

**IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF PENNSYLVANIA**

CLEAN AIR COUNCIL,

S.B., through his Guardian  
Danecia Berrian, and

B.B., through his Guardians  
Diane and Thomas Berman,

Plaintiffs,

v.

UNITED STATES OF AMERICA,

DONALD TRUMP, in his official capacity as  
President of the United States,  
1600 Pennsylvania Avenue NW  
Washington, DC 20500,

UNITED STATES DEPARTMENT  
OF ENERGY,  
1000 Independence Avenue SW  
Washington, DC 20500,

RICK PERRY, in his official capacity as  
Secretary of Energy,  
1000 Independence Avenue SW  
Washington, DC 20500,

UNITED STATES ENVIRONMENTAL  
PROTECTION AGENCY,  
1200 Pennsylvania Avenue NW  
Washington, DC 20004, and

SCOTT PRUITT, in his official capacity as  
Administrator of the Environmental  
Protection Agency,  
1200 Pennsylvania Avenue NW  
Washington, DC 20004,

Defendants.

Case No.

**COMPLAINT FOR  
DECLARATORY RELIEF**

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## **COMPLAINT**

1. In recent years, the United States has experienced a steady increase in extreme weather events that have destroyed American homes and businesses, displaced millions of United States citizens, and caused the tragic loss of lives. The United States Government's current acts to roll back regulations and practices previously directed at addressing and minimizing the United States contribution to climate change will increase the frequency and severity of these extreme weather events and the dangers to Plaintiffs' lives and a life-sustaining environment.

2. Through these acts, the Government is relying on junk science to wage a war on facts, data, and reliable principles and methods arising out of scientific, technical, and specialized knowledge. In doing so, Defendants have acted with reckless and deliberate indifference to the established clear and present dangers of climate change, knowingly increasing its resulting damages, death, and destruction.

3. Plaintiffs bring this action pursuant to the United States Constitution seeking a declaration that the current United States Government's rollback program affirmatively increases the United States contribution to climate change and intensifies its effects, thereby endangering the lives and welfare of United States citizens in violation of the Due Process Clause of the Constitution.

### **I. JURISDICTION AND VENUE**

4. This action is authorized by Article III, Section 2 of the United States Constitution, which extends the federal judicial power to all cases arising in equity under the Constitution. An actual controversy has arisen and exists between Plaintiffs and Defendants, because Defendants have exposed Plaintiffs to dangerous, life-threatening situations, infringing

upon Plaintiffs' constitutional and international rights. Plaintiffs have no adequate remedy at law to redress the harms identified herein, which are of a continuing nature, and if left unresolved, will be irreversible.

5. This Court has jurisdiction pursuant to 28 U.S.C. § 1331, 28 U.S.C. § 2201, and 28 U.S.C. § 2202, as this action arises under the laws of the United States.

6. Venue lies in this judicial district by virtue of 28 U.S.C. § 1391(e). Plaintiff Clean Air Council is headquartered in this judicial district, and Plaintiffs S.B. and B.B. reside in this judicial district. Some Defendants have offices in this judicial district, and the events, omissions, and harms that are the basis of Plaintiffs' claims arise in substantial part in this judicial district.

## **II. PLAINTIFFS**

7. Plaintiff Clean Air Council is a member-supported environmental organization headquartered in Philadelphia, Pennsylvania. The Council is dedicated to protecting and defending everyone's right to breathe clean air. The Council works through a broad array of related sustainability and public health initiatives, using public education, community action, government oversight, and enforcement of environmental laws. The Council is currently fighting for strong regulations of carbon dioxide ("CO<sub>2</sub>") and methane at both the state and national level. These pollutants make up over 90% of America's greenhouse gas emissions. Due to its emissions of CO<sub>2</sub> and methane, Pennsylvania alone is responsible for a full 1% of the world's greenhouse gasses.

8. Plaintiff S.B., by and through his mother and guardian Danecia Berrian, is a seven-year-old citizen of the United States who resides in Philadelphia, Pennsylvania. S.B. is experiencing harm as a result of Defendants' affirmative acts in causing increased climate change. He suffers from severe seasonal allergies, which cause recurrent nosebleeds and

vomiting. S.B.'s medical issues are directly impacted by the climate. He loves to play sports, and increasing temperatures and extreme weather events caused by Defendants' actions affect his athletic performance and ability to enjoy outdoor activities safely. As a result of the United States Government's actions, S.B.'s allergy symptoms have been exacerbated and will continue to worsen as climate change becomes more severe. For example, S.B. needed to be hospitalized during Hurricane Irene in 2011, and his mother experiences anxiety during extreme weather events, fearing that he may need to be hospitalized again in the future.

9. Plaintiff B.B., by and through his parents and guardians, Thomas and Diane Berman, is an eleven-year-old citizen of the United States who resides in Chester County, Pennsylvania. B.B. is experiencing harm as a result of Defendants' affirmative acts in causing increased climate change. B.B. is passionate about protecting the environment, and experiences anxiety about the potentially irreversible impact of climate change on the planet and future generations, including his own children and grandchildren. Before moving to the greater Philadelphia area, B.B. resided in New York, and experienced the frightening impact of Super Storm Sandy and Hurricane Irene. B.B. regularly takes notice of news events documenting the consequences of climate change, particularly those he has seen firsthand. For example, he recently was upset to learn that many people in Staten Island, New York are still struggling to rebuild their homes in the wake of Super Storm Sandy. In addition, B.B. suffers from asthma, which is exacerbated by climate change.

### **III. DEFENDANTS**

#### **A. United States of America**

10. Defendant the United States of America (“United States”) is the sovereign trustee of national natural resources, including air, water, sea, and wildlife. In its sovereign capacity, the United States controls our nation’s air space and atmosphere; federal public lands, waters, and other natural resources, including fossil fuel reserves; and articles of interstate and international commerce, including extraction, development, and conditions for the utilization of fossil fuels. In its sovereign capacity, the United States is responsible for limiting CO<sub>2</sub> emissions from major sources. In reckless disregard for its duty to protect its citizens from the known clear and present dangers of climate change, the United States is allowing dangerous levels of CO<sub>2</sub> to build up in the atmosphere. That build-up impairs essential national public trust resources required by Plaintiffs and future generations, and infringes on their constitutional rights to a life-sustaining climate system.

#### **B. President Donald Trump**

11. Defendant Donald Trump, the President of the United States, in his official capacity, is vested with the executive power of the United States and must faithfully execute the office and preserve, protect, and defend the Constitution. Defendant Trump has waged a war on science and encouraged fossil fuel exploitation, utilization, and exports—activities that generate additional CO<sub>2</sub> emissions and, in light of the present baseline of atmospheric concentrations, dangerously interfere with the climate system in violation of Plaintiffs’ constitutional rights.

#### **C. Department of Energy**

12. Defendant the United States Department of Energy (“DOE”) is a federal agency whose mission is to achieve “effective management of energy functions of the Federal

Government, including consultation with the heads of other Federal departments and agencies in order to encourage them to establish and observe policies consistent with a coordinated energy policy, and to promote maximum possible energy conservation measures in connection with the activities within their respective jurisdictions.”<sup>1</sup> Congress intended for DOE to “assure incorporation of national environmental protection goals in the formulation and implementation of energy programs, and to advance the goals of restoring, protecting, and enhancing environmental quality, and assuring public health and safety.”<sup>2</sup>

13. Defendant Rick Perry is the current Secretary of Energy and, in his official capacity, is responsible for all DOE action and inaction.

**D. Environmental Protection Agency**

14. Defendant the United States Environmental Protection Agency (“EPA”) permits and regulates the activities, industries, and sources of carbon pollution in the United States under the Clean Air Act; the Clean Water Act; the Comprehensive Environmental Response, Compensation, and Liability Act; the Safe Drinking Water Act; and the Resource Conservation and Recovery Act. Before EPA was established, our government was “not structured to make a coordinated attack on the pollutants which debase the air we breathe, the water we drink, and the land that grows our food.”<sup>3</sup> However, over time, it became “increasingly clear that we need[ed] to know more about the total environment—land, water, and air,” and these issues would be most

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<sup>1</sup> Department of Energy Organization Act, 42 U.S.C. § 7112(2).

<sup>2</sup> *Id.* at § 7112(13).

<sup>3</sup> See The White House, Special Message from the President to the Congress About Reorganization Plans to Establish the Environmental Protection Agency and the National Oceanic and Atmospheric Administration (July 9, 1970), Reorganization Act No. 3 of 1970, *available at* <https://www.gpo.gov/fdsys/pkg/USCODE-2010-title5/pdf/USCODE-2010-title5-app-reorganiz-other-dup92.pdf>.

effectively addressed by one federal agency dedicated to developing specialized knowledge to “ensure the protection, development and enhancement of the total environment itself.”<sup>4</sup> Thus, EPA was created to establish and enforce environmental protection standards; conduct “research on the adverse effects of pollution” and pollution control methods; recommend policy changes that strengthen environmental protection programs; and develop and recommend new policies to the President “for the protection of the environment.”<sup>5</sup> Today, EPA sets CO<sub>2</sub> standards for power plants, which account for our nation’s largest source of CO<sub>2</sub> emissions with 35% of United States annual emissions.<sup>6</sup>

15. Defendant Scott Pruitt is the current Administrator of EPA and, in his official capacity, is responsible for all EPA action and inaction.

#### **IV. BACKGROUND AND DEFINITIONS**

16. As discussed herein, climate change is “a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.”<sup>7</sup>

17. Climate change “represents an urgent and potentially irreversible threat to human societies and the planet.”<sup>8</sup> It “impacts, directly and indirectly, an array of internationally guaranteed human rights,” including by causing loss of life and life-sustaining resources.<sup>9</sup>

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<sup>4</sup> *Id.*

<sup>5</sup> *Id.*

<sup>6</sup> U.S. Energy Information Admin., *How much of U.S. carbon dioxide emissions are associated with electricity generation?*, <https://www.eia.gov/tools/faqs/faq.php?id=77&t=11> (last updated May 10, 2017).

<sup>7</sup> U.N. Framework Convention on Climate Change, art. 1 (1992), *available at* <https://unfccc.int/resource/docs/convkp/conveng.pdf>.

<sup>8</sup> United Nations Conference of the Parties, Nov. 30–Dec. 13, 2015, *Adoption of the Paris Agreement*, Decision 1/CP.21 (Jan. 29, 2016), *available at* <https://unfccc.int/resource/docs/2015/cop21/eng/10a01.pdf>.

<sup>9</sup> U.N. Office of the High Commissioner, *Understanding Human Rights and Climate Change 2* (Nov. 27,



18. Carbon emissions cause climate change. Recent scientific studies find that our country is now in a period of “carbon overshoot,” threatening the planet’s capacity to maintain a life-sustaining environment.<sup>10</sup>

19. There is international scientific consensus that the consequences of climate change are imminent, widespread, and severe, including the loss of life and life-sustaining resources, and that there is an extremely limited amount of time to preserve a habitable climate system for our country.

20. The United States Government has known for decades that climate change presents a clear and present danger to the American people. If the human contribution to climate change is not appropriately addressed, the warming of our nation will become increasingly severe and locked-in.

21. As a result of climate change, in recent years, the United States has experienced record droughts, heat waves, floods, and superstorms responsible for the loss of life as well as economic destruction. For example, recent catastrophic weather events, including the California wildfires and Hurricanes Harvey, Irma, and Maria, have caused at least 230 deaths and hundreds of billions of dollars in property damage in the United States and its Territories alone.<sup>11</sup> The frequency and intensity of these types of extreme weather events are exacerbated by climate

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2015), available at <http://www.ohchr.org/Documents/Issues/ClimateChange/COP21.pdf>.

<sup>10</sup> U.S. EPA, *Causes of Climate Change*, [https://19january2017snapshot.epa.gov/climate-change-science/causes-climate-change\\_.html](https://19january2017snapshot.epa.gov/climate-change-science/causes-climate-change_.html) (last updated Jan. 19, 2017); Matthew L. Wald, *For Carbon Emissions, A Goal of Less than Zero*, N.Y. Times, Mar. 26, 2008, <http://www.nytimes.com/2008/03/26/business/businessspecial2/26negative.html>.

<sup>11</sup> See AJ. Willingham, *A look at four storms from one brutal hurricane season*, CNN, Oct. 11, 2017, <http://www.cnn.com/2017/10/10/weather/hurricane-nate-maria-irma-harvey-impact-look-back-trnd/index.html>; Jeff Daniels, *Death toll in California wildfires grows to 42, PG&E sued by couple who lost home*, CNBC, Oct. 18, 2017, <https://www.cnbc.com/2017/10/18/death-toll-in-california-wildfires-grows-to-42-pge-hit-with-lawsuit.html>.

change, and the impacts will only worsen if the human contribution to planetary warming continues.

22. For over fifty years, the United States<sup>12</sup> has known that CO<sub>2</sub> pollution contributed to global warming and dangerous climate change, and that the burning of fossil fuels destabilizes the climate system on which present and future generations of our nation depend for their wellbeing and survival.

23. In a 1965 White House Report titled “Restoring the Quality of Our Environment,” for example, the President’s Science Advisory Committee confirmed that “[p]ollutants have altered on a global scale the carbon dioxide content of the air” through “the burning of coal, oil and natural gas,” and “will modify the heat balance of the atmosphere to such an extent that marked changes in climate, not controllable th[r]ough local or even national efforts, could occur.”<sup>13</sup> The Report further stated: “The land, water, air and living things of the United States are a heritage of the whole nation. They need to be protected for the benefit of all Americans, both now and in the future. The continued strength and welfare of our nation depend on the quantity and quality of our resources and on the quality of the environment in which our people live.”<sup>14</sup>

24. In 2007, the Supreme Court held in *Massachusetts v. EPA* that greenhouse gases, including CO<sub>2</sub>, are pollutants, and therefore must be regulated by EPA if found to endanger

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<sup>12</sup> Throughout this Complaint, the terms “United States” or “Federal Government” refer to the executive branch and executive agencies that are involved in the regulation and prevention of climate change.

<sup>13</sup> The White House, *Restoring the Quality of Our Environment*, Report of the Environmental Pollution Panel, President’s Science Advisory Committee, Nov. 1965, at 1, 9, available at <https://babel.hathitrust.org/cgi/pt?id=uc1.b4315678;view=1up;seq=1>.

<sup>14</sup> *Id.* at 2.

public health or welfare under the Clean Air Act.<sup>15</sup> Following this landmark ruling, in 2009, EPA issued its “Endangerment Finding,” in which it determined that greenhouse gas emissions endanger the public health and welfare of current and future generations.<sup>16</sup> The Endangerment Finding was upheld in *Coalition for Responsible Regulation v. EPA*.<sup>17</sup> In light of the Endangerment Finding, when EPA determines that emissions from a category of mobile sources (e.g., cars, trucks, airplanes) “cause or contribute” to elevated atmospheric greenhouse gas levels, EPA has a mandatory obligation to promulgate a limiting regulation.<sup>18</sup> As a result, EPA issued the so-called “Tailpipe Rule” to limit greenhouse gas emissions from motor vehicles.<sup>19</sup> Additionally, EPA has required stationary sources otherwise subject to EPA’s permitting authority to demonstrate they are using the best available current technology for limiting greenhouse gas emissions.<sup>20</sup>

25. Recognizing the imminent dangers presented by climate change, the Federal Government undertook steps in the last decade to reduce the threats and protect United States citizens and the planet.

26. But beginning in January 2017, the United States Government embarked on a program of reversing, unravelling, dismantling, and eliminating regulations, practices, and research previously committed to addressing, understanding, and minimizing the United States

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<sup>15</sup> 549 U.S. 497 (2007).

<sup>16</sup> Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66, 496 (Dec. 15, 2009).

<sup>17</sup> 684 F.3d 102 (D.C. Cir. 2012), *cert. denied*, 134 S. Ct. 468 (2013).

<sup>18</sup> See 42 U.S.C. § 7521(a)(1); 42 U.S.C. § 7471(a)(2)(A).

<sup>19</sup> Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards; Final Rule, 75 Fed. Reg. 25,324 (May 7, 2010).

<sup>20</sup> See 42 U.S.C. § 7475(a)(4) (application to greenhouse gases upheld by *Util. Air Regulatory Grp. v. E.P.A.*, 134 S. Ct. 2427, 2448–49 (2014)).

contribution to climate change (“the Federal Government Rollbacks” or “the Rollbacks”) and its life-endangering effects.

27. The Rollbacks have been motivated by and built on “junk science.”

28. As used herein, “junk science” refers to “faulty scientific information or research, especially when used to advance special interests.”<sup>21</sup> In the judicial system, “junk science” refers to “[e]vidence which is not consonant with generally accepted medical or scientific views and which lacks other indicia of reliability.”<sup>22</sup>

29. Through the Rollbacks, the Government has in effect waged a war on facts, data, and reliable principles and methods arising out of scientific, technical, and specialized knowledge.

30. The Rollbacks increase the United States contribution to climate change and intensify the frequency and severity of its effects, including, among others, death, shortening of life expectancy, property damage, degradation of food sources, and alteration of ecosystems.

31. Through the Rollbacks, the Government is knowingly and recklessly placing the

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<sup>21</sup> See Random House Webster’s Dictionary; see also *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 592–94 (1993) (holding that, when “[f]aced with a proffer of expert scientific testimony,” “the trial judge must determine at the outset, . . . whether the reasoning or methodology underlying the testimony is scientifically valid and of whether that reasoning or methodology properly can be applied to the facts in issue” by considering (1) “whether it can be (and has been) tested,” (2) whether the theory or technique has been subjected to peer review and publication, and (3) whether the theory has “[w]idespread acceptance” in the “relevant scientific community”).

<sup>22</sup> Joseph M. Price & Gretchen Gates Kelly, *Junk Science in the Courtroom: Causes, Effects and Controls*, 19 Hamline L. Rev. 395 (1996); see also *Ellis v. Costco Wholesale Corp.*, 657 F.3d 970, 982 (9th Cir. 2011) (“Under *Daubert*, the trial court must act as a ‘gatekeeper’ to exclude junk science that does not meet Federal Rule of Evidence 702’s reliability standards by making a preliminary determination that the expert’s testimony is reliable.”) (citing *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 145, 147–49, (1999)); *Pullins v. Stihl Inc.*, No. CIV.A. 03-5343, 2006 WL 1390586, at \*3 (E.D. Pa. May 19, 2006) (excluding expert testimony because “[t]he method [the expert] employed to arrive at his conclusions can only be described as exactly the kind of ‘junk science’ that *Daubert* sought to purge from the federal courts”).

nation's population in harm's way.

32. Defendants have acted with reckless and deliberate indifference to the established clear and present dangers of climate change, thereby increasing its resulting damages, death, and destruction.

## V. STATEMENT OF FACTS

### A. What is Climate Change?

33. Climate change “refers to changes in the totality of attributes that define climate. In addition to changes in air temperature, climate change involves changes to precipitation patterns, winds, ocean currents, and other measures of Earth’s climate.”<sup>23</sup>

34. Global warming refers to “the phenomenon of increasing average air temperatures near the surface of Earth over the past one to two centuries.”<sup>24</sup>

35. “Warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia. The atmosphere and ocean have warmed, the amounts of snow and ice have diminished, and sea level has risen.”<sup>25</sup>

36. In 1988, the Intergovernmental Panel on Climate Change (“IPCC”) was formed by the World Meteorological Organization and the United Nations Environment Program.<sup>26</sup> In 2013, the IPCC reported that the period between 1880 and 2012 saw an increase in global average surface temperature of approximately 0.9 °C (1.5 °F) and stated that most of the

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<sup>23</sup> Henrik Selin & Michael E. Mann, *Global warming*, Britannica Online Encyclopedia, <https://www.britannica.com/science/global-warming>.

<sup>24</sup> *Id.*

<sup>25</sup> IPCC, *Climate Change 2014, Synthesis Report, Summary for Policymakers*, at 2 (2014), available at [http://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5\\_SYR\\_FINAL\\_SPM.pdf](http://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5_SYR_FINAL_SPM.pdf).

<sup>26</sup> IPCC, *History*, [http://ipcc.ch/organization/organization\\_history.shtml](http://ipcc.ch/organization/organization_history.shtml) (last visited Nov. 3, 2017); IPCC, *Organization*, <http://ipcc.ch/organization/organization.shtml> (last visited Nov. 3, 2017).

warming observed over the second half of the 20th century could be attributed to human activities.<sup>27</sup>

37. “Modern global warming is the result of an increase in magnitude of the so-called greenhouse effect, a warming of Earth’s surface and lower atmosphere caused by the presence of water vapour, carbon dioxide, methane, nitrous oxides, and other greenhouse gases.”<sup>28</sup>

38. The IPCC reported in 2014 that concentrations of carbon dioxide, methane, and nitrous oxides in the atmosphere surpassed concentrations found in ice cores dating back 800,000 years. Carbon dioxide is the most important of these gases, both for its roles in the greenhouse effect and in the human economy.<sup>29</sup> If fossil fuels continue to be burned at current rates, they are projected to reach 560 ppm by the mid-21st century, effectively doubling carbon dioxide concentrations in 300 years.<sup>30</sup>

39. The current energy imbalance—that is, the difference between the amount of solar energy absorbed by Earth and the amount of energy released into space as heat—is approximately 0.6 Watts/m<sup>2</sup> averaged over the entire planet, equivalent to exploding more than 400,000 Hiroshima atomic bombs per day, 365 days per year, throughout our planet.<sup>31</sup>

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<sup>27</sup> Selin & Mann, *supra* note 23.

<sup>28</sup> *Id.*

<sup>29</sup> *Id.*

<sup>30</sup> Pushker A. Kharecha & James E. Hansen, *Implications of “peak oil” for atmospheric CO<sub>2</sub> & climate*, NASA Goddard Institute for Space Studies & Columbia Univ. Earth Institute, May 2007, available at <https://arxiv.org/ftp/arxiv/papers/0704/0704.2782.pdf>.

<sup>30</sup> See Michael E. Mann, *Earth Will Cross the Climate Danger Threshold by 2036*, *Scientific American*, Apr. 1, 2014, <https://www.scientificamerican.com/article/earth-will-cross-the-climate-danger-threshold-by-2036/>; William T. Sommers et al., *Synthesis of Knowledge: Fire History and Climate Change*, U.S. Joint Fire Science Program 2.6–2.8 (2011), available at [https://www.firescience.gov/projects/09-2-01-9/project/09-2-01-9\\_09\\_2\\_01\\_9\\_Deliverable\\_01.pdf](https://www.firescience.gov/projects/09-2-01-9/project/09-2-01-9_09_2_01_9_Deliverable_01.pdf).

<sup>31</sup> James Hansen et al., *Earth’s Energy Imbalance and Implications*, NASA Goddard Institute for Space Studies, Jan. 2012, [https://www.giss.nasa.gov/research/briefs/hansen\\_16/](https://www.giss.nasa.gov/research/briefs/hansen_16/); Joe Romm, *Earth’s Rate of Global Warming is 400,000 Hiroshima Bombs a Day*, *Think Progress*, Dec. 22, 2013,

40. Greenhouse gases in the atmosphere act like a blanket over the Earth, trapping energy received from the sun. More greenhouse gas emissions in the atmosphere means that more energy is retained on Earth, with less being radiated back into space.<sup>32</sup>

41. “Basic principles of physics and chemistry dictate that Earth will warm as concentrations of greenhouse gas increase. Though various natural factors can influence Earth’s climate, only the increase in greenhouse gas concentrations linked to human activity, principally the burning of fossil fuels, can explain recent patterns of global warming.”<sup>33</sup>

42. Continued emission of greenhouse gases will cause further warming and long-lasting changes in all components of the climate system, increasing the likelihood of severe, pervasive, and irreversible impacts for humans and the planet. Limiting climate change requires substantial and sustained reductions in greenhouse gas emissions.<sup>34</sup>

43. The current level of atmospheric CO<sub>2</sub> concentration caused by human-made climate change has placed our country in the danger zone. As acknowledged by the United States, “global atmospheric concentrations of CO<sub>2</sub>, methane, and nitrous oxide are at unprecedentedly high levels compared to the past 800,000 years of historical data and pose risks to human health and welfare.”<sup>35</sup>

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<https://thinkprogress.org/earths-rate-of-global-warming-is-400-000-hiroshima-bombs-a-day-44689384fef9/>.

<sup>32</sup> U.S. Global Change Research Program, *Global Climate Change Impacts in the United States: A State of Knowledge Report* 13–14 (2009), available at <http://www.iooc.us/wp-content/uploads/2010/09/Global-Climate-Change-Impacts-in-the-United-States.pdf>.

<sup>33</sup> Michael E. Mann & Lee R. Kump, *Dire Predictions: Understanding Climate Change: The Visual Guide to the Findings of the IPCC* (2016).

<sup>34</sup> IPCC Synthesis Report, *supra* note 25, at 8.

<sup>35</sup> See Federal Defendants’ Answer to First Amended Complaint for Declaratory and Injunctive Relief, *Juliana v. United States*, No. 6:15-cv-01517-TC (D. Or. Jan., 13, 2017), ECF No. 98, ¶ 5 (“*Juliana Answer*”).

44. In 2013, the atmospheric CO<sub>2</sub> concentration exceeded 400 ppm—the highest levels in the past three to five million years.<sup>36</sup> The pre-industrial concentration was 280 ppm.<sup>37</sup> CO<sub>2</sub> concentrations have thus risen more than 120 ppm since pre-industrial times, with half of that rise occurring since 1980.<sup>38</sup> March 2015 was the first month that the monthly global average concentration of CO<sub>2</sub> was 400 ppm for an entire month.<sup>39</sup> Emissions must be rapidly and systematically reduced to well below the natural rate of draw-down into Earth's forests, soils, and crust in order to restore energy balance and avoid crossing tipping points that set in motion disastrous impacts to human civilization and nature.

45. One key observable change is the rapid increase in recorded surface temperatures. As a result of increased atmospheric CO<sub>2</sub> from human activities, our nation has been warming as scientists predicted as early as 1965. In the last thirty years, Earth has been warming at a rate three times faster than the rate at which it was warming over the previous one hundred years. As admitted by the United States,<sup>40</sup> Earth has now warmed at least 1° C above pre-industrial temperatures. That temperature is equivalent to the maximum temperatures of the Holocene era, the period of climate stability over the last 10,000 years that enabled human civilization to develop. Warming hit 1° C in late 2015, and has continued to increase beyond that point.<sup>41</sup>

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<sup>36</sup> Nicola Jones, *Breaking Records: How the World Passed a Carbon Threshold & Why it Matters*, Yale Environment 360, Jan. 26, 2017, <https://e360.yale.edu/features/how-the-world-passed-a-carbon-threshold-400ppm-and-why-it-matters>; NOAA, Earth System Research Laboratory, Global Monitoring System, *Trends in Atmospheric Carbon Dioxide*, [ftp://aftp.cmdl.noaa.gov/products/trends/co2/co2\\_mm\\_mlo.txt](ftp://aftp.cmdl.noaa.gov/products/trends/co2/co2_mm_mlo.txt); Andrew Freedman, *The Last Time CO<sub>2</sub> Was This High, Humans Didn't Exist*, Climate Central, May 3, 2013, <http://www.climatecentral.org/news/the-last-time-co2-was-this-high-humans-didnt-exist-15938>.

<sup>37</sup> Jones, *supra* note 36.

<sup>38</sup> See NOAA, *Trends in Atmospheric Carbon Dioxide*, *supra* note 36.

<sup>39</sup> Brian Kahn, *A Global Milestone: CO<sub>2</sub> Passes 400 PPM*, Climate Central, May 6, 2015, <http://www.climatecentral.org/news/co2-400-ppm-global-record-18965>.

<sup>40</sup> *Juliana* Answer ¶ 210.

<sup>41</sup> Andrew Gilson, *Climate & the rise and fall of civilizations; a lesson from the past*, The Conversation,



According to the National Aeronautics and Space Administration (“NASA”), the past three years have set three consecutive temperature records, with 2016 being the hottest year on record. In fact, sixteen of the last seventeen years are the warmest years on record for the globe.<sup>42</sup>

46. Well-documented and observable impacts from the changes in Earth’s climate system highlight that the current level of atmospheric CO<sub>2</sub> concentration has already taken our nation into a danger zone. Increased CO<sub>2</sub> emissions are already resulting not only in the warming of land surfaces, but also in the warming of oceans, increasing atmospheric moisture levels, raising global sea levels, and changing rainfall and atmospheric air circulation patterns that affect water and heat distribution.<sup>43</sup>

47. Arctic sea ice is declining precipitously and is expected to disappear completely in the coming decades as the Earth continues to get hotter. With less sea ice, less solar radiation is reflected back to space, resulting in a positive feedback loop that amplifies regional and global warming.<sup>44</sup>

48. Similarly, there has been an increase in permafrost temperatures and melting in Alaska.<sup>45</sup> Substantial methane releases from thawing permafrost have already been observed in

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Dec. 10, 2015, <https://theconversation.com/climate-and-the-rise-and-fall-of-civilizations-a-lesson-from-the-past-51907>; *see also* Sommers, *supra* note 30, at 2.8.

<sup>42</sup> NASA, *2016 Climate Trends Continue to Break Records*, July 19, 2016, <https://www.nasa.gov/feature/goddard/2016/climate-trends-continue-to-break-records>; *see also* NASA Global Climate Change, *Climate change: How do we know?*, <https://climate.nasa.gov/evidence/> (last visited Nov. 2017); NASA Global Climate Change, *Global Temperature*, <https://climate.nasa.gov/vital-signs/global-temperature/> (last visited Nov. 3, 2017).

<sup>43</sup> *State of the Knowledge Report*, *supra* note 32, at 12–52.

<sup>44</sup> U.S. EPA, *Climate Change Indicators: Arctic Sea Ice*, <https://www.epa.gov/climate-indicators/climate-change-indicators-arctic-sea-ice> (updated Nov. 2016); Andrea Thompson, *Arctic Sea Ice Sets Record-Low Peak for Third Year*, Climate Central, Mar. 23, 2017, <https://www.scientificamerican.com/article/arctic-sea-ice-sets-record-low-peak-for-third-year/>.

<sup>45</sup> IPCC Synthesis Report, *supra* note 25, at 4; Press Release, National Snow & Ice Data Center, *Arctic Sea Ice Reaches Minimum Extent for 2014*, Sept. 22, 2014,

Alaska. Because much of the Alaskan permafrost overlays old peat bogs that sequester methane, permafrost melting will release methane that will further increase global warming to even more dangerous levels. CO<sub>2</sub> and methane released from thawing permafrost could contribute as much as 0.4°F to 0.6°F of warming by 2100.<sup>46</sup>

49. A global scientific consensus has formed around the conclusion that there is no plausible alternative explanation for global warming other than human influence.<sup>47</sup>

50. That consensus includes scientists across the United States Government. A recent Climate Science Special Report, drafted as part of the fourth National Climate Assessment by scientists from a range of government agencies, including the National Oceanic and Atmospheric Administration, NASA, and Defendant DOE, working in conjunction with academic scientists, concluded that “it is extremely likely that human activities, especially emissions of greenhouse gases, are the dominant cause of the observed warming since the mid-20th century. For the warming over the last century, there is no convincing alternative explanation supported by the extent of the observational evidence.”<sup>48</sup>

51. A substantial portion of every ton of CO<sub>2</sub> emitted by humans persists in the atmosphere for as long as a millennium or more. Therefore, the impacts associated with past and current CO<sub>2</sub> emissions will be borne by our children and future generations. Our nation will

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<http://nsidc.org/arcticseaicenews/2014/09/arctic-minimum-reached>.

<sup>46</sup> Ellen Gray, *Alaska Tundra Source of Early-Winter Carbon Emissions*, NASA, May 8, 2017, <https://www.nasa.gov/feature/jpl/alaska-tundra-source-of-early-winter-carbon-emissions>; Gary Braasch & Bill McKibben, *Earth Under Fire: How Global Warming is Changing the World* 18–20 (2009); see also J.E. Box et al., *Greenland*, in *Arctic Report Card: Update for 2010* 55 (Oct. 19, 2010).

<sup>47</sup> NASA Global Climate Change, *Scientific consensus: Earth’s climate is warming*, <https://climate.nasa.gov/scientific-consensus/> (last visited Nov. 3, 2017).

<sup>48</sup> U.S. Global Change Research Program, *Climate Science Special Report 10* (2017), available at [https://science2017.globalchange.gov/downloads/CSSR2017\\_FullReport.pdf](https://science2017.globalchange.gov/downloads/CSSR2017_FullReport.pdf).

continue to warm in response to concentrations of CO<sub>2</sub> from past emissions, as well as future emissions. As the United States has acknowledged, “CO<sub>2</sub> emissions are currently altering the atmosphere’s composition and will continue to alter Earth’s climate for thousands of years.”<sup>49</sup>

**B. Climate Change Presents a Clear and Present Danger to Life and Life-Sustaining Resources**

52. Climate change not only threatens life, but the most basic life-sustaining necessities as well, including clean air, pure water, sufficient food, and adequate shelter.

53. Fossil fuel extraction and combustion, and the resulting climate change, is already contributing to an increase in allergies, asthma, cancer, cardiovascular disease, stroke, heat-related morbidity and mortality,<sup>50</sup> food-borne diseases, toxic exposures, mental health and stress disorders, neurological diseases and disorders, and the occurrence of infectious diseases.

54. Our nation has experienced significant impacts from the relatively modest degree of warming that has occurred to date. These impacts constitute harbingers of far more dangerous changes to come. If unabated, continued greenhouse gas emissions, especially CO<sub>2</sub>, will initiate dynamic climate change, presenting a clear and present danger to Plaintiffs and future generations. As the planet’s energy imbalance triggers amplifying feedbacks and the climate system and biological system pass critical tipping points, such changes would be irreversible on any time scale relevant to Plaintiffs and would threaten human survival.

55. By 2050, climate change is expected to add thousands of additional premature

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<sup>49</sup> *Juliana* Answer ¶ 206. The United States also admits that “current and projected concentrations of six well-mixed greenhouse gases, which include CO<sub>2</sub>, constitute a threat to public health and welfare.” *Id.* ¶ 8.

<sup>50</sup> In the United States alone, more than 9,000 people have died from heat-related illnesses over the last four decades. U.S. EPA, *Climate Change Indicators: Heat-Related Deaths*, <https://www.epa.gov/climate-indicators/climate-change-indicators-heat-related-deaths> (last visited Nov. 3, 2017).

deaths per year nationally from combined ozone and particle health effects.<sup>51</sup> Higher surface temperatures, especially in urban areas, promote the formation of ground-level ozone, which has adverse impacts on human health by irritating the respiratory system, reducing lung function, aggravating asthma, and inflaming and damaging cells that line the airways.<sup>52</sup>

56. “Children are disproportionately impacted by climate change due to their unique metabolism, physiology and developmental needs. The negative impacts of climate change, including the increasing frequency and intensity of natural disasters, changing precipitation patterns, food and water shortages, and the increased transmission of communicable diseases, threaten the enjoyment by children of their rights to health, life, food, water and sanitation, education, housing, culture, and development, among others.”<sup>53</sup>

57. Irrefutable scientific evidence establishes that the consequences of climate change on a macro level are imminent, devastating, and potentially irreversible.

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<sup>51</sup> George Luber et al., *Climate Change Impacts in the United States: The Third National Climate Assessment* 222 (2014), available at <https://data.globalchange.gov/file/e9d7596e-6619-4b5b-8863-ce90d1101e42>; Efthimios Tagaris et al., *Potential Impact of Climate Change on Air Pollution-Related Human Health Effects*, 43 *Env't'l Sci. & Tech.* 4979 (May 18, 2009); Kuo-Jen Liao et al., *Quantification of the impact of climate uncertainty on regional air quality*, 9 *Atmospheric Chemistry and Physics* 865 (Feb. 3, 2009).

<sup>52</sup> For example, there are now twice as many Lyme disease cases than were reported in 1991; in the past three decades, the percentage of Americans with asthma has more than doubled, and climate change is putting those Americans at greater risk of requiring hospitalization; and longer growing seasons allow for ragweed to produce pollen for a longer period, resulting in aggravated and prolonged allergies for millions of Americans. See National Ambient Air Quality Standards for Ozone, 80 Fed. Reg. 65,292 (Oct. 26, 2015); see also EPA, *Climate Change Indicators in the U.S.* 10, 67–70 (2016), available at [https://www.epa.gov/sites/production/files/2016-08/documents/climate\\_indicators\\_2016.pdf](https://www.epa.gov/sites/production/files/2016-08/documents/climate_indicators_2016.pdf); American Geophysical Union, *Climate change could increase ER visits for allergy-related asthma*, Science Daily, May 10, 2017, <https://www.sciencedaily.com/releases/2017/05/170510115232.htm>.

<sup>53</sup> U.N. Office of the High Commissioner, *Climate Change and the Full and Effective Enjoyment of the Rights of the Child*, U.N. Doc. A/HRC/35/13 (Feb. 27, 2017), available at <http://www.ohchr.org/Documents/Issues/ClimateChange/RightsChild/ChildrenOnePager.pdf>.

***1. Extreme Weather Events, Droughts, and Flooding***

58. Climate change is already causing, and will continue to result in, more frequent, extreme, and costly weather events, such as floods, hurricanes, and tornadoes. Each one degree Fahrenheit of warming of the ocean surface leads to a roughly 4% increase in the amount of moisture (and, therefore, a roughly 4% increase in storm-related rainfall amounts).<sup>54</sup>

59. Devastating hurricanes of historic proportions are becoming commonplace. Recent tragic examples include the record-breaking Hurricanes Harvey, Irma, Jose, and Maria—the result of increasingly warm water temperatures in the Gulf of Mexico and the Atlantic Ocean. Hundreds of thousands of homes flooded and tens of thousands of people have been displaced. Most tragically, the death toll in the United States and its Territories is nearing 200.<sup>55</sup> Experts further predict that the recent hurricanes could be among the costliest natural disasters in American history, with damages in the hundreds of billions of dollars.<sup>56</sup>

60. In Pennsylvania, where Plaintiff Clean Air Council is headquartered, and Plaintiffs S.B. and B.B. reside, climate change has and will result in “extreme precipitation,” increasing the risk of “flooding and storm surging.”<sup>57</sup>

61. Outside of the United States, recent hurricanes have been similarly devastating, with entire islands flooded, homes and hospitals destroyed, millions of people evacuated or

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<sup>54</sup> Kevin E. Trenberth, *Changes in precipitation with climate change*, 47 *Climate Research* 123 (Mar. 31, 2011), available at [http://www.int-res.com/articles/cr\\_oa/c047p123.pdf](http://www.int-res.com/articles/cr_oa/c047p123.pdf).

<sup>55</sup> Willingham, *supra* note 11.

<sup>56</sup> Doyle Rice, *Harvey to be costliest natural disaster in U.S. history, estimated cost of \$190 billion*, USA Today, Aug. 31, 2017, <https://www.usatoday.com/story/weather/2017/08/30/harvey-costliest-natural-disaster-u-s-history-estimated-cost-160-billion/615708001/>.

<sup>57</sup> James Shortle et al., *Pennsylvania Climate Impacts Assessment Update* 168 (May 2015), available at <http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-108470/2700-BK-DEP4494.pdf>.

stranded without electricity or running water, and an ever-rising death toll.<sup>58</sup>

62. Changes in our country's water cycle as a result of climate change also increase the potential for, and severity of, droughts. Even in arid regions, increased precipitation is likely to cause flash flooding followed by drought.

63. Other countries around the world are experiencing similar increases in drought and related wildfires and flash flooding. In developing countries, droughts have only exacerbated challenges in accessing clean water and sustaining agricultural resources.<sup>59</sup> For example, in India, changing weather patterns have resulted in massive flooding, displacing millions, with the death toll surpassing 100.<sup>60</sup>

64. Increased wildfires, shifting precipitation patterns, higher temperatures, and drought conditions also threaten forest industries and private property. In the United States, 72,000 wildfires have been recorded, on average, each year since 1983.<sup>61</sup> Nine of the ten years with the largest acreage burned have occurred in the fourteen years since 2000.<sup>62</sup> In October

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<sup>58</sup> See, e.g., *Death toll grows on islands devastated by Hurricane Irma*, CBS News, Sept. 11, 2017, <https://www.cbsnews.com/news/hurricane-irma-death-toll-grows-islands-devastated-cuba-st-martin/>; Michael Holmes & Dominique van Heerden, *Dominica knocked to its knees by Hurricane Maria's might*, CNN, Sept. 21, 2017, <http://www.cnn.com/2017/09/20/world/hurricane-maria-dominica/index.html>; Tesalon Felicien, *Hurricane Irma aftermath: Destruction, recovery in St. Maarten*, USA Today, Sept. 15, 2017, <https://www.usatoday.com/story/news/nation-now/2017/09/15/hurricane-irma-st-maarten-destruction/670035001/>.

<sup>59</sup> See, e.g., Derek Van Dam, *Cape Town contends with worst drought in over a century*, CNN, June 1, 2017, <http://www.cnn.com/2017/05/31/africa/cape-town-drought/index.html>; Soutik Biswas, *Is India facing its worst-ever water crisis?*, BBC News, Mar. 27, 2016, <http://www.bbc.com/news/world-asia-india-35888535>.

<sup>60</sup> See Nita Bhalla, *Indian PM Modi says flood-hit people getting aid, blames climate change*, Reuters, July 31, 2017, <https://www.reuters.com/article/us-india-floods-climatechange/indian-pm-modi-says-flood-hit-people-getting-aid-blames-climate-change-idUSKBN1AG1PB>.

<sup>61</sup> EPA, *Climate Change Indicators: Wildfires 2* (Aug. 2016), available at [https://www.epa.gov/sites/production/files/2016-08/documents/print\\_wildfires-2016.pdf](https://www.epa.gov/sites/production/files/2016-08/documents/print_wildfires-2016.pdf).

<sup>62</sup> *Id.*

2017, more than a dozen wildfires in Northern California forced at least 20,000 people to evacuate after the Governor declared a state of emergency, destroyed at least 2,000 homes, and caused the deaths of at least 15 people.<sup>63</sup>

65. In higher altitude and latitude regions, including in mountainous areas, more precipitation is falling as rain rather than snow.<sup>64</sup> With early snow melt occurring because of climate change, the reduction in snowpack can aggravate water supply problems.

66. The melting of mountain glaciers is particularly serious in areas that rely on snow melt for irrigation and drinking water supply. In effect, a large snow pack or glacier acts as a supplemental reservoir or water tower, holding a great deal of water in the form of ice and snow through the winter and spring and releasing it in the summer when rainfall is lower or absent. The water systems of the United States rely heavily on this natural water storage.<sup>65</sup> Yet as temperatures warm, not only will these areas lose this supplemental form of water storage, but severe flooding is also likely to increase as rainfall accelerates the melting of glaciers and snow packs.

67. Climate change projections estimate an increase in monetary damages associated with inland flooding across most of the contiguous United States. Approximately 190,000 of our nation's bridges are vulnerable to increased inland flooding caused by climate change, with

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<sup>63</sup> Doug Criss & Judson Jones, *The California wildfires, by the staggering numbers*, CNN, Oct. 11, 2017, <http://www.cnn.com/2017/10/10/us/california-wildfire-by-the-numbers/index.html>.

<sup>64</sup> See, e.g., Sarah Kapnick & Andrew Hall, *Causes of Recent Changes in Western North American Snowpack*, 38 *Climate Dynamics* 1885 (May 2012).

<sup>65</sup> See Richard A. Lovett, *Melting Glaciers Mean Double Trouble for Water Supplies*, Nat'l Geographic News, Dec. 21, 2011, <https://news.nationalgeographic.com/news/2011/12/1112-melting-glaciers-mean-double-trouble-for-water-supplies/>.

adaptation costs estimated at \$170 billion for the period from 2010 to 2050.<sup>66</sup> In an area of the Northwest that includes Washington and parts of Oregon and Idaho, 56% of inland bridges are identified as vulnerable in the second half of the 21st Century.<sup>67</sup>

68. By 2100, adaptation costs associated with large storms in 50 United States cities are estimated by EPA to range from \$1.1 to \$12 billion.<sup>68</sup> Further, climate change is projected to result in \$5 trillion in damage to coastal properties in the contiguous United States through 2100.<sup>69</sup>

## 2. *Sea-Level Rise*

69. Recent scientific reports warn of the disintegration of both the West Antarctic Ice Sheet and the East Antarctic Ice Sheet, causing multi-meter sea-level rise that will devastate coastal regions, including much of the Eastern Seaboard.<sup>70</sup> Millions of Americans will be affected and trillions of dollars in property damage will result. The risk of this devastation approaches certainty, unless fossil fuel emissions are rapidly phased out.<sup>71</sup> These recent studies account for the potential for non-linear ice sheet melting more fully than prior studies, which could raise the sea level by ten feet (or more) by mid-century.<sup>72</sup>

70. If carbon pollution is not quickly abated, there is a near scientific certainty that

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<sup>66</sup> U.S. EPA, *Climate Change in the U.S., Benefits of Global Action* 34–35 (2015), available at <https://www.epa.gov/sites/production/files/2015-06/documents/cirareport.pdf>.

<sup>67</sup> *Id.* at 35

<sup>68</sup> *Id.* at 40–41.

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

<sup>70</sup> Robert M. DeConto & David Pollard, *Contribution of Antarctica to past and future sea-level rise*, *Nature* 531, 591–597 (Apr. 5, 2016).

<sup>71</sup> *Id.*

<sup>72</sup> Andra J. Garner et al., *Impact of climate change on New York City's coastal flood hazard: Increasing flood heights from the preindustrial to 2300 CE*, *Proc. Nat'l Acad. of Sci. USA* (Sept. 1, 2017), available at <http://www.pnas.org/content/early/2017/10/03/1703568114.full.pdf>.



humanity will suffer sea-level rise of several meters, submerging much of the near coastal and low-lying regions of the eastern seaboard of the United States, including large parts of New York City and Florida, as well as low-lying areas of Europe, the Far-East, and the Indian sub-continent.

71. Rising sea levels are already submerging low-lying lands, eroding beaches, and converting wetlands to open water, exacerbating coastal flooding, and increasing the salinity of estuaries and freshwater aquifers. Between 1996 and 2011, twenty square miles of land were inundated by rising sea levels along the Atlantic coast.<sup>73</sup> Coastal states are experiencing wetland loss due to rising sea levels.<sup>74</sup> Scientists have predicted that wetlands in the mid-Atlantic region of the United States, including Pennsylvania, cannot survive acceleration in sea-level rise by seven millimeters per year.<sup>75</sup>

72. As expected, our country's sea levels have also risen from glacial and ice cap melting, as well as from the thermal expansion of the ocean itself. Based on measurements taken from 1993 to 2010, sea levels have been rising at an average rate of 3.2 millimeters per year. Though sea levels rose about 170.18 millimeters (0.17 meters) over the last century, within the last decade, the rate of sea-level rise has nearly doubled.<sup>76</sup> As admitted by the United States, the rising seas have caused and will continue to cause flooding in coastal and low-lying areas.<sup>77</sup> The

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<sup>73</sup> U.S. EPA, *Climate Change Indicators: A Closer Look: Land Loss Along the Atlantic Coast*, <https://www.epa.gov/climate-indicators/atlantic-coast> (last visited Nov. 5, 2017).

<sup>74</sup> *Id.*

<sup>75</sup> James G. Titus et al., *Coastal Sensitivity to Sea-Level rise: A Focus on the Mid-Atlantic Region*, U.S. Climate Change Science Program, at 4 (Jan. 2009), available at <https://downloads.globalchange.gov/sap/sap4-1/sap4-1-final-report-all.pdf>.

<sup>76</sup> Garner, *supra* note 72.

<sup>77</sup> *Juliana Answer* ¶ 214.

combination of rising sea levels and more severe storms creates conditions conducive to severe storm surges during high tides. In coastal communities this can overwhelm levees and sea walls, as witnessed during Hurricane Katrina, Hurricane Sandy, and most recently, Hurricanes Harvey and Irma.

### 3. *Agriculture and Ocean Life*

73. Agriculture is extremely susceptible to climate change, threatening food security. Higher temperatures generally reduce yields of desirable crops while promoting pest and weed proliferation. Climate change is predicted to decrease crop yields, increase crop prices, decrease nationwide calorie availability, and increase malnutrition.<sup>78</sup>

74. Because of extreme temperature increases and unsuitable working conditions, in 2100, a projected 1.8 billion labor hours and \$170 billion in wages will be lost.<sup>79</sup>

75. Increased CO<sub>2</sub> emissions are having a severe negative impact on the health of our oceans. The oceans absorb approximately 25-30% of global CO<sub>2</sub> emissions, resulting in a 30% increase in surface ocean acidity.<sup>80</sup>

76. By 2100, the surface waters of the ocean could be nearly 150% more acidic, resulting in a pH that the oceans have not experienced for more than 20 million years.<sup>81</sup> The rise

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<sup>78</sup> Matthew W. Bloom et al., *Castel Gandolfo Workshop: An Introduction to the Impact of Climate Change, the Economic Crisis, and the Increases in Food on Malnutrition*, 140 J. Nutrition 1325 (Jan. 2010), available at <http://jn.nutrition.org/content/140/1/1325.long>; UNICEF, *Global Nutrition Report: From Promise to Impact, Ending Malnutrition by 2030* 61, 70–71 (2016), available at <https://data.unicef.org/wp-content/uploads/2016/06/130565-1.pdf>.

<sup>79</sup> *Benefits of Global Action*, *supra* note 66 at 28–29.

<sup>80</sup> S. Khatiwala, F. Primeau & T. Hall, *Reconstruction of the history of anthropogenic CO<sub>2</sub> concentrations in the ocean*, 462 Nature 346 (Nov. 19, 2009), available at <https://courses.seas.harvard.edu/climate/seminars/pdfs/khatiwala.primeau.hall.nature.2009.pdf>.

<sup>81</sup> NOAA, PMEL Carbon Program, *What is Ocean Acidification?*, <https://www.pmel.noaa.gov/co2/story/What+is+Ocean+Acidification%3F> (last visited Nov. 1, 2017); *see also id.*, *Ocean Acidification: The Other Carbon Dioxide Problem*,

in ocean acidity places coral reefs at considerable risk. Given that coral reefs are among the most biologically diverse and economically important ecosystems, the impact of their loss cannot be overstated. Coral reefs provide shelter to a quarter of all marine species.<sup>82</sup>

77. Climate change and ocean acidification are threatening the survival and wellbeing of plants, fish, wildlife, and biodiversity. As many as one in six species are threatened with extinction due to climate change.<sup>83</sup> Many more species that do not face extinction will face changes in abundance, distributions, and species interactions that cause adverse impacts for ecosystems and humans.

### **C. United States Knowledge of Climate Change**

78. The United States Government has known for decades that climate change presents a clear and present danger to the health and welfare of its citizens and an immediate threat to the planet.<sup>84</sup>

79. Specifically, the United States Government has been and is aware of the severe consequences of climate change identified herein, and admitted the existence of most of them in *Juliana v. United States*, including the inundation of low-lying lands and beaches, loss of wetlands, increased flooding, increased salinity of near-coastal estuaries and aquifers, increased hurricane intensity, increased frequency of intense storms and heavy precipitation, increased droughts, prolonged heat events, decreased snow cover and snow cover season, reduced

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<https://www.pmel.noaa.gov/co2/story/Ocean+Acidification> (last visited Nov. 1, 2017).

<sup>82</sup> Smithsonian Ocean Portal, *Corals and Coral Reefs*, <http://ocean.si.edu/corals-and-coral-reefs> (last visited Nov. 5, 2017).

<sup>83</sup> Carl Zimmer, *Study Finds Climate Change as Threat to 1 in 6 Species*, N.Y. Times, Apr. 30, 2015, <https://www.nytimes.com/2015/05/05/science/new-estimates-for-extinctions-global-warming-could-cause.html>.

<sup>84</sup> See The White House, *Restoring the Quality of Our Environment*, *supra* note 13, at 1; *Juliana Answer* ¶ 1 (admitting knowledge “for over fifty years”).

agricultural productivity, decreased crop yield, increased wildfires, ocean acidification, harmful algae blooms, threatened coral reefs, decreased biodiversity, increased prevalence of certain diseases, and endangered human health.<sup>85</sup>

80. As early as 1965, the Executive Branch reported that anthropogenic pollutants, including CO<sub>2</sub>, impair our nation’s economy and its quality of life. In the 1965 Report of President Lyndon Johnson’s Scientific Advisors, “Restoring the Quality of Our Environment,” the White House confirmed that anthropogenic pollutants, including CO<sub>2</sub>, threaten “the health, longevity, livelihood, recreation, cleanliness and happiness of citizens who have no direct stake in their production, but cannot escape their influence.”<sup>86</sup>

81. For fifty years, the United States Government has known that “pollutants have altered on a global scale the CO<sub>2</sub> content of the air” through “the burning of coal, oil and natural gas.”<sup>87</sup> Indeed, the United States admitted in *Juliana* that officials and persons in the Federal Government have been aware of the evidence of climate change, its causes, and its consequences for over fifty years.<sup>88</sup> Fifty years ago, the Executive Branch predicted that CO<sub>2</sub> “will modify the heat balance of the atmosphere to such an extent that marked changes in climate, not controllable th[r]ough local or even national efforts, could occur.”<sup>89</sup> The Executive Branch warned that “carbon dioxide [gases] are accumulating in such large quantities that they may eventually produce marked climatic change.”<sup>90</sup> At that time, the Federal Government recommended

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<sup>85</sup> *Juliana* Answer ¶¶ 218–222, 227–229, 233, 235, 237.

<sup>86</sup> The White House, *Restoring the Quality of Our Environment*, *supra* note 13, at 1.

<sup>87</sup> *Id.* at 1, 9; *see also id.* at 119, 124.

<sup>88</sup> *Juliana* Answer ¶ 1.

<sup>89</sup> The White House, *Restoring the Quality of Our Environment*, *supra* note 13, at 9.

<sup>90</sup> *Id.* at 12.

reducing the heating of the Earth because of the extraordinary economic and human importance of our climate system, and the White House recommended that a tax system be implemented to tax polluters, including emitters of air pollution, “in proportion to their contribution to pollution,” to incentivize pollution reduction.<sup>91</sup>

82. In 1969, Patrick Moynihan, then-Adviser to President Nixon, wrote a letter to White House Counsel John Ehrlichman stating that CO<sub>2</sub> pollution resulting from burning fossil fuels was a problem perhaps on the scale of “apocalyptic change,” threatening the loss of cities like New York and Washington, D.C. from sea-level rise. The 1969 Moynihan Letter urged the Federal Government to immediately address this threat.<sup>92</sup>

83. In 1978, Congress passed the National Climate Program Act “to establish a national climate program that will assist the Nation and the world to understand and respond to natural and man-induced climate processes and their implications.”<sup>93</sup>

84. On June 23, 1988, Dr. James Hansen, then-Director of NASA’s Institute for Space Studies and a leading climate scientist in the Federal Government, testified before Congress that carbon pollution in the atmosphere was causing global warming and that impacts were already being observed.<sup>94</sup> Around the time of Dr. Hansen’s testimony, Congress directed its own offices and EPA to separately prepare reports on how to stabilize the global climate system and transition our country away from the use of fossil fuels.<sup>95</sup>

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<sup>91</sup> *Id.* at 17–18.

<sup>92</sup> Memorandum from Daniel Patrick Moynihan to John Ehrlichman (Sept. 17, 1969), *available at* <https://www.nixonlibrary.gov/virtuallibrary/releases/jul10/56.pdf>.

<sup>93</sup> 15 U.S.C. § 2902.

<sup>94</sup> *Greenhouse Effect and Global Climate Change: Hearing Before the S. Comm. on Energy & Nat. Res.*, 100th Cong. 51–83 (1987).

<sup>95</sup> Global Climate Protection Act of 1987, 15 U.S.C. § 2901, Pub. L. No. 100-204, §§ 1101, 1104, 101

85. In response, in December 1990, EPA submitted a report to Congress on “Policy Options for Stabilizing Global Climate.”<sup>96</sup> EPA’s 1990 Report concluded: “responses to the greenhouse problem that are undertaken now will be felt for decades in the future, and lack of action now will similarly bequeath climate change to future generations.”<sup>97</sup>

86. EPA’s 1990 Report called for a 50% reduction in total United States CO<sub>2</sub> emissions below 1990 levels by 2025. EPA explained that such reductions were the only pathway to achieve Congress’s goal of stopping global warming and stabilizing the climate system.<sup>98</sup> EPA’s 1990 Report also called for stabilizing atmospheric CO<sub>2</sub> concentrations at 350 ppm, the current level at that time.<sup>99</sup> In its 1990 Report, EPA confirmed the Executive Branch’s findings from 1965 that CO<sub>2</sub> was a “dangerous” pollutant.<sup>100</sup>

87. In 1991, promptly following EPA’s 1990 Report, the Congressional Office of Technology Assessment (“OTA”) delivered to Congress its own report, “Changing By Degrees: Steps to Reduce Greenhouse Gases.”<sup>101</sup> Finding that the United States was the single largest contributor to carbon pollution, OTA’s 1991 Report developed “an energy conservation, energy-supply, and forest-management package that can achieve a 20- to 35-percent emissions reduction” through a mix of regulatory and market-based federal policies, in order to prevent global warming and climate change.<sup>102</sup> OTA reported that if its recommended measures were

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Stat. 1408, 1409.

<sup>96</sup> U.S. EPA, *Policy Options for Stabilizing Global Climate: Report to Congress, Main Report* (1990).

<sup>97</sup> *Id.* at III-15.

<sup>98</sup> *Id.* at 28, I-5.

<sup>99</sup> *Id.* at 8, I-5.

<sup>100</sup> *Id.* at I-13.

<sup>101</sup> U.S. Office of Technology Assessment, *Changing By Degrees: Steps to Reduce Greenhouse Gases*, OTA-O-482 (Feb. 1991), available at

<https://repository.library.georgetown.edu/bitstream/handle/10822/708292/9111.PDF?sequence=1>.

<sup>102</sup> *Id.* at 5.

implemented, the Federal Government could lower CO<sub>2</sub> emissions 35% from 1987 levels by 2015 and possibly save the Federal Government \$20 billion per year.<sup>103</sup> OTA determined that the 35% necessary reduction in CO<sub>2</sub> emissions was only the beginning, and further efforts in the 21st century would be required to stabilize our nation's climate system. OTA's 1991 Report stated that major reductions of CO<sub>2</sub> would require significant new initiatives by the Federal Government and must be sustained over decades, even before all possible scientific certainties are resolved: "[I]t is clear that the decision to limit emissions cannot await the time when the full impacts are evident. The lag time between emission of the gases and their full impact is on the order of decades to centuries; so too is the time needed to reverse any effects."<sup>104</sup>

88. OTA's 1991 Report informed Congress that the level of emission reductions needed would require the country to wean itself from fossil fuels. OTA also urged that, while global warming was a problem on a global scale, United States leadership was critical to solving the problem and would seriously impact what happened around the globe.

89. In determining that actions would be required across the Federal Government, both EPA's 1990 Report and OTA's 1991 Report concluded that an essential component of reducing CO<sub>2</sub> emissions was implementing a rising carbon tax.

90. On October 15, 1992, following receipt of the EPA and OTA Reports, the Senate ratified the United Nations Framework Convention on Climate Change ("UNFCCC"), which was executed to "protect the climate system for the benefit of present and future generations of humankind."<sup>105</sup> The UNFCCC evidences an "overwhelming weight" of support for protection of

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<sup>103</sup> *Id.* at 10.

<sup>104</sup> *Id.* at 3.

<sup>105</sup> UNFCCC, *supra* note 7, at art. 3.

the atmosphere under the norms and principles of intergenerational equity. The minimal objective of the UNFCCC is the “stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.”<sup>106</sup>

91. The recommendations in EPA’s 1990 Report and OTA’s 1991 Report were never implemented. United States fossil fuel production, consumption, and combustion all continued to accelerate at dangerous speeds for decades.

92. This finally began to change in more recent years. On December 7, 2009, nearly 17 years after the United States ratified the UNFCCC, the then-Administrator of EPA, Lisa Jackson, issued EPA’s formal Endangerment Finding under the Clean Air Act.<sup>107</sup> The finding stated that current and projected atmospheric concentrations of greenhouse gases, including, in particular, CO<sub>2</sub>, threatened the public health and welfare of current and future generations.

93. On January 2, 2011, EPA commenced partial regulation of greenhouse gases under the Clean Air Act from mobile and stationary sources of air pollution.<sup>108</sup> Also in 2011, Defendant DOE admitted that “our responsibility to future generations is to eliminate most of our carbon emissions and transition to a sustainable energy future.”<sup>109</sup>

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<sup>106</sup> *Id.* at art. 2.

<sup>107</sup> U.S. EPA, *Endangerment and Cause or Contribute Findings for Greenhouse Gases under the Section 202(a) of the Clean Air Act*, Dec. 7, 2009, <https://www.epa.gov/ghgemissions/endangerment-and-cause-or-contribute-findings-greenhouse-gases-under-section-202a-clean>; Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66,496 (Dec. 15, 2009).

<sup>108</sup> Reconsideration of Interpretation of Regulations That Determine Pollutants Covered by Clean Air Act Permitting Programs, 75 Fed. Reg. 17,004 (Apr. 2, 2010); Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule, 75 Fed. Reg. 31,514 (June 3, 2010); Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards; Final Rule, 75 Fed. Reg. 25,324 (May 7, 2010).

<sup>109</sup> US Dep’t of Energy, *Strategic Plan* (May 2011), available at



94. The third National Climate Assessment in 2014 acknowledged that “[t]he cumulative weight of the scientific evidence . . . confirms that climate change is affecting the American people now, and that choices we make will affect our future and that of future generations.”<sup>110</sup>

95. The conclusions in the 2017 Climate Science Special Report for the fourth National Climate Assessment went further, finding it “extremely likely” that anthropogenic forces are the primary cause of climate change.<sup>111</sup>

96. Recognizing the imminent threat presented by climate change, the United States Government had—until the Rollback programs—taken affirmative steps to reduce the United States’ anthropogenic contribution to climate change. These steps included the Climate Action Plan, which established new rules to reduce carbon emissions and introduced initiatives to make the United States a global leader in addressing climate change; the Clean Power Plan, which imposed limits on emissions from fossil fuel-burning power plants; and a moratorium on the federal coal leasing program, which significantly limited the United States’ harmful emissions from coal-fired power.

97. By acting to prevent the devastating and life-endangering consequences of climate change, the United States Government has acknowledged its obligation as the trustee of our country’s natural resources not to take affirmative acts to enhance, increase, or intensify those dangers.

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[https://energy.gov/sites/prod/files/2011\\_DOE\\_Strategic\\_Plan\\_.pdf](https://energy.gov/sites/prod/files/2011_DOE_Strategic_Plan_.pdf).

<sup>110</sup> National Climate Assessment, *Climate Change Impacts in the United States* (2014),

<http://nca2014.globalchange.gov/highlights/overview/overview>.

<sup>111</sup> U.S. Global Change Research Program, *Climate Science Special Report 10* (2017), available at [https://science2017.globalchange.gov/downloads/CSSR2017\\_FullReport.pdf](https://science2017.globalchange.gov/downloads/CSSR2017_FullReport.pdf).

98. Having admitted its knowledge of climate change and taken affirmative acts to protect the American people and the planet, the Federal Government has a continuing responsibility not to knowingly place the United States population precisely in the forefront of increased dangers.

**D. International Consensus on Climate Change**

99. Like the United States, countries around the world have reached the same conclusion that a sovereign nation has the responsibility not to place its citizens in known clear and present dangers of climate change.

100. As early as 1899, scientists understood that CO<sub>2</sub> concentrations in the atmosphere cause heat retention on Earth and that a doubling or tripling of the CO<sub>2</sub> content in 1899 would significantly elevate Earth's surface temperature.<sup>112</sup> Scientists also understood that CO<sub>2</sub> was the determinative factor for global heating. By the turn of the 20th century, it was widely accepted in the scientific community that increasing the atmospheric concentration of CO<sub>2</sub> could cause global climate change. There is now near global consensus that climate change endangers humanity and nature.

101. The recognition of the essential nature of a life-sustaining environment has its roots in millennia of laws and traditions from around the world. Today, it has been embodied in international treaties and the domestic laws of a majority of the world's nations. Internationally, there have been more than 400 multilateral agreements aimed at protecting the environment.<sup>113</sup>

102. Most countries now recognize the right to healthy environment through their

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<sup>112</sup> T. C. Chamberlin, *An Attempt to Frame a Working Hypothesis of the Cause of Glacial Periods on an Atmospheric Basis*, *J. Geology* 7, 575 (1899).

<sup>113</sup> Kate O'Neill, *The Environment and International Relations* 7 (2d ed. 2017).

domestic laws. As of 2012, 92 countries afforded their citizens the constitutional right to a clean or healthy environment, and 177 nations recognized the right to a healthy environment through their constitution, environmental legislation, court decisions, or ratification of an international agreement.<sup>114</sup>

103. Many indigenous peoples (those groups possessing historical ties to certain areas, later affected by colonization) have long believed in the need to protect the environment. These beliefs are embodied in the Indigenous Peoples' Earth Charter, which was drafted in 1992 by a gathering of indigenous peoples from around the world: "We maintain our inalienable rights to our lands and territories, to all our resources—above and below—and to our waters. We assert our ongoing responsibility to pass these onto the future generations."<sup>115</sup>

104. Similarly, the right to air and water has been recognized since the days of the Byzantine emperor, Justinian. The Institutes of Justinian declared "the following things are by natural law common to all—the air, running water, the sea, and consequently the sea shore."<sup>116</sup>

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<sup>114</sup> See David R. Boyd, *The Constitutional Right to a Healthy Environment*, Environment Magazine, July-Aug. 2012, <http://www.environmentmagazine.org/Archives/Back%20Issues/2012/July-August%202012/constitutional-rights-full.html>; James R. May & Erin Daly, *Global Environmental Constitutionalism* (2015); James R. May & Erin Daly, *Environmental Constitutionalism: A Research Compendium* (2016).

<sup>115</sup> Kari-Oca Declaration And Indigenous Peoples' Earth Charter, May 1992, available at [www.lacult.unesco.org/lacult\\_en/docc/Kari-Oca\\_1992.doc](http://www.lacult.unesco.org/lacult_en/docc/Kari-Oca_1992.doc). The 1992 Rio Indigenous People's charter (Kari-Oca Declaration) was replaced by the Kari-Oca II Declaration during the 2012 conference. The Kari-Oca II similarly states:

We reject the false promises of sustainable development and solutions to climate change that only serve the dominant economic order. We reject REDD, REDD+ and other market-based solutions that focus on our forests, to continue the violation of our inherent rights to self determination and right to our lands, territories, waters, and natural resources, and the Earth's right to create and sustain life. There is no such thing as "sustainable mining." There is no such thing as "ethical oil."

Kari-Oca II Declaration, Indigenous Peoples Global Conference on Rio +20 and Mother Earth, Indigenous Environmental Network, June 17, 2012, <http://www.ienearth.org/kari-oca-2-declaration/>.

<sup>116</sup> Justinian, *The Different Kinds of Things*, Humanistic Texts (2000), available at

This canon of Roman civil law forms the basis for the public trust doctrine, which designates sovereign governments as trustees of the natural resources that government holds in a “public trust” for the benefit of its citizens.

105. The Stockholm Declaration on the Human Environment was the first major international recognition of a healthy environment. It emerged from a United Nations Conference on the Human Environment in 1972. In the Stockholm Declaration, 114 nations recognized that: “Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being, and bears a solemn responsibility to protect and improve the environment for present and future generations.”<sup>117</sup> The Declaration further recognized that: “The natural resources of the earth, including the air, water, land, flora and fauna and especially representative samples of natural ecosystems, must be safeguarded for the benefit of present and future generations through careful planning or management, as appropriate.”<sup>118</sup>

106. In the time since the Stockholm Declaration was issued, the need to protect the environment has been recognized in hundreds of international treaties and agreements.

107. In 1992, in the Report of the United Nations Conference on Environment and Development (also known as the Rio Declaration on Environment and Development), 178 nations declared that human beings “are entitled to a healthy and productive life in harmony with nature.”<sup>119</sup>

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<http://www.humanistictexts.org/justinian.htm>.

<sup>117</sup> Report of the U.N. Conference on the Human Environment, June 5–16, 1972, U.N. Doc. A/Conf.48/14/Rev.1, § II Principle 1, *available at* <http://www.un-documents.net/aconf48-14r1.pdf>.

<sup>118</sup> *Id.* at § II Principle 2.

<sup>119</sup> Report of the U.N. Conference on Environment and Development, *Rio Declaration on Environment &*

108. Furthermore, the United Nations General Assembly has recognized “that all individuals are entitled to live in an environment adequate for their health and well-being.”<sup>120</sup>

109. Within widely adopted multilateral treaties, there has been a particular focus on climate change. Countries have entered into numerous treaties to slow or reverse the negative effects of climate change, including the Vienna Convention for the Protection of the Ozone Layer in 1985<sup>121</sup>—the first Convention of any kind to achieve universal ratification—and the follow-up Montreal Protocol on Substances that Deplete the Ozone Layer in 1987, which banned ozone-depleting chlorofluorocarbons.<sup>122</sup>

110. The African Charter on Human and Peoples’ Rights recognizes that “[a]ll peoples shall have the right to a general satisfactory environment favorable to their development.”<sup>123</sup> Similarly, the American Convention on Human Rights (which the United States did not sign) states that “[e]veryone shall have the right to live in a healthy environment.”<sup>124</sup> In Europe, the Hague Declaration on the Environment recognizes “the right to live in dignity in a viable global environment.”<sup>125</sup>

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*Development*, June 3–14, 1992, U.N. Doc. A/CONF.151/26 (Vol. 1), Annex 1, Principle 1 at 1 (Aug. 12, 1992), available at <http://www.un.org/documents/ga/conf151/aconf15126-1annex1.htm>.

<sup>120</sup> U.N. General Assembly, *Need to ensure a healthy environment for the well-being of individuals*, U.N. Doc. A/Res/45/94, at 2 (Dec. 14, 1990), available at <http://www.un.org/documents/ga/res/45/a45r094.htm>.

<sup>121</sup> Vienna Convention for the Protection of the Ozone Layer, Mar. 22, 1985, available at <http://ozone.unep.org/en/handbook-vienna-convention-protection-ozone-layer/2205>.

<sup>122</sup> Montreal Protocol on Substances that Deplete the Ozone Layer, Sept. 16, 1987, available at <http://ozone.unep.org/en/handbook-montreal-protocol-substances-deplete-ozone-layer/5>.

<sup>123</sup> African (Banjul) Charter on Human and Peoples’ Rights, OAU Doc. CAB/LEG/67/3, adopted June 27, 1981, rev. 5, 21 I.L.M. 58 (1982), entered into force Oct. 21, 1986, art. 24, available at [http://www.achpr.org/files/instruments/achpr/banjul\\_charter.pdf](http://www.achpr.org/files/instruments/achpr/banjul_charter.pdf).

<sup>124</sup> American Convention on Human Rights, *Additional Protocol to the American Convention on Human Rights in the Area of Economic, Social, and Cultural Rights*, art. 11 (Nov. 17, 1988), available at <http://www.oas.org/juridico/english/treaties/a-52.html>.

<sup>125</sup> *Hague Declaration on the Environment*, 28 Int’l Legal Materials 1308, 1309 (Sept. 1989), available at

111. In 1992, the United Nations Framework Convention on Climate Change (UNFCCC) was negotiated to “stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.”<sup>126</sup> It was entered into force in 1994. As of 2015, 197 countries are parties to UNFCCC, including the United States.

112. The Kyoto Protocol implemented UNFCCC’s goal of stabilizing greenhouse gas concentrations by imposing limits on emissions of greenhouse gases. The Kyoto Protocol was adopted in 1997 and entered into force in 2005. As of 2015, there are 192 parties to the Kyoto Protocol. The Protocol was implemented to address mankind’s impact on climate change by controlling countries’ emissions of greenhouse gases.

113. Most recently, the Paris Agreement extended the UNFCCC to address greenhouse gas emissions from 2020 onward. It was agreed in December 2015 and went into effect in November 2016. As of March 2017, 194 UNFCCC members have signed the Paris Agreement, including the United States, and 141 members (but not the United States) have ratified it. Defendant Trump has announced his intention to withdraw the United States from the Paris Agreement, making the United States one of only two nations, along with Syria, not to participate in the agreement.

114. The Paris Agreement sets certain emissions measures for countries to meet to reduce the effects of climate change. It sets the goal of “[h]olding the increase in the global average temperature to well below 2° C above pre-industrial levels and pursuing efforts to limit

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<http://www.jstor.org/stable/20693363>.

<sup>126</sup> UNFCCC, *supra* note 7.

the temperature increase to 1.5° C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change.”<sup>127</sup>

115. Since 2008, the member nations of the United Nations Human Rights Council have repeatedly recognized that a stable climate system is necessary for the realization of human rights.<sup>128</sup>

116. The responsibility that governments have for protecting the environment have also been recognized through international court decisions. For example, the International Criminal Court has announced that it will now prosecute crimes linked to environmental destruction.<sup>129</sup> Human rights courts have similarly held that States must not only prevent harm, but must take affirmative steps to protect and preserve the right to a life-sustaining climate system.

117. For example, the Hague District Court in the Netherlands recently adjudicated a complaint by 900 Dutch citizens after the government decided to retreat from its international commitments to address climate change. The court held that “[d]ue to the severity of the consequences of climate change . . . the State has a duty of care to take mitigation measures,” and concluded that the impacts of the Government’s retreat from climate action would fall disproportionately on youth and future generations.<sup>130</sup> The court ultimately declared that the

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<sup>127</sup> U.N., *Paris Agreement*, art. 2(1)(a) (2015), available at [http://unfccc.int/files/essential\\_background/convention/application/pdf/english\\_paris\\_agreement.pdf](http://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf).

<sup>128</sup> See U.N. General Assembly, Human Rights Council Res. 32/33, U.N. Doc. A/HRC/RES/32/33 (July 18, 2016), available at <https://documents-dds-ny.un.org/doc/UNDOC/GEN/G16/157/72/PDF/G1615772.pdf?OpenElement>.

<sup>129</sup> Office of the Prosecutor, *Policy Paper on Case Selection and Prioritisation* 13–14, Int’l Criminal Court, Sept. 15, 2016, available at [https://www.icc-cpi.int/itemsDocuments/20160915\\_OTP-Policy\\_Case-Selection\\_Eng.pdf](https://www.icc-cpi.int/itemsDocuments/20160915_OTP-Policy_Case-Selection_Eng.pdf).

<sup>130</sup> *Urgenda Found. v. The State of the Netherlands*, C/09/456689/HA ZA 13-1396 (June 24, 2015), ¶¶ 4.63–4.83, available at [https://elaw.org/system/files/urgenda\\_0.pdf](https://elaw.org/system/files/urgenda_0.pdf).

Netherlands government must further reduce greenhouse gas emissions to meet its obligations to its citizens.<sup>131</sup>

118. Through these actions, a consensus of nations has recognized a governmental responsibility not to endanger life, including the fundamental right to a life-sustaining climate system. Rolling back environmental protections is contrary to this consensus, as it recklessly exposes Plaintiffs to the harms caused by manmade contributions to climate change based on junk science.

#### **E. The War on Science**

119. Since January 2017, the Federal Government has engaged in a war on science by censoring scientific inquiry, attacking internationally accepted facts and data, slashing the budget for programs intended to protect the environment, and appointing climate change deniers to key positions.

120. As a private citizen, candidate, and President, Defendant Trump has repeatedly denied the existence of climate change and referred to global warming as an “expensive hoax,” in contravention of globally accepted scientific conclusions.<sup>132</sup>

121. Defendant Trump’s public denial of climate change dates back to February 2010, when he reportedly stated, “With the coldest winter ever recorded, with snow setting record levels up and down the coast, . . . Gore wants us to clean up our factories and plants in order to protect us from global warming, when China and other countries couldn’t care less. It would

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<sup>131</sup> *Id.* at ¶ 5.1.

<sup>132</sup> Donald J. Trump (@realDonaldTrump), Twitter (Dec. 6, 2013, 10:38 AM), <https://twitter.com/realdonaldtrump/status/408983789830815744?lang=en>; Peter Baker, *Does Trump Still Think Climate Change is a Hoax? No One Can Say*, N.Y. Times, June 2, 2017, <https://nyti.ms/2rAPzsh>.



make us totally noncompetitive in the manufacturing world, and China, Japan and India are laughing at America's stupidity."<sup>133</sup>

122. In fact, between November 1, 2011, and June 1, 2017, Defendant Trump has tweeted about his unfounded beliefs as a climate change denier and conspiracy theorist at least 115 times.<sup>134</sup>

123. For example, in 2012, Defendant Trump sent out a series of tweets rejecting mainstream climate science,<sup>135</sup> culminating in a November 6, 2012 tweet stating that the concept of climate change was created by the Chinese in order to gain a manufacturing advantage over the United States.

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<sup>133</sup> *Trump Cool to Global Warming*, Page Six, Feb. 14, 2010, <http://pagesix.com/2010/02/14/trump-cool-to-global-warming/>. While the United States Government has abandoned its responsibility to reduce climate change, China and India have halted construction of coal-fired power plants and increased development of renewable energy. As a result, both countries are on pace to surpass their obligations under the Paris Agreement. See Niklas Hohne et al., *Action by China and India slows emissions growth, President Trump's policies likely to cause US emissions to flatten*, May 15, 2017, [http://climateactiontracker.org/assets/publications/briefing\\_papers/CAT\\_2017-05-15\\_Briefing\\_India-China-USA.pdf](http://climateactiontracker.org/assets/publications/briefing_papers/CAT_2017-05-15_Briefing_India-China-USA.pdf).

<sup>134</sup> Dylan Matthews, *Donald Trump has tweeted climate change skepticism 115 times. Here's all of it.*, Vox, June 1, 2017, <https://www.vox.com/policy-and-politics/2017/6/1/15726472/trump-tweets-global-warming-paris-climate-agreement>.

<sup>135</sup> See, e.g., Donald J. Trump (@realDonaldTrump), Twitter (Mar. 28, 2012 11:43 AM), <https://twitter.com/realdonaldtrump/status/185074709111644160> ("Global warming has been proven to be a canard repeatedly over and over again. The left needs a dose of reality") (linking to article titled, "Global Warming Models Are Wrong Again"); Donald J. Trump (@realDonaldTrump), Twitter (May 4, 2012 1:13 PM), <https://twitter.com/realdonaldtrump/status/198505724689649664> ("In the 1920's people were worried about global cooling—it never happened. Now it's global warming. Give me a break!"); Donald J. Trump (@realDonaldTrump), Twitter (Nov. 1, 2012 7:23 AM), <https://twitter.com/realdonaldtrump/status/264009741234221058?lang=en> ("Let's continue to destroy the competitiveness of our factories & manufacturing so we can fight mythical global warming. China is so happy!"); Donald J. Trump (@realDonaldTrump), Twitter (Nov. 2, 2012 11:59 AM), <https://twitter.com/realdonaldtrump/status/264441602636906496?lang=en> ("Global warming is based on faulty science and manipulated data which is proven by the emails that were leaked"); Donald J. Trump (@realDonaldTrump), Twitter (Nov. 5, 2012 8:50 AM), <https://twitter.com/realdonaldtrump/status/265496271794630656> ("We can't destroy the competitiveness of our factories in order to prepare for nonexistent global warming. China is thrilled with us!").



124. On January 6, 2014, Defendant Trump appeared by phone as a guest on Fox News' Fox & Friends. When asked about his use of the term "hoax" in the context of climate change, Defendant Trump responded, "Well it's a hoax. I think the scientists are having a lot of fun. . . . The problem we are doing is we are making our manufacturing, our factories and other things, we are making them non-competitive to other countries. And if you look at what's going on in China, if you look at what's going on in India, they are not spending 10 cents in their factories, and then we're supposed to compete. And you can't compete when you can't use fuel."<sup>136</sup>

125. On June 17, 2015, the day after announcing his candidacy for the Republican presidential nomination, Defendant Trump appeared on Sean Hannity's Fox News show, *Hannity*. Defendant Trump and Hannity engaged in the following exchange regarding climate change science:

HANNITY: Do you believe climate change is a science you can --

TRUMP: I'm not a believer in manmade -- look, this planet is so massive. And when I hear Obama saying that climate change is the number one problem it is

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<sup>136</sup> Fox News, *Fox & Friends* (originally aired Jan. 6, 2014), video available at: <https://mediamatters.org/video/2014/01/06/fox-regular-donald-trump-decries-climate-change/197432>.

just madness. And by the way it started this global cooling, I mean we went through global warming --

HANNITY: Ice age.

TRUMP: -- global cooling --

HANNITY: Now it's just climate change.

TRUMP: They don't even know. Now they just call it -- no, they call it extreme weather.

HANNITY: Yes.

TRUMP: You know, they've now reduced it to extreme weather so.<sup>137</sup>

126. On September 21, 2015, during an appearance on Hugh Hewitt's radio show, Trump admitted he did not believe the global scientific consensus on climate change, conceding, "I'm not a believer in man-made global warming. . . . I believe there's weather, I believe there's change, and I believe it goes up and it goes down and it goes up again, and it changes depending on years and centuries, but I am not a believer. And we have much bigger problems."<sup>138</sup>

127. On May 5, 2016, Defendant Trump announced his "100-day action plan." Pursuant to his "America First Energy Plan," Trump committed to rescind "all the job-destroying Obama executive actions including the Climate Action Plan and the Waters of the U.S. rule," save "the coal industry and other industries threatened by Hillary Clinton's extremist agenda," and "cancel the Paris Climate Agreement and stop all payments of U.S. tax dollars to U.N. global warming programs."<sup>139</sup>

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<sup>137</sup> Fox News, *Hannity* (originally aired June 17, 2015), *Exclusive: Donald Trump on What Made Him Run for President on 'Hannity,'* transcript available at <http://www.foxnews.com/transcript/2015/06/18/exclusive-donald-trump-on-what-made-him-run-for-president-on-hannity.html>.

<sup>138</sup> *Hugh Hewitt Show* (Sept. 21, 2015), <https://www.youtube.com/watch?v=rfrpSzEPx7I>.

<sup>139</sup> Donald J. Trump for President, *An America First Energy Plan*, May 26, 2016,

128. After the general election, on November 27, 2016, incoming White House Chief of Staff Reince Priebus spoke on behalf of Defendant Trump, explaining, “as far as this issue on climate change . . . he has his default position, which most of it is a bunch of bunk, but he’ll have an open mind and listen to people.”<sup>140</sup>

129. Defendant Trump appointed Defendant Scott Pruitt, another outspoken climate change denier, to lead EPA. Pruitt has solicited advice from climate change contrarian organization the Heartland Institute and has made little effort to meet with environmental groups since his appointment, focusing instead on appeasing the leaders of industries EPA was created to regulate.<sup>141</sup>

130. When Defendant Trump addressed Congress in early 2017, he stated, “We have undertaken a historic effort to massively reduce job-crushing regulations, creating a deregulation task force inside of every government agency. . . . We’re going to stop the regulations that threaten the future and livelihood of our great coal miners.”<sup>142</sup>

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<https://www.donaldjtrump.com/press-releases/an-america-first-energy-plan>.

<sup>140</sup> Fox News Sunday, *Reince Priebus on Trump’s Stance on Cuba, Cabinet Picks; Rep. Tim Ryan on Why He’s Challenging Nancy Pelosi*, Nov. 27, 2016, transcript available at <http://www.foxnews.com/transcript/2016/11/27/reince-priebus-on-trump-stance-on-cuba-cabinet-picks-rep-tim-ryan-on-why.html>.

<sup>141</sup> See Zack Colman, *CLEAN POWER PLAN: Pruitt is poised to kill the climate rule. What’s next?*, E&E News, Oct. 4, 2017, <https://www.eenews.net/climatewire/stories/1060062491/feed> (noting “the numerous meetings Pruitt has had with industry officials he regulates compared with almost no environmental groups” and “his questioning of whether humans and carbon dioxide are major contributors to climate change”); Eric Lipton, *EPA Chief’s Calendar: A Stream of Industry Meetings and Trips Home*, N.Y. Times, Oct. 3, 2017, <https://www.nytimes.com/2017/10/03/us/politics/epa-scott-pruitt-calendar-industries-coal-oil-environmentalists.html>.

<sup>142</sup> The White House, *Remarks by President Trump in Joint Address to Congress*, Feb. 28, 2017, <https://www.whitehouse.gov/the-press-office/2017/02/28/remarks-president-trump-joint-address-congress>.

## F. The Rollbacks

131. Despite the overwhelming scientific evidence that climate change presents imminent dangers to life, the Federal Government has recently embarked on a sweeping war on science with potentially devastating and irreversible effects.<sup>143</sup>

132. The federal rules and regulations that existed as of January 1, 2017, represented a necessary minimum effort by the Government to address, understand, and respond to United States contribution to climate change. Rolling back, weakening, revoking, or rescinding those regulations and laws increases the clear and present dangers of climate change and its life-endangering effects.

133. Since January 2017, the Federal Government has sought to reverse the following environmental rules, policies, and regulations previously promulgated to protect United States citizens and the planet from the imminent consequences of climate change<sup>144</sup>:

- a. Participation in the Paris Climate Agreement, under which the United States had pledged to cut emissions by 26% to 28% below 2005 levels by 2025<sup>145</sup>;
- b. The requirement that oil and gas companies report methane gas emissions (revoked by Defendant Pruitt in March 2017)<sup>146</sup>;

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<sup>143</sup> See generally Editorial Board, *President Trump's War on Science*, N.Y. Times, Sept. 9, 2017, <https://www.nytimes.com/2017/09/09/opinion/sunday/trump-epa-pruitt-science.html>. As merely one example, John Konkus of EPA is tasked with attempting “to eliminate the ‘double C-word,’ meaning ‘climate change’ from the agency’s research grant solicitations.” *Id.*

<sup>144</sup> See Nadja Popovich & Livia Albeck-Ripka, *52 Environmental Rules on the Way Out Under Trump*, N.Y. Times, Oct. 6, 2017, <https://www.nytimes.com/interactive/2017/10/05/climate/trump-environment-rules-reversed.html>.

<sup>145</sup> Brad Plumer, *Q. & A.: The Paris Climate Accord*, N.Y. Times, May 31, 2017, <https://www.nytimes.com/2017/05/31/climate/qa-the-paris-climate-accord.html> (The Federal Government has formally notified the United Nations of its intent to withdraw, but it cannot complete the process until late 2020).

<sup>146</sup> Press Release, U.S. EPA, *EPA Withdraws Information Request for the Oil and Gas Industry*, Mar. 2,

- c. The rule that prevented coal companies from dumping mining debris into local streams (Congress passed a bill revoking the rule in February, which Defendant Trump signed into law)<sup>147</sup>;
- d. The decision on Keystone XL pipeline, reversing course and approving the pipeline company's permit in March 2017<sup>148</sup>;
- e. The Outer Continental Shelf Lands Act which banned offshore drilling along parts of the Atlantic coast and much of the ocean around Alaska (offshore drilling ban reversed via an April Executive Order)<sup>149</sup>;
- f. Guidance for federal agencies to include greenhouse gas emissions in environmental reviews and to account for possible climate effects in environmental impact reviews<sup>150</sup>;
- g. Participation in the Green Climate Fund, a United Nations program that helps developing countries reduce emissions and adapt to climate change, despite the Federal Government's remaining \$2 billion pledge<sup>151</sup>;

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2017, <https://www.epa.gov/newsreleases/epa-withdraws-information-request-oil-and-gas-industry>.

<sup>147</sup> Devin Henry, *Trump signs bill undoing Obama coal mining rule*, The Hill, Feb. 16, 2017, <http://thehill.com/policy/energy-environment/319938-trump-signs-bill-undoing-obama-coal-mining-rule>.

<sup>148</sup> Jason Slotkin, *U.S. State Department Issues Permit for Keystone XL Pipeline*, NPR, Mar. 23, 2017, <http://www.npr.org/sections/thetwo-way/2017/03/23/521305788/state-department-set-to-certify-keystone-xl-pipeline-is-in-national-interest>.

<sup>149</sup> Nathan Rott, *Trump Signs Executive Order On Offshore Drilling And Marine Sanctuaries*, NPR, Apr. 27, 2017, <http://www.npr.org/sections/thetwo-way/2017/04/27/525959808/trump-to-sign-executive-order-on-offshore-drilling-and-marine-sanctuaries>.

<sup>150</sup> Withdrawal of Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews, 82 Fed. Reg. 16,576 (Apr. 5, 2017).

<sup>151</sup> Nurith Aizenman, *A Little-Known Climate Fund is Suddenly in the Spotlight*, NPR, June 9, 2017, <http://www.npr.org/sections/goatsandsoda/2017/06/09/532106567/a-little-known-climate-fund-is-suddenly-in-the-spotlight>.

- h. The 2016 order to consider climate change in managing natural resources in national parks (rescinded in August 2017 by the National Park Service in order to eliminate confusion among the public and National Parks Service employees regarding the Bureau of Land Management’s “new vision” for America’s parks)<sup>152</sup>;
- i. A fuel-efficiency standards review for car and truck model years 2021 through 2025 (EPA and the Department of Transportation have reopened the review and are also considering easing penalties on automakers who do not comply with the federal standards)<sup>153</sup>;
- j. A rule on toxic discharge from power plants into public waterways, which limited the amount of toxic metals—arsenic, lead and mercury, among others—power plants could release into public waterways (postponed in September 2017 by Defendant Pruitt until 2020)<sup>154</sup>; and
- k. The Bureau of Land Management’s public land use updated planning rule for public lands (revoked by Congress and signed into law by Defendant Trump).<sup>155</sup>

134. On March 16, 2017, Defendant Trump introduced “America First – A Budget Blueprint to Make America Great Again,” which proposed major funding cuts to every agency

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<sup>152</sup> See Popovich & Albeck-Ripka, *supra* note 144.

<sup>153</sup> Rob Hotakainen, *NPS chief scraps climate-focused order*, E&E News, Aug. 31, 2017, <https://www.eenews.net/stories/1060059511>.

<sup>154</sup> Timothy Cama, *EPA delays toxic waste rules for power plants*, The Hill, Sept. 13, 2017, <http://thehill.com/policy/energy-environment/350531-epa-delays-toxic-waste-rule-for-power-plants>.

<sup>155</sup> U.S. Senate Committee on Energy & Natural Resources, *President Trump Signs Measure Repealing BLM Planning 2.0 Rule*, Mar. 27, 2017, <https://www.energy.senate.gov/public/index.cfm/republican-news?ID=BA487B45-1865-4C0A-B1E0-AD55E4FC9977>.

involved in combatting climate change, such as EPA, NASA, and NOAA. For example, EPA faces a 31% budget cut, the highest proposed budget cut of any federal agency.<sup>156</sup> The proposed federal budget “[d]iscontinues funding for the Clean Power Plan, international climate change programs, climate change research and partnership programs, and related efforts,” which would reduce critical funding in these areas by more than \$100 million.<sup>157</sup>

135. On March 28, 2017, Defendant Trump issued the “Presidential Executive Order on Promoting Energy Independence and Economic Growth” (the “Executive Order”).<sup>158</sup> To date, the following consequences of the Executive Order have already taken effect:

- a. The Executive Order directed EPA to immediately review the Clean Power Plan, which established strict carbon emission limits for existing fossil fuel-fired power plants. The Order instructs EPA to initiate new notice-and-comment rulemaking “as appropriate” to suspend, revise, or rescind the Clean Power Plan. It also directs the Attorney General to request a stay “or otherwise delay further litigation” relating to the Clean Power Plan pending the implementation of the Executive Order.<sup>159</sup> In October 2017, EPA proposed repealing the Plan, and the proposal is currently open to public comments.
- b. The Executive Order revoked a Federal Government memorandum that instructed

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<sup>156</sup> Office of Management and Budget, *America First: A Budget Blueprint to Make America Great Again* 41, May 2017, available at [https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/budget/fy2018/2018\\_blueprint.pdf](https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/budget/fy2018/2018_blueprint.pdf), .

<sup>157</sup> *Id.*

<sup>158</sup> The White House, Office of the Press Secretary, *Presidential Executive Order on Promoting Energy and Independence and Growth*, Mar. 28, 2017, <https://www.whitehouse.gov/the-press-office/2017/03/28/presidential-executive-order-promoting-energy-independence-and-economy-1>.

<sup>159</sup> *Id.* § 4(d).



five federal agencies to avoid and then minimize the impacts of development on water, wildlife, land, and other natural resources.<sup>160</sup>

- c. The Executive Order directed agencies to stop using the “social cost of carbon” calculation that helped rulemakers monetize the costs of carbon emissions and instructed them to instead base their estimates on a 2003 cost-benefit analysis.

The Order also disbanded the working group that created estimates for the social cost of carbon and directed the Attorney General to request a stay litigation involving these standards pending the Order’s implementation.<sup>161</sup>

- d. The Executive Order directed DOI to amend or withdraw Secretarial Order 3338 (dated January 15, 2016), which called for a programmatic environmental review and modernization of the federal coal leasing program, and to lift the moratorium on federal coal leasing.<sup>162</sup>

136. According to Trump Administration officials, the primary purpose of the Executive Order was to “curb the federal government’s enforcement of climate regulations by putting American jobs above addressing climate change.”<sup>163</sup> During the ceremonial signing at EPA, Defendant Trump referenced his campaign promises, emphasizing that the Executive Order will follow through on his promises to “eliminate federal overreach,” “start a new era of

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<sup>160</sup> *Id.* § 3(a)(iii); see also The White House, Office of the Press Secretary, *Presidential Memorandum: Mitigating Impacts on Natural Resources from Development & Encouraging Related Private Investment* § 1, Nov. 3, 2015, <https://obamawhitehouse.archives.gov/the-press-office/2015/11/03/mitigating-impacts-natural-resources-development-and-encouraging-related>.

<sup>161</sup> March 28, 2017 Executive Order, *supra* note 158 § 5.

<sup>162</sup> *Id.* § 6.

<sup>163</sup> Dan Merica, *Trump Dramatically Changes US Approach to Climate Change*, CNN, Mar. 29, 2017, <http://www.cnn.com/2017/03/27/politics/trump-climate-change-executive-order/>.

production,” “grow American jobs,” and “[end] the theft of prosperity.”<sup>164</sup>

137. When asked about the environmental impact of the Executive Order, a White House official commented, “the President has been very clear that he is not going to pursue climate change policies that put the US economy at risk. It is very simple.”<sup>165</sup> In addition, the official was reluctant to say whether all Trump Administration officials believe that anthropogenic sources cause climate change.<sup>166</sup>

138. Before the signing of the Executive Order, during a joint Press Briefing with then-Press Secretary Sean Spicer and White House Budget Director Mick Mulvaney, a member of the press asked Mulvaney to “explain a little bit more about what message the President is trying to send by eliminating a lot of funding for science and climate change research.” Mulvaney responded, “Regarding the question as to climate change, I think the President was fairly straightforward – we’re not spending money on that anymore; we consider that to be a waste of your money to go out and do that. So that is a specific tie to his campaign.”<sup>167</sup>

139. In conjunction with releasing the Executive Order, the White House issued a Press Release purporting to explain the contents of the Executive Order.<sup>168</sup> The Press Release contained a number of allegations that environmental experts immediately identified as false and misleading, concluding “that the Trump administration rejects sound climate science and

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<sup>164</sup> *Id.*

<sup>165</sup> *Id.*

<sup>166</sup> *Id.*

<sup>167</sup> The White House, *Press Briefing by Press Secretary Sean Spicer, #25*, Mar. 16, 2017, <https://www.whitehouse.gov/the-press-office/2017/03/16/press-briefing-press-secretary-sean-spicer-3162017-25>.

<sup>168</sup> The White House, Office of the Press Secretary, *President Trump’s Energy Independence Policy*, March 28, 2017, <https://www.whitehouse.gov/the-press-office/2017/03/28/president-trumps-energy-independence-policy>.

economics.”<sup>169</sup> These misrepresentations included the misleading claim that the government’s actions would contribute to “energy independence,” even though reliance on energy imports is already at some of the lowest levels in the last 40 years, and a reliance on a faulty report from NERA Economic Consulting, paid for by the coal industry, that incorrectly overestimated the cost of the Clean Power Plan.<sup>170</sup>

140. In May 2017, Defendant Pruitt fired half of the scientists from EPA’s Board of Scientific Counselors, to be replaced with advisers “who understand the impact of regulations on the regulated community.”<sup>171</sup> Even more scientists were removed from the board in June.<sup>172</sup> These actions undermine the agency’s ability to pursue necessary scientific inquiry and demonstrate its intention to act contrary to the scientific consensus on climate change.

141. In addition, EPA has removed its climate science website—previously an important source of scientifically vetted information regarding the causes and effects of climate change—from public view.<sup>173</sup>

142. The Department of Energy has similarly eliminated the words “clean energy” and

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<sup>169</sup> David Doniger, *Decoding President Trump’s Climate Destruction Plan*, Natural Resources Defense Council, Mar. 31, 2017, <https://www.nrdc.org/experts/david-doniger/decoding-president-trumps-climate-destruction-plan>.

<sup>170</sup> *Id.*

<sup>171</sup> Coral Davenport, *E.P.A. Dismisses Members of Major Scientific Review Board*, N.Y. Times, May 7, 2017, [https://www.nytimes.com/2017/05/07/us/politics/epa-dismisses-members-of-major-scientific-review-board.html?\\_r=0](https://www.nytimes.com/2017/05/07/us/politics/epa-dismisses-members-of-major-scientific-review-board.html?_r=0); Aria Bendix, *EPA Says Goodbye to Half Its Scientific Board*, The Atlantic, May 9, 2017, <https://www.theatlantic.com/news/archive/2017/05/epa-dismisses-half-the-scientists-on-its-review-board/525909/>.

<sup>172</sup> Chris Mooney & Juliet Eilperin, *EPA just gave notice to dozens of scientific advisory board members that their time is up*, Wash. Post, June 20, 2017, [https://www.washingtonpost.com/news/energy-environment/wp/2017/06/20/trump-administration-to-decline-to-renew-dozens-of-scientists-for-key-epa-advisory-board/?utm\\_term=.a08402025a18](https://www.washingtonpost.com/news/energy-environment/wp/2017/06/20/trump-administration-to-decline-to-renew-dozens-of-scientists-for-key-epa-advisory-board/?utm_term=.a08402025a18).

<sup>173</sup> Lisa Friedman, *E.P.A. Scrubs a Climate Website of “Climate Change,”* N.Y. Times, Oct. 20, 2017, <https://www.nytimes.com/2017/10/20/climate/epa-climate-change.html>.

“new energy” from its websites and has cut links to clean or renewable energy initiatives and programs.<sup>174</sup>

143. In June 2017, Pruitt called for a “Red Team/Blue Team” exercise to conduct an “at-length evaluation of U.S. climate science,” to give the 3% of climate scientists who do not support the consensus that human activities contribute significantly to climate change, equal weight to the 97% of scientists who do support the consensus view.<sup>175</sup> Commentators have remarked, “When Pruitt says he wants to ‘red team and blue team’ the climate science, that’s a great example of trying to shift the understanding of the science . . . . That’s very hard to come back from.”<sup>176</sup>

144. In August 2017, the National Oceanic and Atmospheric Administration (NOAA) dissolved its climate science advisory committee.<sup>177</sup>

145. EPA also ended the Climate Leadership Program, which had awarded corporations for taking actions to reduce their greenhouse gas emissions.<sup>178</sup>

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<sup>174</sup> Christa Marshall, *Agency axes ‘clean energy’ from tech websites*, E&E News, May 30, 2017, <https://www.eenews.net/stories/1060055293>.

<sup>175</sup> See Clark Mindock, *EPA launches new unit to ‘critique’ climate science*, Independent, June 30, 2017, <http://www.independent.co.uk/news/world-0/us-politics/epa-climate-change-critique-initiative-scott-pruitt-a7817836.html>; NASA Global Climate Change, *Scientific consensus: Earth’s climate is warming*, <https://climate.nasa.gov/scientific-consensus/>.

<sup>176</sup> Colman, *supra* note 141 (quoting Jody Freeman, a White House official under President Obama who now teaches at Harvard Law School).

<sup>177</sup> Rene Marsh, *Trump administration dismisses climate change advisory panel*, CNN, Aug. 21, 2017, <http://www.cnn.com/2017/08/21/politics/white-house-climate-change-committee-dismantled/index.html>; Juliet Eilperin, *The Trump administration just disbanded a federal advisory committee on climate change*, Wash. Post, Aug. 20, 2017, [https://www.washingtonpost.com/news/energy-environment/wp/2017/08/20/the-trump-administration-just-disbanded-a-federal-advisory-committee-on-climate-change/?utm\\_term=.37990230f670](https://www.washingtonpost.com/news/energy-environment/wp/2017/08/20/the-trump-administration-just-disbanded-a-federal-advisory-committee-on-climate-change/?utm_term=.37990230f670).

<sup>178</sup> Valerie Volcovici, *EPA ends sponsorship of climate leadership program*, Reuters, Aug. 25, 2017, <https://www.reuters.com/article/us-usa-climatechange-epa/epa-ends-sponsorship-of-climate-leadership-program-idUSKCN1B52PK>.

146. In September 2017, EPA reduced its staff by nearly 400 workers, largely through buyouts.<sup>179</sup> The number of EPA staff could soon fall to its lowest level in almost 30 years.<sup>180</sup>

147. Most recently, Defendant Pruitt issued a rule that prohibits EPA from allowing climate scientists to serve on the Science Advisory Board if they have ever received a grant from EPA, effectively barring many academic researchers from serving on the board, because EPA is a major source of funding for environmental research.<sup>181</sup> Defendant Pruitt has replaced these researchers with appointees with ties to the industries that EPA is responsible for regulating, including current and former executives of gas companies and chemical manufacturers, and he has given no indication that he will impose rules to address that conflict of interest.<sup>182</sup>

148. As reflected in White House Budget Director Mulvaney's comments, the Federal Government seeks to terminate all federal efforts and funding related to: (a) studying climate change science; (b) limiting the effects of climate change; (c) and supporting communities faced with the consequences of climate change.<sup>183</sup>

**G. The Rollbacks Increase the Clear and Present Dangers of Climate Change**

149. The Rollbacks exacerbate climate change and its effects, exposing the population to present and future threats to life and life-sustaining resources based on junk science.

150. The Federal Government's attempt to dismantle key federal efforts to address

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<sup>179</sup> Timothy Puko, *Hundreds of EPA Workers Leave in Recent Days*, Wall St. J., Sept. 5, 2017, <https://www.wsj.com/articles/hundreds-of-epa-workers-leave-in-recent-days-1504660207>.

<sup>180</sup> *Id.*

<sup>181</sup> Lisa Friedman, *Pruitt Bars Some Scientists From Advising E.P.A.*, N.Y. Times, Oct. 31, 2017, <https://www.nytimes.com/2017/10/31/climate/pruitt-epa-science-advisory-boards.html>.

<sup>182</sup> *Id.*; Suzy Khimm & Andrew Rafferty, *Pruitt Makes EPA Science Board More Industry Friendly*, NBC News, Nov. 3, 2017, <https://www.nbcnews.com/politics/white-house/pruitt-makes-epa-science-board-more-industry-friendly-n817276>.

<sup>183</sup> See *Press Briefing by Press Secretary Sean Spicer, #25*, *supra* note 167.

climate change are knowingly and recklessly indifferent to the risk of increasing the clear and present danger of climate change to United States citizens.

151. Climate change has already damaged human and natural systems, causing loss of life and pressing species to extinction. Informed by international scientific consensus, all current environmental regulations seek to prevent increasingly severe impacts on our nation and others as a result of climate change. The Federal Government “aver[red] that the consequences of climate change are already occurring and, in general, those consequences will become more severe with more fossil fuel emissions.”<sup>184</sup>

152. During the last decade, the Federal Government has repeatedly stated that allowing “business as usual” CO<sub>2</sub> emissions will imperil future generations with dangerous and unacceptable economic, social, and environmental risks. As detailed herein, and as Defendants have acknowledged,<sup>185</sup> the use of fossil fuels is a major source of CO<sub>2</sub> emissions, placing our nation on an increasingly costly, insecure, and environmentally dangerous path.

153. The Federal Government is now attempting to dismantle key rules and regulations that currently promote clean and safe development of energy sources.

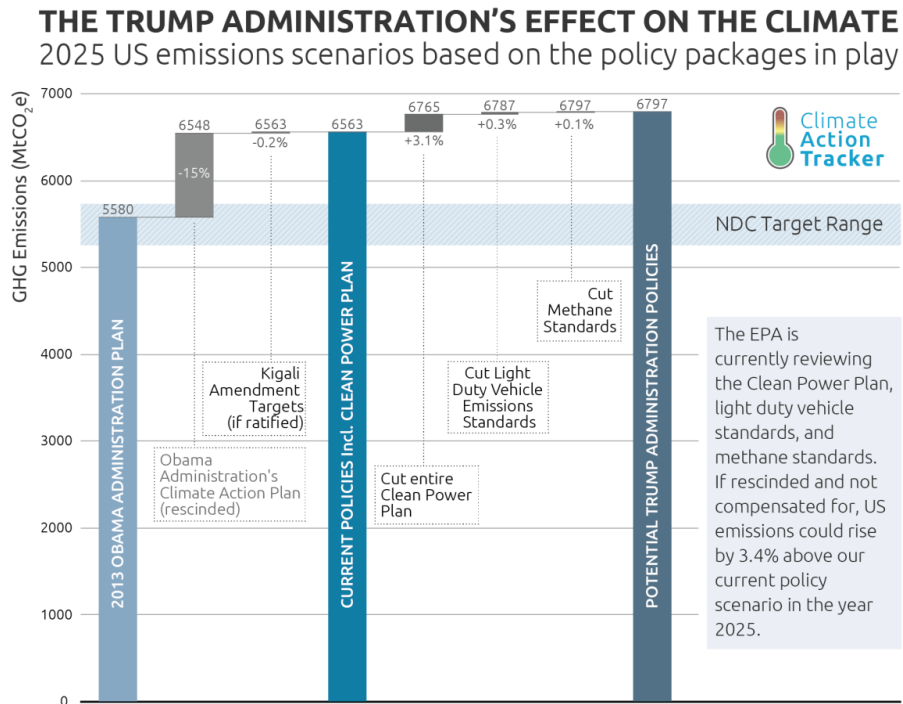
154. According to an analysis conducted by climate analysts, the combined effect of the Rollbacks will result in a 3.4% rise in greenhouse gas emissions.<sup>186</sup>

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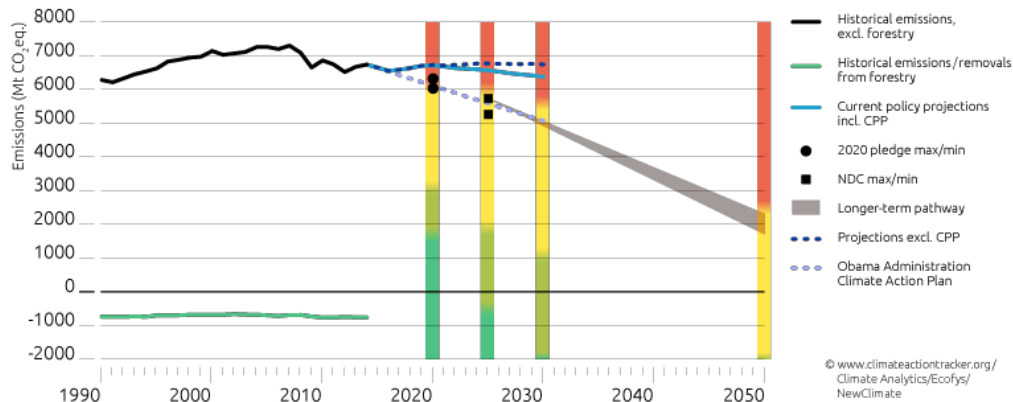
<sup>184</sup> *Juliana* Answer ¶ 10.

<sup>185</sup> *Id.* ¶ 7.

<sup>186</sup> Hohne et al., *supra* note 133.



155. This will cause United States emissions, which had been projected to decline under prior environmental standards, to instead steadily increase.<sup>187</sup>



156. The Federal Government now encourages the use of fossil fuels as the primary energy source in the United States. Fossil fuels are the main contributor to harmful CO<sub>2</sub>

<sup>187</sup> *Id.*

emissions,<sup>188</sup> and they are no longer the most affordable source of energy.<sup>189</sup>

157. Civilization and the water sources, crops, foods, wildlife, marine life, and coastlines on which people depend have developed within a very narrow set of climatic conditions. Prior to January 2017, it would have been difficult for the Federal Government to adapt to all of the current climate change impacts in the quick time-frame in which they will occur. As a result of the Rollbacks, that is now impossible.

## VI. CLAIMS FOR RELIEF

### *FIRST CAUSE OF ACTION*

#### *(Violation of the Due Process Clause of the Fifth Amendment)*

158. Plaintiffs hereby re-allege and incorporate by reference each of the allegations set forth above.

159. The Constitution recognizes and preserves the fundamental right of citizens to be

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<sup>188</sup> For example, the coal moratorium helped limit the United States' contribution to climate change by keeping carbon-emitting fossil fuels in the ground. Approximately 40% of all coal produced in the United States is mined on federal land. Christina Nunez, *Why Does So Much U.S. Coal Come from Federal Land?*, Nat'l Geographic, Jan. 15, 2016, <http://news.nationalgeographic.com/energy/2016/01/150115-coal-lease-pause-federal-land-interior/>. Burning coal for power is one of the largest single contributors of greenhouse gases. According to a Programmatic Environmental Impact Statement conducted by the United States government in January 2017, coal production and combustion accounted for approximately 25% of the United States' greenhouse gas emissions. See U.S. DOI, *Federal Coal Program: Programmatic Environmental Impact Statement*, Jan. 2017, available at [https://www.eenews.net/assets/2017/01/11/document\\_gw\\_02.pdf](https://www.eenews.net/assets/2017/01/11/document_gw_02.pdf). A recent study by the Center for American Progress and the Wilderness Society found that coal harvested in the Powder River basin, the country's largest coal-producing region, accounts for 13% of all United States greenhouse gas emissions. Nidhi Thakar & Michael Madowitz, *Federal Coal Leasing in the Powder River Basin*, Center for American Progress, Jul. 29, 2014, <https://www.americanprogress.org/issues/green/reports/2014/07/29/94204/federal-coal-leasing-in-the-powder-river-basin/>. Greenpeace further found that federal coal leases resulted in the production of 2.2 billion tons of coal, accounting for 3.9 billion metric tons of carbon pollution—more than the emissions from the entire European Union in 2012. See *Leasing Coal, Fueling Climate Change*, Greenpeace, Jul. 23, 2014, <http://www.greenpeace.org/usa/research/leasing-coal-fueling-climate-change/>.

<sup>189</sup> See, e.g., Michael J. Coren, *2016 was the year solar panels finally became cheaper than fossil fuels. Just wait for 2017*, Quartz, Dec. 26, 2016, <https://qz.com/871907/2016-was-the-year-solar-panels-finally-became-cheaper-than-fossil-fuels-just-wait-for-2017/>.



free from government actions that harm life, liberty, and property. The rights to life, liberty, and property have evolved and continue to evolve as technological advances pose new threats to these fundamental rights and as new insights reveal discord between the Constitution's central protections and the conduct of government. As set forth in the Preamble of the Constitution, these rights belong to present generations as well to our "Posterity" (or future generations).

160. "The identification and protection of fundamental rights is an enduring part of the judicial duty to interpret the Constitution."<sup>190</sup>

161. Courts should be guided by customary international law and international human rights law when determining fundamental rights. A consensus of nations has recognized a governmental responsibility not to endanger life, including the fundamental right to a life-sustaining climate system.

162. In addition, nearly half of all United States State Constitutions now include environmental provisions, with at least sixteen recognizing substantive constitutional rights to a healthy, stable, or quality environment.<sup>191</sup>

163. The affirmative aggregate acts of Defendants in promulgating the Rollbacks infringe on Plaintiffs' right to a life-sustaining climate system by increasing dangerous CO<sub>2</sub> concentrations in our nation's atmosphere.

164. The Rollbacks will cause irreversible and catastrophic harm to the natural systems critical to Plaintiffs' rights to life, liberty, and property.

165. The Rollbacks will cause human deaths, shorten human lifespans, result in

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<sup>190</sup> *Obergefell v. Hodges*, 576 U.S. \_\_\_, 135 S. Ct. 2584, 2598 (2015).

<sup>191</sup> James R. May & William Romanowicz, *Environmental Rights in State Constitutions*, Principles of Constitutional Environmental Law 305, 306 (Sept. 23, 2011).

widespread damage to property, threaten human food sources, and dramatically alter the planet's ecosystem, thereby violating Plaintiffs' fundamental right to a life-sustaining climate system.

166. In light of the Government's longstanding knowledge of climate change, Defendants have an obligation not to endanger Plaintiffs' fundamental right to a life-sustaining climate system.

167. Increased CO<sub>2</sub> concentrations in the atmosphere jeopardize Plaintiffs' welfare by diminishing their capacity to provide for their basic human needs, safely raise families, practice their religious and spiritual beliefs, maintain their bodily integrity, and lead lives with access to clean air, water, shelter, and food.

168. The conduct, if not fundamentally altered, will have even worse consequences for future generations.

169. Acting with full appreciation of the consequences of their acts, Defendants have knowingly increased the dangerous interference with our atmosphere and climate system.

170. Defendants have acted with knowing and deliberate indifference to the clear and present and potentially irreversible dangers of the Rollbacks. As described at length herein, these risks are so substantial as to shock the conscience. In spite of their longstanding, actual knowledge of the serious risks of harm, Defendants have engaged in actions that they know will increase the risks to Plaintiffs.

171. By exercising sovereignty over the air space and the federal public domain, by assuming authority and regulatory responsibility over fossil fuels, and by allowing and permitting fossil fuel production, consumption, and its associated CO<sub>2</sub> pollution, Defendants have also assumed custodial responsibilities over the climate system within its jurisdiction and influence.

172. In assuming control of our nation's atmosphere, air space, the federal domain, fossil fuels, and climate system, Defendants have imposed severe limitations on Plaintiffs' freedom to act on their own behalf to secure a life-sustaining climate system and, therefore, have a special relationship with Plaintiffs, and a concomitant duty of care to ensure their reasonable safety.

173. By Defendants' affirmative acts resulting in dangerous interference with a stable climate system, they have abrogated their duty of care to protect, and infringed on, Plaintiffs' fundamental rights to life, liberty, and property. In their custodial role, Defendants have, without due process, endangered Plaintiffs' lives in violation of the Fifth Amendment.

174. Protecting the life-sustaining climate systems of our nation for present and future generations is fundamental to our scheme of ordered liberty. Without a life-sustaining climate system, both liberty and justice are in peril. Among the implicit liberties protected from government intrusion by the Ninth Amendment is the right to be sustained by our country's vital natural systems, including our climate system.

175. Fundamental to our scheme of ordered liberty, therefore, is the implied governmental obligation not to endanger life, including the right to a life-sustaining climate system and an atmosphere and oceans that are free from dangerous levels of anthropogenic CO<sub>2</sub>. Plaintiffs hold these inherent, inalienable, natural, and fundamental rights pursuant to the Ninth Amendment.

176. The Rollbacks have unconstitutionally caused, and materially contributed to, dangerous levels of atmospheric and oceanic CO<sub>2</sub> and a destabilized climate system, thereby violating Plaintiffs' unenumerated constitutional rights secured by the Ninth Amendment.

**SECOND CAUSE OF ACTION**  
**(Violation of the Public Trust Doctrine)**

177. Plaintiffs hereby re-allege and incorporate by reference each of the allegations set forth above.

178. The public trust doctrine, which is rooted in English common law that can be traced back to Roman civil law and has been part of United States common law since the country was founded, exists to prevent sovereign governments from alienating natural resources that the government holds in a “public trust” for the “common benefit” of all citizens.<sup>192</sup>

179. The United States has taken the position before federal courts that, under the public trust doctrine, the Government holds in trust the “public domain,” which includes “public lands and natural resources on them,”<sup>193</sup> and has “the right and the duty to protect and preserve”<sup>194</sup> those resources.

180. As sovereign trustees, Defendants have a duty to refrain from “substantial impairment” of the public trust, including our country’s life-sustaining climate system.<sup>195</sup>

181. Defendants have implemented Rollbacks that largely eliminate the protections intended to combat the devastating effects of climate change. In doing so, Defendants have engaged in affirmative acts in contravention of their duty of care as trustees to manage the life-sustaining resources of the public trust in the best interests of the present and future beneficiaries of the public trust, including Plaintiffs.

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<sup>192</sup> *Martin v. Waddell’s Lessee*, 41 U.S. 367, 411 (1842).

<sup>193</sup> *See, e.g., United States v. Burlington N. R. Co.*, 710 F. Supp. 1286, 1287 (D. Neb. 1989) (quoting *United States v. Beebe*, 127 U.S. 338, 342 (1888)).

<sup>194</sup> *In re Complaint of Stewart Transportation Company*, 495 F. Supp. 38, 40 (E.D. Va. 1980).

<sup>195</sup> *Illinois Central Railroad Co. v. Illinois*, 146 U.S. 387, 435 (1892).

182. Additionally, as beneficiaries of the public trust, Plaintiffs have a fundamental right to substantive due process protection of the public trust under the Fifth and Ninth Amendments. By promulgating the Rollbacks, Defendants have infringed on Plaintiffs' fundamental rights as beneficiaries of the public trust, including our country's life-sustaining climate system.

**VII. PRAYER FOR RELIEF**

WHEREFORE, Plaintiffs pray that this Court, with all due and deliberate speed:

- a. Declare that Defendants cannot effectuate or promulgate any rollbacks that increase the frequency and/or intensity of the life-threatening effects of climate change based on junk science in violation of Plaintiffs' constitutional rights to a life-sustaining climate system and the public trust doctrine; and
- b. Grant such other and further relief as the Court deems just and proper.

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Respectfully submitted,



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