September 22, 2025

U.S. Environmental Protection Agency
EPA Docket Center
Docket ID No. EPA–HQ–OAR–2025–0194
1200 Pennsylvania Avenue NW
Washington, DC 20460.

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Re: Comments on Reconsideration of 2009 Endangerment Finding and Greenhouse Gas Vehicle Standards (Docket ID No. EPA–HQ–OAR–2025–0194)

Dear Administrator Zeldin:

On behalf of Appalachian Mountain Club, the Coalition to Protect America's National Parks and National Parks Conservation Association, we submit the following comments strongly opposing the Environmental Protection Agency's (EPA) proposed Reconsideration of the 2009 Endangerment Finding and Greenhouse Gas Vehicle Standards (Proposal).

I. Introduction

Collectively, our organizations represent the interests of America's most beloved public lands and treasured natural and cultural resources. These public lands and cultural sites offer wondrous beauty, recreational opportunities, ecosystem services, and historic preservation, while providing experiences that improve visitors' health and support local economies.[1] In doing so, they contribute to the social, cultural, financial, and ecological well-being of our nation.

We are particularly concerned about the impacts of climate change and air pollution on our national parks, national forests and other federal public lands, and how the proposal could permanently end all federal efforts to mitigate greenhouse gas (GHG) pollution. America's public lands, especially its national parks and forests, are among the places most endangered by climatic change, which is driven by greenhouse gas pollution. Because these lands are often

[1] Danielle Buttke, *Diana Allen, and Chuck Higgins, Benefits of Biodiversity to Human Health and Well-Being*, 31 Park Science (2014), https://perma.cc/HQC2-4VTK, ("Benefits of Biodiversity") (Attached as Ex. 1).

located at ecosystem extremes, even subtle shifts in climate conditions can have major implications for their wildlife, biodiversity and unique natural features.

Appalachian Mountain Club (AMC) Founded in 1876, AMC promotes the protection, enjoyment, and understanding of the mountains, forests, waters, and trails of America's Northeast. As a community of more than 90,000 adventurers and nature advocates our passion for the outdoors is boundless. We connect people with nature and therefore work to protect the outdoors from detrimental impacts of air and water pollution which impact the enjoyment and safety of hikers and the vitality of natural resources. AMC works to reduce greenhouse gas and air pollution emissions and their impacts to these resources, especially to visibility and hiker and ecosystem health.

The Coalition to Protect America's National Parks represents over 3,100 current, former, and retired employees and volunteers of the National Park Service, with over 50,000 collective years of stewardship of America's most precious natural and cultural resources. The Coalition consists of protection rangers and interpreters, scientists and maintenance workers, managers and administrators, and specialists in the full spectrum of the parks' resources. The Coalition's membership also includes former National Park Service directors, deputy directors, regional directors, and park superintendents. Recognized as the Voices of Experience, the Coalition educates, speaks, and acts for the preservation and protection of the National Park System, and mission-related programs of the National Park Service.

National Parks Conservation Association is a national organization whose mission is to protect and enhance America's national parks for present and future generations. NPCA performs its work through advocacy and education. NPCA has over 1.6 million members and supporters nationwide with its main office in Washington, D.C. and 24 regional and field offices. NPCA is active nationwide in advocating for strong air quality requirements to protect our parks, including submission of petitions and comments relating to visibility issues, Regional Haze State Implementation Plans, climate change, mercury impacts on parks, and emissions from individual power plants and other sources of pollution affecting national parks and communities. NPCA's members live near, work at, and recreate in all the national parks.

Climate change is rapidly and irreversibly transforming landscapes within national parks and public lands. Extreme climate disasters present serious economic, social, and environmental consequences that directly impact our national parks and public lands. All parks and public lands face consequences from rising temperatures that drive fiercer storms, prolong droughts, melt glaciers, cause rising sea levels, encourage invasive plants and animals and fuel extreme wildfires. The effects vary across the public lands system, but cover all geographic locations, including coastal areas, desert landscapes, mountain ranges and forests, as well as urban and rural park cultural and historic resources. From microorganisms to large mammals, wildlife is struggling to adapt— indeed some are facing extinction—while plant life faces challenges that

could alter entire ecosystems. National park and other public lands buildings, visitor infrastructure and historic structures are also being destroyed in the face of climate threats. National parks are particularly vulnerable to changes in climate because of their sensitive natural environments and related risk of exposures. In addition, the harms these lands are suffering serve as a sort of a "canary-in-the-coalmine," portending harms to public health and welfare that will result, and already are resulting, from climate change—both within and outside our national parks and public lands. Because of this, the long term health and welfare of our national parks and public lands depend on reducing major sources of U.S. GHG emissions like on-road vehicles.

EPA's proposal to reconsider the 2009 "Endangerment and Cause or Contribute Finding for Greenhouse Gases Under Section 202(a) of the Clean Air Act" (Endangerment Finding)[2] and repeal of GHG emission standards for all categories of on-road vehicles is both legally flawed and scientifically inaccurate. The potential for billions of tons of additional and avoidable GHG pollution emitted into earth's atmosphere will be utterly devastating for the future of our national parks, national forests, and other public lands. We therefore urge EPA to retain the 2009 Endangerment Finding and existing GHG emission standards for on-road vehicles, as well as to abandon this irrational and shortsighted proposal, which puts the very existence of our parks and public lands at risk.

II. EPA's Reconsideration of the Endangerment Finding Standards is Inconsistent with the Clean Air Act and is Arbitrary and Capricious.

EPA's proposal to reconsider its prior finding that GHGs emitted by vehicles are air pollutants that endanger public health and welfare suffers from numerous legal flaws. Our summary includes:

- EPA's proposed reconsideration of the Endangerment Finding directly contradicts existing law and the plain language of the Clean Air Act (CAA).
    - Numerous courts, including the Supreme Court in *Massachusetts v. EPA*, 549 U.S. 497 (2007), have upheld the overwhelming scientific consensus that GHGs emitted by vehicles are air pollutants that endanger public health and welfare as defined under the plain language of CAA Section 202(a).
    - Despite existing law, this proposal ignores stare decisis, the plain language of CAA § 202(a), Congress's intent, decades of EPA policy, and the overwhelming consensus of scientists.
- EPA's determination that CAA § 202(a) applies only to local or regional air pollution and not global air pollution is arbitrary and capricious.
    - EPA's new interpretation that § 202(a) does not apply to GHG pollution because it is not a local or regional air pollutant is legally flawed. This interpretation creates a new standard that does not exist in the statute and is inconsistent with how EPA has interpreted § 202(a) for decades.

[2] 74 Fed. Reg. 66496 (Dec. 15, 2009).

GHGs are not different from other pollutants and the CAA does not limit controls only to arbitrarily defined local or regional pollutants.

- EPA's determination that GHGs are not regulated air pollutants because they only indirectly affect public health is arbitrary and capricious.
    - Again EPA's interpretation invents a new standard that has no connection to the statutory text and contravenes decades of EPA policy.
        - The impacts of GHGs on public health and welfare are entirely foreseeable, and EPA has long upheld regulations for other air pollutants like ozone and fine particulate matter (PM2.5) that cause indirect impacts because they are secondary pollutants formed in the atmosphere.
- EPA erroneously concludes that regulating GHGs under the CAA triggers the major questions doctrine.
    - EPA's authority to regulate GHGs through the CAA is adequately supported by congressional intent and backed by numerous decisions by the federal judiciary and longstanding EPA policy.
        - The Supreme Court in *Massachusetts v. EPA*, and subsequent decisions, including *West Virginia v. EPA*, 597 U.S. 697 (2022) and *Loper Bright Enterprises v. Raimondo*, 603 U.S. 369 (2024), have upheld EPA's authority to regulate air pollutants, like GHGs emitted by motor vehicles.
- EPA's proposal is arbitrary and capricious because it wholly ignores the benefits of reducing emissions on human health and the environment, including benefits to national parks and public lands.

III. EPA's Proposal to Reconsider the Endangerment Finding Relies on Inaccurate Scientific and Factual Findings While Ignoring the Clear Scientific Consensus

Of grave concern to our organizations is EPA's reliance on the document "A Critical Review of Impacts of Greenhouse Gas Emissions on the U.S. Climate" by a Department of Energy Climate Working Group (draft DoE report) to support its proposal to reconsider the 2009 Endangerment Finding. The draft DoE report was hastily written and had only five authors with limited expertise on the subject matter of climate change and ways in which GHGs are warming the planet's atmosphere. This is in contrast to the innumerable peer-reviewed scientific research papers on the subject and various other authoritative reports that have taken years and even decades to develop through rigorous scientific efforts featuring hundreds of authors and contributors and summarizing countless scientific articles. These reports include, the Intergovernmental Panel on Climate Change's (IPCC) Assessment Reports, the Assessment report by the U.S. National Climate Assessment, and the newly released consensus study by the National Academies of Sciences, Engineering and Medicine. In comparison, the draft DoE report authors lack the breadth of knowledge on the impacts of GHG emissions on humans and the environment, making the draft DoE report dubious at best. Moreover there are serious procedural questions regarding the process behind the formation of the DoE's working group and the development

and implementation of the Draft DoE report, including questions of whether the group's work violated the Federal Advisory Committee Act (FACA).

Because of the DoE report's flaws, the draft presents a very limited scope of the science, limits data presented, and ignores the totality of the evidence that climate change is harmful to humans and every facet of our environment. In contrast, our organizations agree with the overwhelming scientific consensus that specifically demonstrates greenhouse gases, including those emitted by motor vehicles, significantly contribute to and cause anthropogenic climate change. This incontrovertible evidence particularly shows that climate change has extremely detrimental effects on the health of our nation's prized and treasured national parks and forests. The details of the physical mechanisms of this causation are articulated in many peer-reviewed studies and are detailed in comments[3] submitted to the DoE in the public comment period of their draft report. Here, we will focus our comments on the numerous consequences of climate change that are particularly concerning to public lands and their natural resources, including extreme weather (heat, precipitation, and storms), wildfires, and "greening" as discussed in the DoE report.

- **Temperature Trends**
    - The draft DoE report relies only on the lower 48 US Historical Climate Network data and did not address some biases or apply corrections often applied to this data
        - No examination of Arctic (Alaska) climate changes were presented in the draft DoE report yet warming is proceeding at the fastest rate and magnitude in this region. Alaska has more than 222 million acres of public lands covering 60% of the state.
    - The draft DoE report section 6.3.1 only considers limited seasonal timeframes (May - Sept for Tmax and Dec - Mar for Tmin) missing key shoulder season and/or full annual shifts in the distribution of temperatures
        - Changes in shoulder seasons are more disruptive to ecological adaptations particularly in mountain and arctic ecosystems.
        - Changes in minimum temperatures in cold adapted ecosystems are not considered but are of significant concern to wildlife who reside in these habitats.
    - The report does not consider other ecologically relevant temperature changes, related seasonal shifts (length of the growing season), or temperature metrics shown to be important climate metrics, such as winter thaws or frost days in shoulder seasons combined with earlier springs.
    - The authors emphasize an extreme warm period from the 1930s and claim it is evidence of little warming in the last century, ignoring that this anomaly was due to the Dust Bowl, a time when severe drought was not due to weather conditions alone but due to the agriculture practices that denuded the landscape and removed natural vegetative evapotranspiration that helps buffer heat and lack of rainfall.

[3] Climate Experts' Review of the DOE Climate Working Group Report (attachment as Ex. 2).

- **Precipitation and Storms**
    - The draft DoE report uses limited studies, leaving out key publications on national precipitation patterns[4,5,6].
    - The draft DoE report uses a low number of sites in each region examined for precipitation changes.
    - The draft DoE report does not explain its preferred use of 3-day precipitation totals, or average precipitation in one study, while increases in hourly precipitation total[7] and daily heaviest (top 1% at a site) precipitation are not examined. The damage to public lands from these types of extreme shorter events are most relevant and detailed below.
    - The report focuses on hurricane US landfall; however, the latest science does not conclude that the frequency of US landfall of hurricanes would increase.
    - There is evidence that hurricane intensification rates are greater due to warmer ocean waters and air, a point that has been scientifically predicted and observed.
    - Snowfall and snow cover are largely ignored in the draft DoE report except in section 5.6, which focuses on how snow extent data and models do not align in winter months.
        - The report does not explain that the scientific community expects more variability in snow as a warmer atmosphere holds more moisture and can lend to more snowfall in relatively warmer winters (Burakowski et al 2022).
        - The same source of data the draft DoE report presents for winter snow events (Rutgers University Snow Lab) shows that spring snow cover is significantly declining. Spring snow cover has significant ecological impacts in cold-adapted climates including mountainous regions.
- **Drought and Wildfires**
    - The draft DoE report again uses the Dust Bowl era conditions as a way to downplay the current increases in drought regionally and seasonally. The Dust Bowl drought conditions were not due to weather conditions alone but due to the agriculture practices that denuded the landscape and removed natural vegetative evapotranspiration that could help buffer heat and lack of rainfall.
    - The linkage between drought, water vapor pressure to fire weather conditions is not addressed. The report admits that fire intensity is increasing in some regions but minimizes this finding and its ramifications The impact of large fires spread far beyond the footprint of the fires with hazardous air pollution traveling 1,000 of miles.

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[4] Kunkel, K. E., et. al., *Observed climatological relationships of extreme daily precipitation events with precipitable water and vertical velocity in the contiguous United States*, Geophysical Research Letters, 47 (2020) https://doi.org/ 10.1029/2019GL086721 (Attached as Ex. 3).

[5] M.C. Kirchmeier-Young, et. al., Human influence has intensified extreme precipitation in North America, Proc. Natl. Acad. Sci. U.S.A. 117 (24) 13308-13313 (2020) https://doi.org/10.1073/pnas.1921628117 (Attached as Ex. 4)

[6] Sun, Q., et. al., *A Global, Continental, and Regional Analysis of Changes in Extreme Precipitation*, J. Climate, 34, 243–258, (2021) https://doi.org/10.1175/JCLI-D-19-0892.1 (Attached as Ex. 5)

[7] Fowler, H.J., et. al., *Anthropogenic intensification of short-duration rainfall extremes*, *Nat Rev Earth Environ* 2, 107–122 (2021) https://doi.org/10.1038/s43017-020-00128-6 (Attached as Ex.6).

- The draft DoE report indicates that NIFC removed pre-1960 fired data from there website when the sites actually notes it removed data prior to 1983 because they did not track data at that time[8]. This makes Figure 6.8.3 highly misleading with erroneous data and inappropriate scales.
- The draft DoE report claims that the benefit of CO_2 fertilization is "global greening," and that there is an associated benefit of improved water-use efficiency.
- The lead author on a global greening article, Shilong Piao of Peking University, cited cautions that we must address source emissions stating, "[t]his greening and associated cooling is beneficial," but explained that "reducing carbon emissions is still needed in order to sustain the habitability of our planet."[9]
- Put in real world conditions, nutrient and water limitations will limit any long-term gains from greening. Long-term CO_2 fertilization FACE experiments show reductions in the fertilization benefit over time as nutrients (nitrogen and phosphorus) limits develop. Forest productivity is more likely limited by nitrogen and other nutrients.[10]
- Heat and drought are already impacting forests and other ecosystems, countering benefits from CO_2.
- Water use efficiency has been shown to be declining even with increasing CO_2 fertilization due to increasing water vapor deficit which negatively impacts photosynthesis and increases evapotranspiration.[11]
- Evapotranspiration is on the rise over the same time frame of increasing leaf area index, resulting in a net loss of water from ecosystems due to increasing leaf area index.[12]

For the above stated reasons, we believe EPA should receive no deference as it relates to their reliance on the draft DoE Report.

IV. The 2009 Endangerment Finding and Greenhouse Gas Standards for Vehicles are Necessary Because Climate Pollution Harms the Health and Wellbeing National Parks and Other Public Lands

America's national parks and public lands protect natural ecosystems that provide extensive health and welfare benefits to millions of people[13], offering access to places with various

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[8] National Interagency Fire Center, *Wildfires and Acres Total Wildland Fires and Acres (1983-2024)*, (see footnote) https://www.nifc.gov/fire-information/statistics/wildfires.

[9] Kathryn Hansen, Global Green Up Slows Warming, NASA www.earthobservatory.nasa.gov/images/146296/global-green-up-slows-warming (Attached as Ex.7).

[10] Norby, Richard J. et. al., *CO2 enhancement of forest productivity constrained by limited nitrogen availability*, Natl. Acad. Sci. U.S.A. 107 (45) 19368-19373 (2010), https://www.pnas.org/doi/10.1073/pnas.1006463107 (Attached as Ex. 8).

[11] Fei Li et al., *Global water use efficiency saturation due to increased vapor pressure deficit*, Science 381,672-677(2023), DOI:10.1126/science.adf5041 (Attached as Ex. 9).

[12] Yang, Yuting, et. al., *Evapotranspiration on a Greening Earth*, nature reviews earth & environment nature reviews earth & environment, 4, pages626–641 (2023), https://doi.org/10.1038/s43017-023-00464-3 (Attached as Ex. 10)

[13] Diaz et al., *Pervasive human-driven decline of life on Earth points to the need for transformative change*, Vol 366, Issue 6471 (2019) https://doi.org/10.1126/science.aax3100] (Attached as Ex. 11).

physical, mental, aesthetic, cultural, environmental, and historic assets.[14] National parks are a source of pride for Americans and offer significant economic benefits to local and state tourist economies. In 2023, more than 325 million visitors explored the National Park System, bringing in over $26.4 billion in visitor spending to the parks and surrounding communities.[15] National forests and grasslands also see significant visitation. In 2022, spending by visitors contributed about $13.7 billion to the U.S. economy and supported 161,000 full-and part-time jobs.[16]

The CAA in § 302(h) specifically defines public welfare to include the kinds of benefits that parks and other public lands provide, including their roles in protecting the long term viability of "soils, water, . . . animals, wildlife . . . visibility, and climate," as well as the benefits they provide to the economy and to the "personal comfort" of individuals visiting parks and public lands.[17] Should this proposal be finalized, the numerous health and welfare benefits that national parks and other public lands provide will undoubtedly be diminished.

A. Greenhouse Gas Emissions Endanger the Public Health and Welfare Benefits That National Parks and Other Public Lands Provide

Scientists globally have agreed that the evidence from published scientific research shows that human-caused climate change endangers the health of people, the integrity of ecosystems that sustain people, and the public lands that protect those ecosystems.[18] According to the Intergovernmental Panel on Climate Change (IPCC) in their 6th Assessment Report (AR6):

> Human activities, principally through emissions of greenhouse gases, have unequivocally caused global warming, with global surface temperature reaching 1.1°C above 1850-1900 in 2011-2020. Global greenhouse gas emissions have continued to increase over 2010-2019, with unequal historical and ongoing contributions arising from unsustainable energy use, land use and land-use change, lifestyles and patterns of consumption and production across regions, between and within countries, and between individuals . . . Human-caused climate change is already affecting many weather and climate extremes in every region across the globe. This has led to widespread adverse impacts on food and water security, human health and on economies and society and related losses and damages to nature and people . . . Vulnerable communities who have historically contributed the least to current climate change are disproportionately affected.[19]

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[14] Buttke, *Benefits of Biodiversity*.

[15] Matthew Flyr and Lynne Koontz, 2023 National Park Visitor Spending Effects, Nat'l Park Serv. 11 (2024), https://doi.org/10.36967/2305351 (Click on "NPS_2023_Visitor_Spending_Effects.pdf") ("2023 Park Visitor Spending") (Attached as Ex. 12).

[16] U.S. Forest Service, *National Visitor Use Monitoring Survey Results National Summary Report*, (September 2023) www.fs.usda.gov/sites/default/files/2022-National-Visitor-Use-Monitoring-Summary-Report.pdf (Attached as Ex. 13)

[17] 42 U.S.C. § 7602(h).

[18] Intergovernmental Panel on Climate Change (IPCC), *Climate change 2022: Impacts, adaptation, and vulnerability*, Cambridge University Press (2022), https://www.ipcc.ch/report/ar6/wg2.

[19] IPCC, *Synthesis Report of the IPCC Sixth Assessment Report (AR6)*, at 6 ("IPCC AR6 Synthesis Report), IPCC_AR6_SYR_LongerReport.pdf.

Our public lands host some of America's most beloved natural and cultural resources, yet many are particularly vulnerable to a rapidly changing climate because of their sensitive and fragile ecosystems, irreplaceable artifacts and unique geographic locations. The burning of fossil fuels driving global warming has resulted in national park mean annual temperatures increasing "at double the rate of the U.S. as a whole" between 1895 and 2010.[20]

The turmoil caused by this warming and the resulting extreme weather conditions is disastrous for most national park units and is projected to only get worse. All public lands are affected. As temperatures increase, risks from projected climate change are felt across all geographic regions and locations, from coastal to mountainous areas. These climate effects include: (1) rising sea levels; (2) increasingly intense wildfires; (3) wildlife habitat loss, particularly at high elevations; (4) rapid growth of disruptive, invasive species; (5) ecosystem damage and danger to visitors from extreme coastal and inland flooding, heat and intense storms; (6) drier conditions leading to prolonged droughts; (7) loss of glaciers, snowpack and ice; (8) changing landscapes and disrupted ecosystems; (9) destruction of irreplaceable historic and cultural park structures and artifacts; and (10) altered visitation patterns and significant losses to valuable tourism revenue.

These broad climate risks translate into concrete, measurable changes across the national park system. Park specific analyses have demonstrated that historical changes, detected and attributed to human-caused climate change, in multiple U.S. national parks include glacial melt, snow cover reduction, wildfire increase, tree mortality, drought, biome shifts, sea level rise, ocean warming, coral bleaching, ocean acidification, bird species losses, and wildlife shifts.[21] Moreover, projected future risks across all U.S. national parks under continued CO2 emissions suggest that climate change could damage many natural resources including the following projected risks: glacier loss, permafrost thaw, wildfire increase, tree mortality, biome shifts, inundation from sea level rise, coral bleaching, ocean acidification, plant species changes, mammal species declines, bird species changes, reptile species decline, amphibian species declines, fish species decline, butterfly species local loss, invasive species increase, earlier cherry blooming, archeological artifact loss, and archeological site erosion.[22]

In its 2024 report on pollution in national parks, entitled Polluted Parks,[23] NPCA analyzed data for 397 national park sites investigated by the National Park Service (NPS) for their relative threats from certain climate change high-impact vulnerability factors—climate threats—namely, wildfire, drought, sea level rise and invasive species. These threats were prioritized by NPS as primary concerns for parks because they have the potential to rapidly disrupt and transform park ecosystems and resources. The NPS study utilized multiple climate indicators to evaluate parks' exposure and sensitivity to climate change as well as their adaptive capacity. The data revealed

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[20] Patrick Gonzalez et al., *Disproportionate Magnitude of Climate Change in United States National Parks*, 13 ENVTL. RES. LETTERS 1, 3 (2018) (Attached as Ex. 14).

[21] Patrick Gonzalez, Human-Caused Climate Change in United States National Parks and Solutions for the Future, 36 Parks Stewardship Forum 188 (2020), https://escholarship.org/uc/psf, (Attached as Ex. 15).

[22] *Id.*

[23] Daniel Orozco et al., *Polluted Parks*, Nat'l Parks Conservation Ass'n. 13 (2024), https://www.npca.org/reports/air-climate-report (Herinafter "*Polluted Parks*") (Attached as Ex. 16).

that 57% of all national parks face a high risk from at least one climate threat which has the potential to alter park ecosystems and resources fundamentally and permanently.

The data showed that invasive species are among the most dominant threats, harming 113 separate parks predominantly across the Southeast, Northeast and Midwest regions. Wildfire stands out as the second most prominent threat—95 parks are at high risk—primarily in California but also in the Four Corners and Southeast regions. Drought is threatening 75 parks primarily in the Midwest and Western states, while sea level rise affects 48 parks predominantly along the eastern and Gulf coasts.[24] If climate change continues, park wildlife and plant species populations could plummet and biodiversity loss and extinctions may occur, rendering our national parks that currently protect and preserve some of our nation's most unique and special biodiversity devoid of the robust flora and fauna that currently inhabit them. These changes can alter parks in ways that may be irreversible, underscoring the urgency needed to cut greenhouse gas emissions dramatically and swiftly to prevent the worst effects of climate change.

B. Rising Temperatures Endanger the Public Health and Welfare Benefits Provided by National Parks and Other Public Lands

In the decade from 2011-2020, global average temperatures were about 1.1 degrees Celsius higher than they were from 1850-1900, resulting in profound climatic changes that threaten the future and integrity of our national parks.[25] As stated above, national parks and other public lands are particularly vulnerable to the impacts of rising temperatures caused by greenhouse emissions, as they are often found in nature's most extreme places—like the Arctic or exceptionally high elevations—where warming occurs more quickly.[26] These rising temperatures could lead to economic harm by reducing park visitation and degrading infrastructure, social harm by increasing the risk of heat-related illness for park visitors and employees, and environmental harm by degrading park landscapes and ecosystems. These same impacts are also happening in national forests and other public lands throughout the country, adding high levels of stress to our cherished natural landscapes. Without significant reductions in greenhouse gas emissions from sources like on-road vehicles, temperatures will rise even more precipitously in future years than is already expected, resulting in further and more extreme harm to our public lands, and surrounding communities.

Warming temperatures decrease the economic benefits public lands provide by affecting visitation and damaging infrastructure. For example, when monthly temperatures exceed 80 degrees Fahrenheit, visitation in almost all national parks declines markedly.[27] Warming

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[24] Michalak JL Et. Al. *A strategic analysis of climate vulnerability of national park resources and values. Natural Resource Report*, Nat'l Park Serv. (2021) https://doi.org/10.36967/nrr-2287214 (Attached as Ex. 17). *See also,* Daniel Orozco et al., *Polluted Parks*, Nat'l Parks Conservation Ass'n. 13 (2024), https://www.npca.org/reports/air-climate-report (Herinafter "*Polluted Parks*") (Attached as Ex. 16).

[25] *See generally,* Forster, Piers M., et al. *Indicators of Global Climate Change 2024: annual update of key indicators of the state of the climate system and human influence*, Earth System Science Data Discussions (2025) at 1-72.

[26] Patrick Gonzalez, et al., *Disproportionate Magnitude* at 7.

[27] *Climate Change: Park Visitation and Climate Change*, Nat'l Park Serv. (Aug. 12, 2024), https://perma.cc/T5KG-UUTV (Attached as Ex. 18).

temperatures also increase evaporation and transpiration, affecting humidity levels and the intensity and frequency of precipitation.[28] Heavy precipitation damages infrastructure like roads, trails, and essential services buildings, often requiring parks to limit or prohibit visitation entirely.[29] For example, in June 2022, unprecedented rainfall on snow drifts caused substantial flooding, rockslides, and mudslides within Yellowstone National Park.[30] Roads and infrastructure suffered damage, entrances to the park were closed for months, and thousands of people were evacuated.[31] The park is still recovering from the devastating impacts of the floods, and the total rebuilding costs are projected to exceed one billion dollars.[32]

And, not more than a year ago, Hurricane Helene brought record amounts of rain and unprecedented hurricane-force winds to North Carolina, causing significant damage to the Blue Ridge Parkway, which connects Shenandoah and Great Smoky Mountain National Parks.[33] The parkway was fully closed for two weeks in October of 2024, a month that typically brings in $6 million in revenue for surrounding communities from the many visitors coming to admire the fall leaves.[34] According to a summer 2025 article, "as of July, 157 miles [of roads] remain closed in North Carolina due to extensive damage from at least 57 landslides, widespread downed trees and other causes, according to the park service. Beyond the Blue Ridge Parkway, significant recovery work continues in Western North Carolina, where the storm damaged more than 190,000 acres of national forest land, according to the U.S. Forest Service."[35] The damage to the tourism economy from this unprecedented hurricane event in the Blue Ridge Mountains cannot be understated; nearly 9 months later, places like Asheville and Lake Lure, North Carolina are struggling to bring in the kinds of tourist dollars they saw before the storm.[36]

Rising temperatures threaten our public lands and waters in numerous other ways. For example, hotter temperatures jeopardize the integrity of coral reefs[37], endangering thousands of species and disrupting the trillions of dollars in ecosystem services that reefs provide by protecting the coast and supporting the fishing industry, tourism, and other occupational

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[28] *Climate Change Indicators: U.S. and Global Precipitation*, Envtl. Prot. Agency (June 27, 2024), https://perma.cc/QW8W-ZD8D (Attached as Ex. 19).

[29] *Flooding and Climate Change*, Nat'l Park Serv. (Dec. 8, 2021), https://perma.cc/EGJ6-842T (Attached as Ex. 20).

[30] Y*ellowstone National Park: Flood Recovery, and Operations*, Nat'l Park Serv. (Dec. 13, 2023), https://www.nps.gov/yell/planyourvisit/flood-recovery.htm.

[31] *Id.*

[32] *Post-Flood Yellowstone Rebuilding Could Cost More Than $1 Billion*, 360 Yale Env't. (June 22, 2022), https://perma.cc/J3SH-58YJ; *see also,* Laurenz Busch, *Yellowstone National Park Gets $16M for Flood Repair, Resilient Infrastructure*, Bozeman Daily Chronicle (Jan. 25, 2024), https://perma.cc/S2VZ-U8M2.

[33] Linda Coutant, *Helene: Facing Loss and the Blue Ridge Parkway's "Most Tremendous Challenge*,*"* Nat'l Parks Conservation Ass'n (Oct. 29, 2024), https://perma.cc/6D34-FHGE.

[34] *Id.*

[35] Abby Hassler, *The Long Trail Back: Public Lands Recovery After Hurricane Helene*, The Appalacian Voice (july, 24 2025), appvoices.org/2025/07/24/public-lands-recovery-after-hurricane-helene/. *See also, Helene Impacts and Recovery - Blue Ridge Parkway*, Nat'l Park Serv., www.nps.gov/blri/planyourvisit/helene-impacts-and-recovery.htm.

[36] Phil Francis, *Opinion: Trump administration cuts to National Park Service threaten NC economy*, The Citizen-TImes (Sept, 14 2025) www.citizen-times.com/story/opinion/2025/09/14/opinion-trump-park-service-cuts-threaten-blue-ridge-parkway-repairs/86074466007/.

[37] Hughes et al., *Spatial and temporal patterns of mass bleaching of corals in the Anthropocene*, Science 359,80-83(2018).DOI:10.1126/science.aan8048 (Attached as Ex. 21).

sectors.[38] Warmer temperatures put great stress on corals and can cause them to lose the algae that provide corals with food.[39] This process is called “bleaching” because after the algae is gone, all that is left is the coral’s stark-white skeleton; unfortunately, it is often fatal to corals.[40] Coral bleaching poses a large threat to reefs like those in Biscayne National Park. Live coral cover in the South Atlantic Region, which includes Biscayne National Park, has “declined by as much as 90% in the last 30 years.”[41]

Warmer temperatures also negatively affect the health of park visitors and employees.[42] Exposure to excessive heat results in heat-related illnesses, including heat stroke, heat exhaustion, and heat cramps, and can lead to long-term poor health outcomes.[43] Over the next 75 years, rising temperatures are projected to increase the risk of these illnesses by 29-137% for millions of Grand Canyon National Park visitors.[44] Tragically, deaths from heat-related illnesses in all national parks are increasing year after year.[45]

In addition to negatively impacting visitation numbers and the health of park visitors and employees, rising temperatures significantly alter iconic national park landscapes and ecosystems. Warmer temperatures allow invasive animals and plants to thrive[46], spreading disease and crowding out vulnerable park species.[47] Moreover, warming temperatures change plant species’ flowering and fruiting times, disrupting natural feeding cycles, migration patterns, and pollination.[48]

Climate change-induced temperature rise also threatens the very features and species that some national parks were designated to preserve and protect, and often, what they were named for. For example, warming temperatures have caused every glacier in Glacier National Park to decrease in size since 1966—some by more than 80%.[49] Unless greenhouse gases are significantly reduced, by 2100, all of the park’s namesake glaciers are projected to disappear completely.[50]

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[38] Hanny E. Rivera et al., *Coral Reefs Are Critical for Our Food Supply, Tourism, and Ocean Health. We Can Protect Them from Climate Change*, MIT Science Policy Review (Aug. 20, 2020), https://perma.cc/2TMF-YD5J **(**Attached as Ex. 22)**.**

[39] *Id.*

[40] *Id.*

[41] *Biscayne National Park to Receive Funding from the Inflation Reduction Act*, Nat’l Park Serv. (Mar. 6, 2024), https://perma.cc/B8VG-4WYE**.**

[42] Danielle E. Buttke et al*., Predicting Climate-Change Induced Heat-Related Illness Risk in Grand Canyon National Park Visitors*, 18 PLoS One 1, 2, 9 (2023), https://perma.cc/P7NN-T6CY (Attached as Ex. 23).

[43] *Id.*

[44] *Id.* at 2.

[45] Julia Jacobo, *Deaths Due to Extreme Heat at National Parks Increasing, Data from the National Parks Service Shows*, ABC News (July 26, 2023), https://perma.cc/FVJ8-2T5R (Attached as Ex. 24)**.**

[46] Early, et. al., *Global threats from invasive alien species in the twenty-first century and national response capacities*, Nat Commun 7, 12485 (2016), https://doi.org/10.1038/ncomms12485 (Attached as Ex. 25).

[47] *Climate Impact: Invasive Species*, Nat‘l Parks Conservation Ass‘n., https://perma.cc/2PRW-UJWJ (last visited Dec. 18, 2024).

[48] Maxence Gérard et al., *Global Warming and Plant–Pollinator Mismatches*, Emerging Top Life Sci. 77, 79 (Apr. 1, 2020), https://perma.cc/8BCM-KGD7 (Attached as Ex. 26).

[49] *Glacier’s Glaciers: Are the Glaciers Shrinking?* Nat’l Park Serv. (Aug. 12, 2024), https://perma.cc/F6A3-RB7C**.**

[50] Northern Rocky Mountain Science Center, *Status of Glaciers in Glacier National Park*, U.S. Geological Survey (Apr. 6, 2016), https://perma.cc/KRE6-8T2N (Attached as Ex. 27).

Namesake species are likewise at risk. The Joshua trees in Joshua Tree National Park are at risk of extensive death across the park due to hotter and drier conditions.[51] Similarly, changes in the frequency and intensity of rainfall threaten both new and mature saguaro cacti, the namesake species of Saguaro National Park.[52]

Warming temperatures are especially apparent in alpine areas across the U.S., which are largely found in protected public lands in the Rockies, Sierra Nevada, Cascade Mountains in the west and the Northern Appalachian and Adirondack Mountains in the east.[53] They are destination hot spots for recreationists coveted for beautiful alpine meadows, backcountry skiing, and unobstructed views but species have few options living at the top as warming moves upslope. Climate change already threatens these mountain top gems with warming temperatures, longer growing seasons, and shorter winters allowing upslope encroachment of treeline and invasive species, and declines of cold-weather adapted species[54].

Shifts in seasonal timing of spring warm up can disrupt the alignment of plant flowering times with pollinator emergence or arrival, potentially leading to seed/fruit production declines or failure.[55] Large scale shifts in alpine plant compositions are occurring. Across 5 western alpine sites (Glacier National Park (NP), Yellowstone NP, Rocky Mountain NP, Great Sand Dunes NP and Preserve, and Pecos Wilderness in the Santa Fe National Forest) over nearly 2 decades, plant species have shifted to more shrubs and grasses than forbs driven by changes in precipitation and warmer temperatures.[56] The iconic Pika, a small mouse-like creature with a very narrow habitat range at high elevation in the western mountains, is particularly threatened by climate change as the warmer temperatures shrink the cold zones where they thrive.[57] Changes in snowfall amounts and duration in high alpine regions are also of significant concern in a warmer environment. In Rocky Mountain NP snowmelt timing is highly correlated with flowering times and risk of frost damage is more prevalent in warmer/early snow melt years leading to less seed production.

Warmer temperatures also threaten a variety of wildlife. The Appalachian Mountain region, which includes the Appalachian National Scenic Trail, eight national forests, and six national

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[51] Sweet et al. *Congruence between future distribution models and empirical data for an iconic species at Joshua Tree National Park*, Ecosphere Vo. 10 Iss. 6 (2019) https://doi.org/10.1002/ecs2.2763 (Attached as Ex. 28).

[52] *Climate Change Connections: Arizona (Saguaro Cactus)*, Envtl. Prot. Agency (Nov. 8, 2024), https://perma.cc/U8CG-354X (Attached as Ex. 29).

[53] Specific regions are the Zirkel Wilderness, Rocky Mountain National Park in Colorado, the Beartooth Mountains on the Montana-Wyoming border, and the North Cascades in Washington.

[54] Tourville, J., Publicover, D., & Dovciak, M. (2023). *Forests on the move: Tracking climate-related treeline changes in mountains of the northeastern United States*, Journal of Biogeography, 50, 1993–2007. https://doi.org/10.1111/jbi.14708 (Attached as Ex. 30); *see also*, Murray, G.L.D., Anne M. Colgan, Sarah J. Nelson, Eric P. Kelsey, and Kenneth D. Kimbal, *Climate Trends on the Highest Peak of the Northeast: Mount Washington, NH*, Northeastern Naturalist, 28 (sp11), 64-82, (9 July 2021). https://doi.org/10.1656/045.028.s1105 (Attached as Ex. 31); *see also,* Sperduto, D. D., Nichols, W. F., & Jones, M. T. (2023). *Non-native vascular flora of alpine areas in the White Mountains, New Hampshire, USA*, Arctic, Antarctic, and Alpine Research, *55*(1), https://doi.org/10.1080/15230430.2023.2243704 (Attached as Ex. 32).

[55] Inouye, D. W., Climate change and phenology. WIREs Climate Change, 13(3), e764 (2022), https://doi.org/10.1002/wcc.764 (Attached as Ex. 33).

[56] *Change in Alpine Vegetation in the U.S. Rocky Mountains: Analysis of Data from Five GLORIA Sites, 2003–2021*, Nat'l Park Serv., https://www.nps.gov/articles/000/nrca_gloria2025.htm, last visited 7/27/2025 (Attached as Ex. 34).

[57] Craig Moritz, et al., Impact of a Century of Climate Change on Small-Mammal Communities in Yosemite National Park, USA, 322 Science 261, 261–64 (2008), available at http://www.jstor.org/stable/20145010 (Attached as Ex. 35).

parks, is known for native brook trout that thrive only in cold-water streams that are now directly threatened by rising water temperatures, which will fragment their aquatic habitat and drive thermal stress concerns.[58] National parks in the Southeast like Shenandoah, Great Smoky Mountains, the Appalachian Scenic Trail as well as Acadia National Park in Maine and other public lands in the Northeast, are critical homes for brook trout, but climate warming is eroding the safe sanctuary that these parks provide.

Iconic species are also being impacted in the northern Appalachians and broader Northern Forest, which covers 26 million acres and is the largest continuous forest east of the Mississippi. This important forest habitat encompasses numerous public lands such as the Appalachian National Scenic Trail, the White and Green Mountain National Forests, and Umbagog National Wildlife Refuge and is home to many cold and snow-dependent species such as moose, pine marten, and Canada lynx. Recent dramatic declines in moose have been documented in ongoing studies in Maine, New Hampshire and Vermont and linked to winter tick, warmer fall and winter due to climate change[59,60]. A study by New Hampshire Fish and Game has found that winter ticks are causing increasingly negative impacts to adult female moose productivity. When Northern New England winters start later, more ticks are able to latch on in the fall resulting in more moose calf deaths the following year.[61] New Hampshire state biologists are finding that the tick loads are directly related to longer falls/shorter winters. In a very mild winter, 2016, moose calf mortality was 81% and adult mortality 25%.[62] The biologists expect that as winters become consistently shorter, more ticks survive, and calf mortality will likely remain high.[63]

The importance of snow cover to cold-adapted ecosystems and winter recreation is clearly paramount. The winter ski industry and communities that rely on this seasonal pulse of economic stimulus is essential to many regions of the U.S. including areas with public land access. A warmer winter atmosphere can hold more moisture and result in more snowfall in such conditions[64], lending to winters overall not necessarily showing strong declines in snowfall with a warming climate. Many other factors including El Nino, the Arctic and North Atlantic teleconnections can influence winter weather variability, however, evidence is clear in the Northeastern U.S. that winter conditions are weakening. Over the last century there has been a

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[58] Craig D. Snyder, et al., *Accounting for Groundwater in Stream Fish Thermal Habitat Responses to Climate Change*, 25 Ecological Soc'y. of Am. 1397, 1397 (2015) (Attached as Ex. 36).

[59] H. Jones, et. al., *Mortality assessment of moose (Alces alces) calves during successive years of winter tick (Dermacentor albipictus) epizootics in New Hampshire and Maine (USA)*, *Canadian Journal of Zoology*. 97(1): 22-30 (2019) https://doi.org/10.1139/cjz-2018-0140 (Attached as Ex. 37).

[60] Debow, J., et. al., *Effects of Winter Ticks and Internal Parasites on Moose Survival in Vermont, USA*, Jour. Wild. Mgmt., 85: 1423-1439 (2021) https://doi.org/10.1002/jwmg.22101(Attached as Ex. 38).

[61] Henry Jones, P. Pekins, L. Kantar, I. Sidor, D. Ellingwood, A. Lichtenwalner, M. O'Neal. 2018. *Mortality assessment of calf moose (Alces alces) during successive years of winter tick (Dermacentor albipictus) epizootics in New Hampshire and Maine*, Canadian Journal of Zoology, https://doi.org/10.1139/cjz-2018-0140 (Attached as Ex. 37).

[62] Eric Orff, *Here's why we are losing our moose herd,* Fosters Daily Democrat (Sept. 2, 2016), https://www.fosters.com/story/opinion/2016/09/02/heres-why-we-are-losing-our-moose-herd/25528251007/.

[63] N.H. Fish and Game, *Moose in New Hampshire*, https://www.wildlife.nh.gov/wildlife-and-habitat/moose-new-hampshire (last visited Aug. 5, 2025).

[64] Elizabeth A. Burakowski, et. al., *Future of Winter in Northeastern North America: Climate Indicators Portray Warming and Snow Loss That Will Impact Ecosystems and Communities*, *Northeastern Naturalist* 28(sp11), 180-207, (2 February 2022). https://doi.org/10.1656/045.028.s1112 (Attached as Ex. 39).

significant trend of less snow and shorter snow seasons[65, 66]. The importance of reducing GHG emissions now has demonstrated we could save some of our winter in the Northeast. Estimates of future winter snow cover by Burakowski et al (2022) show major reductions in snow cover over the next 80+ years under both high-emissions (RCP 8.5) and lower emissions (RCP 4.5) pathways. Across the Northeastern U.S. the number of days with snow cover declined 39 and 23 days respectively. If we reduce emissions, choosing the lower emissions pathway, we could retain on the order of 16 more snow days, a significant amount in this region of the country.

C. Increased Intensity and Frequency of Wildfires Endanger the Public Health and Welfare Benefits Provided by National Parks and Other Public Lands

Human-caused climate change is intensifying the heat that drives wildfires.[67] Numerous scientific studies have found statistically significant changes in key fire drivers and have attributed these changes to human-caused climate change rather than natural variability. For instance, climate change has increased the fire weather season by up to two months[68] and has doubled the average annual area burned across the western US from 1984 to 2015,[69] and tripled it in northern and central California from 1996 to 2021.[70] Climate change also elevates the combustion potential by increasing the aridity of air, soil leading to the degradation of vegetation. For example, climate change has reduced post-fire regeneration of montane coniferous forest species such as ponderosa pine and Douglas-fir by half from 1979 to 2015.[71]

While other factors like fuel density play a role if U.S. wildfires, as drought and higher temperatures from climate change increase, the frequency and severity of wildfires are also projected to intensify.[72] Since 1989, U.S. wildfires have burned more than 200 million acres.[73] Over a 10 year period from 2014 to 2023 wildfires in the U.S. burned on average over 7.0 million acres annually and federal agencies spent an average of $2.7 billion a year on fire suppression.[74] In January of 2025, the Greater Los Angeles wildfires wreaked havoc in Southern California, resulting in dozens of lives lost, thousands of structures destroyed, and over 37,000 acres burned, including some areas within the Santa Monica Mountains National

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[65] Contosta, A. R., et. al., *Northern forest winters have lost cold, snowy conditions that are important for ecosystems and human communities*, *Ecological Applications* 29(7) (2019) https://doi.org/10.1002/eap.1974 (Attached as Ex. 40)

[66] Murray,G.L.D., Anne M. Colgan, Sarah J. Nelson, Eric P. Kelsey, and Kenneth D. Kimbal, *Climate Trends on the Highest Peak of the Northeast: Mount Washington, NH*, Northeastern Naturalist, 28 (sp11), 64-82, (9 July 2021). https://doi.org/10.1656/045.028.s1105 (Attached as Ex. 41)

[67] Gonzalez, P., *Wildfire, Climate Change, Forest Resilience, and Carbon Solutions*, Parks Stewardship Forum, 39(3) (2023) http://dx.doi.org/10.5070/P539362026 (Attached as Ex. 42).

[68] Zhuang, Y., et. al. *Quantifying contributions of natural variability and anthropogenic forcings on increased fire weather risk over the western United States*, Proceedings of the National Academy of Sciences of the USA 118: e2111875118 (2021) https://doi.org/10.1073/pnas.2111875118 (Attached as Ex. 43).

[69] Abatzoglou, J.T., et.al., *Projected increases in western US forest fire despite growing fuel constraints*, Communications Earth and Environment 2: 227 (2021) https://doi.org/10.1038/s43247-021-00299-0 (Attached as Ex. 44).

[70] Turco, M., et. al., *Anthropogenic climate change impacts exacerbate summer forest fires in California*, Proceedings of the National Academy of Sciences of the USA 120: e2213815120 (2023) https://doi.org/10.1073/pnas.2213815120 (Attached as Ex.45).

[71] Davis, K.T., et.al., *Wildfires and climate change push low-elevation forests across a critical climate threshold for tree regeneration,* Proceedings of the National Academy of Sciences of the USA 116, 6193–6198 (2019) https://doi.org/10.1073/pnas.1815107116 (Attached as Ex. 46).

[72] Matthew W. Jones et al., *State of Wildfires 2023-2024*, 16 Earth System Science Data 3601, 3603 (2024), https://perma.cc/6HA4-YSHK ("State of Wildfires"). (Attached as Ex 47).

[73] *Suppression Costs*, Nat'l Interagency Fire Ctr., https://perma.cc/AU6Y-5CN3 (last visited Jan. 8, 2025).

[74] *Id.*

Recreation Area.[75] Moreover, this summer wildfires in the west burned through thousands of acres within Black Canyon of the Gunnison National Park, as well as over a hundred thousand acres in Grand Canyon National Park, where they have destroyed historic structures, including the historic Grand Canyon Lodge and North Rim Visitor Center.[76] The escalating threat of wildfires—and their economic, social, and environmental impacts on national parks and similarly situated lands—highlights the urgency of reducing greenhouse gas pollution from major sources like on-road vehicles.

Wildfires have also degraded national parks' and forests' innate beauty and recreational appeal, thereby negatively affecting visitation.[77] While many public lands are threatened by wildfires, Yellowstone, Glacier, and Rocky Mountain National Parks are projected to experience the highest increase in wildfire incidents.[78] This heightened incident rate not only jeopardizes the ecological integrity of these parks, but also puts at risk the scenic landscapes, biodiversity, and recreational opportunities that draw millions of visitors to these parks annually.[79]

A decline in visitation and recreation opportunities because of wildfires results in reduced tourism spending, triggering a ripple effect of job and income losses throughout local economies.[80] For example, the regional economic losses from annual wildfires across Utah's National Parks, which include Bryce Canyon, Arches, Canyonlands, Capital Reef, and Zion National Parks, are estimated to range from $2.7 million to $4.5 million per year, as well as result in the loss of dozens of jobs.[81]

Wildfires in national parks also significantly threaten public health and because forests are carbon sinks that absorb atmospheric carbon, wildfires release stored carbon back into the atmosphere.[82] These emissions, which include large quantities of carbon dioxide, particulate matter, and ozone precursors, not only contribute to climate change but can also cause severe health consequences for park visitors, staff, and communities.[83] Studies have shown a direct association between exposure to wildfire smoke and increased rates of asthma, chronic obstructive pulmonary disease, bronchitis, and pneumonia, all of which endanger the public health and welfare that the Clean Air Act intends to protect.[84] Moreover, these health risks discourage people from visiting parks, thereby preventing them from reaping the physical and mental health benefits provided by park exploration.[85]

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[75] Los Angeles Times, *California Wildfires Map*, https://www.latimes.com/wildfires-map/ (last visited Jan. 13, 2025).

[76] *Status of Black Canyon of the Gunnison National Park*, Nat'l Park Serv., (July 18, 2025) www.nps.gov/blca/learn/news/status-of-black-canyon-of-the-gunnison-national-park.htm; *see also*, *Status of the North Rim*, Nat'l Park Serv. www.nps.gov/grca/northrimstatus.htm.

[77] Man-Keun Kim & Paul M. Jakus, *Wildfire, National Park Visitation, and Changes in Regional Economic Activity*, 26 J. Outdoor Recreation & Tourism, 34, 35 (2019), https://perma.cc/YUL4-QZPT ("*Wildfire and Park Visitation*") (Attached as Ex. 48).

[78] *Climate Impact: Fire*, Nat'l Parks Conservation Ass'n, https://perma.cc/6GFF-XVDZ (last visited Dec. 18, 2024).

[79] Yellowstone saw over 4.5 million visitors in 2023, while Glacier and Rocky Mountain National Parks attracted approximately 2.9 million and 4 million, respectively. Flyr and Koontz, *2023 Park Visitor Spending* at 27, 35, 39.

[80] Kim & Jakus, *Wildfire and Park Visitation* at 35.

[81] *Id*. at 34.

[82] *Confronting the Wildfire Crisis* at 16.

[83] *Id*; Wayne E Cascio, *Wildland Fire Smoke and Human Health,* 624 Sci Total Envtl., 3 (2018), https://perma.cc/Z9F8-G5L4 ("*Wildland Fire Smoke*") (Attached as Ex. 49).

[84] Cascio, *Wildland Fire Smoke* at 3; see *also* 42 U.S.C. §§ 7521(a)(1), 7602(h).

[85] Buttke, *Benefits of Biodiversity*.

Additionally, fires can quickly turn deadly, as hotter temperatures and dry conditions can lead to fires spreading rapidly, limiting the opportunity for people to evacuate and wildlife to escape. This was exemplified by a 2016 fire that started in Great Smoky Mountains National Park, spread rapidly due to high winds and dry weather, burned over 17,000 acres, and tragically took the lives of 14 people.[86]

In addition, wildfires in our public lands disrupt critical ecological processes, causing lasting effects on soil health and water systems. Extreme soil temperatures during intense fires can disturb the soil's physical and biological properties, potentially leading to long-term ecological degradation.[87] These changes make the land more vulnerable to erosion and slower to regenerate, threatening the balance of plant and animal life in national parks.[88] Wildfires also significantly impact water systems, with sediment and ash from burned areas accumulating in streams and rivers.[89] This runoff carries pollutants that harm aquatic habitats, reduce water clarity, and disrupt ecosystems.[90]

While fires are a natural part of many ecosystems, climate change has caused fires to burn hotter and spread faster.[91] More severe fires can adversely impact species that typically are fire tolerant, such as the giant sequoia trees found in Sequoia and Kings Canyon National Parks. Despite sequoia trees having a fire-adapted life cycle, between 13 to 19 percent of the world's giant sequoias are estimated to have died in 2020 and 2021 from high-severity fires.[92]

D. Increased Drought Conditions Endanger the Public Health and Welfare Benefits Provided by National Parks and Other Public Lands

Drought conditions, intensified by climate change, pose a significant threat to the economic, social, and environmental vitality of public lands and natural resources. Water scarcity reduces stream flows and lowers water levels in reservoirs, lakes, and ponds, directly impacting wildlife and visitor activities such as fishing, boating, wildlife viewing and even the availability of drinking water.[93] As with rising temperatures and wildfires, these changes have cascading economic effects on communities near parks, which depend on visitor spending tied to park-based recreation. Desert parks, such as Death Valley and Joshua Tree National Parks, exemplify this dynamic: during drought years, spring visitation declines due to the diminished presence of

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[86] Kelly Ann Krueger, *Remembering the Gatlinburg Wildfires Five Years Later*, WVLT8 (Nov. 28, 2021), https://www.wvlt.tv/2021/11/28/remembering-gatlinburg-wildfires-five-years-later/.

[87] Alex Agbeshie et al., *A Review of the Effects of Forest Fire on Soil Properties*, 33 J. For. Res. 1419, 1420 (2022), https://perma.cc/SY7H-E7HK.

[88] *Id.*

[89] Ginger Paige and Jennifer Zygmunt, *The Science Behind Wildfire Effects on Water Quality, Erosion,* Living With Wildfire in Wyoming 31, 32–33 (2013), https://perma.cc/7J9X-WD9E (Attached as Ex. 50).

[90] *Id.*

[91] Jones, *State of Wildfires*.

[92] *Giant Sequoias Face New Threats*, Nat'l Park Serv. (Feb. 24, 2022), www.nps.gov/articles/000/giant-sequoias-face-new-threats.htm.

[93] Jeffrey Jenkins et al., *Visitation to National Parks in California Shows Annual and Seasonal Change During Extreme Drought and Wet Years*, PLOS Climate, 3 (Aug. 9, 2023) https://perma.cc/3ZSA-G4ET ("*Drought and Visitation*") (Attached as Ex. 51). *See also,* NPS, *How the NPS is protecting groundwater for people and ecosystems*, www.nps.gov/articles/how-the-nps-is-protecting-groundwater-for-people-and-ecosystems.htm.

wildflowers and wildlife.[94] Conversely, wet winters can lead to wildflower "super blooms" that attract many visitors, showing the economic and ecological significance of water availability.[95]

Additionally, drought-driven water scarcity results in lower water levels in lakes and rivers. This limits the availability of water-based recreation activities in mountain parks such as Sequoia and Kings Canyon National Parks, causing reduced summer and fall visitation during drought years.[96] Additionally, visitation to Lake Mead National Recreation Area in Nevada dropped by 25% from 2021 to 2022, and visitor spending dropped by $94 million, the result of significantly lower water levels in the lake.[97] Increased greenhouse gas emissions will further limit national parks' cultural and social benefits by impacting the availability of popular recreational activities that are now enjoyed by millions of visitors annually.

Environmentally, drought disrupts ecosystems within national parks by degrading soil quality, hindering plant growth, and increasing the loss of native vegetation.[98] Water scarcity also exacerbates other climate-related challenges, including heightened wildfire risks, invasive species proliferation, and insect outbreaks, all of which harm biodiversity within and around parks.[99] Even iconic American species like the bison are at risk. Bison are found in several national parks, including Wind Cave National Park in South Dakota, where scientists have observed decreases in bison body size as drought becomes more severe and temperatures increase.[100]

E. Rising Sea Levels Endanger the Public Health and Welfare Benefits Provided by National Parks and Other Public Lands.

Increased temperatures from climate change raise sea level by causing ice on land to melt and water to expand as it warms.[101] As with the other climate disasters previously discussed, rising sea levels pose significant threats to the economic, social, and environmental benefits that national parks and public lands provide. Global-mean sea level (GMSL) has increased by approximately 1.5 mm yr-1[102],[103] over the twentieth century More specifically, the IPCC (2023)[104] reports that the average rate of sea level rise was 1.3 [0.6 to 2.1] mm yr-1 between 1901 and

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[94] *Id.* at 12-13.

[95] *Id*. at 14-15.

[96] John Abtazoglou, *New Research Shows Impacts of Drought on National Park Visitation*, Nat'l. Integrated Drought Info. Sys. (Jan. 24, 2024), https://perma.cc/E5BF-8CAS (Attached as Ex. 52).

[97] Jarah Wright, *Lake Mead Visitor Spending Drops by $94 million in One Year, According to Report*, KTNV Las Vegas (Aug. 22, 2023), https://perma.cc/R5YP-FP76.

[98] Sarah R. Weiskopf et al.*, Climate Change Effects on Biodiversity, Ecosystems, Ecosystem Services, and Natural Resource Management in the United States*, 733 Sci. of the Total Envt. 1, 6 (2020), https://perma.cc/7PQB-3PSU ("*Climate Change and Biodiversity"*) (Attached as Ex. 53).

[99] *Id.*

[100] Jeff Martin et al., *Decadal Heat and Drought Drive Body Size of North American Bison (Bison bison) Along the Great Plains*, Ecology and Evolution 336, 344 (2019) https://onlinelibrary.wiley.com/doi/epdf/10.1002/ece3.5898 (Attached as Ex. 54).

[101] Frederikse, T., et al., *The causes of sea-level rise since 1900,* Nature 584: 393-397 (2020) https://doi.org/10.1038/s41586-020-2591-3 (Attached as Ex. 55).

[102] Oppenheimer, M. et al., *IPCC Special Report on the Ocean and Cryosphere in a Changing Climate,* Cambridge University Press,321–445 (2019) www.ipcc.ch/site/assets/uploads/sites/3/2022/03/06_SROCC_Ch04_FINAL.pdf.

[103] Hay, C. et. al., *Probabilistic reanalysis of twentieth- century sea-level rise*, Nature 517, 481–484 (2015) https://doi.org/10.1038/nature14093, (Attached as Ex. 56).

[104] IPCC, IPCC AR6 Synthesis Report.

1971, increasing to 1.9 [0.8 to 2.9] mm yr-1 between 1971 and 2006, and further increasing to 3.7 [3.2 to 4.2] mm yr-1 between 2006 and 2018 (high confidence). As climate change progresses, additional sea level rise is inevitable, but its severity depends on the future rate of greenhouse gas emissions. The National Park Service manages 88 ocean and Great Lakes parks, including over 11,000 miles of coast and 2.5 million acres of ocean and Great Lakes waters.[105] The National Park Service estimates that 92% of coastal parks are affected by sea level rise or will be in the future.[106] U.S. Fish and Wildlife Service, which manages 180 marine, coastal, and Great Lakes wildlife refuges, reports sea level rise is already impacting fish and wildlife habitats, including shorebird and sea turtle nesting habitats.

Rising sea levels damage the infrastructure in national public lands. According to a 2015 report by the U.S. Department of the Interior, which surveyed one-third of national park units threatened by sea level rise, 1 meter of sea level rise could place 40 billion dollars of national park assets at risk.[107] Rising sea levels also endanger historic places protected by national parks. In 2019, the National Trust for Historic Preservation listed Washington D.C.'s Tidal Basin as one of America's 11 most endangered historic places.[108] Twice a day during high tide, water from the Potomac River flows over the sea wall, in part because of sea level rise.[109] The flooding threatens the cherry trees that have lined the Tidal Basin for more than a century by exposing their roots to salty water.[110] In 2024, the National Park Service began a $113 million restoration project that requires cutting down over 150 of these historic trees due to the persistent flooding.[111]

Rising sea levels also cause saltwater intrusion into freshwater resources and endanger coastal areas through increased shoreline erosion, coastal flooding, aquifer and soil contamination, and lost wildlife habitat.[112] Because Everglades National Park is an ecosystem that requires both salt and freshwater and much of its landscape is less than 1.5 meters above sea level, it is particularly vulnerable to rising sea levels that may alter the freshwater-saltwater balance.[113] Increased saltwater levels impact freshwater wetland habitats within the namesake Everglades ecosystem by degrading roots, promoting erosion, and limiting the areas where freshwater species can grow.[114] Effects of saltwater intrusion on the distribution of the mangrove forests

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[105] *Ocean and Coastal Resources,* Nat'l Park Serv. Coastal Resources Div.

[106] Id.

[107] *Interior Department Releases Report Detailing $40 Billion of National Park Assets at Risk from Sea Level Rise,* U.S. Dep't Of The Interior (Jun. 23, 2015), https://perma.cc/79S2-KXQT (Attached as Ex. 57).

[108] *Discover America's 11 Most Endangered Historic Places for 2019*, Nat'l Tr. For Historic Preservation (2019), https://perma.cc/PL8J-ZX7Q.

[109] Andrew Moore, *Cherry Blossoms Reflects Troubling Future for Coastal Forests*, NC State College of Natural Resources News (Apr. 8, 2024), https://perma.cc/BTJ2-PCZ3 ("*Troubling Future*") (Attached as Ex. 58).

[110] *Id.*

[111] *Id.*

[112] Christina Nunez, *Sea Level Rise, Explained,* Nat. Geographic (Feb. 19, 2019), https://perma.cc/S6FT-GWDU.

[113] Shimelis B. Dessu et al., *Effects of Sea Level Rise and Freshwater Management on Long-Term Water Levels and Water Quality in the Florida Coastal Everglades*, 211 J. Envtl. Mgmt. 164, 174 (2018), https://www.sciencedirect.com/science/article/pii/S0301479718300252 (Attached as Ex. 59).

[114] *Id.* at 164.

have already been observed in the park.[115] Many rare species, including endangered species found only in southern Florida, are threatened by the salinization of groundwater and soil. And, increased salinization risks contaminating the Biscayne Aquifer, which serves as South Florida's primary source of drinking water.[116] According to a USGS 2020 report the Mississippi delta region, with 7 National Wildlife Refuges, has some of the highest rate of relative sea level rise in the world raising salinity and flooding.

V. EPA's Proposed Repeal of Greenhouse Gas Standards for Light, Medium and Heavy-Duty On-Road Vehicles will Harm National Parks and Other Federal Public Lands.

Beyond the legal flaws and innumerous real world impacts that could result from rescinding the 2009 Endangerment Finding, EPA's accompanying proposal to repeal GHG standards for on-road vehicles would be devastating for parks and public lands. From a legal standpoint, the rescission of such standards is arbitrary and capricious and is in clear violation with the Clean Air Act. EPA's entire premise for revoking current motor vehicle standards relies on a faulty determination that no "requisite technology" is capable of preventing or controlling GHG from on-road vehicles and that eliminating GHG emissions from on-road vehicles would be futile given GHG contributions from other countries.

As held by the Supreme Court in *Massachusetts v. EPA*, GHGs qualify as air pollutants that endanger public welfare under § 202(a)(1), and EPA has the authority to regulate GHG emissions from sources like light, medium and heavy-duty vehicles.[117] EPA's GHG standards should reflect the "greatest degree of emission reduction achievable through the application of technology which the Administrator determines will be available for the model year to which such standards apply."[118] While the CAA provides some room for considerations of cost, energy, and safety, "it must place primary importance on achieving the greatest degree of emissions reduction."[119] EPA's current proposal ignores this duty and carefully crafted past rules in favor of novel and legally flawed CAA interpretations that have little grounding in law, science or reality.

There are unquestionably numerous technologies available that can improve the efficiency of combustion vehicle engines and reduce GHG emissions, nearly all of which EPA has already identified and supported through their standards for decades. Moreover, EPA's summary dismissal of emission controls like hybrid, battery electric, and other zero-emission engines as "generation shifting" technologies incorrectly applies *West Virginia v. EPA,* 597 U.S. 697 (2022), and ignores over a decade of EPA rulemakings and policy supporting such technologies under Title II of the Clean Air Act.

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[115] Ken W. Krauss et al., *Sea-Level Rise and Landscape Change Influence Mangrove Encroachment into Marsh in the Ten Thousand Island Region of Florida, USA,* J. Coastal Conservation 629, 632 (2011), https://perma.cc/U237-42YZ (Attached as Ex. 60).

[116] *Climate Change Connections: Florida (The Everglades)*, Envtl. Prot. Agency (Nov. 8, 2024), https://perma.cc/SP8D-PQZ8.

[117] *See generally,* 549 U.S. 497, 531 (2007).

[118] 42 U.S.C. § 7521(a)(3)(A)(i).

[119] *Id. See also, Husqvarna AB v. EPA*, 254 F.3d 195, at 200 (D.C. Cir. 2001).

For both zero emission technologies and combustion technologies, EPA further ignores available controls under a flawed premise that reducing GHG emissions is pointless because U.S. on-road vehicles only contribute a small amount of global GHG emissions. This entire argument is seriously flawed and diverges from decades of EPA interpretation. Here, EPA provides no threshold for what level of emissions or controls would be sufficient to require controls. Instead, the proposal simply and arbitrarily dismisses emissions from one of the largest single sources of GHG pollution in the U.S. as unsubstantial when compared to other global contributions. EPA's arbitrary decision to ignore vehicle emissions based on a flawed rationale unconvincingly evades decades of CAA rules that recognize the contributions of numerous sources even if they make up relatively small fractions of a larger pollution problem.

By any measure, emissions from U.S. on-road vehicles are unquestionably significant. The U.S. is currently the second largest global contributor of GHG emissions. Historically, we are by far the largest contributor of GHG emissions, accounting, at one time, for 25% of cumulative CO_2 emissions–much of which is still in the atmosphere driving global climate change to this day. In 2022, there were approximately 280 million registered vehicles in the United States, second only to China and equaling roughly 8 vehicles for every 10 people in the country.[120] In 2020 alone, on-road vehicles in the U.S. produced over 1.6 billion tons of CO_2, accounting for a third of all U.S. CO_2 emissions.[121] This amount of pollution is more than the total 2023 CO_2 equivalent emissions from all sectors, including vehicles, in Germany, France, Italy, and the Netherlands combined.[122]

The significance of U.S. vehicle contributions has been recognized by EPA for years across numerous Republican and Democratic administrations, and has been backed by the courts in numerous cases beginning with and following *Massachusetts v. EPA*. Moreover, the question of whether U.S. vehicle emissions are substantial in the global context and if regulating their emissions would solve climate change is not a binary question. Climate change is currently and undeniably happening in the U.S. and across the world, and the key issue going forward is how badly – not whether – its impacts will harm the health and welfare of people and our planet. Reducing emissions from one of the biggest sources of GHGs in the second highest emitting nation is unquestionably a necessary step toward addressing the degree to which climate change will warm our planet in the long term with the repercussions compounding with every additional degree of average global temperature increase. Reducing U.S. vehicle GHG emissions and inspiring some of the world's largest vehicle manufacturers to develop new and cleaner vehicle technologies would also likely have a ripple effect globally, driving GHG reductions well beyond U.S. borders. Dismissing the basic reality that GHG emissions from U.S. vehicles causes and contributes to climate change defies both the law *and* basic common sense. EPA's unsubstantiated assertions to the contrary are arbitrary and capricious.

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[120] U.S. Dep't of Transp., Fed. Highway Admin., *Highway Statistics, 2022:State Motor-Vehicle Registrations* (Revised February 2025), https://www.fhwa.dot.gov/policyinformation/statistics/2022/mv1.cfm.

[121] EPA*, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2022 – Executive Summary,* www.epa.gov/system/files/documents/2024-04/us-ghg-inventory2024-chapter-executive-summary_04-16-2024.pdf.

[122] European Parliament Directorate General for Communication, *Greenhouse Gas Emissions by Country and Sector*, at 518 (Dec. 2, 2024), www.europarl.europa.eu/pdfs/news/expert/2018/3/story/20180301STO98928/20180301STO98928_en.pdf.

A. Greenhouse gasses and Traditional Air Pollutants Emissions from On-Road Vehicles Harm National Parks and Other Public Lands.

The transportation sector is now the largest source of GHG emissions in the United States, and light, medium and heavy-duty on-road vehicles are the single largest contributor of domestic GHGs within the sector.[123] Revocation of these standards could result in billions of tons of additional and unnecessary climate pollution. As discussed in detail above, these emissions are undoubtedly driving ever-worsenning climate impacts that are harming America's national parks and public lands. Roughly half of all national parks are at high risk from at least one or more high-impact climate change threats, e.g., changes that can alter parks in ways that may be irreversible, such as drought, sea level rise, wildfire, or invasive species.[124] From shifting wildlife habitats and increased flooding and sea level rise to heightened wildfire risk and prolonged extreme heat events, national parks are often on the frontlines of the most severe consequences of a warming planet. Failing to address vehicle GHG pollution in the U.S. will cause continued and escalating harm to America's beloved national parks and public lands.

In addition to impacts of vehicle GHG emissions on national parks and public lands, vehicles emit other pollutants harmful to human health and the environment. This includes pollutants like ammonia, nitrogen oxide (NOx), particulate matter (PM10 and PM2.5), and sulfur dioxide. Vehicle emissions also contribute to the formation of secondary pollutants, like ozone and haze. While this proposal only revokes the GHG standards for on-road vehicles and for now leaves in place emission standards for other pollutants, there is little doubt that this action will result in significant additional emissions of traditional air pollutants. Whether it be through reduced efficiency of combustion engines, or less hybrid and zero-emission vehicles on the road this proposal will unquestionably increase the amounts of traditional air pollutants entering the atmosphere.

Exposure to pollutants like ozone and PM2.5 can cause significant respiratory health problems, including coughing, sinus and airway inflammation, lung damage, chest pains, aggravated asthma, reduced immune system functions, heart attacks, and even premature death.[125] From a public health perspective, revocation of this rule could result in hundreds of thousands of additional premature deaths, hospital and ER visits, millions of additional asthma attacks and missed work and school days, and cost Americans billions of dollars.

Specific to national parks and public lands, these pollutants cause a myriad of impacts, including harms to the health and wellbeing of humans (including park visitors and employees), wildlife and plants, as well as ecosystem impacts like excess nitrogen deposition that drives the proliferation of invasive species and harms to water quality through eutrophication.[126] Haze

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[123] EPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2018 at ES-25 (2020), https://perma.cc/98ZR-XNTR.
[124] Orozco et al., *Polluted Parks* at 3.
[125] *Id*.
[126] Orozco et al., *Polluted Parks* at 4–5.

pollution, in part from vehicle tailpipe emissions, can also cut down on as much as 90 miles of visibility in national parks, like Sequoia and Kings Canyon National Parks.[127]

National parks and other public lands near urban areas where population densities are high are especially affected by vehicle pollution. Air pollution from vehicle tailpipes can also travel long distances, harming parks and public lands downwind from major urban areas.

In 2025, NPCA developed a first-of-its-kind report entitled "Driving Dirty Air: How U.S. Vehicle Pollution Harms Our National Parks," which specifically analyzed the impacts of on-road vehicles on national parks.[128] This report, uncovered a number of key findings highlighting the degree to which vehicle pollution harms our parks, including the following:

- In 2020, U.S. on-road vehicles emit over 2.3 million tons of nitrogen oxides (NO_x), which is 40% more than all major U.S. industrial sources combined.[129]
    - That same year, U.S. vehicles also emitted over 15 million tons of carbon monoxide, 269 thousand tons of particulate matter (PM10 and PM2.5), 90 thousand tons of ammonia, and nine thousand tons of sulfur dioxide.[130]
- 60% (261 of 433) national park units are in counties with high levels of on-road vehicle air pollution (defined in the report as over 500 tons of nitrogen oxides per county annually).[131]
- Counties that host national parks account for 20% (or 1/5th) of the nation's total on-road NOx emissions.[132]
- The report identified 12 hot spot areas for vehicle pollution that stand out for their extreme contributions of NOx pollution affecting national park air quality.[133]
    - These hot spots are defined as counties with high vehicle emissions and home to or nearby national park units; these counties are typically located in and around urban centers with high population densities.[134]
    - The hot spot areas include the: Los Angeles/Southern California Area,Phoenix, Arizona Area, Las Vegas, Nevada Area, Miami/South Florida Area, Seattle, Washington Area, Chicago, Illinois Area, Denver, Colorado Area, Cleveland, Ohio Area, New York City, New York Area, Washington, DC Area, Asheville/Knoxville Area (North Carolina/Tennessee), and Houston, Texas Area.[135]
- These hot spot areas account for 18% of all nationwide NOx emissions from on-road vehicles: equivalent to the annual emissions of 331 coal plant units.[136]

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[127] *Park Air Profiles - Sequoia & Kings Canyon National Parks*, Nat'l Park Serv (2024), https://perma.cc/98TA-J4UN ("*Sequoia and Kings Canyon Profile*").
[128] M. Rose, D. Orozco, U. Reeves, *Driving Dirty Air: How U.S. Vehicle Pollution Harms Our National Parks*, National Parks Conservation Association (2025), www.npca.org/drivingdirtyair, (attached as Ex. 61)
[129] *Id.* 2.
[130] *Id.*
[131] *Id.* 3.
[132] *Id.*
[133] *Id.*
[134] *Id.*
[135] *Id.* 4.
[136] *Id.*

- Dozens of national parks including Joshua Tree, Saguaro, Grand Canyon, Everglades, Mt. Rainier, Indiana Dunes, Great Smoky Mts and Rocky Mountains are disproportionately affected by urban air pollution stemming from on-road vehicles in these hot spot areas.[137]
- These and other parks in their areas experience the equivalent of over 20 and up to nearly 70 coal plant (units) worth of NOx pollution every year.[138]
- The majority (9 of 12) of our identified hot spot areas also fail to meet national ozone standards set to protect human health from this pollution.[139]
- Heavy-duty vehicles, though far fewer in number than light-duty vehicles, are responsible for the majority of (on average 60%) regional NO_x emissions in the 12 hotspot areas.[140]

The findings in this report highlight the key role that vehicle pollution plays in driving air quality, visibility and ecosystem impacts in our national parks, and the pressing need to substantially reduce these emissions. The degree to which these various pollutants continue to affect air quality in our parks and public lands will remain high if EPA moves forward with this proposal to roll back existing standards for light, medium and heavy-duty vehicles.

VI. Conclusion

Global climate change driven by substantial levels of GHG emissions from sources, including U.S. on-road vehicles, is unquestionably endangering public health and welfare. This endangerment extends to significant harms to the long term viability of our national parks, national forests, and other public lands. On-road vehicles especially are major contributors of GHGs and other air pollutants, jeopardizing the future of our parks and public lands. We urge EPA to discard this ill conceived and legally flawed proposal, keep in place the existing 2009 Endangerment Finding, and retain existing standards for on-road vehicles for the health and wellbeing of our national parks, public lands and all the people who enjoy them.

Sincerely,

Mark Rose
Sierra Nevada & Clean Air Senior Program Manager
National Parks Conservation Association

Emily Thompson
Executive Director
Coalition to Protect America's National Parks

Georgia Murray
Senior Scientist
Appalachian Mountain Club

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[137] *Id.*
[138] *Id.*
[139] *Id.*
[140] *Id.* 3.

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