

## ORAL ARGUMENT NOT YET SCHEDULED

## No. 20-1145 (and consolidated cases)

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**IN THE UNITED STATES COURT OF APPEALS  
FOR THE DISTRICT OF COLUMBIA CIRCUIT**

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Competitive Enterprise Institute, *et al.*,  
*Petitioners,*

v.

National Highway Traffic Safety Administration, *et al.*,  
*Respondents.*

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On Petition for Review of a Final Rule of the  
U.S. Environmental Protection Agency and  
the National Highway Traffic Safety Administration

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**FINAL AMICUS BRIEF OF THE COALITION TO  
PROTECT AMERICA'S NATIONAL PARKS, THE NATIONAL  
PARKS CONSERVATION ASSOCIATION, AND THE NEW  
MEXICO WILDERNESS ALLIANCE IN SUPPORT OF  
COORDINATING PETITIONERS**

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**CERTIFICATE AS TO PARTIES, RULINGS,  
AND RELATED CASES**

Pursuant to Circuit Rule 28(a)(1), amici curiae the National Parks Conservation Association, the Coalition to Protect America's National Parks, and the New Mexico Wilderness Alliance, through undersigned counsel, hereby certifies as follows:

**(A) Parties and Amici.** Except for the following, all parties, intervenors, and other amici appearing in this case are listed in the Brief of Public Interest Organization Petitioners.

**Amici:** In support of State and Local Government and Public Interest Organization Petitioners: American Thoracic Society, American Lung Association, American Medical Association, Medical Society of the District of Columbia; Consumer Reports; Economists Benjamin Leard, Joshua Linn, Kenneth A. Small, and James Stock; Senator Tom Carper and Representative Frank Pallone, Jr.; Prof. Michael Greenstone; Andrew Dessler, Philip Duffy, Michael MacCracken, James McWilliams, Noelle Eckley Selin, Drew Shindell, James Stock, Kevin Trenberth, and Gernot Wagner; National League of Cities; U.S. Conference of Mayors; Annapolis; and Boulder County; Glen

Rock; Harris County, TX; Houston; Minneapolis; Pittsburgh; Providence; Saint Paul; Salt Lake City, Santa Fe; Mayors of Durham, Fayetteville, Las Cruces, and Phoenix; and Institute for Policy Integrity at New York University School of Law.

**(B) Rulings Under Review.** By Orders on May 28, 2020, May 29, 2020, June 1, 2020, and July 1, 2020, this Court consolidated cases Nos. 20-1167, 20-1168, 20-1169, 20-1173, 20-1174, 20-1176, 20-1177, and 20-1230 into Lead No. 20-1145. The consolidated petitions before the Court challenge actions of the U.S. Environmental Protection Agency and National Highway Traffic Safety Administration, jointly published as “The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks,” published at 85 Fed. Reg. 24,174 (Apr. 30, 2020).

**(C) Related Cases.** *Amici curiae* are not aware of any related cases other than the consolidated cases before the Court.

Dated: Jan. 21, 2021

/s/ Gabriel Pacyniak  
Gabriel Pacyniak, Esq.  
University of New Mexico School of Law

## CORPORATE DISCLOSURE STATEMENT

The National Parks Conservation Association, the Coalition to Protect America's National Parks, and the New Mexico Wilderness Alliance—*amici curiae* in this case—are nonprofit organizations that do not have parent corporations. None of the organizations have issued stock, no publicly held company has 10 percent or greater ownership interest in these organizations, and none of the organizations have any members who have issued shares or debt securities to the public.

**CERTIFICATE OF COUNSEL UNDER CIRCUIT RULE 29(d)**

*Amici* are nonprofit organizations that advocate for the protection of America's national parks and other public lands. *Amici* have filed this brief to provide the Court with information regarding the significant impacts of increased emissions of greenhouse gases and co-pollutants on the ecosystem, wildlife, and visitors of our national parks and the urgent need to move forward with meaningful limits on greenhouse gases and co-pollutants. Because this information is unlikely to be included in the briefs of the parties or other *amici*, a separate brief is necessary.

Dated: Jan. 21, 2021

/s/ Gabriel Pacyniak

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University of New Mexico School of Law

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**GLOSSARY**

|                      |  |
|----------------------|--|
| “Coalition”          | Coalition to Protect America’s National Parks  |
| “CO <sub>2</sub> ”   | Carbon Dioxide                                 |
| “EPA”                | United States Environmental Protection Agency  |
| “NHTSA”              | National Highway Traffic Safety Administration |
| “NPCA”               | National Parks Conservation Association        |
| “PM <sub>2.5</sub> ” | Fine Particulate Matter                        |
| “Rollback Rule”      | Safer Affordable Fuel-Efficient Vehicles Rule  |

## **STATEMENT OF IDENTITY, INTEREST, AND AUTHORITY TO FILE**

Established in 2003, the Coalition to Protect America's National Parks (Coalition) is a 501(c)(3) non-partisan organization that advocates for the protection of America's national parks. It represents nearly 1,900 current, former, and retired employees of the National Park Service, including former Park Service directors, regional directors, and superintendents. The Coalition represents nearly 40,000 years of professional experience in national park stewardship. Accordingly, the Coalition represents "voices of experience" regarding conserving national park resources and values.

The National Parks Conservation Association (NPCA) has been the leading voice of American people in protecting and enhancing national parks since 1919. NPCA is a nonpartisan organization dedicated to preserving America's natural, historical, and cultural heritage for future generations. Because climate change and air pollution are the greatest threats to national parks, NPCA works to mitigate unhealthy and climate-disrupting pollution.

The New Mexico Wilderness Alliance is a 501(c)(3) non-profit organization dedicated to the protection, restoration, and continued



enjoyment of New Mexico's public lands and Wilderness, with thousands of supporters across New Mexico.

Given the mounting impacts of climate change and air pollution on America's national parks, *amici* have significant interests in ensuring the establishment of meaningful greenhouse gas standards under the Clean Air Act that will also result in reductions of other air pollutants. The unlawful agency action challenged in this case weakened existing greenhouse gas standards and will also lead to higher levels of other air pollutant emissions resulting in harms to national parks. *Amici* filed a notice of intent to file this brief pursuant to Federal Rule of Appellate Procedure 29(a)(2) and Circuit Rule 29(b).

**STATEMENT UNDER RULE 29(a)(4)(E)**

In accordance with Federal Rule of Appellate Procedure 29(a)(4)(E), *amici* state this brief was not authored, in whole or in part, by a party's counsel; no party or party's counsel contributed money that was intended to fund the preparation or submission of this brief; and no persons other than *amici*, their members, or their counsel contributed money intended to fund preparation or submission of the brief.

## **STATUTES AND REGULATIONS**

Pertinent statutes and regulations are contained in the addenda to Brief for Public Interest Organization Petitioners, Doc. No. 1880214 (Jan. 14, 2021) and Brief for State and Local Government Petitioners, Doc. No. 1880213 (Jan. 14, 2021).

## SUMMARY OF ARGUMENT

America's national parks are already being harmed by human-caused climate change. As summarized by leading researchers on global warming and public lands:

Field measurements have detected glaciers melting in Glacier National Park, sea level rising in Golden Gate National Recreation Area, trees dying in Sequoia National Park, vegetation shifting upslope in Yosemite National Park[,] . . . wildfire changing in Yellowstone National Park, and corals bleaching in Virgin Islands National Park.<sup>1</sup>

If immediate action is not taken to significantly reduce emissions of greenhouse gases and co-pollutants,<sup>2</sup> including emissions from cars and trucks, the above impacts promise to become significantly worse.

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<sup>1</sup> Patrick Gonzalez, *Climate Change Trends, Impacts, and Vulnerabilities in US National Parks*, SCIENCE, CONSERVATION, AND NATIONAL PARKS 102 (Beissinger et al. eds. 2017) (citations omitted), <https://perma.cc/ED7L-FFBN> [hereinafter Gonzalez, *Climate Change Trends*].

<sup>2</sup> The rule at issue here establishes greenhouse gas standards that directly regulate carbon dioxide (CO<sub>2</sub>), the most common greenhouse gas, and also provide credits to auto manufacturers for use of air conditioning refrigerants with less global warming potential. Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks, 85 Fed. Reg. 24,174, 24,175 (Apr. 30, 2020) [hereinafter Rollback Rule]. This brief uses the term “co-pollutants” to refer to other air pollutants that are also reduced because

The Safer Affordable Fuel-Efficient Vehicles Rule (“Rollback Rule”) weakens greenhouse gas standards for model year 2021 through 2026 light-duty vehicles and establishes weak fuel economy standards for these same vehicles. It will increase greenhouse gas emissions relative to the prior regulations by at least 867 million metric tons over the lifetime of vehicles through model year 2029.<sup>3</sup> This equals adding greenhouse pollution from an additional 15.7 million cars to the atmosphere.<sup>4</sup> Furthermore, the Rollback Rule will increase emissions of co-pollutants such as nitrogen oxides, particulate matter, and sulfur dioxide, which will further harm park visitors and ecosystems and impair visibility.

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of these standards, including nitrous oxides, sulfur dioxide, particulate matter, and methane. *N.B.* that nitrous oxides and methane operate as both greenhouse gas pollutants and conventional pollutants, but are referred to as co-pollutants because they are not directly regulated by the Rollback Rule.

<sup>3</sup> Rollback Rule, 85 Fed. Reg. at 25,172.

<sup>4</sup> Assuming 12-year vehicle lifetime and average emissions of 4.6 metric tons of CO<sub>2</sub> per year. *See* EPA, Greenhouse Gas Emissions from a Typical Passenger Vehicle, <https://www.epa.gov/greenvehicles/greenhouse-gas-emissions-typical-passenger-vehicle>.

The Rollback Rule harms the public welfare and cherished public lands. As Coordinating Petitioners argue, this action is unlawful under the Clean Air Act (“CAA”) and the Energy Policy and Conservation Act (“EPCA”), and not supported by the record. Therefore, this Court should vacate the Rollback Rule.

## ARGUMENT

The National Park Service Organic Act of 1916 established the “fundamental purpose” of national parks: to “conserve the scenery, natural and historic objects, and wild life ... and to provide for the enjoyment [of the same] ... in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.” 54 U.S.C. § 100101. Courts have consistently affirmed that the National Park System’s principal purpose, under the Organic Act, is conservation. *E.g.*, *Mich. United Conservation Clubs v. Lujan*, 949 F.2d 202, 207 (6th Cir. 1991); *Bicycle Trails Council of Marin v. Babbitt*, 82 F.3d 1445, 1449-50 (9th Cir. 1996).

The CAA’s program of pollution reduction also seeks to protect natural resources and ecosystems, including those conserved by national parks. The Act generally directs the EPA to take regulatory action to reduce air pollution where emissions would endanger “public health and welfare.”<sup>5</sup> As the Act defines “welfare” to include “effects on

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<sup>5</sup> Many CAA regulatory requirements are triggered by a finding that air pollution may endanger “public health and welfare.” *See, e.g.*, 42

soils, water . . . vegetation . . . animals, wildlife . . . and climate,” the Act explicitly seeks to prevent harm to natural resources. 42 U.S.C. § 7602(h).

Moreover, the CAA explicitly protects the unique vulnerability of national parks in two provisions. In the Prevention of Significant Deterioration program, the Act requires a higher degree of air quality protection for units of the National Park System, designating them as either Class I or Class II areas, with Class I areas having the highest level of safeguards. 42 U.S.C. §§ 7472, 7474. Similarly, the Act provides special protections to prevent and remediate any impairment of visibility for national park units designated as mandatory Class I areas. 42 U.S.C. § 7491.

Instead of advancing air pollution standards that would protect national parks, EPA and NHTSA’s Rollback Rule weakens existing

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U.S.C. § 7408(a)(1)(A) (requiring regulation of dispersed pollutants “which may reasonably be anticipated to endanger public health or welfare”); 42 U.S.C. § 7521(a)(1) (requiring regulation of pollution from new motor vehicles and engines . . . “which may reasonably be anticipated to endanger public health or welfare”).



standards and exposes national parks to exacerbated harm from climate change and local air pollution.

## **I. THE ROLLBACK RULE WILL EXACERBATE CLIMATE HARMS IN AMERICA'S NATIONAL PARKS**

While among the most protected lands in America, national parks are among the most vulnerable to climate change.<sup>6</sup> Between 1895 and 2010 the mean annual temperature within the National Park System “increased at double the rate of the US as a whole” and a “greater fraction of national park area (63%) experienced significant temperature increases than the US as a whole (42%).”<sup>7</sup> (See Figure 1 below.)<sup>8</sup> During the same period, researchers found “precipitation declined significantly for 12% of [the] national park area, compared to 3%” of the United States.<sup>9</sup> The ecological implications of these changes

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<sup>6</sup> Patrick Gonzalez et al., *Disproportionate Magnitude of Climate Change in United States National Parks*, 13 ENVTL. RES. LETTERS 1, 6-10 (2018), <https://perma.cc/99FL-CA3S> [hereinafter Gonzalez, *Disproportionate Magnitude*].

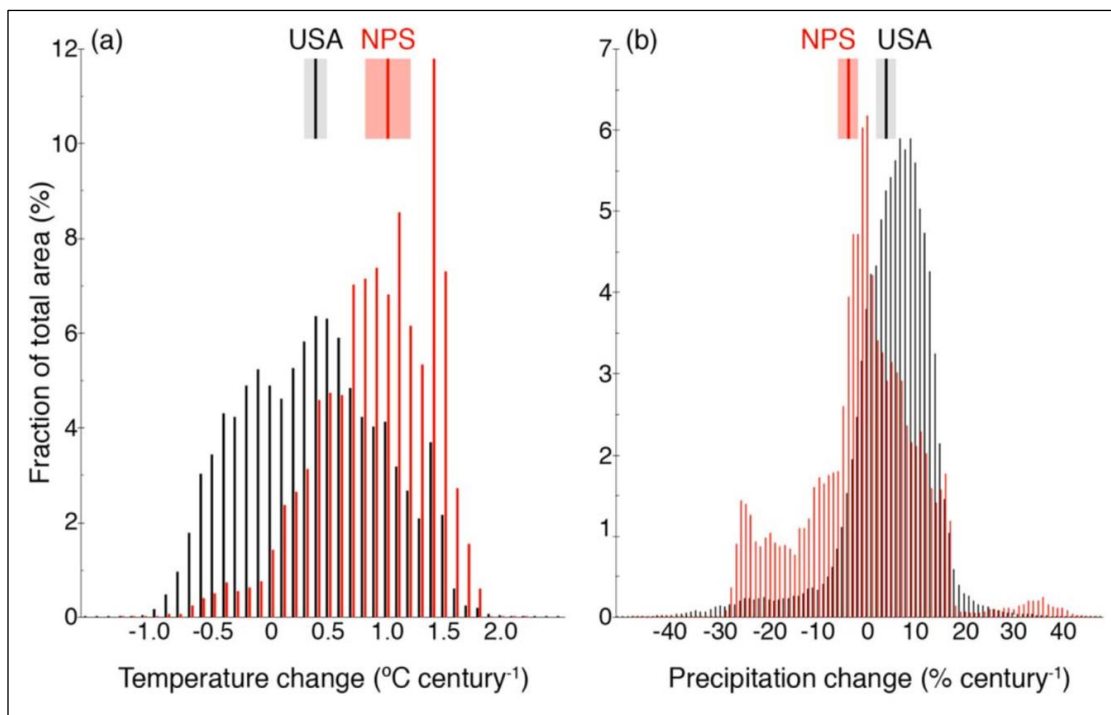
<sup>7</sup> *Id.* at 3.

<sup>8</sup> Figure 1 appears in *id.* at 4.

<sup>9</sup> See *id.* at 4, 5.

are significant: wildfires have grown more severe, forests and wildlife have moved to higher altitudes and latitudes, and tree mortality has doubled in some western parks.<sup>10</sup>

*Figure 1: Historical Climate Change Comparison Between U.S. and National Parks*



In order to slow climate change, reducing greenhouse gas emissions from vehicles is particularly vital because the transportation sector is now the largest source of these emissions in the U.S.<sup>11</sup>

<sup>10</sup> Gonzalez, *Climate Change Trends*, *supra* note 1, at 110-12.

<sup>11</sup> EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2018* at ES-25 (2020), <https://perma.cc/98ZR-XNTR>.

Fortunately, the CAA requires the EPA to reduce greenhouse gas emissions from motor vehicles. Title II of the Act directs the EPA Administrator to set emission standards for “any air pollutant” emitted from “new motor vehicles or new motor vehicle engines” that in her judgment “cause, or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare.” 42 U.S.C. § 7521(a)(1). Greenhouse gases qualify as an “air pollutant” under Title II of the CAA. *Massachusetts v. EPA*, 549 U.S. 497, 528–29 (2007). The EPA has determined that these gases, when emitted from cars and trucks, may reasonably be anticipated to endanger public health and welfare.<sup>12</sup>

EPCA separately requires that NHTSA set corporate average fuel economy standards for automobiles each model year at the “maximum feasible” level. 49 U.S.C. § 32902. Increasing fuel economy is also the

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<sup>12</sup> Endangerment Finding for Greenhouse Gases under CAA Section 202(a), 74 Fed. Reg. 66,496 (Dec. 15, 2009).

primary strategy for reducing greenhouse gas emissions from cars and trucks.<sup>13</sup>

In 2010 and 2012 the EPA and NHTSA promulgated two rounds of joint greenhouse gas and fuel economy standards for cars and trucks under their separate CAA and EPCA mandates.<sup>14</sup> These standards were a critical step in reducing greenhouse gas emissions and slowing the impacts of climate change.

As Coordinating Petitioners demonstrate, the Rollback Rule unlawfully weakens these prior greenhouse gas standards and establishes weak fuel economy standards for model year 2021 and later vehicles.<sup>15</sup> Whereas greenhouse gas standards established in the prior 2012 rule were estimated to require a fleet average of 163 grams of CO<sub>2</sub>

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<sup>13</sup> The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks 83 Fed. Reg. 42,986, 42,987 (proposed Aug. 24, 2018).

<sup>14</sup> Model Year 2012-2016 Light Duty Vehicle Greenhouse Gas and Corporate Average Fuel Economy Standards, 75 Fed. Reg. 25324 (May 7, 2010); Model Year 2017 and Later Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards, 77 Fed. Reg. 62,624 (Oct. 15, 2012) [hereinafter 2012 Rule].

<sup>15</sup> Public Interest Petitioners' Br. at 4-6; State and Local Petitioners' Br. at 23-28.

per mile for 2025 model year vehicles, the Rollback Rule weakens these standards to an estimated fleet average requirement of 240 grams of CO<sub>2</sub> per mile in the 2026 model year.<sup>16</sup> The agencies estimate these weakened standards will increase greenhouse gas emissions by at least 867 million metric tons over the lifetime of vehicles through model year 2029, equal to putting pollution from an additional 15.7 million vehicles into the climate.<sup>17</sup>

Increases in greenhouse gas emissions from this rule will exacerbate the harms that climate change is already causing to America's national parks.<sup>18</sup> As detailed below, these harms include more frequent and more intense wildfires, potential extirpations or extinctions of iconic

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<sup>16</sup> Compare 2012 Rule, 77 Fed. Reg. at 62,641 tbl. I-4, with Rollback Rule, 85 Fed. Reg. at 24184 tbl. II-3.

<sup>17</sup> Rollback Rule, 85 Fed. Reg. at 24,176; see *supra* at note 4.

<sup>18</sup> See NHTSA, Final Environmental Impact Statement, The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Year 2021 – 2026 Passenger Cars and Light Trucks, at 5-40 to 5-56 (2020), <https://www.nhtsa.gov/document/final-environmental-impact-statement-feis-safer-affordable-fuel-efficient-safe-vehicles> (projecting small increases in global CO<sub>2</sub> concentrations, mean surface temperature, sea-level rise and ocean acidification due to Rollback Rule).

wildlife and plants, the loss of iconic glaciers in Glacier National Park, and rising sea levels that harm and threaten parks from the Everglades to the National Mall.

**A. Increased and intensified wildfires are scarring parks and weakening ecosystems, especially in the West.**

Wildfires are becoming more frequent and intense in the West,<sup>19</sup> highlighted by catastrophes such as the deadly 2018 Camp Fire and the record-breaking 2020 fire season that burned over 4 percent of California's land area.<sup>20</sup> A growing body of scientific evidence links this trend to human-caused climate change.<sup>21</sup> Because the western United

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<sup>19</sup> See John Abatzoglou & A. Park Williams, *Impact of Anthropogenic Climate Change on Wildfire Across Western U.S. Forests*, 113(42) PROC. NAT'L. ACAD. SCI. 11770 (2016), <https://perma.cc/7M2A-4ASG>; Jia Coco Liu et al., *Particulate Air Pollution from Wildfires in the Western U.S. under Climate Change*, 138 CLIMATIC CHANGE 655 (2016), <https://perma.cc/R9JQ-5XM3>.

<sup>20</sup> Alex Wigglesworth and Joseph Serna, *California Fire Season Shatters Record with More than 4 million Acres Burned*, L.A. TIMES, Oct. 4, 2020, <https://www.latimes.com/california/story/2020-10-04/california-fire-season-record-4-million-acres-burned>.

<sup>21</sup> E.g., William T. Sommers et al., *Wildland Fire Emissions, Carbon, and Climate: Science Overview and Knowledge Needs*, 317 FOREST ECOLOGY & MGMT. 1, 1-8 (2014), <https://perma.cc/XF9Q-VC9E>; David

States is home to more than half of our national parks—including eight of the ten most visited parks of 2019<sup>22</sup>—more frequent and intense wildfires will continue to significantly harm and threaten the National Park System if action is not taken to reduce carbon pollution.

***1. As wildfires increase in frequency and intensity, more parklands burn, ecosystems and visitors are harmed, and costs add up.***

Higher atmospheric concentrations of greenhouse gases and the resulting hotter temperatures lead to longer dry seasons, decreased snowpack, earlier snowmelt, increased insect and disease outbreaks,

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Peterson, *Climate Change Intensifying Wildfire on National Forests*, U.S. FOREST SERV., (June 2, 2016), <https://perma.cc/LF2K-XLFX>.

<sup>22</sup> NAT'L PARKS SERV., VISITATION NUMBERS (2018), <https://perma.cc/AQ5N-FF69>.

and extended growing seasons.<sup>23</sup> These factors increase the frequency and intensity of wildfires.<sup>24</sup>

Climate change has doubled the number of acres in Western lands burned by wildfires.<sup>25</sup> Scientists believe this measure may double again by mid-century.<sup>26</sup> Fire seasons are on average 78 days longer today than 50 years ago.<sup>27</sup> In 2020, approximately 57,480 wildfires have burned over 10.3 million acres of land, including several historic national park sites.<sup>28</sup> In 2020, the Dome fire in Mojave National

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<sup>23</sup> See Anthony Westerling & Benjamin Bryant, *Climate Change and Wildfire in California*, 87 CLIMATIC CHANGE (Supp. 1) 231, 231-32 (2008), <https://perma.cc/EYM8-TU7D>; Xu Yue et al., *Ensemble Projections of Wildfire Activity and Carbonaceous Aerosol Concentrations over the Western United States in the Mid-21st Century*, 77 ATMOSPHERIC ENV'T 767, 768, 779 (2013), <https://perma.cc/T53F-FKW2>; Abatzoglou & Williams, *supra* note 19, at 1.

<sup>24</sup> See sources cited *supra* in note 19.

<sup>25</sup> Abatzoglou & Williams, *supra* note 19, at 1.

<sup>26</sup> *Id.*, at 2.

<sup>27</sup> *Id.*; see also Anthony Westerling, *Increasing Western U.S. Forest Wildfire Activity: Sensitivity to Changes in the Timing of Spring*, 371 PHILOSOPHICAL TRANSACTIONS B 10 (2016), <https://perma.cc/9KH2-AFPU>.

<sup>28</sup> NAT'L. INTERAGENCY FIRE CTR, NATIONAL PREPAREDNESS LEVEL 1 (2020), <https://perma.cc/8EPC-M4DL>.



Preserve burned more 44,000 acres, including more than 1.3 million Joshua trees that are unlikely to ever recover in the region.<sup>29</sup>

Climate change is making many forests drier and therefore less able to naturally rebound from wildfires.<sup>30</sup> For example, in places where forests exist at the edge of their climatic tolerance, dry conditions combined with wildfire may reduce those forests to grasslands or shrubs.<sup>31</sup>

Increased wildfires also lead to increases in pollutants that harm the health and welfare of park visitors and impair visibility.<sup>32</sup> In recent

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<sup>29</sup> Bettina Boxall, *Mojave Desert Fire in August Destroyed the Heart of a Beloved Joshua Tree Forest*, L.A. TIMES, Sept. 6, 2020, <https://perma.cc/C96S-FQEE>.

<sup>30</sup> Camille S. Stevens-Rumann et al., *Evidence for Declining Forest Resilience to Wildfires under Climate Change*, 21 ECOLOGY LETTERS 243, 243 (2018), <https://perma.cc/SL29-HJP8>.

<sup>31</sup> *Id.*

<sup>32</sup> See Yuanyuan Fang et al., *Impacts of 21st Century Climate Change on Global Air Pollution-Related Premature Mortality*, 121 CLIMACTIC CHANGE 239 (2013), <https://perma.cc/V6LV-9NLM>; Viney Aneja et al., *Ozone and Other Air Quality-Related Variables Affecting Visibility in the Southeast U.S.*, 54 J. AIR AND WASTE MGMT. ASS'N 681, 681-88 (2004), <https://perma.cc/9BKT-3SGA>.

years wildfire “smoke waves” have swept across the western states.<sup>33</sup>

“Smoke waves” are defined as two or more days with elevated fine particulate matter (PM<sub>2.5</sub>) levels that can affect bodily chemistry by slowing blood flow and oxygen to the heart.<sup>34</sup> Exposure to such concentrations of PM<sub>2.5</sub> raises the risk of respiratory and cardiovascular diseases such as asthma, lung and heart disease, stroke, heart attack, and premature death.<sup>35</sup> Additionally, the wildfire’s production of particulate matter contributes to “haze,” which occurs when air pollution emissions reduce the clarity, color, and distance of a person’s vision.<sup>36</sup>

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<sup>33</sup> See Tony Barboza, *How Bad is All the Wildfire Smoke to Our Long-Term Health? ‘Frankly, We Don’t Really Know’*, L.A. TIMES, Sept. 19, 2020, <https://perma.cc/E8QM-GUY4>.

<sup>34</sup> CLIMATE CTRL., WILDFIRE SMOKE WAVES (2018), <https://perma.cc/7TAW-PUD4>.

<sup>35</sup> Jia Coco Liu et al., *Wildfire-Specific Fine Particulate Matter and Risk of Hospital Admissions in Urban and Rural Counties*, 28 EPIDEMIOLOGY 77, 77 (2017), <https://perma.cc/A2V2-UL4L>.

<sup>36</sup> See INTERAGENCY MONITORING OF PROTECTED VISUAL ENVIRONMENTS, VISIBILITY BASICS (2020), <https://perma.cc/BX5A-P9ZC>.

As wildfires intensify, so do the costs of fighting them. From 1985 to 1999, federal fire-fighting costs never exceeded \$1 billion per year.<sup>37</sup> Since 2011, costs have exceeded \$1 billion every year.<sup>38</sup> In 2015 and 2017, costs exceeded \$2 billion, and in 2018, costs exceeded \$3 billion.<sup>39</sup>

## ***2. Yosemite National Park illustrates how increasing wildfires jeopardize the future of national parks.***

Like the rest of the West, Yosemite National Park is experiencing more frequent and intense wildfires.<sup>40</sup> Yosemite faced the two largest wildfires in its history within the past seven years. In 2013, the Rim Fire burned over 77,000 acres—nearly ten percent of the park.<sup>41</sup> In 2018, the Ferguson Fire burned over 10,000 acres of park land, closing Yosemite Valley for twenty days.<sup>42</sup>

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<sup>37</sup> See *Federal Firefighting Costs (Suppression Only)*, NAT'L INTERAGENCY FIRE CENTER, <https://perma.cc/A7L8-PAQS>.

<sup>38</sup> See *id.*

<sup>39</sup> See *id.*

<sup>40</sup> See NAT'L PARKS SERV., *YOSEMITE: PAST FIRE ACTIVITY* (2019), <https://perma.cc/7APT-HEAJ> (Yosemite's fire history map).

<sup>41</sup> *Id.*

<sup>42</sup> Chris Erskine, *Yosemite Valley to Reopen Tuesday After Nearby Fires Closed It for 20 Days*, L.A. TIMES, Aug. 10, 2018, <https://perma.cc/R3GB-PWYT>.

Even after the burning stops, the smoke and other pollution from wildfires threaten Yosemite and its visitors.<sup>43</sup> In July and August of 2018 alone, Yosemite exceeded the National Ambient Air Quality Standard for ozone on 22 days.<sup>44</sup> When visitors return to Yosemite after a fire, they put their cardiovascular and respiratory health at risk.

Unchecked, greenhouse gas pollution will exacerbate wildfires. For parks like Yosemite that will mean fewer visitors and increased pollution, haze, park closures and financial burdens for governments.

**B. Left unchecked, climate change will have catastrophic effects on wildlife and plants that depend on national parks.**

People from around the world visit America's national parks to view their extraordinary flora and fauna. Parks provide safe havens for diverse ecosystems, rare plant species, and threatened or endangered

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<sup>43</sup> See NASA EARTH OBSERVATORY, *Fires Increase Surface Ozone* (2008), <https://perma.cc/5UQW-HLHW>; Alex Rudee, *Yosemite's Dirty Air Secret*, NAT'L PARKS CONSERVATION ASS'N (Sept. 19, 2017), <https://perma.cc/G4PT-MQTG>; Liu et al., *supra* note 35 at 77.

<sup>44</sup> NAT'L PARK SERV., OZONE EXCEEDANCES IN NATIONAL PARKS (2019), <https://perma.cc/Y72E-GBTP>.

wildlife. Unfortunately, these havens are shrinking due to the changing climate. Climate change threatens between 17 to 37 percent of species with extinction.<sup>45</sup> This situation will grow worse in the absence of meaningful limits on greenhouse gas emissions.

Many parks contain unique microclimates that species rely on to survive.<sup>46</sup> Even small climatic changes in these locations can dramatically change the outlook for animals and plants.<sup>47</sup> Park species often inhabit an area at their maximum climatic threshold, meaning there is no suitable habitat for them to move to.<sup>48</sup> This is especially true for elevation-dependent species such as the American pika, which is found in alpine fields and mountainsides.<sup>49</sup> As the climate warms, there is no option for species like the pika to move to higher elevations

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<sup>45</sup> Based on a study of extinction risks in three sample regions. Chris D. Thomas et al., *Extinction Risk from Climate Change*, 427 NATURE 145, 145-48 (2004), <https://perma.cc/ZQ2G-NH8Z>.

<sup>46</sup> See, e.g., 54 U.S.C. § 100101 (recognizing the distinct character of natural areas found within the National Park System).

<sup>47</sup> John Wiens, *Climate-Related Local Extinctions Are Already Widespread Among Plant and Animal Species*, 14 PLOS BIOLOGY 1, 9-11 (2016), <https://perma.cc/D2ZZ-PZBB>.

<sup>48</sup> *Id.* at 9.

<sup>49</sup> See Abigail Cahill, et al., *How Does Climate Change Cause Extinction?*, 280 PROC. ROYAL SOC'Y B 1, 2-4 (2013), <https://perma.cc/4GHK-XYLJ>.

in order to find the conditions they require. Without substantial reductions of greenhouse gas emissions, these trends will lead to extinctions or extirpations of iconic flora and fauna in national parks.

***1. Rising temperatures will further threaten trees and birds in Joshua Tree National Park.***

The impacts to Joshua Tree National Park demonstrate how climate change threatens wildlife and plants in national parks. Warming trends coupled with decreased precipitation resulting from climate change may spell the end for the park's namesake tree.<sup>50</sup> Joshua trees are extremely limited in their ability to migrate and therefore struggle to escape increasing temperatures.<sup>51</sup> Researchers have estimated that Joshua trees will no longer inhabit the park by the end of the century.<sup>52</sup>

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<sup>50</sup> See Kenneth Cole et al., *Past and Ongoing Shifts in Joshua Tree Distribution Support Future Modeled Range Contraction*, 21 ECOLOGICAL APPLICATIONS 137 (2011), <https://perma.cc/3GP3-4BHS>.

<sup>51</sup> See *id.* at 142, 148.

<sup>52</sup> See *id.* at 144; Krishna Dole et al., *The Relative Importance of Climate Change and the Physiological Effects of CO<sub>2</sub> on Freezing Tolerance for the Future Distribution of Yucca Brevifolia*, 36 GLOBAL AND PLANETARY CHANGE 137, 141-43 (2003), <https://perma.cc/J3QU-KQS9>.

Global temperature increase is also threatening bird habitats in Joshua Tree. The golden eagle, great horned owl, California thrasher, and other species face hotter climatic conditions in their preferred habitats around the park.<sup>53</sup> Scientists project that populations of these species will decline, and may even be extirpated from the park altogether, due to climate-induced changes such as loss of food sources for breeding or elevated mortality during heat waves.<sup>54</sup>

## ***2. Warming streams threaten trout populations in Shenandoah National Park.***

Increasing temperatures will also harm wildlife, including fish and other aquatic species.<sup>55</sup> For example, trout in Shenandoah National Park are expected to be harmed as stream temperatures rise and

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<sup>53</sup> See Joanna Wu et al., *Projected Avifaunal Responses to Climate Change Across the U.S. National Park System*, 13 PLOS ONE 1, 6-7, S2 Table (2018), <https://perma.cc/5ECY-HHNL>.

<sup>54</sup> *Id.* at S2 Table.

<sup>55</sup> See Scott J. Cooney et al., *Modeling Global Warming Scenarios in Greenback Cutthroat Trout (*Oncorhynchus Clarki Stomias*) Streams: Implications for Species Recovery*, 65 WESTERN N. AM. NATURALIST 371, 377-79 (2005) (impacts on Rocky Mountain National Park trout), <https://perma.cc/ZFL5-L9PA>; NAT'L PARK SERV., THREATS TO AQUATIC SPECIES AND HABITATS (2017), <https://perma.cc/F8H6-XDCM>.

stream flows decrease.<sup>56</sup> Researchers believe that even with a temperature increase of 1.5 degrees Celsius, trout will lose up to a quarter of their habitat in the park.<sup>57</sup> An increase of 4.5 degrees Celsius would eliminate nearly all suitable trout habitat from the park.<sup>58</sup>

***3. Tree species are experiencing loss of suitable habitat, increases in disease and insect infestations, and drought stress.***

Throughout national parks, climate change is driving the decline of critical tree species. For example, in Yellowstone National Park the Whitebark Pine is a keystone species of the subalpine slopes, but Whitebark Pine stands have diminished due to increased mountain-pine-beetle activity and shrinking habitat.<sup>59</sup> Researchers concluded

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<sup>56</sup> See Patricia A. Flebbe et al., *Spatial Modeling to Project Southern Appalachian Trout Distribution in a Warmer Climate*, 135 TRANSACTIONS OF THE AM. FISHERIES SOC'Y 1371, 1380 (2006), <https://perma.cc/F4KL-AGU5>.

<sup>57</sup> See *id.* at 1376.

<sup>58</sup> *Id.* at 1377.

<sup>59</sup> ROBERT KEANE, ET AL., U.S. DEP'T OF AGRIC., RESTORING WHITEBARK PINE ECOSYSTEMS IN THE FACE OF CLIMATE CHANGE 29-31, 35-36 (2017), <https://perma.cc/9ZA6-BR8X>.



that climate change exacerbates this trend by “accelerating succession to more shade tolerant conifers” and increasing the frequency and severity of mountain pine beetle outbreaks and wildland fire events.<sup>60</sup> In the greater Yellowstone ecosystem, Whitebark Pine may face losses of 71 to 99 percent.<sup>61</sup>

Similarly, in Bandelier National Monument, the characteristic piñon trees that provided an important source of food to Ancestral Pueblo peoples may experience die-offs due to increased drought stress resulting from climate change, and these woodlands may even convert to grasslands.<sup>62</sup> And there is evidence that even the giant sequoias of Sequoia, Kings Canyon, and Yosemite National Parks are at risk of decline due to climate change.<sup>63</sup>

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<sup>60</sup> *Id.* at ii.

<sup>61</sup> Gonzalez, *Climate Change Trends*, *supra* note 1, at 121 (Table 6.3).

<sup>62</sup> *Id.* at 106, 107 (Table 6.1).

<sup>63</sup> *Id.* at 106, 107 (Table 6.1).

**C. Glaciers in America’s national parks are retreating due to climate change—and they could be lost entirely.**

Warming temperatures have already caused the retreat and disappearance of glaciers across the globe, including in America’s national parks.<sup>64</sup> Researchers “have detected decreases in length, area, volume, and mass for almost all” of 168,000 glaciers measured since 1960—among them, glaciers in Denali, Glacier, Glacier Bay, and other national parks.<sup>65</sup> According to the Intergovernmental Panel on Climate Change, these losses are “attributable to human-induced climate change more than natural variation or other non-human factors.”<sup>66</sup>

Glacier National Park in northwestern Montana exemplifies the peril confronting glaciers across the park system. The park is one of the most visited in the country because of its mountain scenery, wildlife,

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<sup>64</sup> *Id.* at 106, 107 (Table 6.1).

<sup>65</sup> *Id.* at 106.

<sup>66</sup> *Id.* (citing Nathaniel L. Bindoff et al., *Detection and Attribution of Climate Change: From Global to Regional*, in CONTRIBUTION OF WORKING GRP. I TO THE 5TH ASSESSMENT REPORT, INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2013: THE PHYSICAL SCIENCE BASIS (Stocker et al. eds. 2013), <https://perma.cc/6L7H-CKDE>).

vast expanses of wilderness, and its namesake glaciers.<sup>67</sup> Not only are the park's glaciers star attractions, they also support wildlife and unique ecosystems.<sup>68</sup>

Researchers estimate that before 1850, there were around 150 glaciers in the park.<sup>69</sup> As of 2015, only 26 glaciers remained—and all had suffered significant reductions in size.<sup>70</sup> Models project that the last of these glaciers will disappear in the coming decades.<sup>71</sup> A stark example of this trend is the iconic Grinnell Glacier, which lost 45 percent of its area between 1966 and 2015.<sup>72</sup> The two photographs below demonstrate the scale of this loss.<sup>73</sup>

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<sup>67</sup> VISITATION NUMBERS, *supra* note 22; *see also* NAT'L PARK SERV., GLACIER NAT'L PARK: LEARN ABOUT THE PARK (2019), <https://perma.cc/6KUT-DD3B>.

<sup>68</sup> *See, e.g.*, U.S. GEOLOGICAL SURVEY, RETREAT OF GLACIERS IN GLACIER NAT'L PARK (2018), <https://perma.cc/XWV3-UCJU>.

<sup>69</sup> *Id.*

<sup>70</sup> *Id.*

<sup>71</sup> *Id.*; NASA EARTH OBSERVATORY, WORLD OF CHANGE: ICE LOSS IN GLACIER NAT'L PARK (2016), <https://perma.cc/4S45-Z5HG>.

<sup>72</sup> NAT'L PARK SERV., HOW TO SEE A GLACIER (2019), <https://perma.cc/H5AF-NGNS>.

<sup>73</sup> NAT'L PARK SERV., MELTING GLACIERS (2019), <https://perma.cc/Y65N-7MYF>.



*Grinnell Glacier, 1910*



*Grinnell Glacier, 2017*

Glaciers stabilize the park's ecosystem by providing late-season runoff to keep rivers and streams full of water at a consistent

temperature.<sup>74</sup> Without glacial runoff, streams may dry up or experience abnormal temperatures that can negatively impact native bull trout and westslope cutthroat trout.<sup>75</sup>

Continued loss of glaciers could also reduce visitation to Glacier National Park, leading to significant economic impacts in Montana. In 2018, the state received an estimated \$633 million from visitation to its national parks, with Glacier accounting for over half of that amount.<sup>76</sup>

#### **D. Rising sea levels are already deluging national parks.**

In the past century, sea levels have risen by around seven to eight inches due to climate change.<sup>77</sup> Although the pace of future sea-level rise largely depends on the rate of continued greenhouse-gas emissions,

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<sup>74</sup> See STEPHEN SAUNDERS ET AL., NAT'L RES. DEF. COUNCIL, *GLACIER NATIONAL PARK IN PERIL: THE THREATS OF CLIMATE DISRUPTION* 18-29 (2010), <https://perma.cc/GL9Y-93AB>.

<sup>75</sup> THREATS TO AQUATIC SPECIES AND HABITATS, *supra* note 55.

<sup>76</sup> CATHERINE CULLINANE THOMAS ET AL., NAT. PARKS SERV. & U.S. DEP'T OF THE INTERIOR, *2018 NAT'L PARK VISITOR SPENDING EFFECTS* 26, 50, (2019), <https://perma.cc/87ZA-PHBN>.

<sup>77</sup> Katharine Hayhoe et al., *Our Changing Climate*, U.S. GLOB. CHANGE RESEARCH PROGRAM, *FOURTH NATIONAL CLIMATE ASSESSMENT* 25-26, 333, 339, 343 (D.R. Reidmiller et al. eds., 2018).

significant increases in sea levels are projected. The 2018 National Climate Assessment reported that sea levels are likely to increase from one to four feet by 2100 relative to 2000 levels.<sup>78</sup>

The Park Service manages 86 coastal parks that include over 11,000 miles of coastline and 2.5 million acres of Ocean and Great Lakes waters.<sup>79</sup> Even small sea level rises—and the storm surges that accompany them—can have devastating effects on these parks by causing flooding, erosion, aquifer and soil contamination, and lost wildlife habitat.<sup>80</sup> One study conducted by the Interior Department—which examined only a third of coastal parks threatened by sea-level rise—found that one meter of rise would place \$40 billion of park assets at risk.<sup>81</sup>

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<sup>78</sup> *Id.* at 108.

<sup>79</sup> NAT'L PARK SERV., OCEAN AND COASTAL RESOURCES (2017), <https://perma.cc/L5ES-X3ZN>.

<sup>80</sup> Christina Nunez, *Sea Level Rise, Explained*, NAT. GEOGRAPHIC (Feb. 19, 2019), <https://perma.cc/W269-6ZD4>.

<sup>81</sup> U.S. DEP'T OF THE INTERIOR, INTERIOR DEPARTMENT RELEASES REPORT DETAILING \$40 BILLION OF NATIONAL PARK ASSETS AT RISK FROM SEA LEVEL RISE (2016), <https://perma.cc/79S2-KXQT>.

***1. Everglades National Park's complex landscape is uniquely vulnerable to sea-level rise.***

The southwestern portion of Florida's Everglades, including Everglades National Park, is a subtropical peatland ecosystem with an abundance of diverse plant and animal species.<sup>82</sup> It requires both salt water and fresh water to support a unique, hybrid ecosystem.<sup>83</sup>

Unfortunately, rising seawaters threaten this delicate balance.<sup>84</sup> Saltwater intrusion increases salinity, degrades roots, and promotes erosion, harming ecosystems including buttonwood and mahogany forests.<sup>85</sup> Effects on the distribution of the iconic mangrove forests have

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<sup>82</sup> NAT'L PARK SERV., WHY PROTECT EVERGLADES NAT'L PARK? (2015), <https://perma.cc/8JH4-7WUG>.

<sup>83</sup> See M.S. Ross et al., *The Southeast Saline Everglades Revisited: 50 Years of Coastal Vegetation Change*, 11 J. VEGETATION SCI. 101, 101 (2000), <https://perma.cc/X2L6-WDJ5> (coastal wetlands "reflect a dynamic hydrologic balance"); Carolyn Gramling, *A Freshwater, Saltwater Tug-of-War Is Eating Away at the Everglades*, SCI. NEWS (Aug. 20, 2018), <https://perma.cc/J9N3-FSED>.

<sup>84</sup> Nat'l Park Serv. & , U.S. Dep't of the Interior, *Potential Ecological Consequences of Climate Change in South Florida and the Everglades*, 2009 SFNRC TECH. SERIES 6 (2009).

<sup>85</sup> See Gonzalez, *Climate Change Trends*, *supra* note 1, at 121 (Table 6.3).

already been observed.<sup>86</sup> Twenty-seven rare plants—including endangered species found only in south Florida, such as tropical orchids and herbs—will be harmed by the salinization of groundwater and the soil.<sup>87</sup>

## ***2. Rising sea levels harm America’s urban parks, including the National Mall in Washington, D.C.***

Rising sea-levels will affect many parks, including one of the most iconic and visited national parks in the country: the National Mall in Washington, D.C. By 2100, “the National Capital Region is projected to experience the highest average rate of sea level change” within the National Park System.<sup>88</sup> In 2019, the National Trust for Historic

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<sup>86</sup> Ken W. Krauss et al., *Sea-Level Rise and Landscape Change Influence Mangrove Encroachment onto Marsh in the Ten Thousand Island Region of Florida, USA*, 15 J. COASTAL CONSERVATION 629, 632 (2011), <https://perma.cc/U237-42YZ>.

<sup>87</sup> Erik Stabena, et al., *Sea-level Rise: Observations, Impacts, and Proactive Measures in Everglades National Park*, 28 PARK SCI. 26, 29 (2011), <https://perma.cc/9LYD-3WBE>.

<sup>88</sup> MARIA CAFFREY ET AL., NAT’L PARK SERV., SEA LEVEL RISE AND STORM SURGE PROJECTIONS FOR THE NATIONAL PARK SERVICE viii (2018), <https://perma.cc/VC56-YVPR>.



Preservation identified the Mall's Tidal Basin as one of the eleven most endangered historic places, mostly due to persistent flooding.<sup>89</sup>

Twice a day, during high tide, approximately 250 million gallons of water from the Potomac River flow into the 107-acre tidal basin.<sup>90</sup> This high tide now spills onto the Mall and over sidewalks on a daily basis.<sup>91</sup> The continuous flooding is both an inconvenience to millions of annual visitors and a threat to the treasured cherry trees that have grown along the Tidal Basin since 1912.<sup>92</sup> The exposure of the trees' roots to brackish water poses risks to the trees' long-term survival.

These examples—and far too many more—demonstrate the harms that climate change is causing across America's national parks. Increased wildfires, threats to unique animal and plant species, melting glaciers, and rising seas will only continue if greenhouse gas

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<sup>89</sup> See NAT'L TR. FOR HISTORIC PRES., DISCOVER AMERICA'S 11 MOST ENDANGERED HISTORIC PLACES FOR 2019 (2019), <https://perma.cc/PL8J-ZX7Q>.

<sup>90</sup> NAT'L PARK SERV., TIDAL BASIN, WASHINGTON, DC (2018), <https://perma.cc/JZZ6-ZTKS>.

<sup>91</sup> Andrew Giambrone, *Famed D.C. Cherry Blossoms Face Long-Term Risks from High Tides*, CURBED D.C. (Apr. 4, 2019), <https://perma.cc/WCY8-5JZW>.

<sup>92</sup> *Id.*

emissions—including emissions from cars and trucks—are not meaningfully reduced in the near future.

## **II. THE ROLLBACK RULE WILL ALSO INCREASE CO-POLLUTANT HARMS TO NATIONAL PARKS**

The Rollback Rule will not only increase greenhouse gas pollution, it will also increase emissions of other co-pollutants: particulate matter, ozone-forming nitrogen oxides, and sulfur dioxide.<sup>93</sup> These pollutants harm people and ecosystems in the national parks and contribute to haze that obscures scenic views.

This increase in co-pollutant emissions resulting from the Rollback Rule could also cause states to fail to meet other federal pollution limits. In some cases, states will struggle to find other ways to achieve the necessary reductions.

### **A. The Rollback Rule will lead to increased ambient air pollution that will harm ecosystems.**

The CAA directs the EPA to set both primary and secondary national standards—called “NAAQS”—for “ambient” air pollutants. 42 U.S.C. §§

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<sup>93</sup> See discussion of “co-pollutants” *supra* at note 2.

7408–09. Secondary standards are to be set at a level “requisite to protect public welfare from any known or anticipated adverse effects” to “soils, water . . . vegetation . . . animals, wildlife . . . and climate.” 42 U.S.C. §§ 7409(b), 7602(h).

Among the ambient air pollutants regulated by EPA are nitrogen oxides, particulate matter, and sulfur dioxide.<sup>94</sup> With regards to particulate matter and sulfur dioxide, Congress required states to meet more rigorous standards when permitting facilities whose emissions could harm national parks. 42 U.S.C. § 7473(b).

Nitrogen oxides, particulate matter, and sulfur dioxide are all emitted by cars and trucks.<sup>95</sup> They are also emitted during the extraction, transportation, refining, storage, and distribution of petroleum motor fuels, referred to as “upstream” emissions.<sup>96</sup> Some major sources of upstream emissions are located near national parks. For example, refinery emissions adversely impact air quality in

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<sup>94</sup> *NAAQS Table*, EPA, <https://www.epa.gov/criteria-air-pollutants/naaqs-table> (last visited Jan. 4, 2021).

<sup>95</sup> Rollback Rule, 85 Fed. Reg. 24,174, 24,845 (Apr. 30, 2020)

<sup>96</sup> *Id.*

Olympic, North Cascades, and Carlsbad Caverns National Parks, among others.<sup>97</sup>

Even by the agencies own accounting, the Rollback Rule will result in net increases of all of these pollutants relative to the 2012 rule due to projected increases from upstream sources.<sup>98</sup> Moreover, public interest petitioners show that the agencies significantly underestimated co-pollutant emissions.<sup>99</sup>

These pollutants wreak havoc on park ecosystems. For example, ground-level ozone—formed by the mixing of nitrogen oxides with other chemicals—makes coniferous trees less resistant to disease and insect

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<sup>97</sup> See, e.g., Nat'l. Park Service, Adverse Impact Determination with regard to BP Cherry Point Refinery Expansion (Dec. 15, 2016) (finding expansion of refinery would adversely affect air quality at Olympic and North Cascades National Parks); Nat'l Park Service, Park Air Profiles - Carlsbad Caverns National Park, <https://www.nps.gov/articles/airprofiles-cave.htm>.

<sup>98</sup> The agencies project small net reductions of some of these co-pollutants from *tailpipe* emissions under the Rollback Rule due to a faster fleet turnover as compared to the 2012 rule, but these reductions would be offset by a larger projected emissions increase from *upstream* sources. Rollback Rule, 85 Fed. Reg. at 25,060, Table VII-123 (alternative 3).

<sup>99</sup> Public Interest Petitioners' Br. at 12-18.

infestations. This has already resulted in significant damage within the western forests of Sequoia and Kings Canyon National Parks.<sup>100</sup>

Similarly, airborne nitrogen and sulfur compounds acidify park soils, lakes, ponds, and streams.<sup>101</sup> Sulfur depositions have already significantly changed stream chemistry in Shenandoah National Park, causing fish species losses.<sup>102</sup> Among the parks at highest risk for future acidification harms from air pollution are Shenandoah, Great Smoky Mountains, Olympic, North Cascades, and Yosemite.<sup>103</sup>

While current co-pollutant levels already compromise public welfare in national parks, the Rollback Rule further threatens park ecosystems.

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<sup>100</sup> NAT'L PARK SERV., PARK AIR PROFILES – SEQUOIA & KING CANYON NATIONAL PARKS (2019), <https://perma.cc/W2BS-FJGD>.

<sup>101</sup> TIMOTHY J. SULLIVAN ET AL., NAT'L PARK SERVICE, EVALUATION OF THE SENSITIVITY OF INVENTORY AND MONITORING NATIONAL PARKS TO ACIDIFICATION EFFECTS FROM ATMOSPHERIC SULFUR AND NITROGEN DEPOSITION: MAIN REPORT ix-x (2011), <https://irma.nps.gov/DataStore/DownloadFile/428429>.

<sup>102</sup> BERNARD J. COSBY ET AL., ACIDIC DEPOSITION IMPACTS ON NATURAL RESOURCES IN SHENANDOAH NATIONAL PARK: TECHNICAL REPORT 1-1 (2006), <https://irma.nps.gov/DataStore/DownloadFile/582005>.

<sup>103</sup> SULLIVAN *supra* note 102 at xi, 43-49.

**B. The CAA specifically protects visibility in national parks, but the Rollback Rule threatens progress.**

In 1977, Congress amended the Clean Air Act to protect the iconic views of America's National Parks from haze and to preserve the vibrance and "national dignity" of our parks.<sup>104</sup> 42 U.S.C. §§ 7491(a)(1), (b)(2). Haze occurs when particulate matter reduces the ability to see distant objects, affecting scenic clarity and color.<sup>105</sup> Vehicles and refineries emit particulate matter directly, as well as sulfur dioxide and nitrogen oxides that form haze-causing particles through chemical reactions.<sup>106</sup>

Despite decades of action by both the states and the EPA to meet haze targets, regional haze continues to impair visibility in the overwhelming majority of federal lands.<sup>107</sup> The National Parks

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<sup>104</sup> TIMOTHY J. SULLIVAN, AIR POLLUTION AND ITS IMPACTS ON U.S. NATIONAL PARKS § 3.4.1 (2017).

<sup>105</sup> Kevin J. Boyle et al., *Valuing Shifts in the Distribution of Visibility in National Parks and Wilderness Areas in the United States*, 173 J. ENVTL. MGMT 10, 10–11 (2017), <https://perma.cc/L2ZP-T39L>.

<sup>106</sup> Regional Haze Regulations, 64 Fed. Reg. 35,714, 35,752 (July 1, 1999).

<sup>107</sup> NAT'L PARK SERV., AIR POLLUTION AND VISIBILITY (2020), <https://perma.cc/5JTQ-EFEF>.

Conservation Association reports that haze moderately or significantly affects 89% of national parks.<sup>108</sup> For example, at New Mexico's White Sands National Park, haze reduces visibility from a maximum range of 175 miles to below 40 miles on high-pollution days.<sup>109</sup> At Yosemite National Park, haze reduces visibility from a range of 155 miles to below 55 miles.<sup>110</sup>

As discussed above, the Rollback Rule will increase emissions of particulate matter, nitrogen oxides, and sulfur dioxide, which all contribute to haze.<sup>111</sup> The result is an increase in visibility impairing pollution that obscures iconic views and denies park visitors the scenic wilderness experience.

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<sup>108</sup> NAT'L PARKS CONSERVATION ASSOC., *POLLUTED PARKS: HOW AMERICA IS FAILING TO PROTECT OUR NATIONAL PARKS, PEOPLE, AND PLANET FROM AIR POLLUTION* 12 (2019), <https://perma.cc/U59D-K2FE>.

<sup>109</sup> *See* NAT'L PARK SERV. & U.S. DEP'T OF THE INTERIOR, *VISIBILITY AT WHITE SANDS NATIONAL MONUMENT* 1-2 (2017), <https://perma.cc/GB4E-GY83>.

<sup>110</sup> *Park Air Profiles – Yosemite National Park*, NAT'L PARK SERV, <https://perma.cc/XWM9-9XWN>.

<sup>111</sup> Rollback Rule, 85 Fed. Reg. at 25,060, Table VII-123 (alternative 3, relative to prior rule).

**C. States' plans to address ambient air pollution and visibility could now become inadequate.**

The CAA directs states to meet federal NAAQS and haze targets through state implementation plans (“SIPs”). 42 U.S.C. § 7491(b)(2); 42 U.S.C. § 7408(b)(1). These SIPs must include “emissions reduction measures” to meet pollution reduction targets. To determine the necessary reduction measures, states estimate the cumulative levels of ambient and haze-causing pollutants emitted into their airsheds, including from vehicles and refineries.<sup>112</sup> These plans represent a substantial analytic undertaking, taking years to draft and submit.<sup>113</sup>

While the states may set their own emissions standards for stationary source emissions, most states do not independently regulate vehicle emissions.<sup>114</sup> 42 U.S.C. §§ 7507, 7543. Rather, states generally

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<sup>112</sup> *E.g.*, 40 C.F.R. § 51.308.

<sup>113</sup> Andrew H. Pegues et al., *Efficacy of recent state implementation plans for 8-hour ozone*, 62 J. AIR & WASTE MGMT ASSOC. 252, 253 (2012), <https://perma.cc/3E5B-SRXM> (each state of SIP process may take years of effort).

<sup>114</sup> Only California may set more stringent standards if it meets statutory criteria for a preemption waiver; other states may then choose to adopt California’s standards.



rely on federal emissions standards when developing SIPs to reduce net levels of pollution within their state.<sup>115</sup> The states therefore necessarily incorporated pre-rollback vehicle emissions standards when developing recent haze and NAAQS SIPs.<sup>116</sup> For example, a 2016 plan for the Phoenix metropolitan area “was primarily dependent upon the emissions benefits of the tighter federal standards for new onroad and nonroad engines and fuel requirements” for achieving necessary emission reductions.<sup>117</sup>

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<sup>115</sup> See e.g., Regional Haze Regulations, 64 Fed. Reg. 35,714, 35,735 (July 1, 1999) (“national mobile source” standards will be an “important factor in projecting” haze emissions).

<sup>116</sup> See e.g., EPA, TECH. SUPPORT DOC. FOR EPA’S UPDATED 2028 REGIONAL HAZE MODELING 1, 11 (2019), <https://perma.cc/WBM8-8AL8> (EPA’s modelling data to inform regional haze SIPs used MOVES2014b to model vehicle emissions); EPA, POLICY GUIDANCE ON THE USE OF MOVES2014 FOR STATE IMPLEMENTATION PLAN DEVELOPMENT, TRANSPORTATION CONFORMITY, AND OTHER PURPOSES (2014), <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100K4EB.pdf> (documenting that MOVES2014 incorporates standards from pre-rollback 2012 rule).

<sup>117</sup> MARICOPA ASSOCIATION OF GOVERNMENTS, 2017 EIGHT-HOUR OZONE MODERATE AREA PLAN FOR THE MARICOPA NONATTAINMENT at 6-8 (2016), [https://www.azmag.gov/portals/0/Documents/EP\\_2016-12-09\\_MAG-2017-EightHour-Ozone-Moderate-Area-Plan-for-the-Maricopa-Nonattainment-Area.pdf](https://www.azmag.gov/portals/0/Documents/EP_2016-12-09_MAG-2017-EightHour-Ozone-Moderate-Area-Plan-for-the-Maricopa-Nonattainment-Area.pdf).

As the Rollback Rule will result in higher emissions of co-pollutants from the combination of vehicle and upstream emissions, state plans may no longer be adequate for controlling these pollutants from all sources. If a state plan becomes “substantially inadequate” due to these changes, states will need to implement other control measures to achieve the required reductions. *See* 42 U.S.C. § 7410(k)(5). Some states have indicated that it will be challenging to identify other measures to achieve these reductions.<sup>118</sup>

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<sup>118</sup> State Petitioners’ Brief at Addendum B-033 to B-034; B-159 (Rollback Rule will make it more challenging for California and Wisconsin to meet NAAQS).

### III. CONCLUSION

The Rollback Rule unlawfully weakens critical emissions standards for greenhouse gas emissions and will also result in increases in emissions of nitrogen oxides, particulate matter, and sulfur dioxide. These increases will exacerbate climate change and co-pollutant harms in National Parks. To aid in protecting cherished national parks from the current and intensifying impacts of climate change, this Court should grant the Coordinating Petitioners petitions and vacate the rule.

Respectfully submitted on January 21, 2021,

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## CERTIFICATE OF COMPLIANCE

This document complies with the type-volume limit of Federal Rules of Appellate Procedure 29(a)(4)(G) and 32(a)(7)(B) because, excluding the parts of the document exempted by Rule 32(f), this document contains 6,499 words. This document also complies with the typeface requirements of Federal Rule of Appellate Procedure 32(a)(5) and the type-style requirements of Federal Rule of Appellate Procedure 32(a)(6) because it has been prepared in a proportionally spaced typeface using Microsoft Word in fourteen-point Century Schoolbook.

Dated: Jan. 21, 2021

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**CERTIFICATE OF SERVICE**

I hereby certify that on January 21, 2021, I electronically filed the foregoing Brief of Amici Curiae, the National Parks Conservation Association, the Coalition to Protect America's National Parks, and the New Mexico Wilderness Alliance, with the Clerk of the Court for the United States Court of Appeals for the District of Columbia Circuit by using the Court's CM/ECF system. I further certify that all parties are represented by counsel registered with the CM/ECF system, so that service will be accomplished by the CM/ECF system.

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