

[NOT YET SCHEDULED FOR ORAL ARGUMENT]

No. 19-1140 (and consolidated cases)

**In the United States Court of Appeals
for the District of Columbia Circuit**

AMERICAN LUNG ASSOCIATION and
AMERICAN PUBLIC HEALTH ASSOCIATION,

Petitioners,

v.

U.S. ENVIRONMENTAL PROTECTION AGENCY and
ANDREW WHEELER, Administrator,

Respondents.

On Petition for Review of a Final Agency Action of
the U.S. Environmental Protection Agency

**BRIEF OF AMICI CURIAE PATAGONIA WORKS AND COLUMBIA
SPORTSWEAR COMPANY IN SUPPORT OF STATE AND MUNICIPAL,
PUBLIC HEALTH AND ENVIRONMENTAL, POWER COMPANY,
AND CLEAN ENERGY TRADE ASSOCIATION PETITIONERS**

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DISCLOSURE STATEMENT PURSUANT TO CIRCUIT RULE 26.1

Amicus Patagonia Works is a private benefit corporation organized under the laws of California and headquartered in Ventura, California. Patagonia Works has no parent company; no publicly held company has a 10% or greater ownership interest in Patagonia Works; and Patagonia Works does not have any members who have issued shares or debt securities to the public.

Amicus Columbia Sportswear Company is a publicly traded company organized under the laws of Oregon and headquartered in Portland, Oregon. Columbia Sportswear Company has no parent company; no publicly held company has a 10% or greater ownership interest in Columbia Sportswear Company; and Columbia Sportswear Company does not have any members who have issued shares or debt securities to the public.

/s/ *Ethan G. Shenkman*
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**CERTIFICATE OF PARTIES, RULINGS, AND
RELATED CASES PURSUANT TO CIRCUIT RULE 28(a)(1)**

A. Parties and Amici. Except for amici Patagonia Works and Columbia Sportswear Company, all parties, intervenors, and amici appearing in this Court are listed in the Brief for Petitioner or have filed notices of intent to file an amicus brief.

B. Ruling Under Review. An accurate reference to the ruling at issue appears in petitioners' brief.

C. Related Cases. The only related cases of which counsel are aware are identified in petitioners' brief.

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**STATEMENT REGARDING CONSENT TO FILE
AND SEPARATE BRIEFING**

All parties have consented to the filing of this amicus brief. Amici filed their notice of intent to participate in this case on April 17, 2020.

Pursuant to Circuit Rule 29(d), amici certify that a separate brief is necessary to provide the unique perspective of outdoor-recreation companies whose businesses depend on a stable climate, clean air, and clean water.

/s/ *Ethan G. Shenkman*
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STATEMENT OF AUTHORSHIP AND FINANCIAL CONTRIBUTIONS

No party's counsel authored this brief in whole or in part. Nor did any party or party's counsel, or any other person other than amici, contribute money that was intended to fund preparing or submitting this brief.

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GLOSSARY

ACE	Affordable Clean Energy rule
BEA	U.S. Bureau of Economic Analysis
CPP	Clean Power Plan
EPA	U.S. Environmental Protection Agency
GHG	Greenhouse gas
USGCRP	U.S. Global Change Research Program
IPCC	U.N. Intergovernmental Panel on Climate Change
NOAA	National Oceanic and Atmospheric Administration

SUMMARY OF ARGUMENT

Amici curiae Patagonia Works (Patagonia) and Columbia Sportswear Company (Columbia) produce outdoor apparel, footwear, and equipment to help people access and enjoy the world's wild places. The climate crisis threatens to disrupt the foundation upon which the outdoor recreation economy is built. The U.S. Environmental Protection Agency's (EPA) decision to rescind the Clean Power Plan (CPP) and replace it with the Affordable Clean Energy rule (ACE)—a rule which fails to fulfill the Agency's statutory mandate to reduce harmful greenhouse-gas pollutants—is not only contrary to law and arbitrary and capricious; it will have significant negative impacts on the bottom line of the \$887 billion outdoor recreation economy, in which amici play a leading role, and on the health and well-being of this industry's many thousands of employees and millions of customers—real world costs that EPA has failed adequately to consider.

The urgency of climate change intensifies with every passing year. The U.S. Global Change Research Program (USGCRP)—a federal program mandated by Congress to coordinate climate-change research across 13 member agencies—warns in its most recent National Climate Assessment (revised June 2019) that without substantial changes to human activity,

“transformative impacts on some ecosystems will occur.”¹ The latest report by the World Meteorological Organization (issued Nov. 25, 2019) found that atmospheric concentrations of carbon dioxide and other greenhouse gases are at new record levels.² And recent United Nations studies echo these warnings, finding, among other things, that human activity threatens to push one million species to extinction and is warming oceans in ways that are disrupting marine ecosystems and inundating coastal zones. The 10th Emissions Gap Report by the United Nations Environment Programme (issued Nov. 26, 2019) cautioned that even if every country fulfills its current pledges under the Paris Agreement (and many, including the United States, Brazil, and Australia, are currently not on track to do so) average temperatures by the year 2100 will *still*

¹ USGCRP, *Fourth National Climate Assessment, Volume II: Impacts, Risks, and Adaptation in the United States* 29 (rev. Feb. 2020) (“*Fourth National Climate Assessment*”), https://nca2018.globalchange.gov/downloads/NCA4_2018_FullReport.pdf.

² World Meteorological Org., *WMO Greenhouse Gas Bulletin: The State of Greenhouse Gases in the Atmosphere Based on Global Observations Through 2018*, at 2 (Nov. 25, 2019), https://library.wmo.int/doc_numphp?explnum_id=10100.

rise by 3.2°C since preindustrial times,³ “bringing wide-ranging and destructive climate impacts.”⁴

From the perspective of thousands of U.S. businesses that depend on a stable climate and wilderness preservation—including those, like amici, in the outdoor recreation industry—this is not an abstract concern. As this brief illustrates, the potential for economic disruption caused by climate change is already in focus and entirely predictable. These effects include:

- The destruction of natural resources critical to tourism and recreation, including through coastal erosion, ocean acidification, bleaching of coral reefs, rainforest destruction, wildlife-habitat destruction, species extinctions, wildfires, droughts, and glacial changes;
- Increased heat, dust, wildfires, and pollution resulting in lower air quality, which will force people to remain indoors; and
- Higher winter temperatures, which will impact winter sports and recreation activities, especially in low-elevation areas.

Climate change will have direct and meaningful negative effects on the outdoor recreation economy and the 7.6 million jobs it supports. The

³ U.N. Environment Programme, *Emissions Gap Report 2019*, at xiii, xix (Nov. 2019), <https://wedocs.unep.org/bitstream/handle/20.500.11822/30797/EGR2019.pdf?sequence=1&isAllowed=y>.

⁴ U.N. Environment Programme, *Cut Global Emissions by 7.6 Percent Every Year for Next Decade to Meet 1.5°C Paris Target* (Nov. 26, 2019), <https://www.unenvironment.org/news-and-stories/press-release/cut-global-emissions-76-percent-every-year-next-decade-meet-15degc>.

destruction of natural resources will mean fewer visitors to our National Parks, wilderness areas, and federal and state lands, spending less money in the nearby communities that support them. Extreme temperatures, wildfires, and smoky skies will keep more people indoors for more days of the year. And warming winters will mean fewer ski days across the United States.

Amici agree with petitioners that ACE is arbitrary and capricious and contrary to law. Rather than heed the alarm sounded by scientists around the world, EPA has elected to rescind the CPP and to replace it with ACE—a rule that unlawfully adopts an overly restrictive interpretation of EPA’s authority under the Clean Air Act (CAA) to address greenhouse-gas emissions from existing power plants, one of the nation’s largest greenhouse-gas-emitting sectors. The CAA is *the tool* that Congress gave EPA to address the nation’s most pressing air pollution problem. That primary purpose must inform EPA’s and the Court’s interpretation of the statute. And the gravity of the problem requires EPA, in making that interpretation, to consider the actual consequences of its approach, including a serious reckoning of the costs of proposing only minimalist measures that are woefully inadequate to confront the true proportions of the problem. Amici have a strong interest in ensuring these real world consequences, including the costs to American businesses, are

understood so that the Court can make a fully informed decision about how the statute should be construed.

INTEREST OF AMICI CURIAE

Amici curiae Patagonia and Columbia play a leading role in the rapidly growing outdoor recreation economy. Patagonia was founded in 1973 and has a 40-year history of environmental advocacy. It is now a California benefit corporation that is in business to save our home planet. Patagonia is headquartered in Ventura, California, with worldwide operations, and has 34 stores throughout the United States and employs thousands of people all over the country. Columbia was founded in Portland, Oregon, as a small regional hat company in 1938. Columbia has since grown to be a multi-brand leader in the outdoor industry, selling products in more than 90 countries. Columbia employs thousands in the United States, where it has operated 144 retail stores and two major distribution centers.

Patagonia and Columbia are in business to support their customers' passion to explore, recreate in, and preserve the great outdoors. As climate change destroys natural resources, erodes coast lines, exacerbates air pollution, and wreaks havoc on our water, amici's customers may be prevented from engaging in the many outdoor activities—hiking, camping, climbing, skiing,

running, cycling, boating, hunting, and fishing—that they love. Put simply, soaring temperatures, extreme weather events, reduced winter snowpack, smoke-filled skies from wildfires, degraded rivers and lakes and diminished wildlife populations will reduce access to outdoor recreation opportunities, which will in turn impact demand for the goods and services the outdoor recreation industry provides. Amici, therefore, have a direct economic interest in how EPA responds to the climate crisis.

Amici also have a longstanding institutional interest in protecting and preserving the natural environment. They have directly contributed tens of millions of dollars to support conservation of wilderness worldwide. In 2012, Patagonia became the first California-registered benefit corporation to enshrine its mission as an advocate for conservation into its articles of incorporation. And both amici have committed to reducing their own impacts on the environment. To that end, they have employed advanced sustainability practices to enhance the mix of energy sources they use, to improve the energy efficiency of their manufacturing processes, and to reduce the potential climate impact of the products they sell.

Patagonia has committed to eliminate or mitigate *all* of its carbon emissions by 2025, by improving energy efficiency, switching to renewable sources

of energy, and employing carbon-capture technology. Columbia has set ambitious targets to reduce its carbon footprint to align with the Paris Climate Agreement. This includes implementing large-scale energy efficiency measures at our headquarters, distribution centers, and retail stores, as well as working with manufacturing partners do the same. These goals will be attainable only if they are supported by a robust and affordable renewable-energy economy. EPA's rescission of the CPP makes that reality far less likely.

STATUTES AND REGULATIONS

All pertinent materials are contained in petitioners' addendum.

ARGUMENT

I. Outdoor Recreation Is a Vital Segment of the Nation's Economy that Supports Jobs, Communities, and Public Health.

A. Outdoor recreation supports the U.S. economy.

Each year Americans spend hundreds of billions of dollars exploring the outdoors in myriad ways—hiking, backpacking, camping, mountaineering, rock climbing, hunting, fishing, canoeing, kayaking, rafting, sailing, running, horseback riding, cycling, downhill skiing, cross-country skiing, snowboarding, snorkeling, scuba diving, and surfing, to name a few. Americans' passion for outdoor recreation supports the burgeoning outdoor recreation economy, which accounts for \$887 billion in annual consumer spending, contributes 7.6

million jobs to the U.S. economy, and generates \$125 billion in federal, state, and local tax revenue each year.⁵ For context, that amounts to more than what Americans spend on pharmaceuticals and fuel, combined.⁶ And more than twice as many Americans are directly employed by hunting- and fishing-related businesses (483,000) than oil and gas extraction (180,000).⁷

The U.S. Bureau of Economic Analysis (BEA) reports that, in 2017, outdoor recreation accounted for 2.2% of U.S. GDP.⁸ And the industry continues to grow: “Real gross output, compensation, and employment all grew faster in outdoor recreation than for the economy as a whole.”⁹ State GDP from outdoor recreation increased by 16.6% between 2012 and 2017 while total state GDP increased by only 7.5%.¹⁰ And in four states—Alaska, Connecticut, North

⁵ Outdoor Industry Association, *The Outdoor Recreation Economy* 5 (2017), https://outdoorindustry.org/wp-content/uploads/2017/04/OIA_RecEconomy_FINAL_Single.pdf (citing U.S. Bureau of Economic Analysis data).

⁶ *See ibid.*

⁷ *Id.* at 7 (citing U.S. Bureau of Labor Statistics data).

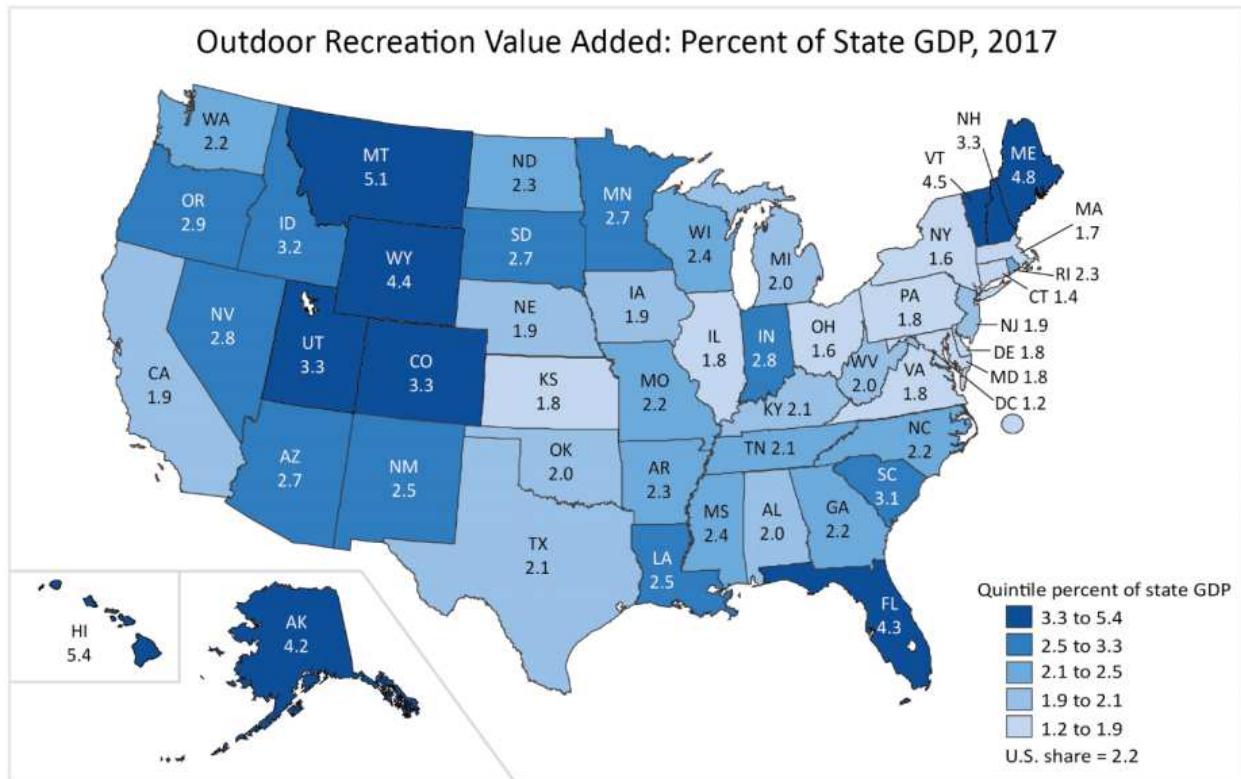
⁸ BEA, *Outdoor Recreation Satellite Account, U.S. and Prototype for States, 2017*, at 1 (Sept. 20, 2019), https://www.bea.gov/system/files/2019-09/orsa0919_1.pdf.

⁹ *Ibid.*

¹⁰ *See* Headwaters Economics, *The Outdoor Recreation Economy by State* (Oct. 2019), <https://headwaterseconomics.org/economic-development/trends-performance/outdoor-recreation-economy-by-state/>.

Dakota, and Wyoming—outdoor recreation GDP grew even while total state GDP decreased.¹¹

Figure 1: Outdoor Recreation as Percent of 2017 GDP¹²



Outdoor recreation contributes to all sectors of the U.S. economy, including \$112.9 billion in arts, entertainment, recreation, accommodation, and food services, \$95.7 billion in retail trade, and \$51.7 billion in manufacturing.¹³ And it provides jobs across the skill spectrum: from park rangers to

¹¹ *Ibid.*

¹² BEA, *supra* note 8, at 1.

¹³ *Id.* at 3.

hydrogeologists, and from fly-fishing guides to retail sales associates and marketing professionals. Career opportunities exist far beyond guiding and outfitting services and lodging and park service. The outdoor recreation industry employs product developers, small and large retailers, and other professionals. And demand for advanced outdoor technical apparel, footwear, and equipment drives innovation and entrepreneurship. It creates jobs for highly skilled workers in diverse fields such as technology, product design, manufacturing, sustainability, and global commerce.

B. Outdoor recreation supports rural and tribal communities.

Outdoor recreation powers a vast economic engine that creates hundreds of billions of dollars in spending and millions of good-paying American jobs all across the United States—from the smallest towns to the most densely packed cities. But it is in rural communities especially that the outdoor recreation economy has proven to power economic growth and social stability. Rural communities with outdoor recreation economies are “more likely to attract new residents with greater wealth and have faster-growing wages than their non-recreation counterparts.”¹⁴ And unlike most rural communities, which

¹⁴ Megan Lawson, *How Outdoor Recreation Supports Rural Economic Development*, Headwaters Econ. (Feb. 19, 2019), <https://headwaterseconomics.org/economic-development/trends-performance/outdoor-recreation/>.

have seen stark declines in recent decades, those with strong outdoor recreation economies are growing both economically and in population.¹⁵

A major driver of this growth is proximity and access to protected public lands and natural resources. For example, a recent study by Resources for the Future found that after national monuments were designated, the number of nearby business establishments and jobs increased (compared with control areas) by an average of 10% and 8.5%, respectively.¹⁶ Moreover, the government reports that outdoor recreation on U.S. Forest Service lands contributes more than \$13 billion to the national economy annually and supports over 205,000 jobs.¹⁷ “Predominantly based in rural communities, these jobs strengthen local economies through the many small businesses that benefit from proximity to national forests, including more than 5,000 outfitters and guide businesses.”¹⁸ Many of these areas are on or near Indian reservations and other tribal lands,

¹⁵ *Ibid.*

¹⁶ Margaret Walls, Patrick Lee & Matthew Ashenfarb, *National Monuments and Economic Growth in the American West*, SCIENCE ADVANCES (Mar. 18, 2020).

¹⁷ U.S. Forest Serv., *Forest Service Makes It Easier for Visitors to Enjoy National Forests and Grasslands* (June 17, 2016), <https://www.fs.usda.gov/news/releases/forest-service-makes-it-easier-visitors-enjoy-national-forests-and-grasslands>.

¹⁸ *Ibid.*

and American Indian communities benefit in many ways from outdoor recreation and tourism.¹⁹ Simply put, “[r]ural communities that have natural amenities and recreation economies do better.”²⁰

To that end, EPA has developed a new planning assistance program—Recreation Economy for Rural Communities—“to help communities develop strategies and an action plan to revitalize their Main Streets through outdoor recreation.”²¹ EPA recognizes that “[p]romoting outdoor recreation can also create jobs and offer new opportunities for people to connect with the natural world.”²² And it has partnered with rural communities in states across the country to revitalize local economies, green spaces, trail networks, and other recreational and cultural attractions.²³

C. Outdoor recreation supports healthy people and healthy communities.

In addition to economic prosperity, outdoor recreation delivers personal and social benefits on which healthy, happy communities thrive. Outdoor

¹⁹ *Fourth National Climate Assessment*, *supra* note 1, at 28, 578.

²⁰ Lawson, *supra* note 14.

²¹ EPA, *Recreation Economy for Rural Communities*, <https://www.epa.gov/smartgrowth/recreation-economy-rural-communities>.

²² *Ibid.*

²³ *See ibid.* (discussing specific projects supported by the program).

recreation activities and settings provide opportunities for people to improve their physical health through movement, exercise, and fresh air.²⁴ Exposure and access to outdoor recreation opportunities can help reduce psychological stress, improve attention, achieve positive mood states and emotions, and provide valued aesthetic and spiritual experiences. For example, among veterans suffering from post-traumatic stress disorder, participation in outdoor recreation corresponds with higher well-being.²⁵ And children with attention-deficit/hyperactivity disorder experience milder symptoms when they play outside in a natural setting.²⁶

Public green space and parks increase the value of nearby residential homes; at larger scales, they can contribute to economic-revitalization efforts.²⁷ A city's green infrastructure can moderate urban heat-island effects,

²⁴ See Paul H. Gobster & David M. Buchner, *Healthy Outdoor Recreation: An Integrated Approach to Linking Physical Activity with Wellness Goals*, in LEISURE, HEALTH, AND WELLNESS: MAKING THE CONNECTIONS 437, 437–41 (Laura Payne ed., 2010).

²⁵ See Elizabeth J. Vella et al., *Participation in Outdoor Recreation Program Predicts Improved Psychosocial Well-being Among Veterans with Post-traumatic Stress Disorder: A Pilot Study*, 178 MILITARY MED. 254 (2013).

²⁶ See Francis E. Kuo & Andrea Faber Taylor, *A Potential Natural Treatment for Attention-Deficit/Hyperactivity Disorder: Evidence From a National Study*, 94 AM. J. PUB. HEALTH 1580 (2004).

²⁷ See Soren T. Anderson & Sarah E. West, *Open Space, Residential Property Values, and Spatial Context*, 36 REG'L SCI. & URBAN ECON. 773 (2006).

filter out air particulates, reduce runoff and flooding, and provide other important environmental services for the well-being of individuals and communities.²⁸ Attractive, well-maintained green spaces can act as crime deterrents and improve social cohesion, and participation in community greening programs can empower communities and raise social capital.²⁹ Most of these benefits are not captured in raw economic data, but they are vitally important to individuals and communities across the United States.

II. ACE Poses a Serious Threat to the Outdoor Recreation Economy.

From our national parks to local green spaces, America's outdoor recreation assets are its citizens' common trust. Conserved areas and natural spaces are the outdoor recreation industry's basic infrastructure. Preserving our treasured natural resources is thus imperative to enhancing the industry's economic and social impact. It is as much our responsibility to protect these resources as it is our right to enjoy them.

²⁸ See Christopher Coutts & Micah Hahn, *Green Infrastructure, Ecosystem Services, and Human Health*, 12 INT'L J. ENVTL. RESEARCH & PUB. HEALTH 9768 (2015).

²⁹ See Michelle Kondo et al., *Effects of Greening and Community Reuse of Vacant Lots on Crime*, 53 URBAN STUDIES 3279 (2016).

Climate change poses a serious and direct threat to this common heritage, as well as to this sector of the economy. The USGCRP warns that “[c]limate change poses risks to seasonal and outdoor economies in communities across the United States, including impacts on economies centered around coral reef-based recreation, winter recreation, and inland water-based recreation.”³⁰ Those effects will be felt not only by recreationists but by “the people who make their living supporting these economies, including rural, coastal, and Indigenous communities,” and by the companies, like amici, who are key players in the outdoor recreation industry.³¹

Climate change has the capacity to affect outdoor recreation through two primary pathways: 1) direct impacts to ecosystems, and 2) changes in environmental conditions that directly affect recreationists.³² Both of these kinds of effects are already being felt across the United States.

A. Climate change is already happening and will continue without immediate action.

Since the 1880s, global temperatures have risen by roughly 1°C. The past decade was the hottest ever recorded on the planet; the past five years

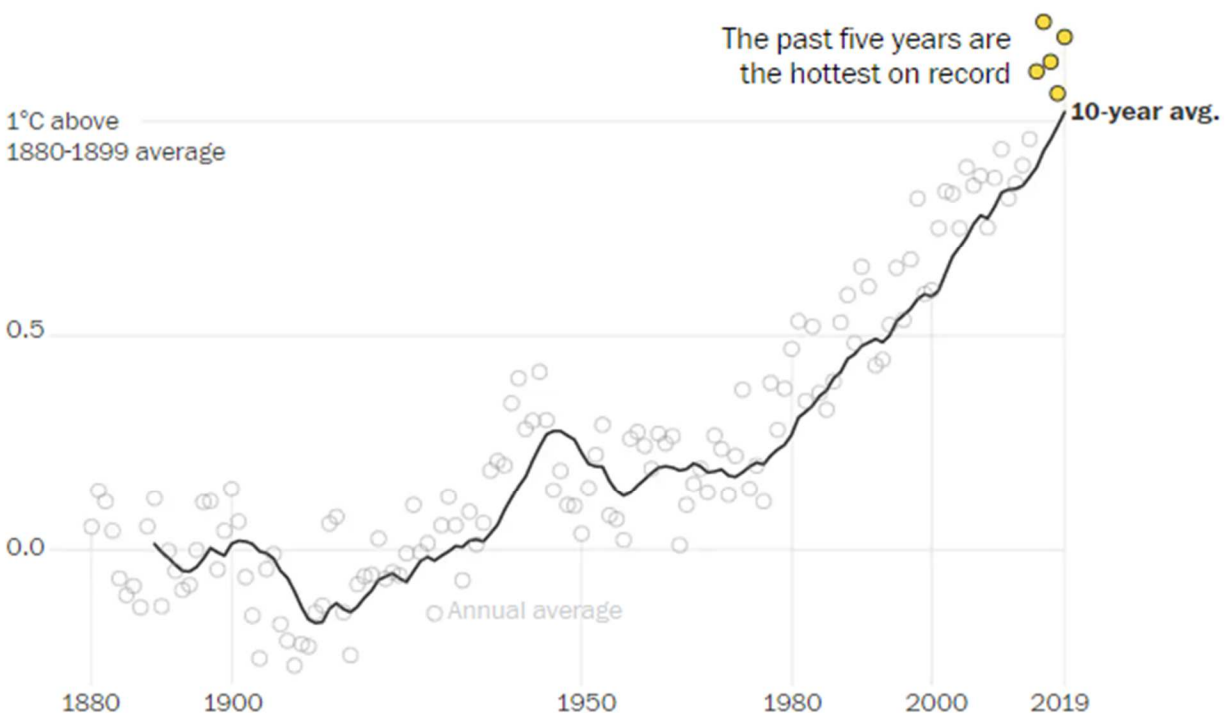
³⁰ *Fourth National Climate Assessment*, *supra* note 1, at 31.

³¹ *Ibid.*

³² *See id.* at 957.

were the five hottest on record; 19 of the hottest 20 years have occurred during the past two decades; and every decade since the 1960s has been warmer than the one before (*see* Figure 2).³³ The planet's oceans are also warming at alarming rates. Ocean temperatures hit their warmest level on record in 2019, and the pace of oceanic warming has increased by roughly 450% since the 1980s.³⁴

Figure 2: Average Global Temperatures 1880–2019³⁵



³³ See NASA, *NASA, NOAA Analyses Reveal 2019 Second Warmest Year on Record* (Jan. 15, 2020), <https://www.nasa.gov/press-release/nasa-noaa-analyses-reveal-2019-second-warmest-year-on-record>.

³⁴ See Lijing Cheng et al., *Record-Setting Ocean Warmth Continued in 2019*, 37 *ADVANCES IN ATMOSPHERIC SCI.* 137, 139 (2020).

³⁵ Brady Dennis et al., *2019 Capped World's Hottest Decade in Recorded History*, *WASH. POST* (Jan. 15, 2020), <https://www.washingtonpost.com/climate-environment/2020/01/15/2010s-hottest-decade-world/?arc404=true>.

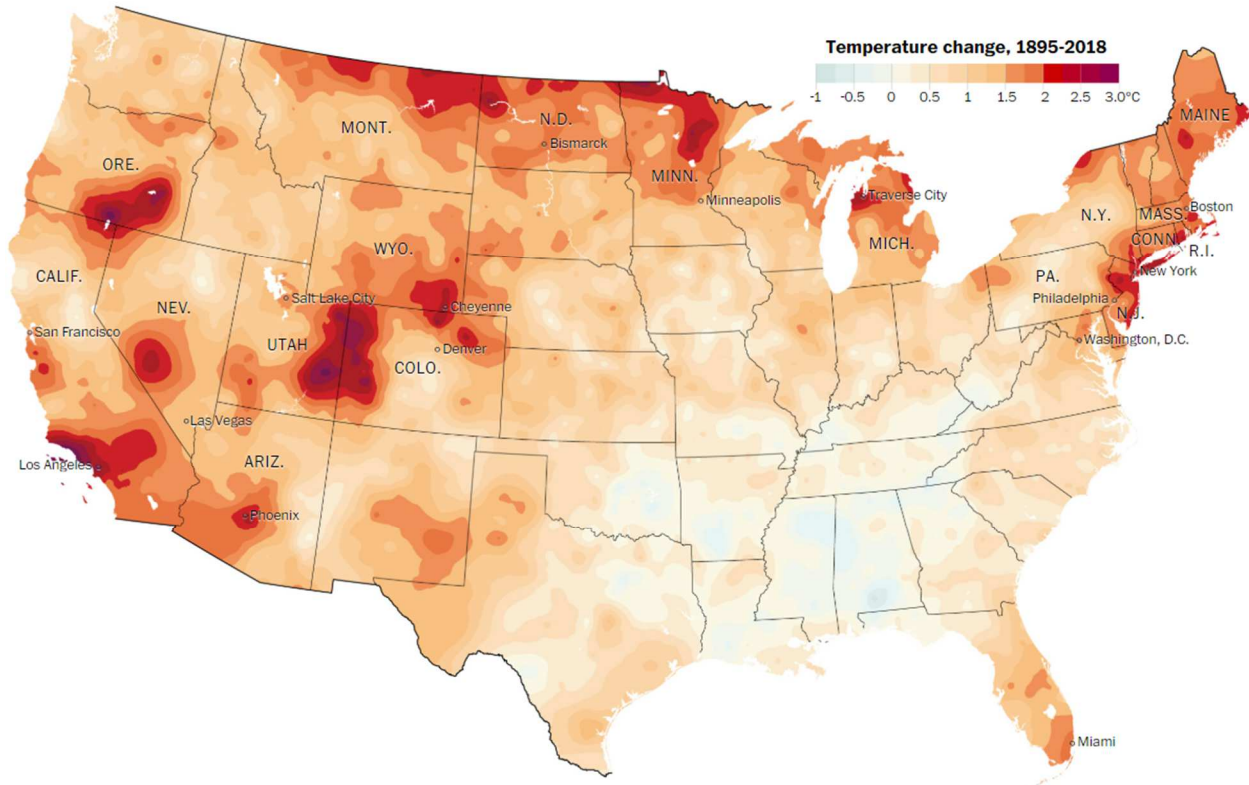
As EPA itself found and documented in the record for the CPP, the consequences of rising atmospheric and oceanic temperatures are already being felt through heatwaves, wildfires, more-extreme weather events, rising sea levels, and diminishing Arctic sea ice, among other changes.³⁶ And the threats posed by *continued* warming are even more serious. The U.N. Intergovernmental Panel on Climate Change (IPCC) warns that, if the planet warms by an average of 2°C, virtually all of the world's coral reefs will die; retreating ice sheets in Greenland and Antarctica could unleash permanent sea-level rise; and summertime Arctic sea ice, which cools the planet by reflecting sunlight, would begin to disappear.³⁷ National Oceanic and Atmospheric Administration (NOAA) temperature data reveal that major areas of the country are nearing or have already crossed the 2°C threshold (including Ventura County, where Patagonia's headquarters is located, which is the fastest warming county in

³⁶ See NASA, *supra* note 33.

³⁷ See IPCC, *Special Report: Global Warming of 1.5°C*, at 7–10 (2018), https://www.ipcc.ch/site/assets/uploads/sites/2/2019/06/SR15_Full_Report_Low_Res.pdf.

the continental United States) (Figure 3).³⁸ Today, over 34 million Americans live in rapidly warming regions, including New York City and Los Angeles.³⁹

Figure 3: Temperature Change in the Continental United States⁴⁰



³⁸ See Steven Mufson et al., *2°C: Beyond the Limit: Extreme Climate Change Has Arrived in America*, WASH. POST (Aug. 13, 2019), <https://www.washingtonpost.com/graphics/2019/national/climate-environment/climate-change-america/>.

³⁹ *Ibid.*

⁴⁰ *Ibid.*

B. Climate change directly threatens the natural resources on which the outdoor recreation economy depends.

Consistent with EPA's own findings in the record, and the studies and data on which the Agency relied in developing the CPP, it is clear that rising atmospheric and oceanic temperatures threaten the natural resources and protected natural places that are at the heart of the outdoor recreation economy. It is not a question of what *might* happen, or even of what *will* happen.

The damage is *already* happening:

- Extreme weather events, exacerbated by climate change, are destroying infrastructure that supports outdoor recreation.⁴¹ For example, Hurricane Maria's high winds, heavy rains, and massive storm surge caused months of closures at many of Puerto Rico's 34 nature reserves, 20 state forests, and 5 wildlife refuges.⁴²
- Warmer and more acidic oceans are killing the world's coral reefs, including those off of the Florida Keys and the Hawaiian islands, where snorkeling and scuba diving are a major economic driver.⁴³ The U.S. government reports that "[t]he loss of the recreational

⁴¹ See *Fourth National Climate Assessment*, *supra* note 1, at 94–97.

⁴² *Puerto Rico Reopens 12 Nature Reserves, Refuges After Maria*, ASSOCIATED PRESS (Jan. 18, 2018), <https://apnews.com/7c57028e0e7c4915baa76a79fdc79106>.

⁴³ See *Fourth National Climate Assessment*, *supra* note 1, at 776 (“[C]oral reef mortality in the Florida Keys and across the globe has been very high in recent decades, due in part to warming ocean temperatures.”); *id.* at 1264–65 (“Widespread coral bleaching and mortality occurred during the summers of 2014 and 2015 in Hawai‘i and during 2013, 2014, and 2016 in Guam and the Commonwealth of the Northern Mariana Islands.”).

benefits alone from coral reefs in the United States is expected to reach \$140 billion by 2100.”⁴⁴

- Rising sea levels are eroding coasts and degrading marine ecosystems, like the beaches and wildlife habitats on California’s coast.⁴⁵ The government warns that “[s]ea level rise and storm surge could completely erode two-thirds of southern California beaches by 2100.”⁴⁶ Those beaches are some of the most visited natural attractions in the world and support a diverse array of outdoor activity, from swimming and surfing, to hiking and birdwatching.
- Higher temperatures and changing drought conditions are causing dangerous algal blooms in recreational waters throughout the country, including Lake Erie and the Puget Sound.⁴⁷ These conditions can close recreational waters to swimming, boating, and fishing, which are some of the largest sectors of the outdoor recreation economy.
- Decreased snowfall and increased temperatures are melting glaciers, like those in Glacier National Park, which the government warns may have no glaciers left by the end of the century.⁴⁸ The loss of these natural resources threatens the estimated \$484 million in economic benefits and over 5,200 jobs supported by the park.⁴⁹

⁴⁴ *Id.* at 361.

⁴⁵ *See, e.g., id.* at 1118.

⁴⁶ *Ibid.*

⁴⁷ *See id.* at 150, 1059.

⁴⁸ *See id.* at 1501 (“Over the next 30 years, glaciologists project that most glaciers in GNP will melt to a point where they are too small to be active glaciers, and some may disappear completely. All glaciers in the park are under severe threat of completely melting by the end of the century.”).

⁴⁹ Nat’l Park Serv., *Tourism to Glacier National Park Adds \$484 Million in Local Economic Benefits* (June 4, 2019), <https://www.nps.gov/glac/learn/news/>

- Higher temperatures, decreased snowpack, and draught conditions are reshaping streams and rivers, and stressing fish populations that are key resources for recreational fishers.⁵⁰
- Higher temperatures combined with changing precipitation patterns are causing more frequent and severe wildfires, with the government concluding that “the area burned by wildfire across the western United States [between 1984 and 2015] was *twice* what would have burned had climate change not occurred.”⁵¹ Those fires not only destroy natural resources and infrastructure; their smoke can also adversely affect health and force people to stay indoors.

And because these impacts are deeply interconnected, they can precipitate cascading effects that alter entire ecosystems.⁵² Because of climate change, there will be fewer coral reefs to dive in, fewer glaciers to traverse, fewer forest trails to hike, fewer beaches to enjoy, fewer wilderness areas to explore.

19-28.htm. In 2018, 3 million people visited Glacier National Park and spent \$344 million in communities near the park.

⁵⁰ See *Fourth National Climate Assessment*, *supra* note 1, at 286, 683, 1070.

⁵¹ *Id.* at 1115 (emphasis added). “Wildfire burned at least 3.7 million acres nationwide in 14 of the 17 years from 2000 to 2016—an area larger than the entire state of Connecticut—including a record 10.2 million acres in 2015 (an area greater than Maryland and Delaware combined).” *Id.* at 236.

⁵² See *id.* at 26, 44–46, 646 Box 17.2.

C. Climate change prevents people from enjoying the great outdoors.

Beyond these direct effects, climate change will also prevent people from enjoying those natural resources that remain. The quality of outdoor experiences are degrading as summers grow longer and hotter, winters and snowpack become more unpredictable, river flows are diminished, and extreme weather becomes more frequent.

The effect of climate change on seasonal activities is especially stark. Warmer winters and changing precipitation patterns will fundamentally change winter sports and activities—like downhill skiing, snowboarding, cross-country skiing, snowmobiling, ice skating, hockey, and mountaineering—an industry that accounted for \$5.6 billion in economic activity in 2016.⁵³ The government projects that “[d]eclines in snow and ice cover caused by warmer winter temperatures are expected to negatively impact the winter recreation industry” across the country.⁵⁴ One 2017 study (coauthored by EPA scientists) projects that “virtually all locations” in the United States will “see reductions in winter recreation season lengths, exceeding 50% by 2050 and

⁵³ BEA, *supra* note 8, at 2.

⁵⁴ *Fourth National Climate Assessment*, *supra* note 1, at 31.

80% in 2090 for some downhill skiing locations” (Figure 4).⁵⁵ That means that by 2050, the average ski season will be cut in half (in many places reduced to a few weeks), and the quality of those remaining days will be far worse. The eastern United States is expected to be especially hard hit—in the worst case scenarios downhill skiing could be entirely wiped out east of the Rocky Mountains.⁵⁶ These changes “could result in millions to tens of millions of foregone recreational visits annually by 2050, with an annual monetized impact of hundreds of millions of dollars.”⁵⁷ By 2090, “the changes in winter recreation season lengths ... could result in a loss of more than \$2 billion annually for downhill skiing” alone.⁵⁸

⁵⁵ Cameron Wobus et al., *Projected Climate Change Impacts on Skiing and Snowmobiling: A Case Study of the United States*, 45 *Global Env'tl. Change* 1, 1 (2017), http://geode.colorado.edu/~small/docs/wobus_etal.pdf; see also *Fourth National Climate Assessment*, *supra* note 1, at 52 (“In the Northeast, activities that rely on natural snow and ice cover may not be economically viable by the end of the century without significant reductions in global greenhouse gas emissions.”).

⁵⁶ Wobus, *supra* note 55, at 10.

⁵⁷ *Id.* at 1.

⁵⁸ *Id.* at 12.

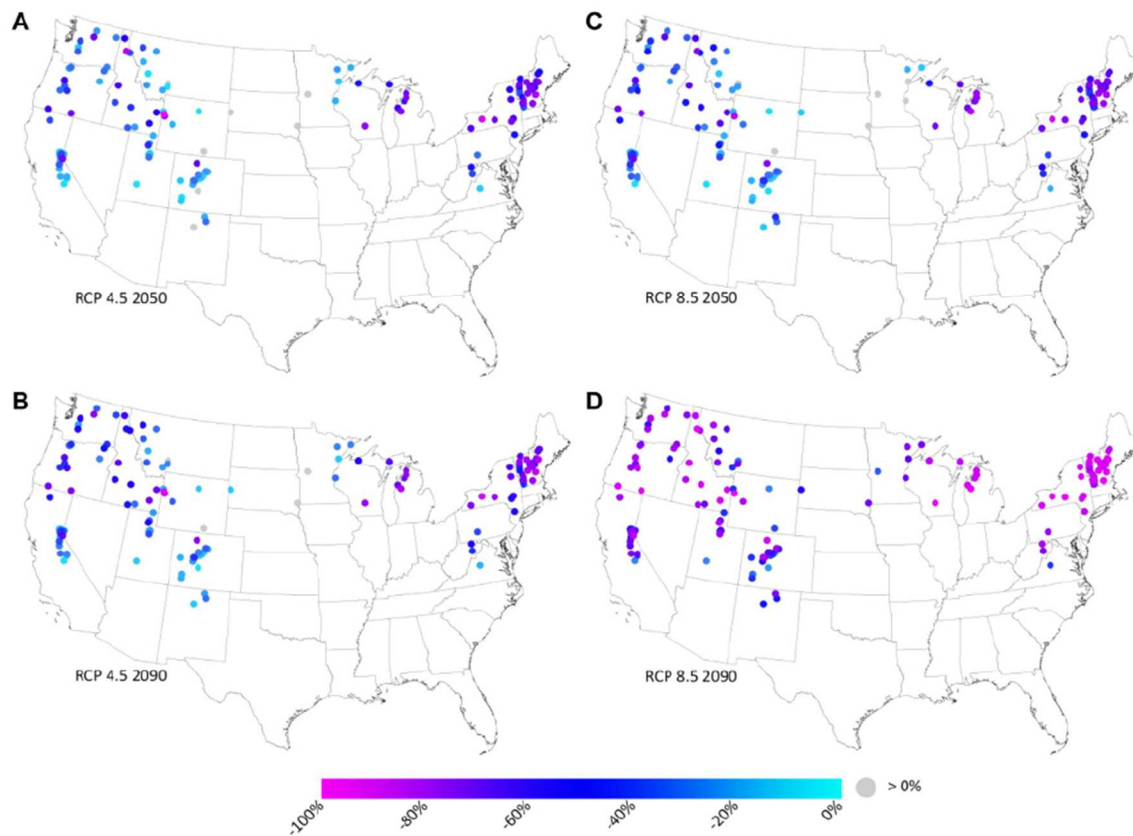
Figure 4: Percent Change in Downhill-Ski-Season Length⁵⁹

Fig. 4. Average percent change in annual cross-country skiing and snowmobiling season lengths across GCMs. A) Results for RCP4.5 in 2050. B) Results for RCP4.5 in 2090. C) Results for RCP8.5 in 2050. D) Results for RCP8.5 in 2090.

But winter is not the only season at risk. Rising summer temperatures and extreme heat events will keep Americans indoors (and using air conditioning, thus contributing more greenhouse gases to the atmosphere).⁶⁰ Rising temperatures and droughts will also bring wildfires and smoke. The

⁵⁹ *Id.* at 10. As used in this Figure, “RCP8.5” implies a future with continued high emissions growth with limited efforts to reduce greenhouse gases; “RCP4.5” represents a global mitigation scenario. *See id.* at 5.

⁶⁰ *Fourth National Climate Assessment, supra* note 1, at 44, 181, 448.

government warns that “[c]limate change-induced increases in wildfire smoke” will “diminish air quality, increase incidences of respiratory illness ... [and] impair visibility,” which, in turn, will “reduce the amount and quality of time spent in outdoor activities.”⁶¹ For example, the 2018 Camp Fire—the deadliest and most destructive wildfire in California history—was responsible for the worst air quality ever recorded in the San Francisco Bay Area, some 150 miles away, prompting health officials to warn the area’s 7 million residents to stay indoors and avoid outdoor recreational activities.⁶²

As EPA itself recognized and documented in the record, climate change also contributes to more frequent and severe extreme weather events, such as hurricanes, typhoons, tornados, thunderstorms, blizzards, hail, strong wind, and heatwaves.⁶³ For example, the government observes that the 2017 hurricane season—which included hurricanes Harvey, Irma, José, and Maria—was, in several important respects, “unprecedented” in ways that “are consistent

⁶¹ *Id.* at 522, 525.

⁶² Ted Goldberg, *Camp Fire Caused Nearly 2 Straight Weeks of Bay Area’s Worst Air Quality on Record*, KQED News (Dec. 19, 2018), <https://www.kqed.org/news/11712211/the-camp-fire-caused-nearly-two-straight-weeks-of-the-bay-areas-worst-air-quality-on-record>.

⁶³ *Fourth National Climate Assessment*, *supra* note 1, at 94–97.

with what might be expected as the planet warms.”⁶⁴ These and other extreme weather events damage natural resources that support tourism and recreation, and they also force people to stay indoors.

Warmer and shorter winters will also exacerbate disease and pest outbreaks. The government projects that climate change will “alter the geographic range, seasonal distribution, and abundance of disease vectors, exposing more people in North America to ticks that carry Lyme disease or other bacterial and viral agents, and to mosquitoes that transmit West Nile, chikungunya, dengue, and Zika viruses” (Figure 5).⁶⁵ Research also suggests that, due to climate change, “the risk of pandemics is growing as rising temperatures ignite animal migrations and other changes.”⁶⁶ At-risk populations, such as children, pregnant people, and older people, may be forced to forego outdoor recreation activities to avoid exposure to these harmful diseases.

⁶⁴ *Id.* at 95.

⁶⁵ *Id.* at 545.

⁶⁶ Chelsea Harvey, *What Could Warming Mean for Pathogens like Coronavirus*, *Scientific American* (Mar. 9, 2020), <https://www.scientificamerican.com/article/what-could-warming-mean-for-pathogens-like-coronavirus/>.

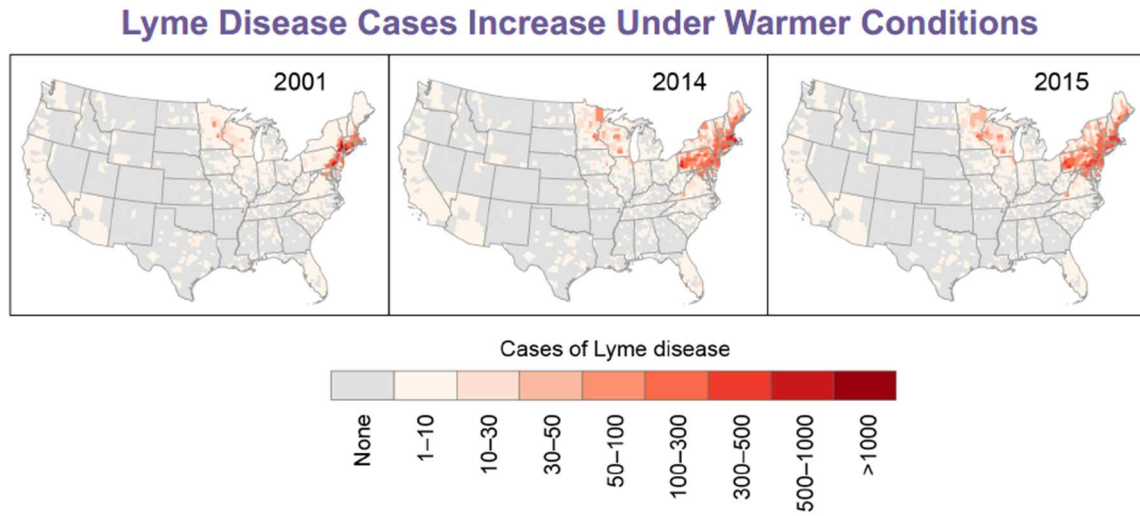
Figure 5: Lyme Disease Cases in 2001, 2014, 2015⁶⁷

Figure A5.32: Reported cases of Lyme disease in 2001, 2014, and 2015 are shown by county for the contiguous United States. Both the distribution and total number of cases have increased from 2001 to 2014 and 2015, particularly in the Midwest and Northeast. Sources: CDC and ERT, Inc.

D. The effects of climate change on the outdoor recreation economy will disproportionately impact rural and tribal communities.

Rural and tribal communities are closely tied to the outdoor recreation economy, and the effects of climate change on outdoor recreation will be disproportionately suffered by those communities.⁶⁸ Less outdoor recreation in and around these communities means fewer visitors and fewer jobs. These effects, moreover, will be exacerbated by the fact that “[r]esidents in rural

⁶⁷ *Fourth National Climate Assessment*, *supra* note 1, at 1509.

⁶⁸ *See supra* Section I.B.

communities often have limited capacity to respond to climate change impacts, due to poverty and limitations in community resources.”⁶⁹

The government reports that “[c]limate change increasingly threatens Indigenous communities’ livelihoods, economies, health, and cultural identities by disrupting interconnected social, physical, and ecological systems.”⁷⁰ “Tribal trust lands provide habitat for more than 525 species listed under the Endangered Species Act, and more than 13,000 miles of rivers and 997,000 lakes are located on federally recognized tribal lands.”⁷¹ The impacts of climate change on these natural resources are expected to increasingly disrupt Indigenous peoples’ livelihoods and economies.⁷²

III. EPA’s Replacement of the CPP with ACE Is Arbitrary and Capricious, Contrary to Law, and Inconsistent with the Fundamental Purposes of the CAA.

When EPA issued the CPP in 2015 to limit carbon pollution from existing power plants under CAA section 111(d), it reaffirmed that climate change caused by greenhouse gases “endanger[s] public health and welfare both for current and future generations,” 80 Fed. Reg. 64,662, 64,683 (Oct. 23,

⁶⁹ *Fourth National Climate Assessment*, *supra* note 1, at 393.

⁷⁰ *Id.* at 28.

⁷¹ *Id.* at 578.

⁷² *Ibid.*

2015), finding that “[n]ew scientific assessments” only “highlight the urgency of addressing the rising concentration of CO₂ in the atmosphere.” *Id.* at 64,677. It further recognized that “fossil fuel-fired EGUs [were] by far the largest emitters of GHGs” and that “significant and prompt action” was necessary to mitigate emissions from these sources. *Ibid.* At the same time, EPA acknowledged that Congress had crafted the CAA to be “the comprehensive vehicle for protection of the Nation’s health from air pollution” and granted EPA broad authority to regulate pollutants—including greenhouse gases—precisely to address such “urgent and severe threats to public health and welfare.” *Id.* at 64,774.

EPA’s interpretation of the CAA was thus directly informed by the statute’s fundamental purpose, and its crafting of the CPP specifically tailored to address the scope and severity of the problem it confronted: “Interpreting the ‘system of emission reduction’ provisions in CAA section 111(d)(1) and (a)(1) to allow the nation to meaningfully address the urgent and severe public health and welfare threats that climate change pose *is consistent with what the CAA was designed to do.*” *Id.* at 64,775 (emphasis added). EPA promulgated the CPP as “an important step in an essential series of long-term actions that are achieving and must continue to achieve the GHG emission

reductions needed to address the serious threat of climate change.” *Id.* at 64,677.

EPA has never disavowed or repudiated the extensive factual and scientific record that it developed in crafting the CPP and that informed its prior interpretation of the statute. Indeed, as the Agency has itself acknowledged, the evidence of climate change and its adverse effects on public health and the economy has only grown stronger. Among other things, in 2016, EPA made a new and more robust “Endangerment Finding.” 81 Fed. Reg. 54,422 (Aug. 15, 2016). And major climate assessments (which we cite extensively above) continue to be released by national and international bodies of scientists, including the IPCC and USGCRP.

Yet, in rescinding the CPP and replacing it with ACE—drastically reducing the stringency of CO₂ emissions limitations for coal-fired power plants and repealing the CPP’s limits for natural gas-fired plants altogether—EPA has cast aside the relevance of its own robust scientific record and abandoned all fealty to the fundamental purposes of the CAA. ACE contains scant discussion of the basic facts of climate change, the nature of the hazard, or the urgency of reducing emissions now—nor does it acknowledge the serious economic costs of failing to mitigate emissions in a manner commensurate with

the scope and urgency of the problem. Where the CPP was emphatic in acknowledging and responding to the urgency of the challenges presented by climate change, ACE is now silent. Where the CPP cited reams upon reams of studies, reports, and assessments detailing the risks of climate change, ACE cites *none*. See 84 Fed. Reg. 32,520 (July 8, 2019).

Moreover, by adopting an overly restrictive reading of the statutory term “best system of emission reduction”⁷³—and deciding that this unnecessary reading limits the “best system” to certain efficiency improvements that power plants can undertake on-site—ACE turns a blind eye to the size of the threat and the broad reductions in carbon pollution that could otherwise be lawfully accomplished by the electricity sector. EPA itself estimates that ACE will reduce annual carbon pollution from the power sector by only .7% in 2030 compared with baseline estimates.⁷⁴ That is flatly inconsistent with EPA’s

⁷³ 42 U.S.C. § 7411(a)(1).

⁷⁴ EPA, *Regulatory Impact Analysis for ACE Rule* ES-6 (Aug. 2018) (hereinafter “RIA”). Another study indicates that, if the CPP were revised and updated to reflect current market conditions, it could achieve CO₂ emissions reductions that are nearly 30 times higher than EPA’s anticipated reductions under the final ACE rule. That is more than 300 million short tons of CO₂ reductions in 2030 relative to business-as-usual, see Environmental Defense Fund Comments 11-12 (Oct. 31, 2018) (EPA-HQ-OAR-2017-0355-24419), compared to roughly 11 million short tons under ACE, 84 Fed. Reg. at 32,561 tbl.3.

obligation to consider “the amount of air pollution [reduced]” when selecting the “best system.” *Sierra Club v. Costle*, 657 F.2d 298, 326 (D.C. Cir. 1981).

EPA asserts that its new interpretation of its statutory authority is compelled by the plain language of the CAA. But EPA cannot read limitations into the statutory text while blinding itself to “the statute’s basic objectives.” *Barnhart v. Walton*, 535 U.S. 212, 219 (2002); *see also King v. Burwell*, 135 S. Ct. 2480, 2496 (2015) (“A fair reading of legislation demands a fair understanding of the legislative plan.”). As this Court held in *Sierra Club v. Costle*, the emissions guidelines established by EPA under the CAA must serve, and may “not undermine[,] the essential purposes of the Act.” 657 F.2d at 325. ACE utterly fails that test.

EPA’s failure to grapple with the true scope of the problem it is supposedly addressing is also reflected in the way the Agency artificially minimizes the benefits of addressing climate change and the costs of inaction. In analyzing the economic benefits of mitigating greenhouse gas emissions, for example, EPA employs a domestic-only damages model, disregarding international

This difference of more than 290 million short tons of CO₂ is roughly equivalent to the annual carbon emissions of a country the size of France.

effects.⁷⁵ By EPA's own reckoning, the Agency's domestic-only focus reduces the estimated costs of climate change *by an order of magnitude*, from \$53 to \$63 per metric ton of CO₂ emissions (global metric) compared with \$6 to \$9 per ton (domestic-only metric).⁷⁶ EPA's domestic-only approach to cost-benefit analysis fails to reflect economic reality by ignoring, among other things, international spillovers into the United States, U.S. benefits from foreign reciprocal actions, and the extraterritorial interests of U.S. citizens, both financial and altruistic.⁷⁷

The deficiencies of EPA's domestic-only approach are well-illustrated by the globally integrated nature of the outdoor recreation industry. Companies such as Patagonia and Columbia have worldwide sales that depend on consumer demand linked to global tourism and recreation activity. U.S. customers pay to visit high-value natural places abroad, and foreign tourists recreate in U.S. national parks and spend money domestically.⁷⁸ Simply put,

⁷⁵ 84 Fed. Reg. at 32,562 (The "estimates used in the RIA for these rule-makings focus on the direct impacts of climate change that are anticipated to occur within U.S. borders.")

⁷⁶ RIA, *supra* note 74, at 7-7 (comparison using a 3% discount rate).

⁷⁷ Environmental Defense Fund Comments (Oct. 31, 2018) (EPA-HQ-OAR-2017-0355).

⁷⁸ See David A. Dana, *Valuing Foreign Lives and Civilizations in Cost-Benefit Analysis: The Case of the United States and Climate Change Policy*

impacts to coral reefs, rainforests, glaciers and other natural resources around the world decrease opportunities globally, which in turn threatens to impact demand for the goods and services provided by the U.S. outdoor retail economy. Worse still, EPA's accounting of the "domestic" costs of carbon pollution are limited to the contiguous 48 states, thus excluding Alaska, Hawaii, Puerto Rico, and other U.S. territories.⁷⁹ Yet these are some of the highest value sites for tourism and recreation, as well as some of the most climate-vulnerable areas, in the United States.⁸⁰

Instead of burying its head in the sand, EPA must confront the scientific record that EPA itself created—a record that demonstrates “the urgency of reducing GHG emissions” now. 80 Fed. Reg. 64,510, 64,518 (Oct. 23, 2015). If EPA's own prior findings are correct, then failing to adopt adequate limits on emissions from the power sector is directly contrary to the CAA's core objectives. At a minimum, if EPA now believes that the world's scientists and its

Northwestern Univ. Faculty Working Paper 196 (2009), <https://scholarlycommons.law.northwestern.edu/facultyworkingpapers/196/>.

⁷⁹ RIA, *supra* note 74, at 3-30.

⁸⁰ See Associated Press, *supra* note 42 and accompanying text (Puerto Rico); *supra* notes 43-45 and accompanying text (Hawaii); *Fourth National Climate Assessment*, *supra* note 1, *Executive Summary* (“Climate Change in Alaska and Across the Arctic Continues to Outpace Global Climate Change”).

own prior conclusions are wrong, EPA must “provide a reasoned explanation for the change”—an “[u]nexplained inconsistency’ in agency policy is ‘a reason for holding an interpretation to be an arbitrary and capricious change from agency practice” and “receives no *Chevron* deference.” *Encino Motorcars, LLC v. Navarro*, 136 S. Ct. 2117, 2125–26 (2016); see *Ark Initiative v. Tidwell*, 816 F.3d 119, 127 (D.C. Cir. 2016).

In short, EPA’s decision to rescind the CPP and replace it with ACE unlawfully disregards (1) the Agency’s own factual and scientific record regarding the significance of the nation’s most pressing air-pollution problem and the necessity of designing a comprehensive scheme to address it, and (2) the Agency’s prior reasoning that the Agency’s interpretation of section 111(d) must serve, and may not undermine, the fundamental purposes of the statute. This is not an abstract concern. The consequences of the Agency’s departure from what the statute requires will be enormous and widespread; the impacts to the outdoor recreation industry are only a sliver of the real world costs of EPA’s inaction in the face of climate change. ACE should be set aside.

CONCLUSION

For the foregoing reasons and the reasons set forth in petitioners’ brief, ACE should be vacated.

Dated: April 24, 2020

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CERTIFICATE OF COMPLIANCE

Pursuant to Fed. R. App. P. 32(g), I hereby certify that this brief complies with the type-volume limitation of Fed. R. App. P. 29(a)(5) and 32(a)(7)(B) because it contains 6,499 words, excluding the parts exempted by Fed. R. App. P. 32(f) and Cir. R. 32(e)(1). I further certify that this brief complies with the typeface requirements of Fed. R. App. P. 32(a)(5) and the type style requirements of Fed. R. App. P. 32(a)(6) because the brief was prepared in 14-point Century Schoolbook font using Microsoft Word.

/s/ *Ethan G. Shenkman*

Ethan G. Shenkman

CERTIFICATE OF SERVICE

I hereby certify, pursuant to Fed. R. App. P. 25(d) and Cir. R. 25, that on April 24, 2020, the foregoing brief was electronically filed with the Clerk of the Court using the CM/ECF system, which will send a notification to the attorneys of record in this matter who are registered with the Court's CM/ECF system.

/s/ *Ethan G. Shenkman*

Ethan G. Shenkman