in order to keep the exemption in line with the public health purpose of the CAA.

In the era of climate change and megafires, land and air managers must move to a paradigm that recognizes that human health will be impacted by wildfire smoke, and therefore they must reframe the regulatory approach to air and forest management to try to mitigate the severity of wildfire smoke by changing the CAA and the EPA's regulations. This is a long-term view of human well-being that recognizes that environmental action affects human health both now and in the future. The law must adapt to reflect the value of prescribed burns and recognize that humans must mitigate the effects of "natural" disasters wherever possible.

334. Alejandro E. Camacho & Robert L. Glicksman, *Legal Adaptive Capacity: How Program Goals and Processes Shape Federal Land Adaptation to Climate Change*, 87 U. COLO. L. REV. 711, 724 (2016).

335. Camacho & Glicksman, *supra* note 334, at 724.

336. 40 C.F.R. § 50.14.