"No Ordinary Lawsuit": Climate Change, Due Process, and the Public Trust Doctrine

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In November 2016, just two days after the election of President Donald Trump, the federal district court in Oregon handed down Juliana v. Obama, *a remarkable decision that refused to dismiss a lawsuit brought by youth plaintiffs who claimed that the federal government's fossil fuel policies over the years—which have produced an atmosphere with dangerous levels of greenhouse gases (GHGs)—violated the federal public trust doctrine (PTD) and their federal constitutional rights to due process and equal protection. The court found a constitutional right to a stable climate system and also determined that the PTD was an implicit part of due process and enforceable through the Constitution's due process clause. If the youth plaintiffs are able to prove at a forthcoming trial that for decades the government willfully disregarded information about the potential catastrophic effects of GHG pollution, or abdicated its public trust duties, the decision could be a game-changer in global efforts to shift to an energy policy that does not threaten young people and future generations.*

This article examines Juliana, *its context as part of a worldwide campaign of "atmospheric trust" litigation, its path-breaking reasoning, and its implications in the United State and abroad. The case may be—as it has been described—"the case of the century" because of the harm it aims to address and the fundamental rights approach endorsed by the court. Pending the forthcoming trial and almost certain appeals, we think the case is—as the trial judge accurately recognized—"no ordinary lawsuit."*

"I have no doubt that the right to a climate system capable of sustaining human life is fundamental to a free and ordered society."

Judge Anne Aiken[1]

Introduction

With no little irony, as humanity attempts to reverse course before plunging over a climate cliff, the American public elected a president bent on accelerating fossil-fuel production. The year 2016 closed as the hottest year on record; heated ocean waters threaten vast marine ecosystems

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[1] Juliana v. United States, Case No. 6:15-cv-01517-TC, 2016 WL 6661146, at *15 (D. Or. Nov. 10, 2016) [hereinafter *Juliana*].

worldwide.[2] The Arctic sea ice hit its lowest recorded level,[3] and scientists have warned that the massive West Antarctic ice sheet may now be in a process of "unstoppable" disintegration which could ultimately cause ten feet of sea level rise, enough to inundate coastal cities worldwide.[4] The unprecedented urgency of greenhouse gas emission reduction arises out of nature's "tipping points"—thresholds which can trigger dangerous feedback processes that would unleash irreversible, "runaway" heating capable of destroying the balance of the planet's climate system.[5]

In what scientists warn is a last opportunity to avert such climate tipping points, the world must rapidly restrict fossil fuel production and switch to safe renewable energy. Instead, President Trump—who claimed that climate change was a hoax perpetrated by the Chinese[6]—intends to spur production of $50 trillion worth of shale, oil, coal, and natural gas.[7] He ordered agencies to resurrect the Keystone and the Dakota Access Pipelines.[8] He aims to open public land to increased

[2] *See* LuAnn Dahlman, *Climate Change: Ocean Heat*, NOAA (July 14, 2015), https://www.climate.gov/news-features/understanding-climate/climate-change-ocean-heat-content.
[3] *See* Phil Plait, *What the Heck Is Going on at the North Pole?*, SLATE (Nov. 21, 2016, 8:45 AM), http://www.slate.com/blogs/bad_astronomy/2016/11/21/arctic_sea_ice_is_declining_when_it_should_be_growing.html.
[4] *See* Brenda Ekwurzel, *"Unstoppable" Destabilization of West Antarctic Ice Sheet: Threshold May Have Been Crossed,* NATIONAL GEOGRAPHIC (Nov. 3, 2016), http://voices.nationalgeographic.com/2016/11/03/unstoppable-destabilization-of-west-antarctic-ice-sheet-threshold-may-have-been-crossed/; *Miles of Ice Collapsing into the Sea,* THE NEW YORK TIMES (May10, 2017), https://www.nytimes.com/interactive/2017/05/18/climate/antarctica-ice-melt-climate-change.html?_r=0.
[5] *See generally* FRED PEARCE, WITH SPEED AND VIOLENCE: WHY SCIENTISTS FEAR TIPPING POINTS IN CLIMATE CHANGE xxiv–vi (Beacon Press 2007) (describing "unstoppable planetary forces" beyond tipping points and the end of climatic stability).
[6] *See* Edward Wong, *Trump Has Called Climate Change a Chinese Hoax. Beijing Says It Is Anything But.,* N.Y. TIMES (Nov. 18, 2016), http://www.nytimes.com/2016/11/19/world/asia/china-trump-climate-change.html.
[7] *See* Michael Bastasch, *Untapped Energy: Trump Promises a $50 Trillion Economic Stimulus,* THE DAILY CALLER (Sept. 23, 2016, 9:59 AM), http://dailycaller.com/2016/09/23/untapped-energy-trump-promises-a-50-trillion-economic-stimulus.
[8] *See* Steven Mufson & Juliet Eilperin, *Trump Seeks to Revive Dakota Access, Keystone XL Oil Pipelines,* WASH. POST (Jan. 24, 2017), https://www.washingtonpost.com/news/energy-environment/wp/2017/01/24/trump-gives-green-light-to-dakota-access-keystone-xl-oil-pipelines/?utm_term=.3df0c26db41b.

oil and gas drilling and coal production,[9] rescind the Obama Administration's Clean Power Plan,[10] and resume oil and gas leasing on the Arctic and mid-Atlantic continental shelves.[11] Trump has announced American withdrawal from the Paris climate agreement.[12] He selected the CEO of ExxonMobil, Rex Tillerson, as Secretary of State, and a known climate denier, Scott Pruitt, to head the EPA.

The scientific community has clearly warned that continued greenhouse gas (GHG) emissions threaten irreversible atmospheric calamity. Author Fred Pearce stated, "[h]umanity faces a genuinely new situation … a crisis for the entire life-support system of our civilization and our species."[13] The cruel situation for young people is that actions taken during President Trump's time in office may lock in a future of grave climate disruption within their projected lifetimes and sea level rise that could inundate coastal cities around the globe, creating a fundamentally "different planet"—one not hospitable to human survival.[14] Dr. James Hansen, formerly the

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[9] *See* David Roberts & Brad Plumer, *Most People Are Wildly Underestimating What Trump's Win Will Mean For the Environment,* VOX (Nov. 14, 2016, 9:21 AM), http://www.vox.com/science-and-health/2016/11/14/13582562/trump-gop-climate-environmental-policy.

[10] *See* Chelsea Harvey, *Trump Has Vowed to Kill the Clean Power Plan. Here's How He Might – and Might Not – Succeed,* WASH. POST (Nov. 11, 2016), https://www.washingtonpost.com/news/energy-environment/wp/2016/11/11/trump-has-vowed-to-kill-the-clean-power-plan-heres-how-he-might-and-might-not-succeed/?utm_term=.0b3aab601d74.

[11] *See* Oliver Milman, *Trump to Scrap NASA Climate Research in Crackdown on 'Politicized Science,'* THE GUARDIAN (Nov. 23, 2016), https://www.theguardian.com/environment/2016/nov/22/nasa-earth-donald-trump-eliminate-climate-change-research.

[12] *See* Michael D. Shear, *Trump Will Withdraw U.S. from Paris Climate Agreement*, THE NEW YORK TIMES (June 1, 2017), *https://www.nytimes.com/2017/06/01/climate/trump-paris-climate-agreement.html*. The Paris Agreement was signed by 175 countries at the 2015 United Nations Conference on Climate Change.

[13] *See* PEARCE, *supra* note 4, at 239; *see also* Al Gore, *Moving Beyond Kyoto*, N.Y. TIMES (July 1, 2007), http://www.nytimes.com /2007/07/01/opinion/01gore.html ("This is a moral issue, one that affects the survival of human civilization…. Put simply, it is wrong to destroy the habitability of our planet and ruin the prospects of every generation that follows ours.").

[14] *See* Joby Warrick & Chris Mooney, *Effects of Climate Change 'Irreversible,' U.N. Panel Warns in Report,* WASH. POST, (Nov. 2, 2014), https://www.washingtonpost.com/national/health-science/effects-of-climate-change-irreversible-un-panel-warns-in-report/2014/11/01/2d49aeec-6142-11e4-8b9e-2ccdac31a031_story.html?utm_term=.eaca6adae491 (United Nation's panel predicting extreme weather, rising sea levels and melting polar ice from soaring levels of carbon dioxide and other gases); James Hansen et al., *The Case for Young People and Nature: A Path to a Healthy, Natura, Prosperous Future* 10 (2011), http://www.columbia.edu/~jeh1/mailings/2011/20110505_CaseForYoungPeople.pdf ("We cannot burn all of the fossil fuels without producing a different planet, with changes occurring with a rapidity that will make Earth far less

nation's chief climate scientist at NASA, has warned, "Failure to act with all deliberate speed…functionally becomes a decision to eliminate the option of preserving a habitable climate system."[15]

Into this bleak and dangerous picture, groups of youth have stepped forward to defend the atmosphere from dangerous GHG emissions. In cases filed throughout the world over the past few years,[16] they have asked courts to force a government response to the climate crisis and reduce GHG emissions. In late 2016, only two days after the election of President Trump, the children gained a remarkable victory when the federal district court of Oregon issued a landmark opinion underscoring the validity of their claims, denying the government's motion to dismiss, and allowing the case to go forward to trial.[17] As the court in *Juliana v. U.S.* recognized at the outset of its opinion, this was "no ordinary lawsuit."[18] For the past several decades, environmental lawsuits have relied largely on statutes or regulations. *Juliana* is instead a human rights case, challenging the government's entire fossil-fuel policy, based on an assertion of constitutional rights to inherit a stable climate system. At a time of unprecedented climatic danger, the children have pursued a litigation strategy born from matching the law with the existential threat they face.

In *Juliana*, the youth plaintiffs contend that government's fossil fuel policies have violated their fundamental constitutional rights to life, liberty, and property, breached the government's constitutional public trust obligations, violated due process guarantees, and discriminated against

hospitable for young people, future generations, and most other species.").

[15] Brief for Dr. James Hansen as Amici Curiae Supporting Plaintiffs-Appellants at 7, Alec L. v. Jackson, No. C–11–2203 EMC, 2011 WL 8583134 (N.D. Cal. Nov. 14, 2011) [hereinafter Hansen, *Amici Curiae* Brief], https://static1.squarespace.com/static/571d109b04426270152febe0/t/5785741a29687ff48a7c1375/1468363803338/Hansen+Amicus+.pdf.

[16] *See* Our Children's Trust website, https://www.ourchildrenstrust.org/.

[17] *Juliana*, 2016 WL 6661146 (2016)

[18] *Id.* at *2.

them in violation of equal protection principles.[19] The court aptly recognized the case as a "civil rights action"—an action "of a different order than the typical environmental case"—alleging that federal actions "have so profoundly damaged our home planet that they threaten plaintiffs' constitutional rights to life and liberty."[20] Judge Ann Aiken broke new legal ground, deciding that the children have a fundamental right to a climate system capable of sustaining human life.[21] This right, she concluded, is protected against federal government interference by both the due process and equal protection clauses of the U.S. Constitution[22] as well as the public trust doctrine, which she found to be implicit in the due process clause and, indeed, implicit in sovereignty.[23] The case will now proceed to trial on the issue of whether the government actually breached these constitutional rights.[24] At a time when the political system seems prepared to shun responsible climate action, the lawsuit may be the only legal mechanism that can "trump" the incumbent

[19] *Id*. at *14–17 (fundamental constitutional rights), *18–25 (public trust doctrine rights).
[20] *Id.* at *1 (civil rights action), *26 (different order, so profoundly damaged).
[21] *Id.* at *16–17.
[22] U.S. CONST., Amend. V (". . . nor [shall any person] be deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use, without just compensation"). Due process is also applicable to the states through the 14th Amendment. U.S. CONST., Amend. XIV. In discussing the constitutional claims, Judge Aiken referred to them collectively as "due process claims." *Juliana*, at *14. Her ruling, which upheld the constitutional claims of plaintiffs, seemingly encompasses the various grounds of due process, equal protection, and unenumerated rights reserved by the 9th Amendment to the Constitution, which were all pled separately by plaintiffs. See *Juliana* Complaint, *supra* note 49. One exception, however, concerned the equal protection argument asserted by the plaintiffs that future generations constituted a suspect class. To that claim, Judge Aiken responded, "The court should decline to create a new separate suspect class based on posterity. Nonetheless, the complaint does allege discrimination against a class of younger individuals with respect to a fundamental right protected by substantive due process." *Juliana*, at n. 8. In subsequent Findings and Recommendations issued by Magistrate Judge Coffin recommending denial of the motion to certify an appeal, Judge Coffin brought attention back to the equal protection argument by noting, "The plaintiffs contend that the federal defendants are denying their basic right to a habitable climate system so that the current generation can reap the economic benefits from energy production levels which exacerbate global warming while transferring the most harmful consequences of these actions to their generation and future generations." cite

[23] *See Juliana*, at *17, *23–25. *See infra* § III*; see also* Robinson Twp. v. Commonwealth, 83 A.3d 901 (Pa. 2013)(plurality opinion).
[24] *See infra* § VI.A.

administration. If upheld on appeal, the case could be a legal game-changer for climate crisis—and perhaps for environmental law as a whole.

This article considers *Juliana* and its implications. Section I briefly describes the current climate crisis and the fossil-fuel production policies that drive it. Section II explains the wave of atmospheric trust litigation of which this lawsuit is a part. Section III proceeds to examine Judge Aiken's preliminary rulings on procedural issues that required resolution before moving to the substantive claims. These issues, involving the political question doctrine and the young plaintiffs' standing, concern the proper role of courts in the climate crisis. Section IV explores the court's due process ruling and the concept of fundamental rights in American constitutional law, describing the *Juliana* decision as a logical extension of existing jurisprudence.

Section V proceeds to consider the public trust doctrine (PTD), which Judge Aiken decided was implicit in due process, and contends that court's application of this ancient principle to the federal government was both well-founded and consistent with case law. Section VI explains the road ahead in *Juliana* by anticipating the next phase of the litigation, which will result in a trial. Section VII examines the international march of atmospheric trust litigation, of which the *Juliana* case is a part. A number of international cases have recognized fundamental environmental rights embedded in the PTD and expressed in "right to life" provisions of national constitutions.[25] The article concludes that *Juliana* could—and should—signal a significant change to environmental law—at the outset of an era in which the federal government seems quite prepared to wage a potentially deadly gamble with the future of young people.

[25] *See infra* § VII.B and accompanying text.

I. The Climate Crisis[26]

Despite climate denial in the halls of Congress,[27] there is little or no scientific question that the world has entered an era of climate instability, if not imminent catastrophe.[28] The planet recently surpassed 400 parts per million (ppm) of carbon dioxide (CO_2) in the atmosphere, "never to return below it in our lifetimes."[29] Fifteen of the sixteen hottest years on record have occurred since 2001.[30] While the planet has heated about 2.4 degrees F. on average since the Industrial Revolution,[31] warming at the poles is more extreme, with winter month temperatures near the North Pole at times soaring between 36º to 50ºF. above average.[32] Ocean warming is melting ice masses across the Arctic, Antarctica, and Greenland, setting record lows in ice measurements.[33] Warmer water temperatures combined with planetary ice melt causes sea levels to rise.[34] In a

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[26] Parts of this section are adapted from Mary C. Wood, Michael C. Blumm & Charles W. Woodward, IV, *Earth on the Docket: Why Obama Can't Ignore This Climate Lawsuit by America's Youth,* THE CONVERSATION (Dec. 15, 2016, 10:20 PM), http://theconversation.com/earth-on-the-docket-why-obama-cant-ignore-this-climate-lawsuit-by-americas-youth-69193. Some of the supporting footnote material is drawn from prior works of the authors in the area of climate litigation.

[27] *See, e.g.,* Sean Reilly, *Freedom Caucus Would Scrap More Than 200 Rules,* E&ENEWSPM (Dec. 15, 2016), http://www.eenews.net/eenewspm/2016/12/15/stories/1060047290 (discussing report by some House Republicans calling for revocation of numerous climate rules and green energy initiatives).

[28] *See, e.g.,* Paul Brown, *Propaganda Hides Climate Change From the Public,* CLIMATE NEWS NETWORK (Sept. 30, 2016), http://climatenewsnetwork.net/climate-warnings-propaganda/ (discussing report by Sir Robert Watson, former chair of the U.N.'s Intergovernmental Panel on Climate Change, et al., *The Truth About Climate Change* (Sept. 2016), https://drive.google.com/drive/folders/0B7HRGKIJWol-OEZfNDFjRHUwM2c.).

[29] *See* Brian Kahn, *Earth's CO_2 Passes the 400 PPM Threshold-Maybe Permanently,* SCIENTIFIC AMERICAN (Sept. 27, 2016), https://www.scientificamerican.com/article/earth-s-co2-passes-the-400-ppm-threshold-maybe-permanently/.

[30] *See Global Analysis*, NOAA (2015), https://www.ncdc.noaa.gov/sotc/global/201513.

[31] *See* Patrick Lynch, *2016 Climate Trends Continue to Break Records*, NASA (July 19, 2016), https://climate.nasa.gov/news/2465/2016-climate-trends-continue-to-break-records/.

[32] For 36ºF, see Chris Mooney & Jason Samenow, *The North Pole Is An Insane 36 Degrees Warmer Than Normal As Winter Descends*, WASH. POST (Nov. 17, 2016), https://www.washingtonpost.com/news/energy-environment/wp/2016/11/17/the-north-pole-is-an-insane-36-degrees-warmer-than-normal-as-winter-descends/?utm_term=.2f9785476963. For 50ºF, *see* Andrew Freeman, *North Pole to Warm to Near Melting Point This Week*, MASHABLE (Dec. 20, 2016), http://mashable.com/2016/12/20/north-pole-to-warm-to-near-melting-point-this-week/#zzl3M79JvPqS.

[33] *See* Plait, *supra* note 2; *see also* Curt Mills, *Troubling Signs in Antarctic and Arctic Sea Ice Levels,* U.S. NEWS & WORLD REPORT (Nov. 21, 2016, 11:07 AM), *http://www.usnews.com/news/world/articles/2016-11-21/antarctic-and-arctic-sea-ice-levels-at-record-lows*.

[34] *See* Christopher Joyce, *Antarctica's Ice Sheets Are Melting Faster – And From Beneath*, NPR (Oct. 25, 216, 11:01 AM), http://www.npr.org/sections/thetwo-way/2016/10/25/499206005/antarcticas-ice-sheets-are-melting-faster-and-from-beneath (Antarctica); John Abraham, *Global Warming Is Melting the Greenland Ice Sheet, Fast*, THE

recent study, Dr. Hansen, the former chief climate scientist at NASA, observed that continued heating will make it "impossible to avoid large-scale ice sheet disintegration with sea level rise of at least several meters."[35] Such a sea level rise would leave most coastal cities uninhabitable.[36] Dr. Hansen thought that the cost to society of functionally losing of all coastal cities was "practically incalculable."[37]

Carbon emissions now devastate marine ecosystems. The oceans have absorbed more than ninety percent of the excess heat energy generated by fossil fuel consumption,[38] causing massive coral reef bleaching and death[39] as well as depleted oxygen levels in the ocean.[40] Marine absorption of carbon dioxide from human emissions has made the oceans thirty percent more acidic than before the Industrial Revolution, jeopardizing shellfish survival.[41]

GUARDIAN (Aug. 25, 2016, 6:00 AM), https://www.theguardian.com/environment/climate-consensus-97-per-cent/2016/aug/25/global-warming-is-melting-the-greenland-ice-sheet-fast (Greenland).

[35] *See* James Hansen et al., *Ice Melt, Sea Level Rise and Superstorms: Evidence from Paleoclimate Data, Climate Modeling, and Modern Observations that 2°C Global Warming Could Be Dangerous* 2 (2016), http://www.atmos-chem-phys.net/16/3761/2016/acp-16-3761-2016.pdf [hereinafter Hansen, *Sea Level Rise*].

[36] *See* Oliver Milman, *Climate Guru James Hansen Warns of Much Worse than Expected Sea Level Rise*, THE GUARDIAN (Mar. 22, 2016, 12:01 AM), https://www.theguardian.com/science/2016/mar/22/sea-level-rise-james-hansen-climate-change-scientist.

[37] *See* Hansen, S*ea Level Rise*, *supra* note 34, at 2. *See also* R. Henry Weaver & Douglas A. Kysar, *Courting Disaster: Climate Change and the Adjudication of Catastrophe* 4 (draft available on SSRN) ("Indeed, climate change may routinize catastrophe itself.").

[38] *See* Milman, ***supra*** note 35.

[39] *See* Michelle Innis, *Great Barrier Reef Hit By Worst Coral Die-Off On Record, Scientists Say*, N.Y. TIMES (Nov. 29, 2016), *http://www.nytimes.com/2016/11/29/world/australia/great-barrier-reef-coral-bleaching.html; see also* Karl Mathiesen, *15,000 sq km of Coral Reef Could Be Lost in Current Mass Bleaching, Say Scientists*, THE GUARDIAN (July 7, 2015, 12:21 PM), https://www.theguardian.com/environment/2015/jul/07/six-percent-of-worlds-coral-could-be-lost-in-current-mass-bleaching-say-scientists.

[40] *See Latest Ocean Warming Review Reveals Extent of Impacts on Nature and Humans*, IUCN (Sept. 5, 2016), https://www.iucn.org/news/latest-ocean-warming-review-reveals-extent-impacts-nature-and-humans; Karin Limburg, *The Oceans are Suffocating: Climate Change Is Causing Low Oxygen Levels,* SLATE (Nov. 3, 2016, 1:43 AM), http://www.salon.com/2016/11/03/the-oceans-are-suffocating-climate-change-is-causing-low-oxygen-levels_partner. *See* Seth Borenstein, *The Amount of Man-Made Heat Energy Absorbed by the Seas has Doubled Since 1997, A Study Released Monday Showed*, U.S. NEWS & WORLD REPORT (Jan. 19, 2016, 3:59 AM), http://www.usnews.com/news/politics/articles/2016-01-19/study-man-made-heat-put-in-oceans-has-doubled-since-1997.

[41] *See* Oliver Milman, *World's Oceans Warming at Increasingly Faster Rate, New Study Finds*, THE GUARDIAN (Jan. 18, 2016, 11:00 AM), https://www.theguardian.com/environment/2016/jan/18/world-oceans-warming-faster-rate-new-study-fossil-fuels; *see also Ocean Warming Doubles in Recent Decades*, NOAA (Jan. 18, 2016), http://research.noaa.gov/News/NewsArchive/LatestNews/TabId/684/ArtMID/1768/ArticleID/11572/Ocean-warming-doubles-in-recent-decades.aspx.

Scientists warn that the world faces dangerous "tipping points" capable of triggering irreversible feedback processes that would unleash uncontrollable heating and destroy the planet's climate system.[42] Some ten years ago, the Ninth Circuit Court recognized this threat, stating that "climate change may be non-linear, meaning that there are positive feedback mechanisms that may push global warming past a dangerous threshold (the 'tipping point')."[43] As an example of just one such process, vast areas of melting permafrost now release large amounts of CO_2 and methane (both GHGs) into the atmosphere, causing a feedback loop that further increases the temperature on Earth and, in turn, melts more permafrost, causing more release of GHGs.[44] Another feedback loop concerns the melting of ice sheets, because less ice remains to reflect heat away from Earth—a dynamic known as the albedo effect.[45]

Delay in mounting an effective climate response allows tipping points—both known and as yet unidentified—to compound, requiring further drastic and severe countermeasures to prevent runaway heating. As the trial court judge in the Washington atmospheric trust case starkly put it, "[The younger generations'] very survival depends upon the will of their elders to act now, decisively and unequivocally, to stem the tide of global warming by accelerating the reduction of emissions of GHGs before doing so becomes first too costly and then too late."[46]

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[42] *See generally* PEARCE, *supra* note 4, at xxiv–vi; Leslie McCarthy, Goddard Institute for Space Studies, *Research Finds that Earth's Climate is Approaching 'Dangerous' Point*, NASA, http://www.nasa.gov/centers/goddard/news/topstory/2007/danger_point.html (May 30, 2007) (discussing thresholds of global temperatures and atmospheric carbon dioxide that trigger dangerous interference with the climate system).
[43] Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin., 508 F.3d 508, 523 (9th Cir. 2007).
[44] *See* Nafeez Ahmed, *Seven Facts You Need to Know About the Arctic Methane Timebomb*, THE GUARDIAN: EARTH INSIGHT (Aug. 5, 2013, 1:01 AM), http://www.theguardian.com/environment/earth-insight/2013/aug/05/7-facts-need-to-know-arctic-methane-time-bomb.
[45] *See* James Hansen et al., *Climate Change and Trace Gases,* 365 PHIL. TRANSACTIONS ROYAL SOC'Y A 1925, 1935 (2007) ("A climate forcing that 'flips' the albedo of a sufficient portion of an ice sheet can spark a cataclysm."); Mark Kinver*, Earth Warming to Climate Tipping Point, Warns Study*, BBC NEWS (Nov. 30, 2016), http://www.bbc.com/news/science-environment-38146248.
[46] *See* Order Affirming the Dept. of Ecology's Denial of Pet. for Rule Making at 5, Foster v. Wash. Dep't of Ecology, No. 14-2-25295-1 SEA (Wash. Super. Ct. Nov. 19, 2015).

A. Promoting Fossil Fuel Policy with Little Regard For the Consequences

The increase of carbon dioxide in the atmosphere over the last 150 years is due to the combustion of fossil fuels since the Industrial Revolution.[47] Although China surpassed the U.S. as the highest annual CO2 emitter in 2005, the United States remains the world's largest cumulative emitter of carbon dioxide.[48] This responsibility for the lion's share of emissions is hardly surprising given the government's inexorable promotion of fossil fuels as the nation's primary energy policy. For over a century, three fossil fuels—petroleum, coal, and natural gas—have accounted for over eighty percent of the total U.S. energy consumption.[49] Federal energy policy includes leasing of public lands for fossil fuel development and the undervaluing of royalty rates for the leased lands,[50] near automatic permitting approval for extraction,[51] continued underwriting of the fossil fuel sector (including subsidies for exploration, consumption, and exportation), and extensive financing of international fossil fuel projects.[52]

Public records reveal that the federal government has known for decades of the danger these fossil fuel-promoting policies pose to the planetary climate system that underpins human survival. For example, a 1965 report by President Lyndon Johnson's Scientific Advisory Committee acknowledged that human-caused CO_2 emissions would risk "the health, longevity,

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[47] *See Sources of Greenhouse Gases*, EPA (2017), https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions. Carbon dioxide makes up the greatest portion—about eighty-one percent—of total GHG emissions. *See Overview of Greenhouse Gases: Carbon Dioxide Emissions*, EPA (2017), https://www.epa.gov/ghgemissions/overview-greenhouse-gases#carbon-dioxide.

[48] Decl. of Dr. James E. Hansen in Support of Pls.' Compl. for Declaratory and Injunctive Relief at 28, Juliana v U.S., No. 6:15-cv-01517-TC (D. Or. Aug. 12, 2015) [hereinafter Hansen Declaration].

[49] *See Fossil Fuels Still Dominate U.S. Energy Consumption Despite Market Share Decline*, U.S. ENERGY INFORMATION ADMINISTRATION (July 1, 2016), https://www.eia.gov/todayinenergy/detail.php?id=26912.

[50] US rates are half that of Texas. See Am. Compl. for Declaratory and Injunctive Relief para. 172 (pdf p. 65), Juliana v. United States, No. 6:15-cv-01517-TC (D. Or. Sept. 10, 2015) [hereinafter Juliana Complaint], http://ourchildrenstrust.org/sites/default/files/YouthAmendedComplaintAgainstUS.pdf.

[51] *See id.* at para. 170 (pdf p. 65).

[52] *See* Sonali Prasad et al., *Obama's Dirty Secret: The Fossil Fuel Projects the US Littered Around the World,* THE GUARDIAN (Dec. 1, 2016, 7:00 AM), https://www.theguardian.com/environment/2016/dec/01/obama-fossil-fuels-us-export-import-bank-energy-projects; *see also* Juliana Complaint, *supra* note 49, at para. 177 (pdf p.66).

livelihood, recreation, cleanliness and happiness of citizens who have no direct stake in their production, but cannot escape their influence."[53] In a 1990 report, "Policy Options for Stabilizing Global Climate," the Environmental Protection Agency (EPA) reiterated the 1965 report's conclusion that CO_2 was a dangerous anthropogenic pollutant.[54] The 1990 report called for a fifty percent reduction in total U.S. CO_2 emissions below 1990 levels by 2025 and set a goal of stabilizing atmospheric CO_2 concentrations at 350 ppm to ensure global warming did not exceed 1.5° C. above the preindustrial level.[55] The 1.5° C. heating limit was believed then—and is still widely viewed—to be the line beyond which irrevocable climate disruption lies. The 2015 Paris Climate Agreement defined the 1.5° C limit as an aspirational world-wide goal. [56]

For decades, a wide spectrum of government agencies published reports, studies, and recommendations exposing the dangers of continued fossil fuel combustion.[57] But instead of responding to these warnings with decisive actions, U.S. energy policy has remained centered on promoting fossil fuels. Indeed, over the course of decades, the fossil-fuel industry contributed hundreds of millions of dollars to political campaigns to purchase influence and thereby forestall regulation.[58] Consequently, there is today still no comprehensive regulation or pricing of carbon

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[53] *Restoring the Quality of Our Environment: Report of The Environmental Pollution Panel*, PRESIDENT'S SCIENCE ADVISORY COMMITTEE (Nov. 1965) [hereinafter 1965 SAC Report], https://dge.carnegiescience.edu/labs/caldeiralab/Caldeira%20downloads/PSAC,%201965,%20Restoring%20the%20Quality%20of%20Our%20Environment.pdf.

[54] *Policy Options for Stabilizing Global Climate*, ENVIRONMENTAL PROTECTION AGENCY at 6-8 (Dec. 1990) [hereinafter 1990 EPA Report], nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=91014BJ0.TXT.

[55] *Id.*

[56] *See generally* Adam Vaughn, *Paris Climate Deal: Key Points at a Glance,* THE GUARDIAN (Dec. 12, 2015, 11:56 AM), https://www.theguardian.com/environment/2015/dec/12/paris-climate-deal-key-points; *see also* Michael Le Page, *Paris Climate Deal is Agreed But is it Really Good Enough?,* NEW SCIENTIST (Dec. 12, 2015), https://www.newscientist.com/article/dn28663-paris-climate-deal-is-agreed-but-is-it-really-good-enough/.

[57] *See e.g.,* 1965 SAC Report, *supra* note 52; 1990 EPA Report, *supra* note 53; Terry P. Kelley, *Global Climate Change Implications for the United States Navy*, U.S. NAVAL WAR COLLEGE (1990), http://documents.theblackvault.com/documents/weather/climatechange/globalclimatechange-navy.pdf; Jason Plautz, *CIA Shuts Down Climate Research Program*, THE ATLANTIC (May 21, 2015), https://www.theatlantic.com/politics/archive/2015/05/cia-shuts-down-climate-research-program/452502/.

[58] *See* Fossil Fuel Funding to Congress: Industry Influence in the U.S., OIL CHANGE INTERNATIONAL (2017), http://priceofoil.org/fossil-fuel-industry-influence-in-the-u-s/.

dioxide emissions in the United States. The top fossil fuel producers have collectively reaped more than $1 trillion in profits since the millennium, while the global damage and human death toll from climate chaos escalates worldwide.[59]

B. Restoring Climate Stability: The Scientific Prescription

Although considerable climate harm is irrevocably underway, many leading scientists say it is still possible (albeit barely so) to restore climate equilibrium over the long term. Such an effort would require reducing atmospheric carbon dioxide levels to 350 ppm, the uppermost level to limit total average planetary heating to a safe zone of below 1.5º C.[60] In 2010, recognizing the need to quantify the emissions reduction necessary to stay within this safe zone, Dr. Hansen convened an international team of scientists to formulate a climate "prescription" for the planet.[61] This prescription remains a fulcrum for atmospheric trust litigation, representing best available science to define necessary action to avert climate catastrophe.

The Hansen prescription addressed both carbon emissions and the planet's natural carbon absorption mechanisms, since they are inextricably linked. The first part of the climate prescription presents a trajectory—or "glidepath"—of annual emissions reduction towards an ultimate goal of near-zero emissions.[62] To reach 350 ppm by the end of the century, the team prescribed global emissions reduction of six percent annually, beginning in year 2013.[63] However, delaying reduction of carbon emissions increases sharply the level of necessary yearly reductions,

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[59] *See* Bill McKibben, *Global Warming's Terrifying New Math*, ROLLING STONE (July 19, 2012), http://www.rollingstone.com/politics/news/global-warmings-terrifying-new-math-20120719.
[60] *See* James Hansen et al., *Assessing "Dangerous Climate Change": Required Reduction of Carbon Emissions to Protect Young People, Future Generations, and Nature*, 8 PLOS ONE e81648, 13 (2013) [hereinafter Hansen, *Climate Prescription*], http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0081648.
[61] *Id*.
[62] *Id*. at 9.
[63] *Id*. at 10.

perhaps to a point at which the reductions ultimately become too steep to plausibly salvage a habitable planet.[64] For example, the Hansen team estimated that, had concerted climate-action started in 2005—fifteen years after the 1990 EPA report recommending action—emissions reductions of just 3.5 percent a year could have restored climate equilibrium at 350 ppm by the end of the century. But after eight years of inaction, that figure climbed to six percent per year by 2013.[65] The scientists projected that, if emissions reductions are delayed until 2020, the necessary annual global emissions reduction will rocket to fifteen percent per year.[66] At some point, the necessary cuts will become too drastic for society to accomplish on a global scale. As the Hansen team emphasized, "[I]t is urgent that large, long-term emissions reductions begin soon."[67]

Reducing emissions alone will not restore climate equilibrium, however. Because approximately forty percent of emissions persist in the atmosphere for over a thousand years at present removal rates, any climate restoration must also focus on removing much of the carbon dioxide that has already accumulated in the atmosphere.[68] Accordingly, the second part of the scientific climate prescription addresses the "drawdown" of carbon dioxide through massive reforestation (because trees naturally absorb carbon dioxide) and improved agricultural measures (because soil also absorbs carbon dioxide). The Hansen team calculated that a full-scale massive restoration program could draw down about 100 gigatons (GT) of carbon dioxide from the

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[64] *See* PAUL BAER ET AL., STOCKHOLM ENV'T INST., THREE SALIENT GLOBAL MITIGATION PATHWAYS ASSESSED IN LIGHT OF THE IPCC CARBON BUDGETS 1 (2013), http://sei-us.org/Publications_PDF/SEI-DB-2013-Climate-risk-emission-reduction-pathways.pdf ("The 1.5°C marker pathway is defined as the most challenging mitigation pathway that can still be defended as being techno-economically achievable.").
[65] *See* Hansen, *Climate Prescription*, *supra* note 59, at 18.
[66] *Id*. at 10.
[67] *Id*.
[68] *See* William Moomaw, *From Failure to Success: Reframing the Climate Treaty*, THE FLETCHER FORUM OF WORLD AFFAIRS (Feb. 10, 2014), http://www.fletcherforum.org/home/2016/8/22/from-failure-to-success-reframing-the-climate-treaty?rq=From%20failure%20to%20success.

atmosphere, the amount in 2013 that was key to restoring atmospheric carbon levels to 350 ppm.[69] However, because emissions reduction did not materialize at the projected rate in 2013 (emissions dropped only by 0.6 percent, rather than six percent),[70] the drawdown amount must increase to compensate. Dr. Hansen calculated that further delay of emissions reduction for just three more years (until 2020) would increase the total CO_2 removal necessary by fifty percent, to 150 GT.[71]

These are the daunting effects of delay—metaphorically, they amount to an exponential rise in interest on the mortgage humanity took out on the planet through unrestricted use of fossil fuels. As one scholar noted, limiting global warming to 1.5ºC. at this point will take "a true world revolution."[72] A full and swift transition from fossil fuels to renewable fuels is feasible,[73] but not likely forthcoming without legal pressure. As a recent analysis concluded, "the main barriers to 100 percent clean energy are social and political, not technical or economic."[74] Such a transition would produce enormous co-benefits, preventing four to seven million deaths from pollution per year, creating some 20 million more jobs than would be lost in the transition, and stabilizing energy costs.[75] Phasing out fossil fuels also would safeguard society from the massive collateral damage

[69] *See* Hansen, *Climate Prescription*, *supra* note 59, at 10.
[70] *See* James Hansen, *Rolling Stones* (Jan. 11, 2017), http://www.columbia.edu/~jeh1/mailings/2017/20170111_RollingStones.pdf.
[71] *Id.*
[72] *See* Le Page, *supra* note 55 (quoting Piers Forster, University of Leeds).
[73] Mark Schwartz, *Stanford Scientist Unveils 50-State Plan to Transform U.S. to Renewable Energy,* STANFORD REPORT (Feb. 26, 2014), http://news.stanford.edu/news/2014/february/fifty-states-renewables-022414.html.
[74] *See* Mark Jacobson*: Barriers to 100% Clean Energy are Social and Political, Not Technical or Economic*, ECOWATCH (Nov. 20, 2015, 1:53 PM), http://www.ecowatch.com/mark-jacobson-barriers-to-100-clean-energy-are-social-and-political-no-1882122292.html.
[75] *Id.*

that fossil fuel dependence imposes, including from pipeline leaks,[76] exploding trains,[77] marine oil spill pollution,[78] fracking-induced earthquakes, and groundwater pollution.[79]

There are clear signs that a transition is underway. As Richard Heinberg of the Post Carbon Institute has claimed, "Fossil fuels are on their way out one way or another."[80] In fact, renewable energy already employs more people than the oil and gas industries,[81] and global investment in solar and wind is double that of fossil fuels.[82] The reasons are simple: 1) the easy sources of fossil fuels have been tapped, so continuing to extract the remaining sources is less economically feasible;[83] and 2) the foundation of renewable energy sources is technology, not a fuel, so prices fall as efficiency increases.[84] Despite these gains, however, the market alone is not responsive to the urgency posed by climate crisis, and relying on a market-driven transition is unrealistic. As

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[76] *See* George Joseph, *30 Years of Oil and Gas Pipeline Accidents, Mapped*, THE ATLANTIC: CITY LAB (Nov. 30, 2016), http://www.citylab.com/weather/2016/11/30-years-of-pipeline-accidents-mapped/509066/.
[77] *See* Kathryn A. Wolfe & Bob King, *Oil Boom Downside: Exploding Trains*, POLITICO (June 18, 2014, 5:01 AM), http://www.politico.com/story/2014/06/exploding-oil-trains-energy-environment-107966; *see also* Eric de place & Keiko Budech, *Oil Train Explosions: A Timeline in Pictures*, SIGHTLINE INSTITUTE (last updated June 3, 2016), http://www.sightline.org/2015/05/06/oil-train-explosions-a-timeline-in-pictures/.
[78] *See* Carolyn Embach, *Oil Spills: Impact on the Ocean*, WATER ENCYCLOPEDIA (2017), http://www.waterencyclopedia.com/Oc-Po/Oil-Spills-Impact-on-the-Ocean.html.
[79] For fracking-induced earthquakes, see Matthew Philips, *Why Oklahoma Can't Turn Off Its Earthquakes*, BLOOMBERG (Nov. 16, 2016, 8:43 AM), https://www.bloomberg.com/news/articles/2016-11-08/why-oklahoma-can-t-turn-off-its-earthquakes. For groundwater pollution, see Laurel Peltier, *Pennsylvania Fracking Water Contamination Much Higher Than Reported*, ECOWATCH (Feb. 4, 2016, 2:42 PM), http://www.ecowatch.com/pennsylvania-fracking-water-contamination-much-higher-than-reported-1882166816.html; *see also* Sharon Kelly, *BREAKING*: *$4.2 Million Jury Verdict Against Cabot Oil & Gas in Dimock, PA Water Contamination Lawsuit*, DESMOG.COM (Mar. 10, 2016, 10:23 AM), https://www.desmogblog.com/2016/03/10/breaking-news-4-2-million-jury-verdict-dimock-pa-water-contamination-lawsuit-reported.
[80] *See* RICHARD HEINBERG & DAVID FINDLEY, OUR RENEWABLE FUTURE 3 (Island Press 2016).
[81] *See* Anna Hirtenstein, *Clean-Energy Jobs Surpass Oil Drilling for First Time in U.S.*, BLOOMBERG (May 25, 2016, 7:00 AM), https://www.bloomberg.com/news/articles/2016-05-25/clean-energy-jobs-surpass-oil-drilling-for-first-time-in-u-s.
[82] *See* Tom Randall, *Wind and Solar Are Crushing Fossil Fuels*, BLOOMBERG (April 6, 2016, 2:00 AM), https://www.bloomberg.com/news/articles/2016-04-06/wind-and-solar-are-crushing-fossil-fuels.
[83] *See* Richard Heinberg, *Rising Cost of Fossil Fuels and the Coming Energy Crunch*, OILPRICE.COM (July 12, 2011, 11:32 AM), http://oilprice.com/Energy/Energy-General/Rising-Cost-Of-Fossil-Fuels-And-The-Coming-Energy-Crunch.html.
[84] *See* Hansen, *Sea Level Rise*, *supra* note 34.

one analytical team observed, "[T]he shift to renewable energy isn't happening fast enough to avoid the catastrophic legacy of fossil-fuel dependence. . . ."[85]

A comprehensive response to the climate crisis will consequently require more than simply encouraging renewable energy investment and development; it now will necessitate aggressive curtailment of fossil-fuel extraction. Analysts warn that potential carbon emissions from currently operating oil and gas fields in the United States alone can cause planetary heating greater than the 1.5ºC. increase targeted in the Paris agreement.[86] If operating coal mines figure into the equation, the planet could surpass a 2ºC. temperature rise.[87] Quite simply, time is of the essence. As the Hansen team declared, "[w]e have a global emergency."[88]

II. Atmospheric Trust Litigation (ATL) and the *Juliana* case

The *Juliana* case is part of a wave of atmospheric trust litigation launched by the non-profit organization, Our Children's Trust. Recognizing that looming tipping points necessitate a rapid and decisive response to the planet's atmospheric crisis—and that the crisis only worsened during several decades while the political branches indulged in climate-change denial—the ATL campaign has turned to the judiciary for eleventh-hour relief to force worldwide emissions reductions.[89] ATL is a full-scale, coordinated movement, with multiple suits pending and others

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[85] *See* Randall, *supra* note 81.
[86] *See* Greg Muttitt, *The Sky's Limit: Why the Paris Climate Goals Require a Managed Decline of Fossil Fuel Production,* Oil Change International (Sept. 22, 2016), http://priceofoil.org/content/uploads/2016/09/OCI_the_skys_limit_2016_FINAL_2.pdf.
[87] *Id.*
[88] *See* Hansen, *Sea Level Rise*, *supra* note 34.
[89] *See* Gabriel Nelson, *Young Activists Sue U.S., States Over Greenhouse Gas Emissions*, N.Y. TIMES (May 5, 2011), http://www.nytimes.com/gwire/2011/05/05/05greenwire-young-activists-sue-us-states-over-greenhouse-64366.html; Matthew Brown, *Climate Activists Target States With Lawsuits; Atmosphere As a 'Public Trust'*, CNSNEWS.COM (May 4, 2011, 5:39 AM), http://www.cnsnews.com/news/article/climate-activists-target-states-lawsuits-atmosphere-public-trust. On the ATL campaign, *see* Mary Christina Wood, *Atmospheric Trust Litigation*, *in* ADJUDICATING CLIMATE CHANGE: STATE, NATIONAL, AND INTERNATIONAL APPROACHES (William C. G. Burns & Hari M. Osofsky eds., Cambridge Univ. Press 2009); Mary Christina Wood, *Atmospheric Trust Litigation Around the World*, *in* FIDUCIARY DUTY AND THE ATMOSPHERIC TRUST (Ken Coghill et al. eds. 2012).

teed up in different forums, all connected by a common template of science and law. As Professor Randall Abate has observed, "Within the past five years, ATL has been a primary focus of climate justice litigation and it has made significant progress in advancing its theory in U.S. and foreign domestic courts."[90]

The litigation campaign began in May 2011, when young people filed legal processes in every state in the U.S., launched a federal suit[91] and began plans for lawsuits in other countries as well.[92] The suits and petitions were premised on the public trust doctrine, an ancient principle dating back 1500 years to public rights articulated in Roman law.[93] The modernized principle characterizes essential natural resources as part of an enduring ecological endowment—a "trust"—and designates government actors as trustees over essential resources, charging them with fiduciary duties of protection and restoration to sustain these resources for the benefit of the present and future public.[94] The public trust principle exists in every state of the United States[95] and is evident in legal systems of nations throughout the world.[96] Professor Gerald Torres aptly described

[90] *See* Randall S. Abate, *Atmospheric Trust Litigation in the United States: Pipe Dream or Pipeline to Justice for Future Generations?* 561 (2016), http://www.academia.edu/29932478/Atmospheric_Trust_Litigation_in_the_United_States_Pipe_Dream_or_Pipeline_to_Justice_for_Future_Generations; *see also id.* at 557 ("[S]everal state courts have embraced the concept of ATL as a potential strategy to address climate change regulation in the courts, and it is rapidly gaining support.").

[91] The initial federal case, *Alec L. v. Jackson*, against the Obama administration was unsuccessful, as the D.C. district court dismissed the case, deciding that the public trust did not bind the federal government. *See* Abate, *supra* note 89, at section III (describing case).

[92] For a comprehensive set of ATL updates and materials, consult the website of Our Children's Trust at http://ourchildrenstrust.org.

[93] J. INST., 2.1.1. (T. Sandars trans., 4th ed. 1867).

[94] For a discussion on the public trust framework, see Mary Christina Wood & Charles W. Woodward, IV, *Atmospheric Trust Litigation and the Constitutional Right to a Healthy Climate System: Judicial Recognition at Last*, 6 WASH. J. ENVTL. LAW & POL'Y 634, 648-55, section III (2016).

[95] *See, e.g.,* Michael C. Blumm (ed.), *The Public Trust Doctrine in 45 States* (2014), https://ssrn.com/abstract=2235329.

[96] *See* MICHAEL C. BLUMM & MARY CHRISTINA WOOD, THE PUBLIC TRUST DOCTRINE IN ENVIRONMENTAL AND NATURAL RESOURCES LAW 333-64 (2d ed. 2015) (surveying the jurisprudence, constitutions, and statutes of India, the Philippines, Uganda, Kenya, Pakistan, South Africa, Norway, Sweden, Finland, and Canada, among others).

the principle as the "law's DNA."[97] With constitutional underpinnings, the public trust presents a fundamental-rights framework for articulating climate obligations that transcend jurisdictions across the planet.[98]

The basic ATL case applies public trust principles to the atmosphere,[99] making the following claims: 1) the air and atmosphere, along with other vital natural resources, are within the *res* of the public trust, and therefore subject to special sovereign obligations; 2) the legislature and its implementing agencies are public trustees; 3) both present and future generations of the public are beneficiaries of the public trust; 4) the government trustees owe a fiduciary duty of protection against "substantial impairment" of the air, atmosphere, and climate system, an affirmative duty to restore its balance; and 5) courts have a duty to enforce these trust obligations. Scores of cases make clear that the public trust principle imposes obligations separate from statutory law.[100] Throughout the course of the ATL campaign, law professors have submitted amicus briefs in key cases to explain the basis and scope of the public trust, its constitutional character, and the crucial role of the judiciary in enforcing the public trust in the present climate context.[101]

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[97] Gerald Torres & Nathan Bellinger, *The Public Trust Doctrine: The Law's DNA,* 4 WAKE FOREST J. L. & POLY 281, 283–85 (2014).

[98] Where specific constitutional or statutory provisions of a jurisdiction provide trust protection, the youth plaintiffs often have asserted those as well in their ATL complaints and administrative petitions. *See, e.g.*, Pet. for Original Jurisdiction, Barhaugh et al. v Montana, (Mass. May 4, 2011), https://static1.squarespace.com/static/571d109b04426270152febe0/t/5768120fe6f2e19198908d2b/1466438160482/MT.Petition.pdf; Pet. of Sherley et al. to the Mass. Dep't of Envtl Prot., (Nov. 1, 2012), https://static1.squarespace.com/static/571d109b04426270152febe0/t/57609324356fb0f59a89b317/1465946918296/2012.10.31-FINAL+MA+Petition_0.pdf.

[99] *See* Abate, *supra* note 89, at 548-49.

[100] *See, e.g.*, Parks v. Cooper, 676 N.W.2d 823, 837 (S.D. 2004) ("The doctrine exists independent of any statute."); Kootenai Envtl. All., Inc. v. Panhandle Yacht Club, Inc., 671 P.2d 1085, 1095 (Idaho 1983) (compliance with legislative authority alone is not sufficient to determine to determine public trust compliance).

[101] For links to law professors' *amicus* briefs filed in Oregon, North Carolina, New Mexico, and District of Columbia, see https://www.ourchildrenstrust.org/lawlibrary/. The authors are part of the law professors amicus group.

The ATL approach recognizes that, in order to curb global warming, the law must reflect the actual physical, chemical, and biological requirements of the planet. The ATL petitions and lawsuits demand enforceable climate recovery plans from government trustees to reduce carbon emissions at the rate called for by best available science, epitomized by the scientific prescription described above.[102] The campaign anticipates long-term implementation of climate recovery plans under continuing court supervision, a remedy adapted from other types of institutional litigation.[103] Although conventional statutory approaches held promise when the world had several decades to confront the growing climate crisis, the deadlines imposed by nature's tipping points now require a judicial remedy that can deliver widespread relief tailored to the rapid carbon emissions reduction necessary to avoid planetary calamity.[104]

Beyond its potential to offer relief on a macro-scale, the ATL campaign brings a fundamental rights approach to climate crisis. Statutory and regulatory law can be vulnerable to erratic political whims of the legislative and executive branches, suffering extreme destabilization from one administration to the next—as evidenced by President Trump's changes to the Obama climate initiatives.[105] The climate crisis demands broad, enduring, system-changing solutions that

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[102] *See supra* notes 59-87 and accompanying text. The initial prescription was developed by the scientific team for the litigation and disseminated in May, 2011. *See* MARY CHRISTINA WOOD, NATURE'S TRUST: ENVIRONMENTAL LAW FOR A NEW ECOLOGICAL AGE 221 (2013) (explaining the Hansen team's climate prescription).

[103] *Id.* at 240-247.

[104] Statutory law fractures government's overall climate responsibility into isolated, disjointed parts falling to an array of separate agencies. Even when a statutory lawsuit is successful, it narrowly focuses on one contentious permit, rule, program, or other isolated action. Moreover, the remedies under statutory law are often procedural, typically returning the process to a recalcitrant agency free of continuing judicial supervision. Within the framework of a macro-remedy, however, statutory law provides many of the tools for accomplishing emissions reduction. For example, the Clean Air Act provides the EPA with authority to regulate emissions. *See infra* Section VII.A.3.a.

[105] As the magistrate judge in *Juliana* observed, "[T]he intractability of the debates before Congress and state legislatures and the alleged valuing of short term economic interest despite the cost to human life, necessitates a need for the courts to evaluate the constitutional parameters of the action or inaction taken by the government." Order and Findings & Recommendations at 8, Juliana v. United States, No. 6:15-cv-01517-TC (D. Or. April 8, 2014) [hereinafter *Juliana* Findings], http:/ourchildrenstrust.org/sites/default/files/16.04.08.OrderDenyingMTD.pdf.; *see also* Wood, et al., *supra* note 25.

hold the promise of protecting life, liberty, and property. As a complement to existing statutes, ATL aims to set firm boundaries on political discretion through the assertion of fundamental rights of constitutional character that cannot be ignored by the current administration or any other.[106]

The *Juliana* case was filed in the federal district court of Oregon in September 2015 on behalf of twenty-one youth plaintiffs from across the United States,[107] challenging—quite literally—the entire fossil fuel policy of the United States. The suit named as defendants multiple federal agencies with control over the United States' fossil-fuel policies.[108] Early in the *Juliana* litigation, the fossil fuel industry intervened through trade associations, siding with the federal government in defending the U.S. fossil fuel policies.[109]

The *Juliana* complaint asserted that, by promoting the development of fossil fuels, the federal government has continued to violate the youngest generation's constitutional rights and has both caused and allowed substantial impairment of essential natural resources protected by the public trust.[110] The complaint described the entire fossil-fuel regime and chronicled its governmental support over decades through massive subsidies, regulatory permits, leasing,

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[106] *See* Wood, et al., *supra* note 25. *See also* Foster v. Department of Ecology, Foster v. Dept. of Ecology, 14-2-25295-1 SEA, Order Granting Petitioners Motion for Leave to File Supplemental Brief (April 18, 2017) (noting with approval that "courts have recognized the role of the third branch of government in protecting the Earth's resources that it holds in trust."). .

[107] *See Juliana* Complaint, *supra* note 49.

[108] In addition to President Obama himself, the defendants included the EPA and the Departments of Transportation, Energy, Interior, State, Commerce, Defense Agriculture, the Council on Environmental Quality, the Office of Management and Budget and the Office of Science and Technology Policy. Juliana Complaint, *supra* note 49, at pdf p. 2-3. The case also challenged a contested a fossil fuel export project, the Jordon Cove Liquified Natural Gas Terminal and its associated proposed pipeline, which would cross the state of Oregon.

[109] Order, Juliana v. United States, Case 6:15-cv-01517-TC (Jan. 4 2016 D. Or.) https://static1.squarespace.com/static/571d109b04426270152febe0/t/5761954f2fe1316f09d2ec4d/1466013009907/16.01.14.OrderGrantingMotiontoIntervene.pdf

[110] *See Juliana* Complaint, *supra* note 49, at 3. The federal district court in the District of Columbia an earlier case, *Alec L. v. Jackson*, in part on displacement grounds. Alec L. v. Jackson, 863 F. Supp. 2d 11 (D.D.C. 2012), *aff'd* Alec L. *ex rel*. Loorz v. McCarthy, 561 Fed. App'x 7 (D.C. Cir. 2014), *cert. denied*, 135 S. Ct. 774 (2014) (deciding that the Clean Air Act displaced the public trust claim).

exploration, drilling and mining public lands and offshore areas, and approving export proposals. Describing a pattern that "shock[s] the conscience," the youth plaintiffs alleged:

> For over fifty years, the United States of America has known that carbon dioxide ("CO2") pollution from burning fossil fuels was causing global warming and dangerous climate change, and that continuing to burn fossil fuels would destabilize the climate system on which present and future generations of our nation depend for their wellbeing and survival. Defendants also knew the harmful impacts of their actions would significantly endanger Plaintiffs, with the damage persisting for millennia. Despite this knowledge, Defendants continued their policies and practices of allowing the exploitation of fossil fuels. . . . *Defendants have acted with deliberate indifference to the peril they knowingly created.*[111]

The *Juliana* plaintiffs also charged that "[t]he present level of [GHG] emissions and [associated] warming, both realized and latent, are already in the zone of danger," asserting that "our country is now in a period of carbon overshoot, with early consequences that are already threatening and that will, in the short term, rise to unbearable unless the [government] take[s] immediate action[.]"[112] They also pointed out that the harm is likely to continue into the foreseeable future, particularly from ocean acidification, rising sea levels, and damaged fresh water resources.[113] Moreover, the youths alleged that the federal government—controlling over a quarter of the planet's GHG emissions[114]—has no plan to constrain those emissions to levels that do not threaten the ecological functions of the planet.

The youths sought a judicial order requiring government defendants to prepare and implement an enforceable national remedial plan to stabilize the climate system in accordance with the best available science.[115] As reflected in the Hansen team's prescription described above,[116] the plan must comprise both 1) a de-carbonization project to fully phase out fossil fuel emissions;

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[111] *See Juliana* Complaint, *supra* note 49, at 1-3, 85 (emphasis added).
[112] *Id.,* at 3-4 (quoting the plaintiffs' amended complaint).
[113] *Id.* at 76-79.
[114] *Id.* at 3.
[115] *Id.* at 94.
[116] *See supra* notes 59-70 and accompanying text.

and 2) a draw-down project to naturally extract existing excess atmospheric CO_2.[117] The plaintiffs seek continuing court jurisdiction to monitor and enforce implementation of the national remedial plan.[118]

The youth plaintiffs gained an initial victory in the litigation in April 2016, when Magistrate Judge Thomas Coffin recommended denial of the government's and fossil fuel interveners' motions to dismiss in all aspects, finding that plaintiffs had stated claims for relief grounded in the due process and equal protection guarantees, and the federal public trust principle (implicit in the constitution).[119] Judge Coffin stated: "Given the allegations of direct or threatened direct harm, albeit shared by most of the population or future population, the court should be loath to decline standing to persons suffering an alleged concrete injury of a constitutional magnitude."[120] Judge Coffin's findings were then reviewed by federal district court Judge Ann Aiken. Oral argument took place in September 2016, drawing hundreds of school children to the federal courthouse. In November 2016, Judge Aiken issued a groundbreaking 54-page opinion affirming Judge Coffin, validating the youth's claims, and denying the defendants' motions to dismiss.[121] Judge Aiken's decision will allow the youth plaintiffs to prove their claims at trial.[122]

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[117] *See Juliana* Complaint, *supra* note 49, at 94.
[118] *Id*.
[119] *See Juliana* Findings, *supra* note 104.
[120] *Id*. at 7. For coverage of the case, see James Conca, *Federal Court Rules on Climate Change In Favor of Today's Children*, FORBES (Apr. 10, 2016, 6:00 AM), http://www.forbes.com/sites/jamesconca/2016/04/10/federal-court-rules-on-climate-change-in-favor-of-todays-children/#273936b06219. *See also* John Schwartz, *In Novel Tactic on Climate Change, Citizens Sue Their Governments*, N.Y. TIMES (May 10, 2016), http://www.nytimes.com/2016/05/11/science/climate-change-citizen-lawsuits.html?_r=0.
[121] *See Juliana*, at *27. *See* John Blackstone, "*Bring It On:" Students Sue Trump Administration Over Climate Change*, CBS NEWS (April 21, 2017), http://www.cbsnews.com/news/our-childrens-trust-students-sue-trump-administration-over-climate-change/.
[122] *See* Chelsea Harvey, *This Climate Lawsuit Could Change Everything. No Wonder the Trump Administration Doesn't Want It Going to Trial*, WASH. POST (Mar. 9, 2017), https://www.washingtonpost.com/news/energy-environment/wp/2017/03/09/this-climate-lawsuit-could-change-everything-no-wonder-the-trump-administration-doesnt-want-it-going-to-trial/?utm_term=.439db8d23e84. On March 9, 2017, federal defendants filed a motion before Magistrate Judge Thomas Coffin to certify an order for an interlocutory appeal. Mem. In Supp. Of Federal Defs.' Mot. To Certify Order For Interlocutory Appeal, Juliana v.

In May 2017, in a stunning development, the industry interveners made motions to withdraw from the case, leaving ample speculation as to their reasons.[123] On June 8, 2017, Judge Ann Aiken affirmed Judge Coffin's recommendations to deny defendants' motion to certify an appeal to the Ninth Circuit.[124]

U.S., No. 6:15-cv-01517-TC (D. Or. Mar. 7, 2017), https://static1.squarespace.com/static/571d109b04426270152febe0/t/58c08d521b631b9e64284395/1489014099526/Doc+120-1+Memo+in+Support+of+Fed+Motion+to+Certify+Order+for+Interlocutory+Appeal.pdf. On May 1, 2017, Magistrate Judge Coffin issued a thorough opinion recommending denial of the motion to certify and appeal. Findings and Recommendations, *Juliana v. United States* (May 1, 2017), https://static1.squarespace.com/static/571d109b04426270152febe0/t/590793bb6b8f5bc7d71525da/1493668796765/17.05.01.Coffin+Order+Recommending+Denial+of+Interlocutory+Appeal.pdf. He noted, "[I]f anything, the plaintiffs' due process claim has been enhanced since the complaint was filed given the significant admissions made by the federal defendants after the Order denying the motions to dismiss." *Id.* at 10 (slip op). As to the public trust, Magistrate Coffin reiterated the strong basis of the federal public trust obligation and added, "The implications of . . . forsaking of a federal public trust doctrine by the Government are staggering." *Id.* at 13.

[123] *See* Chelsea Harvey, *These Fossil Fuel Groups Joined a Historic Lawsuit. Now, They Want to Get Out of It,* THE WASHINGTON POST (May 26, 2017), https://www.washingtonpost.com/news/energy-environment/wp/2017/05/26/three-fossil-fuel-groups-joined-a-historic-climate-lawsuit-now-they-want-to-get-out-of-it/?utm_term=.739a9367369e. The industry interveners had strenuously resisted discovery requests from the plaintiffs. A few weeks prior to making motions to withdraw from the case, the industry had received an order from Magistrate Judge Coffin directing them to comply with plaintiff's requests for admissions, some of which presumably could have far-reaching ramifications as to the industry's overall liability for climate damage. Minute Order, *Juliana v. United States* (April 20, 2017) (on file with authors).

[124] Judge Aiken's order thereby ended the defendants' pursuit of an interlocutory appeal through normal processes. Order, June 8, 2017, https://static1.squarespace.com/static/571d109b04426270152febe0/t/593a101403596e9ea174ce22/1496977428927/Aiken+adopts+Coffin+F%26R.pdf. The day after the court issued its order however, the Trump administration lawyers filed a rare "writ of mandamus" petition with the 9th Circuit Court of Appeals, seeking to circumvent the normal appellate process. See Chelsea Harvay, *Kids' Climate Lawsuit Against Trump Administration Stays Alive*, THE WASHINGTON POST (June 12, 2017), https://www.washingtonpost.com/news/energy-environment/wp/2017/06/12/were-still-on-fast-track-to-trial-kids-climate-lawsuit-against-trump-administration-stays-alive/?utm_term=.8fbdaec5616f. Professor Douglas Kyser analyzed the move in the following terms:

> Writs of mandamus are reserved for the most extraordinary and compelling situations in which ordinary rules of appellate procedure must be overridden to avoid a manifest injustice. For the Trump Justice Department to even seek a writ of mandamus in the current context is offensive to Judge Aiken, to the entire federal judiciary, and, indeed, to the rule of law itself. The writ should not be granted and we should all question why the Trump Administration's lawyers are willing to try such a trick rather than forthrightly defend the case. When the Framers divided power within the government, they did it so that the branches could not only check and balance each other, but also poke and prod when necessary. The Juliana litigation is a powerful poke and prod to the entire federal government on the question of climate responsibility. In that sense, Juliana might well be the most important lawsuit on the planet right now and the government knows it. That's why Trump's lawyers are so desperate to avoid an honest fight.

"Most Important Lawsuit in the World," Mercury News International (June 9, 2017), *http://www.mercurypress.com/most_important_lawsuit_in_the_world*. *See also* R. Henry Weaver & Douglas A.

III. Procedural Thresholds

As is often the case in climate lawsuits against government, the *Juliana* defendants raised procedural defenses involving the political question doctrine and the doctrine of standing. Judge Aiken rejected the government's arguments that the case involved an unreviewable political question, relying heavily on the Supreme Court's criteria for political questions established in *Baker v. Carr*,[125] the landmark redistricting case.[126] Judge Aiken also dismissed the government's allegation that the youths lacked standing.[127]

While we consider each of these preliminary matters in turn below, we first draw attention to a broader theme identified by Yale law professor Douglas Kysar in a probing article on climate litigation.[128] Detailing the fate of several climate tort cases brought before the *Juliana* case, Professor Kyser recounts the early dismissals of virtually all -- based on procedural grounds. He writes, "Whether through deference, displacement, or deliberate sabotage, anxious courts have found ways to ignore the climate change plaintiff."[129] These decisions represent, in aggregate, a quite troubling mass "retreat" from the actual, imminent, and rapidly worsening, context of climate change.[130] Judicial inaction is hardly neutral, for as Kyser points out, "inaction can inflict a symmetric violence." He draws upon the work of Linda Ross Meyer, who describes a judicial response of "nihilism" to broad catastrophe: "Rather than expand the bounds of law to domesticate disaster, 'the nihilist acknowledges the normative challenge that the

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Kysar, *Courting Disaster: Climate Change and the Adjudication of Catastrophe,* SSRN https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2965084 (draft posted May 7, 2017).

[125] 369 U.S. 186 (1962) (articulating the modern version of the political question doctrine and ruling that redistricting was not an unreviewable political question).

[126] *See Juliana*, at *5-8, discussing in detail the six criteria established in *Baker,* 369 U.S at 217.

[127] *Id.* at *9-14 (finding that the plaintiffs met the standing requirements of injury-in-fact, causation, and redressability).

[128] Weaver & Kysar, *supra* note 37.

[129] *Id.* at 32.

[130] *Id*. at 35.

catastrophe represents and stays there. The normative ground is gone, anomie reigns . . . .'"[131]

Kyser brings the insight to the climate context, explaining:

> The error of the nihilist judge is to refuse responsibility over the extraordinary and the indeterminate. By various means, candidly or covertly, nihilist judges abdicate their duty to decide because of the complex or dramatic nature of a harm and the remedy it seems to necessitate. For instance, judges seem to believe that, short of ordering a whole restructuring of the global economy, their only option in climate change litigation is to avoid exercising jurisdiction in the first place. *Again, stuck in a binary choice between denial and nihilism, most courts opt for the latter*.[132]

A. **The Political Question Defense**

The fossil-fuel industry intervenors and the government contended that the court lacked jurisdiction because the case involved a non-justiciable political question, an issue the government had successfully invoked in some other cases.[133] The political question doctrine, first articulated by Chief Justice John Marshall in *Marbury v. Madison,*[134] forecloses judicial review of certain questions that courts determine are more appropriate for resolution by the political branches of government.[135]

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[131] *Id.* at 9, quoting from Linda Ross Meyer, *Catastrophe: Plowing Up the Ground of Reason*, in LAW AND CATASTROPHE 19, 22 (Austin Sarat et al. ed., 2007).

[132] *Id.* at 67.

[133] *See. e.g.,* Alex L v. Jackson, 863 F.Supp.2d 11, 16–17 (D.D.C. 2012), *aff'd, sub nom*. Alex L ex rel. Loorz, v. McCarthy, 561 F.Appx. 7 (D.C. Cir. 2014) (mem.); Sanders-Reed v. Martinez, 350 P.3d 1221, 1225-27 (N.M. App. 2015) (New Mexico constitution imposes a public trust duty on the state, but the state incorporated that duty into the state's Air Quality Act, which provides the exclusive scheme for reviewing administrative decisions, in part because of separation of power grounds); Barhaugh et al. v. Montana, No. OP 11-0258 (Mont. 2011) (refusing to consider plaintiff's case because it did not involve "purely legal questions). *But see* Kanuk v. State, Dept. of Natural Resources, 335 P.3d 1088, 1097-1103 (Alaska 2014) (deciding that the public trust doctrine was not a political question, but dismissing three of the plaintiffs' claims because they involved a policy question falling within the competency of political branches of government, and others because relief was not prudential); Butler ex rel. Peshlakai v. Brewer, 2013 WL 1091209 (D. Az. 2013) (rejecting the state's argument that "the determinations of what resources are included in the [Public Trust] Doctrine and whether the State has violated the Doctrine are non-justiciable.").

[134] 5 U.S. (1 Cranch.) 137, 170 (1803).

[135] *See* JOHN E. NOWAK & RONALD D. ROTUNDA, CONSTITUTIONAL LAW § 2.15 (7th ed. 2004).

In *Baker v. Carr,* which ruled that political redistricting was not immune from judicial review under the political question doctrine, Justice William Brennan identified several criteria by which courts may identify political questions, the most important of which are: 1) a demonstrable commitment to non-judicial branch of government, 2) a lack of judicially manageable standards for resolving an issue, and 3) the impossibility of deciding the dispute without an initial policy choice clearly appropriate for non-judicial discretion.[136]

Judge Aiken engaged in a searching inquiry of the political question doctrine, noting its importance in assuring an appropriate balance of power between the three branches of government.[137] As she noted, "a court cannot simply err on the side of declining to exercise jurisdiction when it fears a political question may exist; it must instead diligently map the precise limits of jurisdiction."[138] Judge Aiken determined that the first factor did not apply because "climate change policy is not *inherently*, or even primarily a foreign policy decision."[139] She proceeded to conclude that the other two factors were likewise inapplicable because the plaintiffs did indeed present a dispute within the court's competence. Observing that plaintiffs charged that the government's "*aggregate actions* violate[d] their substantive due process rights and the

[136] 369 U.S. 186, 217 (1962), cited by *Juliana*, at *6–7. Other criteria Brennan identified were 1) the impossibility of a court's resolving an issue without expressing a lack of respect to coordinate branches; 2) an unusual need to adhere to a political decision already made; and 3) the potential of embarrassment from multifarious pronouncements by various branches to the same issue. *Id.* The intervenor-defendants argued only the first three of the *Baker* factors.

[137] *Juliana*, at *3 ("The political question doctrine is 'primarily a function of the separation of powers.'"(citing *Baker*, 369 U.S. at 210). While this discussion focuses on the three Baker factors that the intervenor defendants contended were implicated, Judge, Aiken's detailed and careful analysis addressed all six of the Baker factors, concluding that the case implicated none.

[138] *Juliana*, at *4.

[139] *Id.* at *6 (emphasis in original). Moreover, as Magistrate Judge Coffin later concluded in recommending denial of the motion to certify an appeal, the fact that climate change is subject to political debate does not mean it is a political question for jurisprudential purposes: "To the extent Intervenors are suggesting that the topic of 'climate change' is formed and determined by political values and is thus a non-justiciable political question, such an argument must be emphatically rejected." F&R at 8. See also id at 7 ("Nowhere in the Constitution is there a textual commitment of climate change related issues to a specific branch of government.").

government's trust obligations"[140]—both constitutional claims—Judge Aiken emphasized, "At its heart, this lawsuit asks this Court to determine whether defendants have violated plaintiffs' constitutional rights. That question is squarely within the purview of the judiciary."[141]

The defendants complained that, by not identifying violations of statutory or regulator law, the plaintiffs left the court without standards to apply. But Judge Aiken observed:

> Plaintiffs could have brought a lawsuit predicted on technical regulatory violations, but they chose a different path. As masters of their complaint, they have elected to assert constitutional rather than statutory claims. Every day, federal courts apply the legal standards governing due process claims to new sets of facts. The facts in this case, though novel, are amenable to those well-established standards.[142]

The court recognized that the plaintiffs sought broad-based relief in the form of a national remedial plan, and that "[t]he court could issue the requested declaration without directing any individual agency to take any particular action." She acknowledged that the court would have to "exercise great care" in fashioning a remedy that would "avoid separation-of-powers problems," perhaps by declaring that the government must "ameliorate plaintiffs' injuries" but not "specify[ing] precisely how to do so."[143]

The recent decision of the Ninth Circuit in *Washington v. Trump*, upholding a district court injunction of the initial Trump executive order on immigration, may be a harbinger of how the

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[140] *Id.* at *7 (emphasis in original). The court stated that the "plaintiffs do not ask this Court to pinpoint the 'best' emissions level; they ask this Court to determine what emission level would be sufficient to redress their injuries. That question can be answered without any consideration of competing interests." *Id.* at *6. The court also dismissed the other *Baker* factors, because she noted that these factors should only rarely make a case nonjusticiable. *Id.* at *7. She explained that a judicial declaration of the plaintiffs' due process rights would be fully consistent with international commitments, would not interfere with "a political decision already made," or produce an "embarrassment" to the other branches of government. *Id.* at *8.

[141] *Id.* at *8. The court noted that the youth plaintiffs shared "key features" with the *Baker* plaintiffs in that they are "minors who cannot vote and must depend on others to protect their political interests," and thus their claims are "rooted in a 'debasement of their votes.'" *Id.* (citing amicus brief submitted by the League of Women Voters).

[142] *Id* at *7.

[143] *Id.* at *9. The court observed that "speculation about the difficulty of crafting a remedy could not support a dismissal at this early stage" of the litigation. *Id.*

Ninth Circuit could react to Judge Aiken's opinion. A unanimous panel of the court rejected the federal government's argument that the president's immigration decisions, especially when motivated by national security, were not judicially reviewable, a position quite similar to the government's invocation of the political question doctrine in *Juliana*.[144] The court had little difficulty in rejecting this claim, explaining that courts "routinely review—and even invalidate—actions taken by the executive to promote natural security."[145] The Ninth Circuit panel explained that a claim of unreviewability of executive and legislative acts "runs counter to the fundamental structure of our constitutional democracy" and concluded that it was "beyond question" the federal judiciary may remedy constitutional violations by the Executive.[146] If alleged actions in defense of national security are reviewable, the dangerous atmospheric pollution at issue in *Juliana* should be no less subject to judicial scrutiny.

B. **Standing**

Government and industry defendants also challenged the standing of the twenty-one youth plaintiffs in the *Juliana* case. As a threshold inquiry, standing requires the plaintiff to demonstrate that the injury complained of is: 1) concrete, particularized, and actual or imminent; 2) fairly traceable to the defendant's conduct; and 3) likely to be redressed by a favorable court decision.[147] With respect to the first factor (concrete harm), nearly thirty pages of the youth plaintiffs' complaint detailed specific harm already happening to plaintiffs as a result of climate disruption in their regions.[148] In the opening oral argument in the *Juliana* case, plaintiffs' attorney introduced

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[144] *See supra* notes 124–26 and accompanying text.
[145] Washington v. Trump, No. 17-35105, D.C. No. 2:17-cv-00141, at 17 (Feb. 7, 2017) (per curiam order) (citing Boumediene v. Bush, 553 U.S. 723 (2008) (upholding federal habeas jurisdiction despite executive and congressional objection over so-called "enemy combatants").
[146] *Id.* at 14 (also quoting the Supreme Court in *Boumediene*, 553 U.S. at 765, to the effect that the "political branches" lack the authority "to switch the Constitution on or off at will"), 18 ("beyond question").
[147] *Juliana*, at *9.
[148] *Juliana* Complaint, *supra* note 49, at 6-33.

Jayden F., a 13-year old Louisiana plaintiff sitting before the court, as a victim of extreme flooding just two weeks prior—a flood event that would normally happen every 1,000 years but is occurring now allegedly as a result of climate change.[149] The government argued that, because climate harm affects everyone on Earth, plaintiffs' injuries amounted to a "nonjusticiable generalized grievance" defeating the case or controversy requirement of Article III of the Constitution. The court thought otherwise, citing a plethora of cases holding that a plaintiff asserting a "concrete and particularized injury" does not lack standing even if many others experience harm from the same action.[150] The opinion highlighted the plight of Jayden, noting that she and her siblings woke up in their house on August 13, 2016 to find floodwaters "pouring into our home through every possible opening" and "a stream of sewage and water running through our house."[151] The court also found "concrete and particularized" harm that is "actual or imminent" from other harms alleged in the complaint such as 1) drought that damaged salmon harvests; 2) high temperatures that harmed orchards and

[149] *See, e.g.,* John Upton, *Louisiana Floods Directly Linked to Climate Change,* Climate Central (Sept. 7, 2016), http://www.climatecentral.org/news/louisiana-floods-directly-linked-to-climate-change-20671; Ian Urbina, *Perils of Climate Change Could Swamp Coastal Real Estate*, N.Y. TIMES, Nov. 24, 2016, https://www.nytimes.com/2016/11/24/science/global-warming-coastal-real-estate.html?_r=0 (last visited Mar. 30, 2017); Lauren Sommer, *With Climate Change, California is Likely to See More Extreme Flooding*, NPR, Feb. 28, 2017, http://www.npr.org/2017/02/28/517495739/with-climate-change-california-is-likely-to-see-more-extreme-flooding (last visited Mar. 30, 2017).

[150] *Juliana*, at *9 (observing that "the possibility that some other individual or entity might later cause the same injury does not defeat standing—the question is whether the injury *caused by the defendant* can be redressed") (emphasis the court's). Later, in recommending denial of the federal defendants motion to certify an appeal, Magistrate Coffin forcefully reiterated the position stating,

> Plaintiffs have alleged, and federal defendants have since admitted, that human induced climate change is harming the environment to the point where it will relatively soon become increasingly less habitable causing an array of severe deleterious effects to them which includes an increase in allergies, asthma, cancer, cardiovascular disease, stroke, heat related morbidity and morality, food-born disease, injuries, toxic exposures, mental health and stress disorders, and neurological diseases and disorders. These are concrete, particularized, actual or imminent injuries to the plaintiffs that are not minimalized by the fact that vast numbers of the populace are exposed to the same injuries. *It would surely be an irrational limitation on standing which allowed isolated incidents of deprivation of constitutional rights to be actionable, but not those reaching pandemic proportions.* Findings & Recommendations, supra note __, at 14 (emphasis added).

[151] *Id.* at *9-10 (also noting, "With no shelters available and nowhere else to go, the family remained in the flooded house for weeks," sleeping together in the living room because "the bedrooms are uninhabitable.").

required new irrigation systems; 3) decreased snowpack that inhibited recreational skiing; 4) forest fires that injured asthmatics; and 5) algae blooms that harmed drinking water supplies.[152]

As to the second standing factor, the court determined that the plaintiffs' injuries were "fairly traceable" to the challenged government actions and inaction**s** because—at least at the motion to dismiss stage—she was bound to accept the plaintiffs' allegations as true.[153] Judge Aiken also noted that the federal government had jurisdiction over "a substantial share" of worldwide GHG emissions, as the second-largest producer and consumer of global carbon dioxide emissions.[154] The court decided that, although causal chains may be difficult to prove on the merits, at the pleading stage they were sufficient to allege a satisfactory causal link between the government's conduct and the alleged injuries.[155]

Finally, as to the third factor, Judge Aiken decided that the youths' injuries could be redressed by judicial relief, since the federal government controlled a substantial amount of global GHG emissions, and a reduction of those emissions would reduce atmospheric pollution and slow climate change.[156] The fact that there was some uncertainty was not disabling, since all that was required is a "substantial likelihood that the Court could provide meaningful relief."[157] The plaintiffs' request that the court order the government to "cease their permitting, authorizing, and subsidizing fossil fuels" and "ensure that atmospheric [carbon pollution] is no more concentrated

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[152] *See id.* at *9, 11.
[153] *Id.* at *12 (observing that at "at the motion to dismiss stage, a federal court is in no position to say it is impossible to introduce evidence to support a well-pleaded causal connection . . .", and that "climate science is constantly evolving").
[154] *Id.* The court observed that for 263 years, the United States has produced over 25% of global carbon dioxide emissions, *id.,* and that the plaintiffs had articulated a plausible chain of causation: government agencies with jurisdiction over 64% of U.S. carbon dioxide emissions (and 14% of global emissions), "allow[ing] high emission levels by failing to set demanding standards; high emissions levels cause climate change; and climate change causes plaintiffs' injuries." *Id.* at *13.
[155] *Id.* at *13.
[156] *See Juliana*, at *13.
[157] *Id.*

than 350 [parts per million] by 2100" through a national plan to stabilize the climate was, according to Judge Aiken, adequate to establish standing to sue.[158]

IV. Fundamental Rights and the Environment

Although the young plaintiffs set forth several distinct constitutional claims arising from separate provisions of the U.S. Constitution, the court referred to those for simplicity's sake as "due process claims."[159] One of the plaintiffs' due process claims arose from the contention that the government tolerated or caused GHG emissions "to rise to levels that dangerously interfere with a stable climate system," thereby knowingly endangering their health and welfare and, even after recognizing the dangerous situation, perpetuated the danger by continuing to promote and allow dangerous levels of fossil-fuel production, consumption, and combustion.[160] In addressing a subset of plaintiffs' due process and equal protection claims, the court engaged in an inquiry as to whether the right to a climate system capable of sustaining human life is a fundamental constitutional right.[161] Protection of fundamental rights requires strict scrutiny from the courts and may not be infringed unless the action serves a compelling state interest, and the government tailors the infringement narrowly.[162] Without such close judicial review, Judge Aiken thought that the government's "affirmative actions would survive rational basis review."[163]

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[158] *Id.* at *14.
[159] *Id.* at n. 6.
[160] *Id.* The complaint stated three claims based on express provisions of the constitution. See *Juliana* Complaint, *supra* note 49. The first claim asserted violation of the Due Process Clause of the Fifth Amendment. The second claim asserted violation of "Equal Protection Principles Embedded in the Fifth Amendment." The third claim asserted violations of the "Unenumerated Rights Preserved for the People by the Ninth Amendment." While the court failed to address all of the claims in detail, distinctions between them may become pivotal in the fact-finding stage. Discussion of that aspect is beyond the scope of this article.
[161] *Id.* (stating that resolution of the due process claim "therefore hinges on whether plaintiffs have alleged infringement of a fundamental right.").
[162] *Id.* *14-15 (citing Reno v. Flores, 507 U.S. 292, 302 (1993)).
[163] *Id.* at *14.

A. **A Fundamental Right to a "Climate System Capable of Sustaining Human Life"**

Fundamental liberty rights may be express in the Constitution or "1) deeply rooted in this Nation's history and tradition or 2) fundamental to our scheme of ordered liberty."[164] Aware that the Supreme Court has cautioned that such rights be articulated only with the "utmost care,"[165] Judge Aiken turned for guidance to recent Supreme Court decisions announcing fundamental liberty rights to privacy, procreation, and marriage.[166] Quoting Justice Kennedy's admonition in the right to marry case, *Obergefell v. Hodges*, that "we may not always perceive injustice in our own times,"[167] Judge Aiken understood that a court must exercise "reasoned judgment" when deciding on fundamental rights. She recognized that "identification and protection of fundamental rights is an enduring part of the judicial duty to interpret the Constitution."[168] She also observed that the marriage right recognized by the Court supported other vital liberties like the family and social order.[169]

With these background principles in mind, Judge Aiken articulated a fundamental liberty right to a "climate system capable of sustaining human life," saying that she had "no doubt that the right to a climate system capable of sustaining human life is fundamental to a free and ordered

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[164] *Id.* at *15 (citing McDonald v. City of Chicago, Ill., 561 U.S. 742, 767 (2010)).
[165] *Id.* (citing Washington v. Glucksberg, 521 U.S. 720 (1997)).
[166] *Id.* at *15 (citing Roe v. Wade, 410 U.S. 113, 152-53 (1973) (privacy and procreation, including the right to an abortion); Obergefell v. Hodges, 135 S.Ct. 2584, 2598 (2015) (marriage)).
[167] *Id.*, quoting Justice Kennedy in *Obergefell*, 135 S.Ct. at 2598:

> The nature of injustice is that we may not always see it in our own times. The generations that wrote and ratified the Bill of Rights . . . did not presume to know the extent of freedom in all its dimensions, and so they entrusted to future generations a charter protecting the right of all persons to enjoy liberty as we learn its meaning. When a new insight reveals discord between the Constitution's central protections and a received legal scheme, a claim to liberty must be addressed.

[168] *Id.* at *15–16 (quoting *Obergefell,* 135 S.Ct. at 2598). She also quoted *Obergefell* to the effect that the responsibility to declared fundamental rights "has not been reduced to any formula . . . [h]istory and tradition guide and discipline this inquiry but do not set its outer boundaries, [since] future generations [may] protect . . . the right of all persons to enjoy liberty as we learn its meaning." *Id.* at *15 (quoting *Obergefell,* 135 S.Ct. at 2598).
[169] *Id.* at *15 (citing *Obergefell*, 135 S.Ct. at 2599, 2561).

society."[170] She reasoned that "[j]ust as marriage is the 'foundation of the family,' a stable climate system is quite literally the foundation 'of society, without which there would be neither civilization nor progress.'"[171] She described plaintiffs' claims as "[e]choing *Obergefell's* reasoning" in their assertion that "a stable climate is a necessary condition to exercising other rights to life, liberty, and property.").[172] Judge Aiken rejected the government's characterization that the youth plaintiffs sought freedom from all pollution, describing their claim as one that argued only against GHG pollution that threatened catastrophic results.[173] Then, writing with a broader stroke, she noted, "To hold otherwise would be to say that the Constitution affords no protection against a government's knowing decision to poison the air its citizens breathe or the water its citizens drink."[174]

Although the court relied heavily on the marriage and procreation decisions,[175] it might have cited several other fundamental rights declared by the Supreme Court over the years.[176] For example, the right of privacy is fundamental, even though it is implicit,[177] protecting marital, child-rearing, and private sexual choices.[178] Similarly, the right to vote and participate in the political

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[170] *Id.*
[171] *Id.* (quoting *Obergefell*, 135 S.Ct. at 2598). The court also cited a case from The Philippines Supreme Court, Oposa v. Factoran., GR No. 101083, 33 LL.M. 173, 187-88 S.C., Jul. 30, 1993 (Phil.) (without "a balanced and healthful ecology," future generations "stand to inherit nothing but parched earth incapable of sustaining life.").
[172] *Id.* at *16.
[173] *Id.* at *16 ("Plaintiffs do not object to the government's role in producing *any* pollution or causing *any* climate change; rather, they assert the government has caused pollution and climate change on a catastrophic level, and that if the government's actions continue unchecked, they will permanently and irreversibly damage plaintiffs' property, their economic livelihood, their recreational opportunities, their health, and ultimately their (and their children's) ability to live long, healthy lives.") (emphasis in original).
[174] *Id.*
[175] *Id.* at *15–16 (citing Obergefell v. Hodges, 135 S.Ct. 2584, 2598, 2599, 2601 (2015); and Roe v. Wade, 410 U.S. 113, 152-53 (1973)).
[176] *See* JOHN E. NOWAK & RONALD D. ROTUNDA, CONSTITUTIONAL LAW § 11.7 (7th ed. 2004); AKHIL REED AMAR, AMERICA'S CONSTITUTION: A BIOGRAPHY 385 (2005).
[177] Griswold v. Connecticut, 381 U.S. 479 (1965) (right of privacy protected by the "penumbras" of several constitutional provisions, including due process).
[178] *See, e.g.,* Boddie v. Connecticut, 401 U.S. 371 (1971) (welfare recipients could not be denied the right to divorce because of high court fees); Loving v. Virginia, 388 U.S. 1 (1967) (striking down a state law outlawing mixed-race marriages); Pierce v. Society of Sisters, 268 U.S. 510 (1925) (striking down an initiative forbidding parochial

process is a fundamental liberty,[179] as is the right to travel interstate.[180] There are also fundamental rights to fair process in criminal cases and in government deprivations of property and liberty.[181] These decisions make clear that the Supreme Court has a long history of finding fundamental rights implicit in the Constitution. The *Juliana* result harmonizes with the judiciary's approach to defining other fundamental rights. If rights to privacy, procreation, marriage, and interstate travel are recognized as fundamental liberty rights, the right to a healthful atmosphere that can sustain human life and protect property must also be fundamental, as it forms the linchpin to survival and, indeed, the exercise of all other political and civil fundamental rights.[182]

Judge Aiken did not suggest that all environmental claims were protected by the due process clause; she limited her decision to "the right to a climate system capable of sustaining human life," and she clarified that such an approach would not transform "any minor or even moderate act that contributes to the warming of the planet into a constitutional violation."[183] But those acts that "affirmatively and substantially damag[e] the climate system in a way that will cause human deaths, shorten lifespans, result in widespread damage to property, threaten human food sources, and dramatically alter the planet's ecosystem" would, according to Judge Aiken, violate due process.[184]

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schools); Meyer v. Nebraska, 262 U.S. 390 (1923) (striking down a state statute forbidding teaching German in public schools); Lawrence v. Texas, 539 U.S. 558 (2003) (striking down a state statute forbidding sodomy).

[179] Harper v. Virginia State Bd. of Elections, 383 U.S. 663 (1966) (striking down a state poll tax); Carrington v. Rash, 380 U.S. 89 (1965) (striking down a state law prohibiting members of the armed forces from moving to Texas and voting while in the service).

[180] Shapiro v. Thompson, 394 U.S. 618 (1969) (striking down a state law requiring a year of residency to collect welfare payments, although as a violation of equal protection, not due process).

[181] *See* NOWAK & ROTUNDA, *supra* note 166, at 471-72 (citing cases).

[182] Judge Aiken reserved questions of whether the government's actually violated the plaintiffs' due process and public trust rights for trial.

[183] *Juliana*, at *15–16.

[184] *Id.* at *16 ("I intend to strike a balance and to provide some protection against the constitutionalization of all environmental claims.").

B. **Challenging Government Inaction: The "Danger Creation" Exception**

Judge Aiken recognized that, with limited exceptions, the due process clause does not impose an affirmative obligation on government to take action even where necessary to protect due process rights.[185] One such exception—the "danger creation" exception—arises when government conduct puts an individual in peril due to a "deliberate indifference" to safety.[186] This indifference must be the product of a "culpable mental state more than gross negligence."[187]

The *Juliana* plaintiffs maintained that "with full appreciation of the consequences" the government defendants knowingly caused, and continue to cause, "dangerous interference with our atmosphere and the climate system."[188] They cited the government's "longstanding actual knowledge" of the serious risks of harm posed by its failure to confront climate change and alleged that the government had "a unique and central role" in creating the climate crisis "with full knowledge of the significant and unreasonable risks" involved.[189] Judge Aiken held that the youth plaintiffs stated a valid claim in their assertion that the government's actions and inactions put the public "in peril in a deliberate indifference to their safety."[190] She agreed that if the plaintiffs could prove their allegations at trial—which she stated would require "rigorous proof"—due

[185] *Juliana*, at *16 (citing Deshaney v. Winnebago Cnty. Dep't of Soc. Servs., 489 U.S. 189, 196 (1989)).
[186] *Id.* (citing Penila v. City of Huntington Park, 115 F.3d 707, 709 (9th Cir. 1997)).
[187] *Id.* (citing Paluk v. Savage, 836 F.3d 1117, 1125 (9th Cir. 2016)).
[188] *Id.* at *17.
[189] *Id.*
[190] *Id.* at 26 (quoting Penilla v. City of Huntington Park, 115 F.3d 707, 709 (9th Cir. 1997 and relying on DeShaney v. Winnebago Cnty. Dep't of Soc. Servs., 489 U.S. 196 (1989) (a state government agency's failure to prevent child abuse by a custodial parent does not violate the child's right to liberty for the purposes of the Fourteenth Amendment). . Judge Aiken emphasized that, at trial, the plaintiffs must show that "the government *knew* its acts caused that danger; and that . . . the government with *deliberate indifference* failed to act to prevent the alleged harm." *Juliana*, at *16 (also noting, "These stringent standards are sufficient safeguards against the flood of litigation concerns raised by the [government]–indeed, they pose a significant challenge to plaintiffs in this very lawsuit.").

process would require government action to reduce emissions under the danger-creation exception.[191]

V. The Public Trust Doctrine and the Atmosphere

The *Juliana* case summons an ancient principle for a decidedly modern – indeed unprecedented – global threat. Some have accused the PTD of being irrelevant in a statutory era,[192] potentially undermining democracy and the separation of powers.[193] Government defendants characteristically describe the public trust principle as a mere common law doctrine limited to submerged lands, and applicable only to states.[194] None of those criticisms and perceived limitations are well-founded. In *Juliana*, Judge Aiken gave an accurate interpretation of the PTD's origin, scope, and effect and contributed a trailblazing recognition that the PTD is implicit in constitutional due process, as explained below. Her opinion decisively brings the PTD into the 21st Century.

A. The PTD as Implicit in Sovereignty

A clarion aspect of *Juliana* was its recognition that the PTD is an inherent constitutional limit on sovereignty.[195] As Judge Aiken correctly noted, by limiting the ability of the legislature to dispose of essential natural resources, the principle protects the power of future legislatures to

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[191] *Id.* ("A plaintiff asserting a danger-creation due process claim must show: (1) the government's acts created the danger to the plaintiff; (2) the government knew its acts caused the danger; and (3) the government *with deliberate indifference* failed to act to prevent the alleged harm."). The court rejected the government's claim that the danger-creation exception did not apply to the federal government. *Id.*

[192] Richard J. Lazarus, *Changing Conceptions of Property and Sovereignty in Natural Resources Law: Questioning the Public Trust Doctrine*, 71 IOWA L. REV. 631, 657–58 (1986); *but cf.* Michael C. Blumm, *Two Wrongs?: Correcting Professor Lazarus' Misunderstanding of the Public Trust Doctrine,* 46 ENVTL. L. 481, 487–88 (2016).

[193] James L. Huffman, *A Fish Out of Water: The Public Trust Doctrine in a Constitutional Dem*ocracy, 19 ENVTL. L. 527, 533 (1989) (a somewhat ironic critique coming from a champion of the anti-democratic Takings Clause).

[194] *See, e.g.,* Alex L v. Jackson, 863 F.Supp.2d 11, 13 (D.D.C. 2012), *aff'd, sub nom*. Alex L ex rel. Loorz, v. McCarthy, 561 F.Appx. 7, 8 (D.C. Cir. 2014) (mem.).

[195] *See, e.g.,* Robinson Twp. v. Commonwealth, 83 A.3d 901, 948–49 (Pa. 2013) (deciding that the PTD was a pre-existing right and was inherent in the state of Pennsylvania's Constitution but not created by it)..

"'provide for the well-being and survival of its citizens.'"[196] Like the police power and the right of condemnation, the PTD is an inherent sovereign power—an "attribute of sovereignty"—recognized but not created by the Constitution.[197] As Aiken noted, the PTD is an ancient doctrine, originating in Roman law and finding its way to the United States through England.[198] The doctrine therefore applies equally to the federal as well as state governments, as discussed below.[199] Moreover, the PTD should raise no separation of power concerns when the courts merely pronounce the law and require the political branches to exercise their discretion within those bounds.[200] The *Juliana* decision is certainly one in which the court aimed to invigorate, not intrude upon, the political branches of government.

In deciding that the PTD was an inherent aspect of sovereignty, Judge Aiken quoted Justice Kennedy's language in the Supreme Court's *Coeur d'Alene Tribe* decision,[201] which declared that the PTD developed as "a natural outgrowth of the perceived public character of submerged lands,

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[196] *Juliana*, at *18 (citing amicus brief of Global Catholic Climate Movement).

[197] The Tenth Amendment recognized state police powers, but it did not create them. U.S. CONST., § Amend. X ("The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people."). Likewise, the right to condemn private property was not created by the 5th Amendment, but merely subjected to "public use" and "just compensation" requirements. U.S. CONST., Amend. V ("… nor shall private property be taken for public use without payment of just compensation.).

[198] *Juliana*, at *18 ("Application of the public trust doctrine to natural resources predates the United States of America. Its roots are in the Institutes of Justinian . . . the body of Roman law that is the 'foundation for modern civil law systems.'") (citation omitted). For background on the origins of the principle, *see* BLUMM & WOOD, *supra* note 96, at 10-51 (reprinting excerpts from DAVID C. SLADE, PUTTING THE PUBLIC TRUST DOCTRINE TO WORK (Coastal States Org., 2d ed. 1997); Harrison C. Dunning, WATERS AND WATER RIGHTS, §§ 29.01-.03, 30.02 (Lexis/Nexis, 3rd ed. 2014); Joseph L. Sax, *The Public Trust Doctrine in Natural Resources Law: Effective Judicial Intervention,* 68 MICH. L. REV. 471 (1970); and Charles F. Wilkinson, *The Headwaters of the Public Trust: Some Thoughts on the Source and Scope of the Traditional Doctrine,* 19 ENVTL. L. 425 (1989).

[199] *See, e.g.,* Charles F. Wilkinson, *The Public Trust Doctrine in Public Land Law,* 14 U.C.-DAVIS L. REV. 269, 277–78 (1980); Michael C. Blumm & Lynn S. Schaffer, *The Federal Public Trust Doctrine: Misinterpreting Justice Kennedy and* Illinois Central Railroad, 45 ENVTL. L. 399, 413–14 (2015).

[200] Nor does the PTD threaten private property rights, despite much commentary to the contrary. *See* Michael C. Blumm, *Private Property and the Public Trust Doctrine: The Accommodation Principle,* 27 PACE ENVTL. L. REV. 649, 655 (2010).

[201] *Juliana*, at *22, quoting Idaho v. Coeur d'Alene Tribe, 521 U.S. 261, 286 (1997). *See also Robinson Twp*., 901 A.3d. at 948 ("Among the inherent rights of the people of Pennsylvania are those enumerated in Section 27, the Environmental Rights Amendment" (establishing the public trust obligations of the state).

a perception which underlies and informs the principle that these lands are tied in a unique way to sovereignty."[202] As an inherent limit on sovereignty, the PTD applies to all sovereigns, not just the states.[203] This limit—preserved by but not created by the Constitution[204]—is an "obligation [that] cannot be legislated away."[205] Recognition of the inalienable nature of the PTD would prove dispositive as to the plaintiffs' PTD claims in *Juliana.*

B. **The Scope of the PTD and the Duty of Protection**

Judge Aiken framed the scope of the PTD by noting that public trust assets were part of a "taxonomy of property" (dating back to early jurisprudence) that recognized the division of natural wealth into private and public property. Control over public trust property cannot be abdicated by the sovereign, as made clear in *Illinois Central* when the Supreme Court said the state legislature could not sell the shoreline of Lake Michigan to a private railroad company.[206] Judge Aiken broadly referred to the "natural resources trust," noting "[i]n natural resources cases, the trust property consists of a set of resources important enough to the people to warrant public trust protection."[207] Although she cited considerable authority for the proposition that air and the atmosphere falls within the scope of the public trust,[208] she found it unnecessary to decide the

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[202] *Juliana*, at *22 (quoting *Coeur d'Alene Tribe*, 521 U.S. at 286).
[203] Judge Aiken cited two cases supporting the notion that the PTD applies to the federal government, *id.*, at *23: United States v. 1.58 Acres of Land Situated in the City of Boston, Suffolk Cy, Mass., 523 F.Supp. 120, 124 (D. Mass. 1981) (federal government is subject to the PTD concerning land it condemned); and City of Alameda v. Todd Shipyards Corp., 635 F.Supp. 1447, 1450 (N.D. Cal. 1986) (same). *See also Juliana*, at *22 (citing United States v. 32.42 Acres of Land, More or Less, Located in San Diego County, California, 683 F.3d 1030, 1038 (9th Cir. 2012)) (declining to reject a federal PTD concerning state lands that the federal government condemned). Aiken thought the D.C. Circuit's cursory unpublished opinion rejecting a federal PTD was unpersuasive. *Id*. at *22–23 (citing Alex L ex rel. Loorz v. McCarthy, 561 F.Appx. 7, 8 (D.C. Cir. 2014)). *See also* Blumm & Schaffer, *supra* note 189, at 400-02, 430.
[204] *Juliana*, at *25.
[205] *Id.* at *24. *See also id.* at *25 ("Governments, in turn, possess certain powers that permit them to safeguard the rights of the people, these powers are inherent in the authority to govern and cannot be sold or bargained away.").
[206] Illinois Central Railroad v. Illinois, 146 U.S. 387, 453-56 (1892).
[207] *Juliana*, at *19.
[208] *Id.* at *20, n. 10 (citing the Institutes of Justinian, J. Inst. 2.1.1 (J.B. Moyle trans.); Arnold v. Mundy, 6 N.J.L 1, 71 (1821); United States v. Causby, 328 U.S. 256, 261 (1946); Mary C. Wood, *Atmospheric Trust Litigation Across the World*, in FIDUCIARY DUTY AND THE ATMOSPHERIC TRUST 113 (Ken Cargill et al. eds. 2012); Mathews v. Bay

question,[209] anchoring the plaintiff's trust claims instead in the territorial seas. Observing that the federal government owns most of the submerged land in the territorial seas,[210] and recognizing the long-settled public trust over "lands beneath tidal waters," Aiken found a viable PTD claim because a number of plaintiff's injuries were caused by GHG pollution of the atmosphere that produced ocean acidification[211] and rising ocean temperatures.[212]

Juliana was not the only decision to interpret the scope of the PTD to reach the atmosphere because of its effects on navigable waters. In *Foster v. Wash. Dep't of Ecology,* a Washington Superior Court—which stated that "[the youths'] very survival depends upon the will of their elders to act now, decisively and unequivocally, to stem the tide of global warming"—emphasized the inextricable relationship between navigable waters and the atmosphere, deciding that separating the two was "nonsensical."[213] The Alaska Supreme Court also suggested that the close relationship between the pollution of the atmosphere and the pollution of the oceans raised a PTD

Head Improvement Ass'n, 471 A.2d 355, 365 (N.J. 1984) (concerning the capacity of the PTD to evolve to meet felt necessities); Foster v. Wash. Dep't of Ecology, No. 14-2-25295-1 (Wash. Super. Ct. Nov. 19, 2015) (concerning the close relationship of navigable waters and the atmosphere); Robinson Twp. v. Commonwealth, 83 A.3d 901, 953 (Pa. 2013) (stating that the "ambient air" was a PTD resource because it was a "public natural resource" that implicated the public interest and was "outside the scope of purely private property")).

[209] *Id.* at *20 ("I conclude that it is not necessary at this stage to determine whether the atmosphere is a public trust asset . . . ." but stating also, "To be clear, today's opinion should not be taken to suggest that the atmosphere is not a public trust asset."). The opinion, in note 10, built a robust case for treating air and atmosphere as public trust assets, referencing Justinian's description of air as "by natural law common to all," and citing cases that include air in the public trust. The court also noted the flexible interpretive approach that some courts bring to public trust cases.

[210] The federal government owns the bed of submerged lands between three and twelve miles offshore. *See Juliana*, at *21 (citing Restatement (Third) of the Foreign Relations Law of the United States § 511(a) (1987); Presidential Proclamation of Dec. 21, 1988, No. 5928, 3 C.F.R. § 547 (1989); 43 U.S.C. § 1312).

[211] Ocean acidification is the ongoing increase in the acidity of the Earth's oceans, caused by the uptake of carbon dioxide from the atmosphere. *See, e.g.,* K. Caldeira & M.E. Wickett, *Anthropogenic Carbon and Ocean pH,* 425 NATURE 365 (2003).

[212] *Juliana*, at *21.

[213] *See* Order Affirming the Dep't of Ecology's Denial of Pet. for Rule Making at 5, 8, Foster v. Wash. Dep't of Ecology, No. 14-2-25295-1 SEA (Wash. Super. Ct. Nov. 19, 2015), https://static1.squarespace.com/static/571d109b04426270152febe0/t/57607fe459827eb8741a852c/1465941993492/15.11.19.OrderFosterV.Ecology.pdf. The court used the link between navigable waters and the atmosphere to announce that "the state has a constitutional obligation to protect the public's interest in natural resources held in trust for the common benefit of the people of the State." *Id.* at 8.

issue.[214] Although there is growing precedent that the atmosphere is a PTD resource,[215] even courts that do not expressly recognize it as a trust asset recognize a PTD claim when atmospheric pollution adversely affects traditional trust resources.

The *Juliana* court made clear the affirmative sovereign duty to protect assets in the trust, stating, "The natural resources trust operates according to basic trust principles, which impose upon the trustee a fiduciary duty to '[protect the trust property against damage or destruction.'"[216] This duty, she emphasized, inures "equally to both current and future beneficiaries of the trust."[217] Judge Aiken explained, "The government, as trustee, has a fiduciary duty to protect the trust assets from damage so that current and future trust beneficiaries will be able to enjoy the benefits of the trust."[218] Aiken ruled that this trust duty was non-discretionary: "no government can legitimately abdicate its core sovereign powers."[219] She announced that the youth plaintiffs had stated a valid PTD claim by asserting that the government "nominally retain[ed] control over trust assets while actually allowing their depletion and destruction" through marine acidification and rising sea levels and temperatures.[220] If proved at trial, neglect of the affirmative duty to protect trust assets would be a PTD violation, and therefore a constitutional violation as well, as explained below.[221]

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[214] Kanuk v. Alaska Dep't of Natural Res., 335 P.3d 1088, 1102 (Alaska 2014) (recognizing that plaintiffs "do make a good case" when alleging that the atmosphere is inextricable linked to the entire ecosystem, and that climate change is already having impact on well-recognized public trust resources like water, shorelines, and wildlife, and noting also a potential trust violation where the atmospheric pollution adversely affects trust resources like navigable and tidal waters).

[215] *See supra* note 199; *infra* notes 321-28 and accompanying text.

[216] *Juliana* at 28, citing George G. Bogert et al., BOGERT'S TRUSTS AND TRUSTEES, § 582 (2016). The opinion's reliance on "basic trust principles" is important because trust law imposes basic duties that statutory law, with narrow commands, may not speak to. One such duty is the duty of loyalty, for example. See WOOD, NATURE'S TRUST, *supra* note 101, at 189-91. *See also infra* notes 285-87 and accompanying text.

[217] *Juliana*, at *19.

[218] *Id.*

[219] *Id.* at *18.

[220] *Id.* at *19.

[221] For discussion of the upcoming trial, *see infra* section VI.

C. **The PTD as an Implicit Constitutional Right**

Judge Aiken described the public trust, with its origins pre-dating the constitution, as part of the "inalienable [r]ights" that the people secured through the creation of government. Explaining the social contract theory that influenced the founding generation, the court observed that "the Declaration of Independence and the Constitution did not *create* the rights to life, liberty, or the pursuit of happiness—the documents are, instead, vehicles for protecting and promoting those already-existing rights."[222] One of the powers that government cannot bargain away, she noted, is the "status of trustee pursuant to the public trust doctrine."[223] This public right was neither waivable nor conveyable.[224] The court's recognition of the public trust as protecting inalienable, inherent rights reserved by citizens in the original creation of government paralleled the approach forged in two important public trust decisions, both cited by the *Juliana* court: 1) *Robinson Township v. Commonwealth*, a 2013 plurality opinion of the Pennsylvania Supreme Court that defined public trust rights as "inherent and indefeasible" rights impliedly reserved by the citizens when forming government;[225] and 2) *Oposa v. Factoran*, a 1990 opinion of the Philippines Supreme Court, declaring that "these basic rights need not even be written in the Constitution for they are assumed to exist from the inception of humankind."[226]

Building on the inalienable rights frame that preceded the *Juliana* case, Judge Aiken broke new ground by deciding that the PTD—although antedating the Constitution—was secured by,

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[222] *Juliana*, at *25 (emphasis the court's).
[223] *Id*.
[224] *Id.* ("Governments . . . possess certain powers that permit them to safeguard the rights of the people; these powers are inherent in the authority to govern and cannot be sold or bargained away. One example is the police power. Another is the status as trustee pursuant to the public trust doctrine.")
[225] *Id.* (citing Robinson Twp. v. Commonwealth, 83 A.3d 901, 948 (Pa. 2013); *See also Robinson*, 83 A.3d at 947 (describing such rights as "of such 'general, great and essential' quality as to be ensconced as 'inviolate.'").
[226] *Id.* (citing Oposa v. Factoran, No. 101083, 224 S.C.R.A 792, 33 I.L.M. at 188 (July 30, 1993)).

and enforceable through, the due process clause of the Fifth Amendment of the Constitution,[227] which protects against the deprivation of life, liberty, and property from arbitrary federal or state governmental action.[228] Deciding that "public trust claims are properly categorized as substantive due process claims," the court looked to the tests defining the scope of fundamental rights under the due process clause: such rights must be "implicit in the concept of ordered liberty" or "deeply rooted in this Nation's history and tradition." The court concluded that "[p]ublic trust rights, related as they are to inherent aspects of sovereignty and the consent of the governed from which the United States' authority derives, satisfy both tests."[229] Thus, the right to a stable climate system, implicit in due process, is a constitutionally protected right, a consequence of the government's ownership and control of trust resources like submerged lands and the oceans.[230] Judge Aiken observed that since the PTD was not explicit in the due process clause, it fell within the scope of Ninth Amendment protection as well—although the Fifth Amendment provided the plaintiffs' cause of action.[231]

D. **The Federal Public Trust Doctrine**

Based on the reasoning that the public trust is an attribute of sovereignty, Judge Aiken concluded that the PTD burdened the federal government. In doing so, she disagreed with the

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[227] *Juliana*, at *25.

[228] *See Juliana*, at * 5 (relying on U.S. CONST., Amend. V). The 14th amendment's due process clause, directed at the states, would presumably produce a similar result if a state's action threatened the youths' right to a healthful atmosphere. *Id.* (Amend. XIV). Therefore, the *Juliana* opinion provides analysis useful to the state courts considering ATL claims. *See* § VII.A., explaining state ATL litigation. The *Juliana* court recognized the case as part of a "wave of wave of recent environmental cases asserting state and national governments have abdicated their responsibilities under the public trust doctrine. *Id*. at *29.

[229] *Id.* at *25.

[230] In this sense, the right to a stable climate system is similar to the public's right to use the New Jersey and Oregon beaches, which are subject to public recreational use easements due to the public's ownership of tidelands. *See* Raleigh Avenue Beach Ass'n v. Atlantis Beach Club, 879 A.2d 112 (N.J. 2005); State ex rel Thornton v. Hay, 462 P.3d 671 (Or. 1969). In both cases, the courts recognized ancillary public access rights necessary to protect the public's use of publicly owned tidelands.

[231] *Juliana*, at *25, citing U.S. Const. Amend. IX (enumeration of rights express in the Constitution's text "shall not be construed to deny or disparage other retained by the people.")).

D.C. Circuit, which ruled to the contrary in an unpublished and unreflective opinion rendered in an earlier federal ATL case, *Alec L. v. Jackson*.[232] She found the D.C. Circuit's reasoning unpersuasive—and for good reason, as that court seemed to over-read Justice Kennedy's statements about the PTD in a decision, *PPL Montana*, having nothing to do with the federal government.[233]

As Judge Aiken recognized, the *PPL Montana* case was not about the PTD at all. Instead, it concerned the application of the equal footing doctrine to waterways in Montana. But in describing the equal footing doctrine, Justice Kennedy distinguished it in passing from the public trust, referring to the latter as a state-law doctrine.[234] Kennedy's dictum was not inaccurate, since the PTD has been largely interpreted by state courts. But the D.C. Circuit in *Alec L.* invoked the dictum in a context not remotely similar to the bedlands ownership question at issue in *PPL Montana*, stretching it beyond bounds to address the federal government's obligations under the PTD. As Judge Aiken explained, the *Alec L.* court's approach "was not a plausible interpretation" because "*PPL Montana* said nothing at all about the viability of federal public trust claims with respect to federally-owned trust assets."[235]

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[232] Alex L ex rel. Loorz v. McCarthy 561 F.Appx. 7 (2014) (mem.) *Id.* at *23.

[233] *Id.* (describing the D.C. Circuit's reliance on a "passing statement" of Justice Kennedy in *PPL Montana,* which Judge Aiken noted "was not a public trust case'); *id.* at *22. In a subsequent ruling in the *Juliana* case, Magistrate Judge Coffin again analyzed the *PPL Montana* case and stated that the opinion "has no relevance to the issue presented in this action." Juliana v. United States, Findings and Recommendations 11 (May 1, 2017). *See* PPL Montana v. Montana, 132 S.Ct. 1215 (2012) (ruling that the Montana Supreme Court failed to employ the proper federal test for navigable waters that were conveyed at statehood from the federal to the state governments under the equal footing doctrine, discussed in Blumm & Schaffer, *supra* note 190, at 407-09).

[234] *PPL Montana,* 132 S.Ct. at 1235.

[235] *Juliana*, at *22. In a later decision by Magistrate Judge Coffin recognizing the federal public trust, the court aptly noted: [T]his public trust over the navigable waters In other words, this public trust over the navigable waters and riverbeds passed to the States to hold as the new sovereigns from the previous sovereign, the United States. The United States could not pass what it did not have. The public trust doctrine is rooted in our common law heritage and can be traced back millennia to ancient Roman times." Juliana v. United States, Findings and Recommendations 12 (May 1, 2017). Moreover, as Judge Coffin noted, "The federal public trust doctrine may have been relatively dormant in federal courts since the 19th Century, but it has hardly been extinguished." *Id.* at 13.

Further, the *Alec L.* court's reliance on *PPL Montana*, both unfounded and unsupported by any reasoning, was flatly inconsistent with the Supreme Court's landmark PTD decision in *Illinois Central Railroad v. Illinois*.[236] In *Illinois Central*, the Court recognized the PTD as an inherent limitation on the sovereignty of Illinois and decided that the state legislature could not convey and thereby privatize the inner-harbor of Chicago to a railroad company.[237] *Illinois Central* is widely considered to be binding on the states (and therefore a reflection of federal law),[238] foreclosing wholesale privatization of public resources.[239] *Illinois Central* was *not* based on state law, despite erroneous dicta in some subsequent cases; it was instead a pronouncement of federal law.[240]

Judge Aiken recognized that no Supreme Court decision had denied that there was a federal PTD, and in fact, well-reasoned lower court opinions recognized a federal PTD.[241] She explained that although the Court stated in its *Coeur d'Alene Tribe v. Idaho* decision that *Illinois Central* involved an interpretation of state law, that decision also recognized that the PTD's "central tenets

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[236] 14 U.S. 387 (1892).
[229] *PPL Montana,* 132 S.Ct. at 1234-35.
[237] Illinois Central Railroad v. Illinois, 146 U.S. 387, 452–53 (1892) (explaining that the conveyance from the state to the railroad "would sanction the abdication of the general control of the state over lands under the navigable waters of an entire harbor or bay, or of a sea or a lake. Such abdication is not consistent with the exercise of that trust which requires the government of the state to preserve such waters for the use of the public. . . . The control of the state for the purposes of the trust can never be lost, except as to such parcels as are used in promoting the interest of the public therein, or can be disposed of without any substantial impairment of the public interest in the lands and waters remaining `. . . .").
[238] Most states have interpreted *Illinois Central* to be binding on them, belying the claim that the decision was a product of state law. *See* Crystal Chase, *The* Illinois Central *Public Trust Doctrine and Federal Common Law: An Unconventional View,* 16 HASTINGS W.-NW. J. ENVTL. L. & POL'Y L. REV. 113, 150-53 (2010) (of 35 state courts citing *Illinois Central*, 29 considered it to be binding).
[239] *Illinois Central Railroad,* 146 U.S. at 453 ("A grant of all the lands under navigable waters has never been adjudged to be within the legislative power; and any attempted grant of the kind would be held, if not absolutely void on its face, as subject to revocation. The state can no more abdicate its control over property in which the whole people are interested, like navigable waters and the soils under them, so as to leave them under the use and control of private parties . . . than it can abdicate its police powers in the administration of government and the preservation of the peace.").
[240] The *Illinois Central* decision was, for example, later mischaracterized as a statement of Illinois Law in Appleby v. City of New York, 271 U.S. 364, 395 (1926). The erroneous statement was dictum, as fully explained in Chase, *supra* note 226, at 150-53.
[241] *See Juliana*, at *23 (citing U.S. v. 1.58 Acres of Land Situated in the City of Boston, Suffolk Cnty., Mass., 523 F.Supp. 120, 124 (D. Mass. 1981); and City of Alameda v. Todd Shipyards Corp., 635 F.Supp. 1447, 1450 (N.D. Cal. 1986)). *See also* Blumm & Schaffer, *supra* note 190, at 421-22 (citing cases).

. . . applied more broadly."[242] Moreover, she pointed out that, despite the *PPL Montana* Court's statement that "the public trust doctrine remains a matter of state law," that Court proceeded to describe how the American PTD diverged from the English PTD, leading Judge Aiken to write, "I can think of no reason why the public trust doctrine, which came to this country through the Roman and English roots of our civil law system, would apply to the states but not to the federal government."[243] She concluded that, because the PTD is an inherent attribute of sovereignty, the federal sovereign is just as subject to the PTD as are the state sovereigns.[244]

E. **The PTD and Congressional Displacement**

In *Juliana,* the government argued that the federal public trust claim was displaced by the Clean Air Act, relying on an earlier Supreme Court decision, *American Electric Power Company v. Connecticut*, which concluded that the Clean Air Act displaced a common law nuisance claim brought against coal-fired plants for greenhouse gas pollution.[245] In the earlier federal ATL case, *Alec L.*, the government successfully convinced the D.C. federal district court the PTD was displaced by the Clean Air Act, under the *American Electric Power* holding.[246] The *Alec L.* court, however, made no detailed inquiry into the differences between a common law nuisance claim against polluters that could be regulated under the CAA and a public trust claim brought by citizens against government actors who failed to fulfill their constitutional fiduciary duty to protect the trust resource.

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[242] *See Juliana*, at *22 (quoting from *Coeur d'Alene Tribe,* 521 U.S. at 285).
[243] *Id.* (stating also, "[t]here is no reason why the central tenets of *Illinois Central* should apply to another state, but not to the federal government.").
[244] *Id.* at *23. Most states have interpreted *Illinois Central* to be binding on them, contradicting the claim that the decision was a product of state law. *See* Chase, *supra* note 229, at 150-53.
[245] 564 U.S. 410, 424 (2011).
[246] Alec L. v. Jackson, 863 F.Supp.2d 11, 16 (D.D.C. 2012) (quoting the *AEP* decision, 564 U.S. at 424, 428).

In an extensive analysis, Judge Aiken contrasted the two types of claims and determined that the inalienable aspect of the PTD, established long ago in the Supreme Court's *Illinois Central* decision, was decisive.[247] She recognized that the PTD—as an inherent limit on sovereignty and implicit in the Constitution's due process clause—imposed a non-displaceable obligation that distinguished it from a federal common law nuisance claim.[248] Aiken stated: "Public trust claims are unique because they concern inherent attributes of sovereignty. The public trust imposes on the government an obligation to protect the *res* of the trust. A defining feature of that obligation is that it cannot be legislated away. Because of the nature of public trust claims, a displacement analysis simply does not apply."[249]

However prominent the displacement issue will be on eventual appeal, if the Ninth Circuit understands the constitutional force of the public trust, the appeals court should categorically reject the displacement argument raised by government. As the *AEP* Court noted, displacement analysis applies to common law: "The test for whether congressional legislation excludes the declaration of federal common law is simply whether the statute 'speak[s] directly to [the] question' at issue."[250] But the trust represents a constitutional measure of the sovereign's performance. Thus, *the AEP* inquiry, which looks simply to what the statutes address, is not appropriate in a constitutional context. For even when a government enacts regulations to prevent harm to the assets held in trust, the basic trust question remains as to whether the

[247] 146 U.S. at 453 (a state may not "abdicate its control over property in which the whole people are interested.").
[248] *Juliana*, at *24.
[249] *Id.* at *24.
[250] AEP v. Connecticut, 564 U.S. 410, 424 (2011) (citation omitted).

regulation is adequate, as implemented, to protect the natural asset for present and future generations.[251]

F. The PTD and the Federal Property Clause

The *Juliana* decision rejected the government's claim that a federal PTD was inconsistent with federal authority under the Constitution's property clause.[252] The Supreme Court has ruled numerous times that the scope of federal authority under that provision is "without limitations."[253] But Judge Aiken noted that the Court has qualified its broad pronouncement, stating that "'the furthest reaches of the power granted by the Property Clause have not yet been definitively resolved[.]'"[254]

Judge Aiken characterized the "defining feature" of the PTD as the duty to protect the corpus of the trust, a duty which "cannot be legislated away."[255] Thus, she concluded that the Court has never ruled that the federal government had authority under the property clause to "violate individual constitutional rights or run afoul of public trust obligations."[256] In other words, while the property clause may allow broad discretion for the sovereign trustee to choose between appropriate trust uses to benefit the public, it may not breach the trust by allowing wholesale

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[251] It is nearly inconceivable that pollution regulation alone under the CAA would suffice to meet the public trust obligation. A sovereign would have to implement other types of policy to make the transition from fossil fuels to renewable energy and to thereby achieve the decarbonization necessary to stabilize the atmosphere, much less achieve the carbon drawdown called for by scientists. See Hansen, *Climate Prescription*, *supra* note 59.

[252] U.S. CONST., Art. IV, § 3, cl. 2 ("Congress shall have authority to establish all needful rules concerning ")

[253] Judge Aiken cited Kleppe v. New Mexico, 426 U.S. 529, 539 (1976) (rejecting the state's attempt to limit federal authority over wildlife on public lands). Decisions dating back to 1840 uphold federal authority over public lands and characterize the role of government in administering those lands as a public trustee. *See* Michael C. Blumm & Olivier Jamin, *The Property Clause and Its Discontents: Lessons From the Malheur Occupation,* 43 ECOLOGY L.Q. __ (forthcoming 2017). Decisions expressing broad, nearly unfettered federal power over public lands were typically in the context of challenges to the federal government's authority to protect such lands. For analysis, see WOOD, NATURE'S TRUST, *supra* note 101, at 135.

[254] *Juliana*, at *23 (quoting *Kleppe,* 426 U.S. at 539).

[255] *Id.* at *24.

[256] *Id.* at *23.

impairment or destruction of the natural wealth, for that would contravene the very purpose of the trust to protect an ecological endowment for present and future generations of the nation. The property clause authority—while expansive—is thus subject to constitutional rights, including the PTD.

VI. *Juliana* and the Road Ahead

Judge Aiken denied the federal government's and industry intervenors' motions to dismiss. In the next phase of the litigation, the plaintiffs must prove, after discovery, that their constitutional rights as articulated by Judge Aiken were in fact violated by the federal government's past and ongoing actions and inactions. The discussion below provides a roadmap of the steps ahead.

A. The Ongoing Case: "The Trial of the Millennium"

Judge Aiken's November 2016 decision set the stage for a trial on the merits as to whether the federal government's energy policies breached its constitutional duty to protect the due process, equal protection, and public trust rights of the youth plaintiffs to a stable climate system. A trial presenting such broad evidence—geared towards proving violations of fundamental rights—is quite unusual in federal environmental law, which typically concerns judicial review of specific agency rules or enforcement actions under statutory authority. Environmental law is largely about administrative law.[257] Environmental attorneys typically engage more in administrative and appellate practice rather than courtroom lawyering.[258]

The forthcoming stage of the *Juliana* case will—for the first time—put U.S. federal fossil-fuel policy on trial and subject it to broad public scrutiny, prompting the youths' attorneys to call

[257] See WOOD, NATURE'S TRUST, *supra* note 101, ch. 11 (describing role of courts in environmental law).
[258] One exception concerns alleged "take" of endangered species without authority granted by permits or take statements authorized by the Endangered Species Act (ESA). 16 U.S.C §1539. Proving an ESA "take" can require a fact-intensive trial.

this the "trial of the millennium."[259] Fossil fuel policies have never been comprehensively assessed against climate reality by the judiciary. Although some congressional hearings and media investigative reports have focused on discrete aspects of government's fossil fuel policy,[260] there has never been a forum evaluating how U.S. fossil-fuel policy in its totality measures up to the imperative of carbon dioxide reduction as illuminated by climate science. The *Juliana* case provides the first opportunity to do so in a court of law. As Judge Coffin noted in his order recommending denial of the defendants' motion to certify an appeal in the case,

> Whether or not climate change is occurring, whether or not it is human- induced, and the degree of its severity and impact on the global climate, natural environment, and human health is quintessentially a subject of scientific study and methodology, not solely political debate. The judicial forum is particularly well-suited for the resolution off actual and expert scientific disputes, providing an opportunity for all parties to present evidence, under oath and subject to cross- examination in a process that is public, open, and on the record. [261]

Moreover, since *Juliana* was grounded on the Constitution, Congress may not—as it has done in the past with disputes based on statutes—make the case disappear by dictating the result.[262]

During the forthcoming trial, federal lawyers may try to downplay climate dangers and obfuscate climate science. But, unlike political forums, a court offers a deliberative fact-finding forum subject to the rules of evidence, so strategies of "manufacturing doubt" (or facts) may be

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[259] *See* Coco McPherson, *Why Young Americans Are Suing Obama Over Climate Change,* ROLLING STONE (Mar. 12, 2016), http://www.rollingstone.com/politics/news/why-young-americans-are-suing-obama-over-climate-change-20160312.

[260] *See* WOOD, NATURE'S TRUST, *supra* note 101, ch. 1.

[261] *Juliana v. United States*, Findings and Recommendations 9 (May 1, 2017). In a footnote, Judge Coffin noted:

> Science and ideology have provided notable historical clashes in a trial forum previously, including Galileo's defense of the heliocentric theorem of the universe before an Inquisition court in 1633 against charges of heresy based on religious doctrine of a geocentric universe and the 1925 Scopes trial in a Tennessee State court pitting the Darwinian evolutionary theory against legislation prohibiting the teaching o f evolution in any State funded schools.

[262] *Id.* at 106-07 (discussing appropriation riders waiving statutory obligations).

far less effective in the courtroom.[263] Government evidence will not receive the kind of judicial deference that it enjoys in administrative law cases challenging rules that are subject to notice-and-comment rulemaking.[264] Instead, the government must carry the same burden of persuasion imposed on all civil litigants.[265]

1. The Focus of *Juliana* Discovery

The discovery phase of trial is presently underway. The focus of discovery and trial in the *Juliana* case will mirror the elements of the plaintiffs' claims. The public trust claim is rather straightforward, requiring evidence that the government, as trustee, allowed "substantial impairment" of crucial trust resources.[266] A plethora of existing climate studies likely satisfy that basic threshold.[267] Because the *Juliana* opinion focused on the ocean and shoreline environment as a trust resource, fact-finding will undoubtedly explore, at the least, the relationship between GHG emissions and ocean acidification, the effects of ocean acidification and rising temperatures on marine life, and the effect of rising global temperatures on sea levels.

The district court distilled the constitutional claims into whether the government's fossil fuel policies violate the youth's fundamental due process rights to life, liberty, and property.[268] Plaintiffs will present evidence to show that government actors placed them (and their generation) in danger, or enhanced a position of danger, acting with "deliberate indifference to their safety."[269]

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[263] For a discussion of the fossil fuel industry's campaign of "manufacturing doubt" within the political sphere, see NAOMI ORESKES & ERIK CONWAY, MERCHANTS OF DOUBT (Bloomsbury Press 2011).
[264] See *Chevron U.S.A., Inc. v. Nat. Resources Def. Council*, 467 U.S. 837, 843–844 (1984).
[265] That burden requires generally a preponderance of the evidence.
[266] *See supra* note 233 and accompanying text. For "substantial impairment," see *Juliana* Findings, *supra* note 104, at 1. *See Illinois Central*, 146 U.S. at 435 (explaining that the government can use or dispose of lands held in trust for the public "when that can be done without substantial impairment of [the public's] interest.").
[267] *See, e.g., Juliana* Complaint*, supra* note 49, at 51-56; Hansen, *Climate Prescription*, *supra* note 59.
[268] *See supra* note 174 and accompanying text.
[269] *See Juliana*, at *16.

As Judge Aiken wrote, "Deliberate indifference requires creation of a dangerous situation with actual knowledge or willful ignorance of impending harm."[270]

The evidence on the constitutional claims will focus on 1) government's knowledge of the climate danger, and 2) its response to and perpetuation of that danger by continuing to promote fossil fuels.[271] As to the first, numerous public reports referenced in plaintiffs' complaint and subsequent briefing show consistent warnings from climate scientists and agency staff to government leaders over the last several decades.[272] The climate-science inquiry is likely to explore the gravity and extent of risk to young people and future generations, the tipping points and climate thresholds, and projections for the future.

As to the second issue, there are a couple of aspects to the government's fossil-fuel policy that will be addressed at trial, described by plaintiff's counsel in oral argument as "two sides of a coin:" 1) the regulation side, and 2) the production side.[273] The regulation side involves the failure to regulate CO_2 emissions (such as the government's initial resistance to making an "endangerment" finding from CO_2 that would trigger Clean Air Act regulation).[274] The production side involves affirmative government steps to authorize and promote fossil fuel production and consumption. The complaint detailed a myriad actions taken over the decades "in the areas of

[270] *Id.* ("Plaintiffs's allege that the defendants' action in this case has created a life-threatening situation and that defendants have willfully ignored long-standing and overwhelming scientific evidence of that impending harm to the young and future generations.").
[271] Magistrate Judge Coffin highlighted some of the numerous factual questions to be addressed at trial in his opinion recommending denial of the motion to certify the appeal. *Juliana v. United States*, Findings and Recommendations (May 1, 2017). Two of the several questions articulated were: "Have the federal defendants deliberately chosen to encourage and promote fossil fuel production with knowledge of the dangers created by those policies?" and "Are the federal defendants' actions a substantial cause of the alleged injuries to plaintiffs?" *Id.* at 15.

[272] *See* Juliana Complaint, *supra* note 49, at 51-56; *see supra* note 56 and accompanying text.
[273] Reporter's Tr. Of Proceedings at 44-45, Juliana v. U.S., No. 6:15-cv-01517-TC (Sept. 13, 2016), https://static1.squarespace.com/static/571d109b04426270152febe0/t/57e4b56fe58c624b613c92da/1474606448428/09-13-2016+Aiken+civil+Juliana.pdf.
[274] Massachusetts v. Environmental Protection Agency, 549 U.S. 497, 510 (2007).

fossil fuel extraction, production, transportation, importation and exportation, and consumption," that cause dangerous cumulative atmospheric CO_2 concentrations, disrupting the climate system and threatening "irreversible harm to the natural systems critical to Plaintiffs' rights to life, liberty, and property.""[275]

Days before President Obama left office, the federal defendants submitted an answer to the complaint – over a year after the case was filed.[276] In it, they made several significant admissions that may make it difficult for the Trump Administration's lawyers to contest many of the factual assertions in the complaint. The government acknowledged that the use of fossil fuels contributes CO_2 emissions, "placing our nation on an increasingly costly, insecure and environmentally dangerous path."[277] The government also admitted that, for over fifty years, some officials in the federal government were aware of the growing body of climate research showing the potential danger from rising CO_2 levels. Further, the government conceded that federal policies have contributed to the present CO_2 levels, which "threaten the public health and welfare of current and future generations."[278] The Trump Administration lawyers could offer an amended answer disputing the climate science, but as Professor Michael Burger has observed, "[t]he last thing a

[275] *See Juliana* Complaint, *supra* note 49, at 91 ("After placing Plaintiffs in a position of climate danger, Defendants have continued to act with deliberate indifference to the known danger they helped create and enhance.")
[276] Fed. Defs.'Answer to First Am. Compl. for Declaratory and Injunctive Relief, Juliana v. U.S., No. 6:15-cv-01517-TC (D. Or. Jan. 13, 2017), https://static1.squarespace.com/static/571d109b04426270152febe0/t/587a5336f7e0ab6a701534f6/1484411703596/Doc+98+Feds+Answer.pdf.
[277] *Id.* The federal defendants' answer to paragraph 150 of the Juliana Complaint stated: "Federal Defendants admit the allegations in this paragraph." *Id.* (quote originates from the Juliana Complaint). *See* Juliana Complaint, *supra* note 49, at 60.
[278] *See* Federal Defs.' Answer, *supra* note 272; Megan Darby, *Obama Ties Trump Admin Into Accepting CO_2 Dangers*, CLIMATE CHANGE NEWS (Jan. 19, 2017, 4:04 PM), http://www.climatechangenews.com/2017/01/19/obama-ties-trump-admin-into-accepting-co2-dangers/; Emily Hoard, *Federal Defendants Admit to Several Allegations of Youth Climate Lawsuit*, THE NEWS-REVIEW (Jan. 19, 2017), http://www.nrtoday.com/news/environment/federal-defendants-admit-to-several-allegations-of-youth-climate-lawsuit/article_55fe66da-6d35-5394-9081-398d19cbf0ea.html.

Trump Administration department of justice actually wants is to have the science of climate change go on trial."[279]

In addition to evidence supporting the substantive due process, equal protection, and public trust claims, the plaintiffs must present facts supporting standing, showing both causation between the government's conduct and their injuries.[280] The court noted that, although "[e]ach link in these causal chains may be difficult to prove," that difficulty did not make the case non-justiciable at the pleading stage of the litigation.[281] The plaintiffs must also demonstrate redressability, namely, a "substantial likelihood" that a court remedy would address their injuries.[282] The questions framed by the court include: 1) what part of the youth plaintiffs' injuries are attributable to emissions beyond the government's control?; 2) despite such emissions, would the plaintiffs' injuries be reduced if they obtained judicial relief?; and 3) when will the world reach the climate-change tipping point of no return when irreversible consequences are inevitable, and could the defendants avoid that tipping point without cooperation from third parties?[283]

2. The Industry on Trial

Although the federal government's answer to the plaintiffs' complaint contained potentially significant admissions, certain aspects of the climate science and government response to climate change will proceed to trial. A judicially-supervised fact-finding process could have important ramifications outside of the case (discussed in section B below). The discovery process in *Juliana* proved intriguing from the outset because of the status of the fossil-fuel industry as an

[279] *See* Darby, *supra* note 267 (quoting Burger).
[280] *See supra* notes 144–46 and accompanying text.
[281] *See Juliana*, at *13.
[282] *Id.* (also noting, "If plaintiffs can show, as they have alleged, that defendants have control over a quarter of the planet's greenhouse gas emission, and that a reduction in those emissions would reduce atmospheric CO_2 and slow climate change, then plaintiffs' requested relief would redress their injuries.").
[283] *Id.* (citing an affidavit of Dr. James Hansen, concerning the irreversible tipping point).

intervenor-defendant party. This intervenor status subjected the industry to discovery requests[284] and created more opportunities for plaintiff attorneys to explore the longstanding, but largely surreptitious, relationship between the government and the fossil-fuel industry. In fact, just after a pre-trial conference with Magistrate Thomas Coffin, the plaintiffs' attorneys gave notice of a deposition for Rex Tillerson, the former CEO of Exxon who became Secretary of State for the Trump Administration.[285] At the time the *Juliana* case was filed, Tillerson was president of the board of directors of the American Petroleum Institute, the main industry intervenor in the case. His appointment as Secretary of State carried the highly unusual consequence of a lead intervenor figure becoming a lead government agency defendant.[286] Julia Olson, a plaintiffs' attorney, claimed that the Tillerson's appointment "very clearly demonstrates . . . that the United States government and the fossil fuel industry have worked together to keep a fossil-fuel–based energy system in place, and that has caused climate change and has threatened the lives of these plaintiffs and future generations and resulted in constitutional violations."[287] When the industry intervenors moved to withdraw from the case in May, 2011, they were facing the prospect of highly probing requests for admissions and other discovery requests.[288]

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[284] *See* FRCP 16, 26(b) (2015) (under the federal rules of civil procedure, an intervenor becomes a party to the case, and thus becomes subject to rule 16 governing discovery among parties).

[285] *See* Pls.' Notice of Dep. of Rex Tillerson, No. 6:15-cv-01517-TC (D. Or. Dec. 28, 2016), https://static1.squarespace.com/static/571d109b04426270152febe0/t/58645e359f74562190fa14f2/1482972726374/2016-12-28+Notice+of+Depo+Tillerson.pdf (requesting testimony of Rex Tillerson, Secretary of State-designate and former CEO of ExxonMobil).

[286] The Department of State is one of the defendant agencies in the *Juliana* case.

[287] *See* Dana Varinsky, *Trump's Secretary of State Nominee May Have to Testify in a Landmark Climate Lawsuit the Day Before Inauguration*, BUSINESS INSIDER (Jan. 13, 2017, 11:15 AM), http://www.businessinsider.com/tillerson-kids-climate-lawsuit-deposition-2017-1.

[288] *See supra* note 124. Of course, even if the interveners' motion to withdraw is granted, plaintiffs will continue to probe government documents for the same evidence of government-industry involvement. Requests made to government defendants include "communications with any of the intervener defendants" as to specified matters relating to climate and energy policy. See e.g. Federal Objections to Discovery Requests, Doc. 15, Exh. 6, p. 13-15.

One aspect of the fact-finding will concern the relationship between the industry and government officials, and whether those officials and their agencies gave preference to the industry's goal of fossil-fuel promotion instead of the public they are constitutionally bound to represent. The answer to that question could have enormous implications not only as evidence for the constitutional claims—perhaps by explaining the intent of government officials to pursue what they seemingly knew was a dangerous energy policy—but it also may enhance the public trust claim. Any trust requires a fiduciary trustee to exercise a duty of loyalty towards the beneficiaries, which, in the case of a public trust, are the present and future citizens.[289] The trust requires avoidance of any conflict of interest—indeed, in Justice Cardozo's famous words, "a punctilio of an honor the most sensitive."[290]

Policies favoring the industry to the detriment of the citizen beneficiaries would not omen well for the government defendants. Although breach of the duty of loyalty is not a necessary element of plaintiff's public trust claim,[291] a breach would fall within the complaint's allegation that "Defendants have failed in their duty of care to safeguard the interests of Plaintiffs as the present and future beneficiaries of the public trust."[292] The broad sweep of that claim appears to warrant a probing inquiry as to whether industry influence over government decision makers

[289] *See* Robinson Twp. v. Commonwealth, 83 A.3d 901, 957-60 (Pa. 2013).
[290] *See* Meinhard v. Salmon, 164 N.E. 545, 546 (N.Y. 1928).
[291] The public trust principle gives rise to both substantive and procedural fiduciary duties. See The Public Trust Doctrine, a Primer, UNIVERSITY OF OREGON ENVIRONMENTAL AND NATURAL RESOURCES LAW CENTER, https://law.uoregon.edu/images/uploads/entries/PTD_primer_7-27-15_EK_revision.pdf; Mary Christina Wood & Gordon Levitt, *The Public Trust Doctrine in Environmental Decision Making*, chapter in ENVIRONMENTAL DECISION MAKING (Edward Elgar Publishing 2015), pre-publication draft *available at* https://law.uoregon.edu/images/uploads/entries/FINAL_PDF_For_DISTRIBUTION_Encyclopedia_Public_Trust1.pdf. Plaintiffs' substantive public trust claim rests on the government's fiduciary duty to protect and restore the atmosphere. This claim does not entail any element of willfulness or intent or bias. Rather, it rests on the evidence that the atmosphere has been "substantially impaired" partially as a result of government's actions in promoting fossil fuel production. But the complaint was crafted in a broad enough manner to allow evidence of a violation of the trustees' procedural duty of loyalty to citizens. Such duty requires avoidance of any conflicts that could create bias in decision-making.
[292] *See* Juliana Complaint, *supra* note 49, at 98.

tainted the decision-making process. Thus, the relationship between the fossil fuel industry and government may be subject to discovery, making the industry vulnerable in a number of ways discussed below.

B. Ripple Effects Across the Legal and Social Landscape

Although there will likely be an appellate stage to the *Juliana* litigation in the Ninth Circuit, and perhaps the U.S. Supreme Court, the more immediate discovery and fact-finding stage of the case at trial could have dramatic ramifications within and outside the legal field. Within the legal field, the climate science fact-finding in particular may influence other ATL cases in other jurisdictions, both in the United States and abroad. Because *Juliana* is part of a coordinated litigation campaign, with a number of cases pending throughout the nation and the world, as discussed below,[293] facts established at trial and reflected in a *Juliana* opinion could influence other ATL courts.

The case could have far-reaching effects on other non-ATL litigation as well. Potential evidence indicating that fossil fuel companies knew of the mounting climate danger and continued their operations despite this knowledge—and any evidence that they in fact tried to obfuscate the climate danger in various forums[294]—could affect pending investigations launched by state attorney generals in New York and California that probe potential violations of securities laws, and a pending case brought by the Massachusetts Attorney General against Exxon Corporation alleging violations of state consumer protection laws (concerning the industry's alleged failure to disclose relevant information on the effect its products would have on the planet's climate

[293] *See infra* section VII.

[294] A rich platform for this kind of evidence has already been developed in a searching work, Naomi Oreskes & Erik Conway, MERCHANTS OF DOUBT (2011).

system).[295] Possible evidence of fossil fuel industry collusion with the government could spur new criminal investigations on the state level, or even at the federal level, and perhaps in other nations as well. As Denis Binder has explained, "criminal liability has become a global reality. . . ." particularly in response to disasters such as oil spills and explosions and other pollution disasters."[296]

Moreover, evidence of an industry-government alliance could advance the necessity defense raised by citizens arrested for non-violent civil disobedience in the form of direct action to stop the flow of oil. For example, five citizens known as the "Valve Turners" face prosecution in four different states for shutting off pipelines carrying tar sand oil from Canada in to the U.S.[297] The necessity defense requires a showing that the defendants lacked recourse to stop the climate harm using traditional legal avenues[298]—a showing that would be advanced through any evidence of government-industry collusion. In the so-called *Delta Five* case, an amicus party, the Climate Defense Project, submitted a brief in support of the necessity defense and argued that the citizens' civil disobedience was a necessary response to the state of Washington's alleged violation of its constitutional public trust duty to protect the atmosphere and a healthy climate system.[299]

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[295] For discussion of the Massachusetts litigation, see Marilyn Schairer, *Mass Scored A Victory in its Exxon Lawsuit: What's Next,* WGBH NEWS, (Jan. 18, 2017), http://news.wgbh.org/2017/01/18/local-news/mass-scored-victory-its-exxon-lawsuit-whats-next.

[296] *See* Denis Binder, *The Increasing Application of Criminal Law in Disasters and Tragedies: A Global Phenomenon*, 38 W. NEW ENG. L. REV. 313, 313 (2016), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2647610.

[297] *See Washington State Jury Refuses to Convict First "Valve-Turner" in Four State Tar Sands Pipeline Action*, FREE SPEECH RADIO NEWS (Feb. 3, 2017), https://fsrn.org/2017/02/washington-state-jury-refuses-to-convict-first-valve-turner-in-four-state-tar-sands-pipeline-action/.

[298] *See* U.S. v. Meraz-Valeta, 26 F.3d 992, 995 (10th Cir. 2004), *rev'd on other grounds by* U.S. v. Aguirre-Tello, 353 F.3d 1199, 1207-08 (10th Cir. 2004).

[299] Amicus Br. of Climate Defense Project in Supp. of Defs.' Mot. for Discretionary Review, Washington v. Brockway (Wash. Ct. App. Feb. 23, 2017), https://climatedefenseproject.org/wp-content/uploads/2017/02/CDP-Amicus-Brief-State-v.-Brockway.pdf.

Beyond its legal ramifications, the *Juliana* case could spur greater and more widespread climate awareness among the public. At a time when the Trump Administration promotes climate denialism,[300] the case has galvanized national and international press attention, and the trial is likely to be widely covered by the press. If the plaintiffs present evidence of collusion between the fossil fuel industry and government in the face of knowledge of mounting danger to children, the court of public opinion could react in a way that deters fossil fuel investors, increases the hostility of consumers to energy companies, and inspires widespread resistance to fossil fuel development worldwide. As columnist Dan Kahle wrote about the case, "When the future speaks for itself, we can't bear not to listen."[301]

C. **The Remedy**

In their complaint, *the Juliana* plaintiffs asked for a plan to 1) decarbonize the United States infrastructure at a rate that meets the pace set by the best available science, as currently captured in the Hansen prescription (described in section I); and 2) a plan to achieve drawdown of excess atmospheric carbon. These measures are necessary to restore the planet's CO_2 levels to below 350 parts per million. The remedy is characteristic of "structural injunctions" that have been ordered by other courts in various instances of institutional malfeasance or recalcitrance.[302] In his denial of the federal defendants' motion to certify an appeal, Magistrate Judge Coffin emphasized the remedial power of the court, noting, "[T]he court has broad discretion in fashioning equitable relief (if appropriate) in this lawsuit that are manageable and within the judicial role envisioned by

[300] On March 9, 2017, EPA head Scott Pruitt questioned the human role in climate change, sparking widespread citizen criticism. See *EPA's Scott Pruitt Denies Climate Change Science and Angry Americans are Flooding Him with Phone Calls*, CHICAGO TRIBUNE (Mar. 10, 2017) http://www.chicagotribune.com/news/nationworld/politics/ct-scott-pruitt-climate-chancge20170310-story.html.
[301] *See* Dan Kahle, *Youth's Climate Lawsuit Could Have Lasting Impact*, THE REGISTER-GUARD (Jan. 20, 2017), http://registerguard.com/rg/opinion/35194101-78/youths-climate-lawsuit-could-have-lasting-impact.html.csp.
[302] *See infra* note 328.

Article III of the Constitution."[303] Structural remedies require, at their core, an enforceable, judicially supervised plan. Citing precedents from the prison and civil rights institutional litigation, Judge Coffin stated:

> Thus, the court, in fashioning equitable relief in this action should the plaintiffs prevail, need not micro manage federal agencies or make policy judgments that the Constitution leaves to the other branches. The court may make findings that define the contours of plaintiffs' constitutional rights to life and a habitable atmosphere and climate, declare the levels of atmospheric $C0_2$s which will violate their rights, determine whether certain government actions in the past and now have and are contributing to or causing the constitutional harm to plaintiffs, and *direct the federal defendants to prepare and implement a national plan which would stabilize the climate system and remedy the violation of plaintiffs rights*. [304]

Even as discovery and trial proceed, the Trump Administration is likely to approve extraction and development of U.S. fossil fuels as rapidly as possible. For example, on February 7, 2017, the U.S. Army Corps of Engineers abruptly terminated the environmental review process for the controversial Dakota Access Pipeline and granted the easement, moving rapidly towards completion of the pipeline and the flow of oil.[305] Since analysts project that continued production from just currently operating oil and gas fields around the world will push the planet to 1.5 degrees C. over preindustrial temperatures[306]—beyond the aspirational limit set by the global Paris Agreement on climate change[307]—there appears to be an immediate need for so-called "backstop

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[303] Findings and Recommendations, Juliana v. United Stats 8 (May 1, 2017).

[304] *Id.* at 8 (emphasis added). *See also id*. at 9 (noting "trial court's ability to fashion reasonable remedies based on the evidence and findings after trial."). JOHN E. NOWAK & RONALD D. ROTUNDA, CONSTITUTIONAL LAW compliant the Trump administration would be in developing a national remedial plan for the climate system. Severe recalcitrance would cause delay that further damages the climate system and may foreclose options of recovery altogether, leaving the world to slide beyond tipping points. Courts, however, can rely on and take guidance from plans prepared by independent experts. *See* Prospectus for an Atmospheric Recovery Institute, University of Oregon Climate Change Research Symposium (Apr. 26, 2017).

[305] Army Corps of Engineers Grants Easement for Dakota Access Pipeline, NPR (Feb. 7 2017), http://www.npr.org/2017/02/07/513957885/army-corps-of-engineers-grants-easement-for-dakota-access-pipeline

[306] *See* Greg Muttitt, *The Sky's Limit: Why the Paris Climate Goals Require A Managed Decline of Fossil Fuel Production*, OIL CHANGE INTERNATIONAL (2016), http://priceofoil.org/content/uploads/2016/09/OCI_the_skys_limit_2016_FINAL_2.pdf.

[307] *See supra* note 55 and accompanying text.

injunctions" to protect the status quo for the duration of the lawsuit. Such an injunction could restrict fossil fuel development in new areas or limit the expansion of existing projects.[308] A court's role in this regard might be similar to the role of district courts responding to the Trump immigration order, which was challenged as unconstitutional.[309] In *Darweesh v. Trump*, for example, the federal district court for the Eastern District of New York issued a nationwide injunction against enforcement of the Trump order only days after its issuance.[310]

Clearly, the *Juliana* case clearly has enormous freight to carry. But given the Trump Administration's declared intentions to ramp up fossil-fuel production and consumption,[311] there appears to be little in the way of viable alternatives to force rapid reduction of greenhouse gas pollution.[312] Section VII below positions the case in the atmospheric trust litigation campaign advancing steadily in the United States and abroad.

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[308] After President Trump was elected but before he took office, President Obama had a unique opportunity to solidify some of his late-term actions disapproving fossil fuel production by entering into a partial consent decree in the *Juliana* case. See Wood, Blumm, & Woodward, *supra* note 25. Despite persistent requests to do so by youth plaintiffs, the Obama Justice Department refused to pursue settlement options. See Alliance for Climate Education/Our Children's Trust, *President Obama: Our Future Is On the Line*, WASH. POST (Dec. 2, 2016, 12:00 PM), https://www.washingtonpost.com/video/national/president-obama-our-future-is-on-the-line/2016/12/02/8765535e-b8b1-11e6-939c-91749443c5e5_video.html. The lack of transparency shrouding the Justice Department makes it is difficult to know whether the highest officials in the Obama administration were ever even appraised of the opportunity to enter into a partial consent decree, or whether Justice attorneys were acting on their own without direction from the Obama White House – a problematic possibility. The attorney ethics surrounding Department of Justice decisions on settlement opportunities are worthy of examination but are beyond the scope of this article.

[309] *See supra* notes 135-36 and accompanying text.

[310] *See* Michael D. Shear, Nicholas Kulish, & Alan Feuer, *Judge Blocks Trump Order on Refugees Amid Chaos and Outcry Worldwide*, N.Y. TIMES (Jan. 28, 2017), https://www.nytimes.com/2017/01/28/us/refugees-detained-at-us-airports-prompting-legal-challenges-to-trumps-immigration-order.html.

[311] *See supra* notes 6-11 and accompanying text.

[312] As the court in the Washington ATL case—Foster v. DOE—recently noted in a procedural order, "This Court takes judicial notice of the fact that federal mechanisms designed to protect the environment are now under siege, more than ever leaving to the States the obligation to protect their citizens under the Public Trust Doctrine." Foster v. Department of Ecology, 14-2-25295-1 SEA, Order Granting Petitioners Motion for Leave to File Supplemental Brief (April 18, 2017). Further, as noted earlier in this article, climate recovery will also require massive drawdown of excess CO2 in the atmosphere. *See supra* notes 67-70. A litigation approach to recover natural resource damages (NRD) from the carbon majors (fossil fuel companies) to fund a global restoration effort aimed towards natural drawdown is developed in Mary Christina Wood & Dan Galpern, *Atmospheric Recovery Litigation: Making the Fossil Fuel Industry Pay to*

VII. Atmospheric Trust and PTD Litigation Worldwide

Juliana was part of a series of cases filed by youth plaintiffs worldwide against governments, collectively referred to as atmospheric trust litigation (ATL).[313] ATL cases seek to apply the fundamental public trust duty of protection to the atmosphere to abate continued damage from GHG pollution and restore climate balance.[314] This section first considers the state litigation. The second section considers some of the cases abroad.

A. State Atmospheric Trust Litigation

ATL cases must progress through three stages to prove effective. First, the court must recognize its role in upholding the rights of the plaintiffs and rule against the government's procedural defenses designed to keep the case out of court—defenses such as standing, political question, and displacement. Second, the court must issue declarations of principle providing a guide for government action and a framework for the remedy. Third, the court must manage the remedy so that it offers a practical means to enforce the rights of the plaintiffs. Although the decisions in the state ATL cases are not binding on other states, they can influence each other as they move through the courts.

1. Overcoming Judicial Inertia

Public trust cases call forth the judiciary to evaluate the other branches of government in performance of fiduciary obligations owed to the people. As the Hawaii Supreme Court stated in a leading public trust case, "The check and balance of judicial review provides a level of protection

Restore a Viable Climate System, 45 ENVTL. L. 259 (2015). Such NRD litigation would be brought by sovereign trustees (states, tribes, or foreign nations) against fossil fuel defendants..

[313] *Id.* (outlining the atmospheric trust litigation campaign); *see also* WOOD, NATURE'S TRUST, *supra* note 100. Atmospheric Trust Litigation is an approach to climate crisis first originating in Mary Christina Wood, "Atmospheric Trust Litigation Around the World," chapter in Fiduciary Duty and the Atmospheric Trust (Ken Coghill, Charles Sampford, Tim Smith, eds) Ashgate Publishing (Australia) (January 2012).

[314] *See* WOOD, NATURE'S TRUST, *supra* note 100, at 220-29.

against improvident dissipation of an irreplaceable *res*."[315] In the context of the ATL campaign, the early cases demonstrated that some courts were uncomfortable with a role in climate crisis, particularly in light of the complex regulatory schemes available to the agencies to regulate greenhouse gas pollution. As a result, several earlier decisions were dismissed on displacement, preemption, or political question grounds.[316] As the court in *Alec L*. claimed, agencies are allegedly "better equipped" than courts to handle GHG pollution.[317]

These early decisions placed unwarranted confidence in the political branches of government to prevent runaway planetary heating.[318] They succumbed, as several notable climate tort cases before them, to the judicial "nihilism" identified by Professor Kyser. "[D]enying [their] own expansive power, [these courts] cowered before catastrophe."[319] Perhaps spurred by growing evidence of the severity of the climate crisis and the government's clear lack of appropriate response, courts have begun to discard the displacement, preemption, and political question arguments. In *Kanuk v. Alaska*, for example, the Alaska Supreme Court decided that the political

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[315] *In re* Water Use Permit Applications, 9 P.3d 409, 455 (Haw. 2000). *See also* Lake Mich. Fed'n v. U.S. Army Corps of Eng'rs, 742 F. Supp. 441, 446 (N.D. Ill. 1990) ("The very purpose of the public trust doctrine is to police the legislature's disposition of public lands. If courts were to rubber stamp legislative decisions, as Loyola advocates, the doctrine would have no teeth."); Ariz. Ctr. for Law in the Pub. Interest v. Hassell, 837 P.2d 158, 169 (Ariz. Ct. App. 1991) ("Just as private trustees are judicially accountable to their beneficiaries for dispositions of the res, so the legislative and executive branches are judicially accountable for their dispositions of the public trust.").

[316] *See, e.g.*, Alec L. v. Jackson, 863 F. Supp. 2d 11, 17 (D. D.C. 2012) (dismissing ATL federal suit on basis of displacement by Clean Air Act and noting that agencies are "better equipped" than courts to address carbon emissions); Chernaik v. Kitzhaber, 328 P.3d 799 (Or. Ct. App. 2014) (reversing lower court's dismissal that had been based on political question doctrine, separation of powers doctrine, sovereign immunity, and the court's perceived lack of authority to grant requested relief.).

[317] *See* Alec L., 863 F.Supp.2d at 17; *see also* Cherniak et al. v. Brown, No. 16-11-09273, slip op. at 15,16 (Or. Cir. Ct. May 11, 2015), https://static1.squarespace.com/static/571d109b04426270152febe0/t/5760c5061d07c0ae9834fa84/1465959686687/15.05.11.OregonCircuitCtOpinion.pdf (stating that the climate recovery plan sought by plaintiffs would ask the "Court to substitute its judgment for that of the legislature."). The case is on appeal to the Oregon Court of Appeals.

[318] For discussion of judicial avoidance in the environmental context, see LISA KLOPPENBERG, PLAYING IT SAFE: HOW THE SUPREME COURT SIDESTEPS HARD CASES AND STUNTS THE DEVELOPMENT OF LAW 39–43, 46, 66 (N.Y.U. Press 2001).

[319] See Weaver & Kysar, *supra* note 37, at 39 ("[Judges have gone to extraordinary lengths to avoid jurisdiction over climate change suits. Although tort aw could accommodate catastrophe, many courts have preferred to respond with nihilism.").

question did not foreclose plaintiff's suit, although it rejected the particular declaratory relief sought by the plaintiffs, finding that it would not be dispositive.[320] In Oregon, the trial judge dismissed the plaintiffs' suit because the court thought the question was more appropriate for the legislative branches,[321] but that decision was reversed by the Oregon Court of Appeals, which held ""plaintiffs are entitled to a judicial declaration of whether, as they allege, the atmosphere 'is a trust resource' that 'the State of Oregon, as a trustee, has a fiduciary obligation to protect [from] the impact of climate change' . . . "[322] In a summary of ATL cases, Professor Abate concluded that "several state courts have embraced the concept of ATL as a potential strategy to address climate change regulation in the courts, and it is rapidly gaining support."[323]

2. Judicial Recognition of ATL's Foundational Legal Principles

Beyond recognizing a role for the judiciary, the courts must declare rights to climate stability and underscore the constitutional nature of those rights. Even early cases made considerable headway on both scores. For instance, in 2012, *Bosner-Lain v. Texas*, the court upheld the Texas Commission on Environmental Quality's denial of the plaintiffs' rulemaking petition, but not without addressing several of the agency's incorrect assumptions about the case.[324] The court explicitly discarded the agency's determination that the PTD applied only to water,

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[320] Kanuk v. Alaska, 335 P.3d 1088, 1102 (Alaska 2014).

[321] Ignoring the purpose of the trust claim to hold the legislature accountable, the court stated, "One of the functions of the legislature is to decide politically, based on whatever facts it deems relevant to the determination, whether or not global warming is a problem and what, if anything, ought to be done about it." Cherniak v. Kitzhaber, (Or. Cir. Ct. Apr. 5, 2012), https://static1.squarespace.com/static/571d109b04426270152febe0/t/5760c9f801dbae197362236c/1465960952875/Oregon.Dist_.Ct_.Dismissal.Order_.pdf

[322] Cherniak v. Kitzhaber, 263 Or App 463 (2014).

[323] *See* Abate, *supra* note 89, at 557.

[324] Bonser-Lain v. Texas Comm'n on Envtl. Quality, No. D-1-GN-11-002194 (Tex. Dist. Ct. July 9, 2012), https://static1.squarespace.com/static/571d109b04426270152febe0/t/57681f6de4fcb5dd5cbcb4f6/1466441581871/Texas-letter-ruling_0.pdf. The Texas Court of Appeals would later hold that the Texas Legislature had not given Texas courts jurisdiction over cases involving agencies' decisions regarding rule making petitions, invalidating the district court decision without addressing the court's findings on the public trust doctrine. *See* Texas, OUR CHILDREN'S TRUST (July 23, 2014), https://www.ourchildrenstrust.org/texas.

stating "the [public trust] doctrine includes all natural resources of the State," and the federal Clean Air Act provided "a floor, not a ceiling, for the protection of air quality."[325] In a 2015 case, the New Mexico Court of Appeals determined that the atmosphere was a trust asset; however, the court upheld dismissal of the case on grounds that statutes provided the appropriate framework of relief.[326] In *Butler ex rel. Peshlakai v. Brewer*, the Arizona Court of Appeals stated: "[W]e assume without deciding that the atmosphere is a part of the public trust subject to the doctrine."[327] In Oregon, a lower court rejected air as part of the public trust, but the decision was roundly criticized by amicus law professors and is now on appeal.[328] In *Kanuk v. Alaska,* the Alaska Supreme Court stated that plaintiffs made a "good case" that the atmosphere is a public trust asset, but the court declined to issue declaratory relief to that effect, for prudential reasons.[329] The Alaska court noted, that, even absent a declaration that air is a public trust asset, the trust could include climate change because of its "detrimental impact on already-recognized public trust resources such as water, shorelines, wildlife, and fish."[330]

In Washington's ATL case, *Foster v. Department of Ecology*, the court resoundingly found that public trust includes air and atmosphere. Judge Hill stated: "The navigable waters and the atmosphere are intertwined and to argue a separation of the two, or to argue that GHG emissions do not affect navigable waters is nonsensical."[331] The court also decided that the public trust held

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[325] *Id.* at 1-2.
[326] *See* Sanders-Reed v. Martinez, 350 P.3d 1221 (N.M. Ct. App. 2015) ("[H]olding that state constitution recognizes public trust over atmosphere but also finding that citizens' claims for protection of the atmosphere must be based on existing constitutional or statutory processes.").
[327] Butler *ex rel*. Peshlakai v. Brewer, 2013 WL 1091209, *6 (Ariz. Ct. App. Mar. 14, 2013) (dismissal affirmed for lack of remedy).
[328] *See* Cherniak v. Brown, No. 16-11-09273, slip op. at 15,16 (Or. Cir. Ct. May 11, 2015), https://static1.squarespace.com/static/571d109b04426270152febe0/t/5760c5061d07c0ae9834fa84/1465959686687/15.05.11.OregonCircuitCtOpinion.pdf; *see also Oregon*, OUR CHILDREN'S TRUST (last visited Mar. 9, 2017), https://www.ourchildrenstrust.org/oregon.
[329] Kanuk v. State, Dep't of Natural Res., 335 P.3d 1088 (Alaska 2014).
[330] *Id.*
[331] *See* Order Affirming the Dep't of Ecology's Denial of Pet. for Rule Making at 8, Foster v. Wash. Dep't of

constitutional force, both as a reserved right and as a right corollary to the state's ownership of submerged lands under the equal footing doctrine. The court declared, "the State has a constitutional obligation to protect the public's interest in natural resources held in trust for the common benefit of the people of the State . . . . If ever there were a time to recognize through action this right to preservation of a healthful and pleasant atmosphere, the time is now."[332]

3. Judicial Management of the Remedy

When courts turn to managing the remedy in stage three of ATL cases, their role is no different than in other public trust cases: courts do not exercise direct management over the trust *res* but instead aim to ensure that the political branches fulfill their trust obligation to avoid destruction or substantial impairment of the *res*. A critical difference arises, however, with respect to the urgency with which government must undertake remedial measures. In a tipping-point world, effective relief depends on close judicial supervision to ensure the implementation of effective climate recovery plans within applicable time frames. The past approach of deferring to the agencies no will longer suffice in face of an unforgiving climate reality, coupled with demonstrated agency recalcitrance to take action. Close supervision by the courts involves two tasks: 1) requiring a plan that includes measurable steps, and 2) imposing continued oversight to

Ecology, No. 14-2-25295-1 SEA (Wash. Super. Ct. Nov. 19, 2015).

[332] *Id.*, at 8–9. *See* Wood & Woodward, *supra* note 93 (discussing constitutional grounds of ruling). Framing the right to a healthy atmosphere as a constitutional right, the Washington court underscored the urgency of climate crisis by citing a December 2014 Washington Department of Ecology report that stated: "Climate change is not a far off risk. It is happening now globally and the impacts are worse than previously predicted, and are forecast to worsen . . . If we delay action by even a few years, the rate of reduction needed to stabilize the global climate would be beyond anything achieved historically." *Id*. at 9 (quoting WASH. DEP'T OF ECOLOGY, WASHINGTON GREENHOUSE GAS EMISSION REDUCTION LIMITS (2014)). The court recognized that the climate protection duty is also grounded in the Clean Air Act. *See id*. at 6 ("This mandatory duty must be understood in the context not just of the Clean Air Act itself but in recognition of the Washington State Constitution and the Public Trust Doctrine.").

ensure proper execution. Judicial oversight of remedies was characteristic of desegregation, treaty rights, land use, prison reform, and educational funding cases.[333]

Because most states already have some air regulation, and many have climate goals, the problem faced by some ATL courts is not the wholesale lack of agency authority to address climate goals, but instead a lack of effective action to match the scale of what scientists now say is needed to avert irrevocable harm. In some states, the mere existence of a statutory or regulatory scheme for GHG reduction masks serious neglect by the state agencies to implement the charge—not unlike the federal government's longstanding failure to undertake comprehensive GHG regulation under the Clean Air Act.[334] In Oregon, for example, statewide climate targets were set in 2007, but they were non-binding, never implemented, and are now outdated.[335]

To provide an effective remedy, a court must sometimes undertake the challenging task of comparing the regulatory progress underway with the progress needed as called for by expert testimony (or, as in the case of Washington, as informed by reports issued by the same agency that the youth have sued). Typically, government defendants allege that their regulatory processes will address the problem, and early ATL courts deferred to those branches, even though the plaintiffs alleged that the climate response by those branches was breathtakingly insufficient. The Massachusetts and Washington ATL actions, however, serve as path-breaking examples of courts addressing deficiencies of regulatory action, with the Washington case even taking notice of the

[333] *See* WOOD, NATURE'S TRUST, *supra* note 101, ch. 11 (describing remedial structures judges use to enforce fundamental rights in contexts of longstanding institutional recalcitrance or dysfunction).
[334] For the saga of failure to regulate under the Clean Air Act, see WOOD, NATURE'S TRUST, *supra* note 101, ch. 1.
[335] See Plaintiffs' Opening Brief at 11-12, Cherniak v. Oregon (filed Feb. 25, 2016, Or. Ct. App.) (citing findings of Global Warming Commission that "Oregon is likely to fall well short of the targets set by its greenhouse gas reduction and mitigation plan.").
https://static1.squarespace.com/static/571d109b04426270152febe0/t/5760c4951d07c0ae9834f858/1465959583677/16.02.25.OpeningBriefAppeal.pdf.

contemporaneous *Juliana* decision.[336] (Notably, too, a court in the Netherlands has found government action deficient in comparison to the action scientists emphasize is necessary, as explained below in section VII.B.).

a. ATL in Massachusetts: Kain v. Department of Environmental Protection

The Massachusetts ATL case started as a petition for rulemaking to the state's environmental agency in 2012, requesting the state agency to prepare a plan to reduce carbon emissions, as required by the Massachusetts' Global Warming Solutions Act.[337] In a dystopian coincidence, the youth petitioners were delayed in filing the petition by one of the largest storms ever to hit the East Coast, Hurricane Sandy.[338] Although the Department of Environmental Protection (DEP) denied the petition in June 2013, citing ongoing and upcoming efforts to address carbon emissions, the DEP's decision agreed with the petitioners that it was the state's responsibility "to protect the integrity of Massachusetts' atmospheric resource, climate system, and shorelines by adequately protecting our atmosphere."[339] However, the DEP's decision also

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[336] *See* Order Den. Mot. for Order of Contempt & Granting Sua Sponte Leave to File Am. Pleading at 4-5, Foster v. Wash. Dep't of Ecology, No. 14-2-25295-1 SEA (Wash. Super. Ct. Dec. 19, 2016), https://static1.squarespace.com/static/571d109b04426270152febe0/t/585979e1d1758ec9d1667705/1482343090836/FostervEcology-2016-12-19-141247.

[337] *See* Pet. of Eshe Sherley et al. to the Mass. Dep't of Envtl. Prot. (Nov. 1, 2012), https://static1.squarespace.com/static/571d109b04426270152febe0/t/57609324356fb0f59a89b317/1465946918296/2012.10.31-FINAL+MA+Petition_0.pdf.

[338] *See In the Wake of Hurricane Sandy, Boston Students Deliver Climate Change Petition to the Massachusetts Department of Environmental Protection*, OUR CHILDREN'S TRUST (Nov. 1, 2012), https://static1.squarespace.com/static/571d109b04426270152febe0/t/576092feab48de66f71fe4f0/1465946879363/2012.11.1-PressRelease+MA.pdf.

[339] *See* The Massachusetts Department of Environmental Protection's Action on the *Kids vs. Global Warming* Petition, MASS. DEP'T OF ENVTL. PROT. (June 24, 2013), https://static1.squarespace.com/static/571d109b04426270152febe0/t/57609155c6fc08526047381b/1465946454076/MassDEPDecision.pdf.

maintained that state positive law supplanted the state's public trust doctrine.[340] In response, the petitioners filed an appeal with the district court.[341]

The district court affirmed DEP's denial in 2015, and the youth plaintiffs appealed.[342] Just six months later, the Massachusetts Supreme Judicial Court decided to take the case on direct review, skipping the lower appellate court.[343] In May 2016, the Massachusetts court handed a resounding victory to the youth, deciding that the DEP failed to satisfy its legal obligation to reduce the state's GHG emissions pursuant to legislative goals.[344] The state's existing schemes, it determined, "fall short."[345] The court ordered the agency to "promulgate regulations that address multiple sources or categories of sources of greenhouse gas emissions, impose a limit on emissions that may be released . . . and set limits that decline on an annual basis."[346]

The Massachusetts high court did not order the lower court to retain jurisdiction over the remedy, but the decision prompted a concerted and direct response from the state's political branches. On September 2016, Governor Charles Baker issued Executive Order No. 569: "Establishing an Integrated Climate Change Strategy for the Commonwealth."[347] The order

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[340] *Id.*
[341] *See* Complaint, Kain v. Mass. Dep't of Envtl. Prot., No. 14-2551 (Mass. Super. Ct. Aug. 11, 2014), https://static1.squarespace.com/static/571d109b04426270152febe0/t/57609131c6fc08526047374e/1465946419001/14.08.11COMPLAINTGWSASuprCt.pdf.
[342] *See Massachusetts*, OUR CHILDREN'S TRUST, https://www.ourchildrenstrust.org/massachusetts/.
[343] *Id.*
[344] *See* Kain v. Mass. Dep't of Envtl. Prot., No. SJC-11961, slip op. at 2 (Mass. May 17, 2016), https://static1.squarespace.com/static/571d109b04426270152febe0/t/5760900cf850822f93831a52/1465946126893/2016.05.17.MASupCtDecision.pdf.
[345] *Id.* at 2.
[346] *Id.* at 9.
[347] *See* Establishing an Integrated Climate Change Strategy for the Commonwealth, Exec. Order No. 569, OFFICE OF MASS. GOV. CHARLES D. BAKER, (Sept. 16, 2016), https://static1.squarespace.com/static/571d109b04426270152febe0/t/583629145016e15e71e84953/1479944469315/MA+Executive+Order+Climate+Change.pdf.

required the DEP to promulgate a regulatory scheme by August 11, 2017, that would establish annual reductions in the state's GHG emissions.[348]

Although the outcome of *Kain* is promising and a sign of progress, tangible emissions reductions do not result from a signature on an executive order. The importance of continued judicial oversight is evidenced by the Washington ATL case discussed below.

b. ATL in Washington: Foster v. Department of Ecology

In the *Washington* ATL action, the Department of Ecology (DOE) denied the youth plaintiffs' petition for science-based rulemaking, and the plaintiffs appealed to the Washington Superior Court. In *Foster v. Washington Department of Ecology*,[349] Judge Hollis Hill issued her first opinion in June 2015, ordering DOE to reconsider its denial of the youths' petition.[350] While DOE was reconsidering its decision, the plaintiffs obtained a meeting with Governor Jay Inslee, after which Inslee issued a directive to the DOE to engage in the science-based rulemaking the youths were seeking.[351] As a result, the DOE again denied the youths' petition on the ground that the executive directive initiated the rulemaking that the plaintiffs requested.[352]

The youths appealed again. In the ensuing decision, Judge Hill upheld the DOE's denial of the rulemaking petition, but not without declaring strong parameters defining the state's duty to

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[348] *Id.* at 3.
[349] For a detailed discussion of Foster v Department of Ecology, see Wood & Woodward, *supra* note 93.
[350] *See* Order Remanding Dep't of Ecology's Denial of Pet. for Rule Making, Foster v. Wash. Dep't of Ecology, No. 14-2-25295-1 SEA (Wash. Super. Ct. June 23, 2015), https://static1.squarespace.com/static/571d109b04426270152febe0/t/576080a91bbee08251f28287/1465942187394/Order_Fosterv.Ecology.pdf.
[351] *See In Advance of Paris Climate Talks, Washington Court Recognizes Constitutional and Public Trust Rights and Announces Agency's Legal Duty to Protect Atmosphere for Present and Future Generations*, OUR CHILDREN'S TRUST (Nov. 19, 2015), http://ourchildrenstrust.org/sites/default/files/15.11.20WADecisionPR.pdf.
[352] *Id.*

protect the atmosphere under the PTD.[353] The court's approach to interpreting the plaintiffs' public trust rights was undoubtedly influenced by the dilatory climate response from the other branches of government. Judge Hollis had to look no further than the DOE's own December 2014 report to find the agency's response wholly inadequate. She stated:

> The scientific evidence is clear that the current rates of reduction mandated by Washington law cannot achieve the GHG reductions necessary to protect our environment and to ensure the survival of an environment in which Petitioners can grow to adulthood safely. In fact, in its 2014 report to the legislature the Department stated, 'Washington's existing statutory limits should be adjusted to better reflect the current science. The limits need to be more aggressive in order for Washington to do its part to address climate risks.'[354]

Three months after the court's dismissal, DOE dropped its rulemaking procedure, leading to another appeal. This time Hill responded by stating,

> This is an extraordinary circumstance that we are facing here. . . . The reason I'm doing this is because this is an urgent situation. This is not a situation [in which] these children can wait. . . . Polar bears can't wait, the people of Bangladesh can't wait. I don't have jurisdiction over their needs in this matter, but I do have jurisdiction in this court, and for that reason I'm taking this action.[355]

Judge Hill ordered DOE to promulgate an emissions reduction rule by the end of 2016 and to submit recommendations to the legislature concerning science-based reductions for the 2017 legislative session.[356] She also directed DOE to consult with the plaintiffs before making those legislative recommendations.[357] Instead, Governor Inslee appealed the decision, rolling out a

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[353] *See* Order Affirming the Dep't of Ecology's Denial of Pet. for Rule Making, Foster v. Wash. Dep't of Ecology, No. 14-2-25295-1 SEA (Wash. Super. Ct. June 23, 2015), https://static1.squarespace.com/static/571d109b04426270152febe0/t/57607fe459827eb8741a852c/1465941993492/15.11.19.Order_FosterV.Ecology.pdf. Judge Hill stated that the state has the duty to establish air quality standards that "[p]reserves, protect[s] and enhance[s] the air quality for the current and future generations." *Id.* at 6 (quoting RCW 70.94.011).

[354] *Id.* at 5.

[355] Tr. of Hr'g for Order on Pets' Mot. For Relief Under CR 60(b) at 20, Foster v. Wash. Dep't of Ecology, No. 14-2-25295-1 SEA (Wash. Super. Ct. May 3, 2016).

[356] *See Youths Secure Win in Washington State Climate Lawsuit: Judge Chastises State, Rules From Bench Ordering State to Reduce Carbon Emissions,* OUR CHILDREN'S TRUST (Apr. 29, 2016), http://ourchildrenstrust.org/sites/default/files/2016. 04.29WAFinalRulingPR.pdf.

[357] Order on Pets.' Mot. For Relief Under CR 60(b) at 3, Foster v. Wash. Dep't of Ecology, No. 14-2-25295-1 SEA (Wash. Super. Ct. May 16, 2016).

proposed clean air rule supported by the fossil fuel industry that fell short of the court's orders.[358] The plaintiffs responded with a motion for contempt of court. Although Judge Hill denied the contempt motion, she did grant the plaintiffs' request to amend the original complaint to include a constitutional climate rights claim "due to the emergent need for coordinated science based action by the state of Washington to address climate change before efforts to do so are too costly and too late."[359] Judge Hill's order cited the *Juliana* decision in deciding that "[w]here a complaint alleges government action is affirmative and substantially damaging the climate system in a way that will cause human deaths, shorten human lifespans, result in widespread damage to property, threaten human food sources, and dramatically alter the planet's ecosystem, it states a claim for [a] due process violation."[360]

The court made clear that the youths would have their day in court to make their claims. Perhaps more importantly, the court seemed to embrace a judicial role because of the magnitude of the issue: "Because this court is fully advised in the matter thus far it retains jurisdiction to implement this ruling and proceed as expeditiously as possible."[361] Thus, *Foster* became the first ATL action to progress firmly into the remedial stage of coordinated litigation.[362]

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https://static1.squarespace.com/static/571d109b04426270152febe0/t/57607f4901dbaec634f08166/1465941834691/16.05.16.Order_.pdf.

[358] *See WA Gov. Doubles Down on Betraying Youth*, OUR CHILDREN'S TRUST (June 16, 2016), https://static1.squarespace.com/static/571d109b04426270152febe0/t/576da0b8ff7c50a6aea2f349/1466802374364/2016.06.16InsleeAppealPR.pdf.

[359] *See* Order Den. Mot. for Order of Contempt & Granting Sua Sponte Leave to File Am. Pleading at 2, Foster v. Wash. Dep't of Ecology, No. 14-2-25295-1 SEA, (Wash. Super. Ct. Dec. 19, 2016), https://static1.squarespace.com/static/571d109b04426270152febe0/t/585979e1d1758ec9d1667705/1482343090836/FostervEcology-2016-12-19-141247.

[360] *Id.* at 4 (quoting *Juliana*, at *16).

[361] *Id.* at 5.

[362] For additional discussion of the decision, see Weaver & Kysar, *supra* note 37, at 56-61. As the litigation continues, the court has emphatically addressed the urgency. In an opinion rendered in the case on a procedural motion, the court noted "the emergent need for coordinated science based action by the state of Washington to address climate change before efforts to do so are too costly and too late. . . . Time has marched on . . . . To date, the legislature has not acted to establish binding requirements to meet statutory emissions limits." Foster v. Department of Ecology, Foster v. Dept.

In addition to the cases mentioned above, a decision by the Colorado Court of Appeals in March, 2017 handed a victory to youth plaintiffs that challenged fracking practices.[363] Ongoing state ATL actions in Maine, Oregon, and Pennsylvania have potential for positive outcomes as well.[364] Although these decisions will not be binding in other states, the decisions could influence each other. Meanwhile, Our Children's Trust is formulating additional actions in Hawaii, North Carolina, Florida and other states.[365]

B. **Atmospheric Trust and PTD Litigation Worldwide**

The ATL campaign draws upon the public trust principle in large part because it is a universal principle of ecological obligation, now recognized by other nations as well as the United States. The idea is that, in the wake of a failure of international treaty negotiations, domestic courts of nations across the world could enforce climate obligations from a shared framework of fiduciary responsibility toward the common atmosphere.[366] ATL suits seek to accomplish, though decentralized domestic litigation in countries across the globe, what has thus far eluded the centralized, international diplomatic treaty-making process. The ATL campaign characterizes all nations as co-trustees of the atmosphere, each holding a duty towards both their own citizens and their co-trustees of protecting the shared atmospheric trust.[367] If the ATL approach were to succeed, domestic actions would force science-based carbon dioxide reduction, and therefore

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of Ecology, 14-2-25295-1 SEA, Order Granting Petitioners Motion for Leave to File Supplemental Brief 2, 3 (April 18, 2017).

[363] For coverage, see *Colorado Elected Officials in a Letter to Governor: Don't Appeal this Court Case,* COLORADO INDEPENDENT (May 16, 2017).

[364] For links to each case, see *State Judicial Actions Now Pending*, OUR CHILDREN'S TRUST (last visited Mar. 8, 2017), https://www.ourchildrenstrust.org/pending-state-actions.

[365] *See Other Proceedings in All 50 States*, OUR CHILDREN'S TRUST, https://www.ourchildrenstrust.org/other-proceedings-in-all-50-states.

[366] *See* Mary Christina Wood, *Atmospheric Trust Litigation Around the World*, *in* FIDUCIARY DUTY AND THE ATMOSPHERIC TRUST (Ken Coghill et al. eds. 2012), https://law.uoregon.edu/images/ uploads/entries/ATL-Across-the-World.pdf.

[367] *See id.*

create tangible backing to the principles declared in the United Nations Framework Convention on Climate Change (UNFCCC), agreed to in 1992 by 192 nations of the world.[368]

Long before the ATL global litigation, many leading cases established the public trust as a recognized principle in legal systems throughout the world. In a pathbreaking 1993 decision from the Philippines, *Oposa v. Factoran*, the Philippines Supreme Court declared an inherent right to ecological balance "exist[ing] from the inception of humankind."369 The lawsuit was brought by children and their parents to prevent the federal government from allowing private logging corporations to cut down the last remaining old growth forest in the country. Invoking the trust to enjoin any further logging, the Court declared:

> Needless to say, every generation has a responsibility to the next to preserve that rhythm and harmony for the full enjoyment of a balanced and healthful ecology… . [T]he right to a balanced ecology … belongs to a different category of rights [than civil and political rights] altogether for it concerns nothing less than self-preservation and self-perpetuation … the advancement of which may even be said to predate all governments and constitutions.
>
> As a matter of fact, these basic rights need not even be written in the Constitution for they are assumed to exist from the inception of humankind. If they are now explicitly mentioned … it is because of the well-founded fear of its framers that unless the right to a balanced and healthful ecology and to health are mandated as state policies by the Constitution itself … the day would not be too far when all else would be lost not only for the present generation, but also for those to come – generations which stand to inherit nothing but parched earth incapable of sustaining life.[370]

Indeed, the *Oposa* suit, brought on behalf of children, provided the template for suits in the atmospheric trust context nearly two decades later. Its declaration of an inherent constitutional right informed the *Juliana* court cited *Oposa*.[371] A subsequent case decided by the Philippines

[368] United Nations Framework Convention on Climate Change, UNITED NATIONS (1992), https://unfccc.int/resource/docs/convkp/conveng.pdf.
[369] Oposa v. Factoran, GR No 101083 (Sup Ct Phil 1993) (also rejecting the government's claim that the case raised political questions unsuited for judicial resolution), reprinted in BLUMM & WOOD, *supra* note 96, at 341.
[370] Oposa v Factoran, GR No 101083 (Sup Ct Phil 1993),.
[371] *See Juliana*, at *15, 25.

Supreme Court decision invoked the PTD in issuing a comprehensive injunction requiring the cleanup of pollution in Manila Bay.[372] That case also informs the remedy sought in the atmospheric trust cases, as the Philippines Supreme Court retained jurisdiction to supervise a number of agencies in following a comprehensive plan to clean up the bay.[373]

Other international recognition of the PTD includes the India Supreme Court's 1997 landmark decision enjoining a resort development on forest land adjacent to the Bees River, in which the court announced that "[u]nlike our laws, nature cannot be changed by legislative fiat; [natural law is] imposed on us by the natural world. An understanding of the laws of nature must therefore inform all of our social institutions."[374] Other courts upholding PTD claims include those in Uganda, Kenya, Indonesia, South Africa, and Canada;[375] many other jurisdictions have located the PTD in their constitutions' promise of a "right to life."[376]

Several international ATL cases reflect an awakening of the judiciary as the key institution to address the climate crisis. PTD actions abroad have in fact produced some resounding victories, including in the climate-change context. The most prominent of these was a 2015 decision of a Netherlands district court, which agreed with environmentalists that the country had to take action

[372] Metropolitan Manila Development Authority v. Concerned Residents of Manila Bay, 574 S.C.R.A. 661 (Phil. 2008), excerpted and discussed in BLUMM & WOOD, *supra* note 96, at 344-46.
[373] *See* WOOD, NATURE'S TRUST, *supra* note 101, at 246-51.
[374] M.C. Mehta v. Kamal Nath, 1 S.C.C. 388 (India 1997), reprinted in BLUMM & WOOD, *supra* note 96, at 333 (concluding that the PTD includes all natural resources, is enforceable by public beneficiaries, and includes the "polluter pays" principle). Other India PTD decisions, including those interpreting the PTD to reflect "time immemorial natural law," are discussed *id.* at 340.
[375] *See* BLUMM & WOOD, *supra* note 96, at 346-64 (reprinting Advocates Coalition for Development and Environment v. Attorney General, Misc. Case No. 0100 (High Court, Uganda, 2004) (interpreting the PTD to require local consent before government approves public land leases or concessions); Wawaru v. Republic, 1 K.L.R. 677 (High Court, Kenya, 2006) (discussing the Pakistani cases and concluding that the PTD is a natural law right); David Takacs, *The Public Trust Doctrine, Environmental Human Rights, and the Future of Private Property,* 16 N.Y.U. ENVTL. L. J. 711 (2008) (discussing South African cases); British Columbia v. Canadian Forest Products, Ltd., 2 S.C.R. 74 (2004)); *id.* at 352-53 (discussing the Indonesian cases). *See generally* Michael C. Blumm & Rachel D. Guthrie, *Internationalizing the Public Trust Doctrine: Natural Law and Constitutional and Statutory Approaches to Fulfilling the Saxion Vision,* 45 U.C.-DAVIS L. REV. 741 (2012).
[376] *See* Blumm & Guthrie, *supra* note 367, at 762 (India), 766-69 (Pakistan), at 787-89 (Nigeria), and at 795 (Brazil).

to reduce greenhouse gas emissions by 2020 to at least twenty-five percent below those of 1990.[377] Since the Dutch government had already agreed to a fourteen to seventeen percent reduction, the decision represented the first time a court intervened and pronounced the government's remedial efforts inadequate in light of the best available science.[378] Moved by the severity and scope of the climate problem, the government's knowledge and the foreseeability of the damage, and the risk that hazardous changes in climate will occur, the court decided that the government had breached its duty of care and ordered the government to use its authorities to further reduce GHG emissions.[379] The decision came at a crucial time, offering a "well-spring of inspiration" to climate litigants worldwide.[380]

The Dutch court cited the quarter-century old 1992 U.N. Climate Treaty as evidence that the Dutch government, in signing the treaty, had accepted responsibility to reduce emissions as much as necessary to avert climate catastrophe.[381] The three-judge panel rejected the government's claim that judicial action was unwarranted because the solution to the global climate problem could not be resolved solely by Dutch efforts, since the country's per-capita emissions are among of the highest in the world, and any reduction of emissions will contribute to the prevention of dangerous climate change.[382] Moreover, the court ruled that there was sufficient evidence to assume a causal link between the Dutch greenhouse gas emissions, global climate

[377] Urgenda Found. v. The State of the Netherlands (Ministry of Infrastructure and the Environment, Case No. C/09/456689/HA ZA 13-1396 (June 24, 2015), https://static1.squarespace.com/static/571d109b04426270152febe0/t/576c54812994cad806826f45/1466717314190/Verdict_UrgendaVDutchState.pdf. The Urgenda Foundation filed the case on behalf of some 900 Dutch citizens.
[378] *See* Arthur Neslen, *Dutch Government Ordered to Cut Carbon Emissions in Landmark Ruling,* THE GUARDIAN (June 24, 2015, 6:04 AM), https://www.theguardian.com/environment/2015/jun/24/dutch-government-ordered-cut-carbon-emissions-landmark-ruling.
[379] *See Urgenda*, at §§ 4.83-4.86, 5.1.
[380] Weaver & Kysar, *supra* note 37, at 40 (also praising the decision for offering "judicial leadership in the articulation of climate change norms.").
[381] *Id.* § 4.66.
[382] *Id.* § 4.78-4.79.

change, and the effects (now and in the future) on the Dutch living climate.[383] The court explained that its decision was not an unwarranted intrusion on the political branches of government.[384] The decision was the first to invoke human rights as a basis to protect individuals against climate change.[385] In many significant respects, the Netherlands decision responded to the same arguments faced by the *Juliana* court and state courts in ATL cases.

Other cases also have met with success. In Pakistan, a farmer brought a case alleging that climate inaction (both with respect to emissions reduction and mitigation) violated the fundamental constitutional rights to life and dignity and the public trust doctrine.[386] Underscoring these rights, the Lahore High Court embarked on a classic structural injunction remedy, creating an administrative judicial apparatus to supervise the undertaking of climate actions, ordering the establishment of a Climate Change Commission comprised of high cabinet officials.[387] Directing the commission to carry out the climate changes forged through a framework formulated but never implemented by the government, the court's order contemplated ongoing reports and judicial supervision.[388] Later, in the spring of 2016, a seven-year-old girl filed a separate lawsuit in the Pakistan Supreme Court, asserting that the government, through the exploitation and promotion of fossil fuels, had violated the PTD and the youngest generation's constitutional rights to life, liberty, property, human dignity, and equal protection of the law.[389] A few short months later, reversing a

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[383] *Id.* § 4.90.
[384] *Id.* § 4,94–4.98. ("It is an essential feature of the rule of law that the actions of (independent, democratic, legitimised and controlled) political bodies, such as the government and parliament can – and sometimes must– be assessed by an independent court.").
[385] For additional discussion of the decision, see Weaver & Kysar, *supra* note 37, at 40-53.
[386] Leghari v. State, W.P. No. 25501/2015 (SC 2016), https://elaw.org/system/files/pk.leghari.090415_0.pdf.
[387] *Id.*at 6-7.
[388] *Id.* at 8.
[389] Rabab Ali v. Federation of Pakistan, Constitution Petition (April 5, 2016), https://static1.squarespace.com/static/571d109b04426270152febe0/t/576c56ff6a4963de8ddd5613/1466717953266/PakistanYouthClimatePetition.pdf.

registrar's earlier rejection of the constitution petition, the court ruled that the youth plaintiff's climate change lawsuit should proceed to the merits of the case.[390]

In Ukraine youth secured a swift partial victory when the court ordered government to prepare an assessment of the country's progress toward realizing the reduction goals set by the Kyoto Protocol.[391] Other atmospheric trust petitions and lawsuits, tailored to the laws and circumstances of the particular country, are pending. In India, a nine-year old filed a climate change petition against her government in March**,** 2017, asserting duties under the public trust doctrine, intergenerational equity, and India's constitution.[392] She asks the National Green Tribunal to order the government of India to prepare a carbon budget and national climate recovery plan designed to reduce India's share of the global atmospheric CO2 to below 350 parts per million (ppm) by 2100. The case is pending.

In the Philippines, youth brought a broad petition, asking the courts to reconfigure the road system to allow non-fossil fuel transportation.[393] In Norway, citizens sued to prevent the government from allowing oil drilling in the Arctic Barents Sea, asserting rights declared in a constitutional amendment that was passed just two years before and asserting a public trust right to a healthful environment "that will be safeguarded for future generations as well."[394] Actions are planned in other countries, including Canada, France, Australia, England, and Belgium.[395]

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[390] *See* Naeem Sahoutara, *Seven-Year-Old Girl Takes On Federal, Sindh Governments*, THE EXPRESS TRIBUNE (June 29, 2016), https://tribune.com.pk/story/1133023/seven-year-old-girl-takes-federal-sindh-governments/.
[391] Litigation progress in that country has been stymied by extreme political unrest. For updates, see *Ukraine*, https://www.ourchildrenstrust.org/ukraine/.
[392] For documents in the case, see https://www.ourchildrenstrust.org/india
[393] *Phillipines*, OUR CHILDREN'S TRUST, https://www.ourchildrenstrust.org/philippines.
[394] *See Norway*, OUR CHILDREN'S TRUST, https://www.ourchildrenstrust.org/norway (citing Norwegian Constitution, article 112).
[395] For updates on the global litigation, see Our Children's Trust website, at https://www.ourchildrenstrust.org/global-legal-actions/.

Conclusion

The *Juliana* decision was clearly a path-breaking one, finding the right to a stable climate system protected by constitutional due process, including the PTD.[396] Key to the former was a determination that the right to a stable climate system was a fundamental right protected by the due process clause of the Constitution.[397] Such a fundamental right brings a standard of strict scrutiny to the plaintiffs' claims and the government's responses.[398] Deciding there was a fundamental right to a healthy atmosphere, given the stakes involved and the growing precedent in support, seems no great reach from previously recognized fundamental rights to privacy, procreation, marriage, and interstate travel.[399]

The *Juliana* court's determination that the Constitution proscribed the government's interference with the youths' PTD rights was also in keeping with considerable international precedent.[400] Although the court did not decide that the atmosphere was a public trust resource—although it cited sufficient authority to do so[401]—Judge Aiken did rule that the close relationship between atmospheric GHG pollution and adverse effects on trust resources like oceans and navigable waters could produce a PTD violation.[402] In short, the court regarded the atmosphere as a resource ancillary to trust resources like the ocean and the territorial seas. The approach parallels other courts' protection of corollary resources and public access to them. For example, courts have secured public access to dry sand beaches, finding such access necessary to full enjoyment of the traditional public trust in tidelands,[403] In the same vein, courts have protected non-navigable

[396] *Juliana*, at *24-25.
[397] *Id*.
[398] *See supra* note 153 and accompanying text.
[399] *See supra* notes 166–71 and accompanying text.
[400] *See supra* section VII.B.
[401] *Juliana*, at *20-21.
[402] *Id*..
[403] Matthews v. Bay Head Improvement Ass'n, 471 A.2d 355, 360–61 (1984); Thornton v. Hay, 462 P.2d 671, 672-

tributaries to navigable waters held in trust, and have extended trust protection to groundwater with a hydrological connection to surface trust waters.[404]

Judge Aiken closed her opinion by noting that federal courts "have been . . . overly deferential in the area of environmental law, and the world has suffered for it."[405] She pointed to Judge Alfred Goodwin's decision in the Oregon beach case,[406] which found a public right to access the beach based on customary rights.[407] Judge Aiken stated that the case had "strong echoes" of the claims of the Oregon case in *Juliana.*[408] At a time in which the U.S. Supreme Court seems prepared to reconsider its doctrine of judicial deference to administrative decision making,[409] the *Juliana* case provides cogent reasoning for a judicial check on the political branches—certainly where the survival interests of young people and future generations are at stake.

It should not surprise students of American legal history that the climate crisis worsened steadily for decades and entered its "11th hour" before a court declared a due process liberty and

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73 (Or. 1969); *see supra* note 220 and accompanying text.

[404] *See, e.g.,* Nat'l Audubon Soc'y v. Super. Court of Alpine Cnty., 658 P.2d 709, 724 (Cal. 1983), *cert. denied sub nom*, City of L.A. Dep't of Water & Power v. Nat'l Audubon Soc'y, 464 U.S. 977 (1983); *In re* Water Use Permit Applications, 9 P.3d 409, 451–53 (Haw. 2000) (extending trust protection to "all water resources without exception or distinction," reasoning, "[m]odern science and technology have discredited the surface-ground dichotomy."). For discussion of the judicial approach extending trust protection to ancillary resources, see WOOD, NATURE'S TRUST, *supra* note 101, at ch. 7.

[405] *See Juliana*, at *26, citing Alfred T. Goodwin, *A Wake-Up Call for Judges*, 2015 WISC. L. REV. 785, 785-86, 788 (2015).

[406] Thornton v. Hay, 462 P.2d 671 (Or. 1969); *see* Michael C. Blumm & Eric A. Doot, *Oregon's Public Trust Doctrine: Public Rights in Waters, Wildlife, and Beaches*, 42 ENVTL. L. 315, 407-09 (2012) (discussing the *Hay* decision).

[407] *Hay*, 462 P.2d at 672-73.

[408] *See Juliana,* at * 27. Judge Aiken did note that one member of the Oregon Supreme Court thought that the state's beaches should have been declared subject to public use by virtue of the PTD. *Id.* at *27, n. 14 (citing Justice Denecke's concurrence, *Hay*, 462 P.2d at 679).

[409] *See* Amanda Reilly, *Chevron Doctrine on the Ropes as Trump Era Looms*, Greenwire (Dec. 9, 2016), http://www.eenews.net/greenwire/stories/1060046945/search?keyword=Chevron+deference ; Lisa Heinzerling, *The Power Canons*, 58 Wm. & Mary L. Rev. ___ (forthcoming, 2017), https://ssrn.com/abstract=2757770 (asserting that the Supreme Court has embraced new canons of statutory interpretation and identifying situations in which "the Court took interpretive power from an administrative agency, power that would normally have been the agency's due under *Chevron*, and kept it for itself," reflecting a basic distrust of an active administrative state).

public trust right to something so fundamental as a stable climate system—the necessity of which will become only more obvious as climate chaos takes its ruthless toll on human survival and civilization. Rights today widely recognized as fundamental—like First Amendment rights to religion and speech—were not commonly recognized by the federal courts until over a century-and-a-half after the ratification of the First Amendment.[410] As Justice Kennedy has acknowledged, sometimes fundamental liberty rights are "not always see[n] . . . in our own times . . . ," but the Framers "did not presume to know the extent of freedom in its all its dimensions, so they entrusted to future generations the charter of protecting the right of all persons to enjoy liberty as we learn its meaning."[411] The right to a stable climate system, like the right to marry and the right to racial non-discrimination, if not originally among those rights the Framers thought were constitutionally protected, is certainly "deeply rooted in this Nation's history and tradition" and "fundamental to our scheme of ordered liberty."[412] And too, a stable climate system remains the linchpin to the full ecological endowment secured by the public trust principle. In addition to its authoritative impact, decisions like *Juliana* can serve broad educative functions in society, inspiring waves of change beyond the courthouse doors, as did the Supreme Court's historic decision in *Brown v. Board of Education* ruling that racial discrimination in public education is unconstitutional.[413] Although it took a decade, *Brown* led to the Civil Rights Act of 1964[414] and the Voting Rights of

[410] *See* West Virginia Bd. of Education v. Barnette, 319 U.S. 624 (1943) (in an unprecedented decision, the Supreme Court overturned a decision only three years old, Minersville School Dist. v. Gobitis, 310 U.S. 586 (1940), and ruled that the free speech clause of the First Amendment protected schoolchildren from being forced to salute the American flag and say the pledge of allegiance in school).
[411] *Juliana*, at *15 (quoting Justice Kennedy in his *Obergefell* opinion).
[412] *Juliana,* at *15 (quoting McDonald v. City of Chicago, Ill., 561 U.S. 742, 767 (2010).
[413] 347 U.S. 483 (1954).
[414] 42 U.S.C.A. § 2000a-h.

1965,[415] which effectively ended U.S. *de jure* racial segregation after some 400 years. Some day *Juliana* may be seen in the same broad educative light as *Brown*.

But at the moment the *Juliana* decision, resting as it does on constitutional rights, seems the last bulwark against a reckless ramp-up of fossil fuel production in the United States that could push the planet past irreversible tipping points. Perhaps the most important aspect of the *Juliana* decision is that it takes the courageous and historic step into what Professor Kysar has identified as a gulf between normative law and climate catastrophe,"[416] turning a judicial tide of other climate cases—cases that had simply evaded the calls of justice through procedural maneuvers—to address the climate reality unflinchingly and to accept the institutional "grace of responsibility" with great jurisprudential care and, as we have shown, doctrinal mooring.[417] In this vein, the *Juliana* opinion "demonstrate[s] the more dynamic, adaptive, and restless forms of jurisdictional assertion required in an age of unlimited harm."[418] Against a reality where "[t]oday's political failures may foreclose possible natural worlds," threatening damage that is "irreversible on any conceivable human timescale,", the *Juliana* decision paves the way for courts faced with similar suits to require the political branches to take remedial action before the crisis spirals completely out of humanity's control. These cases are, indeed, the "jurisdictional struggles that define the boundary between

[415] 52 U.S.C.A. §10101-10702.
[416] *See also* Weaver & Kysar, supra note 37, at 7 ("Catastrophes . . . create situations of misalignment, where a void opens between normative structure and cognizable fact.").
[417] *Id.* at 33 (describing climate tort cases and observing, "evasiveness has characterized most judicial responses to climate change torts.").
[418] *Id.* at 40. We include, in this characterization, the opinions written by Magistrate Judge Coffin as well, for they broke ground in new constitutional terrain and laid the foundation for Judge Aiken's historic opinion.

the legal order and catastrophic overturning."[419] Such judicial intervention across the globe cannot happen a moment too soon.[420]

[419] *Id.* at 40.
[420] *See id.* at 1 ("[a]gainst the backdrop of a potentially existential threat, judges redeem the very possibility of law when they forthrightly confront the merits of climate lawsuits.").