

*COMMENTARY:*

**THE REVIVAL OF CLIMATE CHANGE SCIENCE  
IN U.S. COURTS**

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Science never has been the obstacle to the recognition of climate change. Since Arrhenius did his original calculations in 1896,<sup>1</sup> the scientific world was quite aware of the prospect that industrial-age levels of carbon dioxide pollution would result in increasing global temperatures and acidification of the world's oceans. The brilliant—and striking—graphical display that we know today as the Keeling Curve started in 1957,<sup>2</sup> and year after year it records the relentless upward march of these atmospheric pollutant loadings. Through the years, necessarily, a vast number of scientific warnings, publications, findings, and predictions would be offered to the public at large, urging action to combat climate change.<sup>3</sup>

The pages in this journal devoted to the issue of ocean acidification are but the latest manifestation of this relentless march of science towards more understanding and deeper appreciation of the gravity of these issues. In contrast to the slow (if erratic) march of science, the political response to climate change—particularly in the United States—has been

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1. See Anna Moritz, *Scientific Consensus on Climate Change*, in WILLIAM H. RODGERS JR. ET AL., *CLIMATE CHANGE: A READER* 16 (Carolina Acad. Press 2011).

2. See *id.* at 17.

3. See *id.* at 29. For the statement of the Joint Science Academies of Eleven Nations (2005), see *id.* at 29–31. See also WASH. STATE DEPT OF ECOLOGY, WASHINGTON GREENHOUSE GAS EMISSION REDUCTION LIMITS: REPORT PREPARED UNDER RCW 70.235.040, at 18 (December 2014) (“Climate change is not a far off risk. Globally, it is happening now and is worse than previously predicted, and it is forecasted to get worse. We are imposing risks on future generations (causing intergenerational inequities) and liability for the harm that will be caused by climate change that we are unable or unwilling to avoid.”).

enthusiastically absent. Even the sufferers from this political nullification policy have tipped their hats, conceding an insidious effectiveness of “just say no” tactics.<sup>4</sup> There is an eerie concordance of interest between the corporate takeover of Washington, D.C. by lobbyists and the conspicuous inaction on climate change.<sup>5</sup> This political denial of climate change in Washington, D.C., has endured for close to thirty years. The moment of “truth,” as it were, is explained this way by George M. Woodwell:

A signal event in U.S. public cognition of the dangers of climate disruption was a set of hearings before Congress in early summer 1988. On June 23, six scientists, I among them, summarized scientific perspectives on climate disruption for the Senate’s Committee on Energy and Natural Resources in the first series of sessions led by Tim Wirth, then a senator from Colorado. The Senate hearings were followed four days later by oversight Hearings before the Subcommittee on Interior and Insular Affairs of the House of Representatives. The Senate testimony, while reporting on a broad consensus among experienced scientists, carried for each of us a highly personal element. It reflected intense exasperation at having over the preceding decades defined a serious challenge to human welfare only to be virtually ignored. Underneath the testimony were cries of pain and concern, even terror, over what could happen to humanity if action were not soon taken to reverse the trends in the composition of the atmosphere, so clearly the product of expanding use of fossil fuels.<sup>6</sup>

The testimony on that day was noticed by the news media as never before. It was the day when James Hansen, a government employee of the National Aeronautics and Space Administration and head of the Goddard Space Science

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4. For a book of malignant specifics, see MICHAEL E. MANN, *THE HOCKEY STICK AND THE CLIMATE WARS: DISPATCHES FROM THE FRONT LINES* (Columbia Univ. Press 2012).

5. See *generally* LEE DRUTMAN, *THE BUSINESS OF AMERICA IS LOBBYING: HOW CORPORATIONS BECAME POLITICIZED AND POLITICS BECAME MORE CORPORATE* (Oxford Univ. Press 2015); ALYSSA KATZ, *THE INFLUENCE MACHINE: THE U.S. CHAMBER OF COMMERCE AND THE CORPORATE CAPTURE OF AMERICAN LIFE* (Spiegel & Grau 2015).

6. GEORGE M. WOODWELL, *A WORLD TO LIVE IN: AN ECOLOGIST’S VISION FOR A PLUNDERED PLANET* 94–95 (MIT Press 2016).

Institute at Columbia University, testified that the Reagan administration had attempted to suppress his testimony, but that he had decided to testify anyway to bring to public attention the evidence that the warming of the earth was proceeding and was then measurable. George Woodwell was quite amazed at how it was possible for nearly thirty years to see the science sizzle while the politics fizzled:

What is striking now, more than a quarter century later, about the 1988 Senate testimony . . . is not only that it was correct in its detail at the time but also that with few alterations it might be offered today as evidence in favor of governmental steps in amelioration, still not taken. In view of the developments of subsequent years, especially the great climatic events of global consequence of 2008–2013, the increasing rates of glacial melting, the expansion of arid zones, the greater frequency of severely damaging storms, and floods that in some parts of the world have devastated agriculture, our predictions in 1988 of likely occurrences have been borne out and reported in thousands of news articles.<sup>7</sup>

While the science of climate change has raced and the politics stalled, the law has been strangely inept. As early as 2004, the U.S. Supreme Court obstructed revelations of the Cheney Energy Policy Committee that was assembling the recommendations of the fossil fuel first preferences of the George W. Bush Administration.<sup>8</sup> In 2004, the famous case of *Massachusetts v. EPA*<sup>9</sup> was filed and it ended in a five-to-four triumph for those who anticipated sweeping action against the menace of climate change under the Clean Air Act. In 2008, the promising, and prescient,<sup>10</sup> “conspiracy” theory (the same

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7. *Id.* at 95.

8. *Cheney v. U.S. Dist. Court of D.C.*, 542 U.S. 367 (2004).

9. *Massachusetts v. EPA*, 549 U.S. 497 (2007) (Roberts, C.J., joined by Scalia, Thomas & Alito, JJ., dissenting).

10. See Neela Banerje et al., *Exxon's Own Research Confirmed Fossil Fuels' Role in Global Warming Decades Ago*, INSIDECLIMATE NEWS (Sept. 16, 2015), <http://insideclimateneeds.org/news/15092015/Exxons-own-research-confirmed-fossil-fuels-role-in-global-warming> (describing “how Exxon conducted cutting-edge climate research decades ago and then, without revealing all that it had learned, worked at the forefront of climate denial, manufacturing doubt about the scientific consensus that its own scientists had confirmed.”); Neela Banerje, *Exxon's Oil Industry Peers Knew About Climate Dangers in the 1970s, Too*, INSIDECLIMATE NEWS (Dec. 22, 2015), <http://insideclimateneeds.org/news/1512222015/Exxon-oil-industry-peers-knew-about-climate-dangers-in-the-1970s-too>.

theory that felled the tobacco industry) was raised in much-noticed litigation initiated by fearless trial lawyers eager for a good legal battle against the fossil fuel industry.<sup>11</sup> In the years immediately following, however, the Supreme Court happily joined the campaign to nullify all legal avenues that had been pursued to combat climate change. The federal common law theory of nuisance was displaced by the federal Clean Air Act.<sup>12</sup> And in short order the U.S. Supreme Court completely demolished the Environmental Protection Agency's best efforts to combat climate change under the Clean Air Act<sup>13</sup> and took preliminary steps to do the same to the Obama Clean Power Plan.<sup>14</sup>

It is perhaps good fortune that the U.S. Supreme Court is yet to get its hands on the topic of ocean acidification, but that is likely because agencies charged with protecting our ocean and marine resources have done little to mitigate its effects. The Western District of Washington has upheld the Environmental Protection Agency's approval of Washington and Oregon's impaired waters lists prepared under the Clean Water Act, largely deferring to the agency's belief that "[t]he science surrounding ocean acidification and its causes and effects is complicated and still-developing."<sup>15</sup> Ocean acidification also has been raised as a factor justifying the listing of certain marine species under the Endangered Species Act, but has been rebuffed by agencies and largely ignored by

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insideclimatenews.org/news/22122015/exxon-mobil-oil-industry-peers-knew-about-climate-change-dangers-1970s-american-petroleum-institute-api-shell-chevron-texaco ("The American Petroleum Institute together with the nation's largest oil companies ran a task force to monitor and share climate research between 1979 and 1983, indicating that the oil industry, not just Exxon alone, was aware of its possible impact on the world's climate far earlier than previously known.").

11. See WILLIAM H. RODGERS JR. ET AL., *CLIMATE CHANGE: A READER* 83–85 (Carolina Academic Press 2011) (citing Complaint, No. 4:08CV01138, *Native Village of Kivalina v. Exxon Mobil Corp.*, 663 F. Supp. 2d 863 (N.D. Cal. 2009) (setting forth the allegations, including "conspiracy")).

12. See *American Elec. Power Co., Inc. v. Connecticut*, 131 S. Ct. 2527 (2011) (holding that the state law nuisance theories survive as the court below is affirmed by a 4:4 vote).

13. *Utility Air Regulatory Grp. v. EPA*, 134 S. Ct. 2427 (2014).

14. *West Virginia v. EPA*, 136 S. Ct. 1000 (2016) (Court order staying EPA's "Carbon Pollution/Emission Guidelines," 80 Fed. Reg. 64,662 (Oct. 23, 2015), pending disposition in the U.S. Court of Appeals for the D.C. Circuit).

15. *Center for Biological Diversity v. EPA*, 90 F. Supp. 3d 1177, 1209 (W.D. Wash. 2015).

courts, due to the “complex” and “uncertain” nature of the phenomenon.<sup>16</sup>

But recent decisions seem to suggest the law may finally be catching up with the science. In several states the Public Trust Doctrine is being asserted on behalf of youth and future generations as a means to obtain court-ordered executive and legislative action on climate change. As part of a coordinated campaign called Atmospheric Trust Litigation,<sup>17</sup> a recent decision from a Washington state court endorsed the value of this legal approach:

[C]urrent science makes clear that global warming is impacting the acidification of the oceans to alarming and dangerous levels, thus endangering the bounty of our navigable waters.

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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. Therefore, the Public Trust Doctrine mandates that the State act through its designated agency to protect what it holds in trust.<sup>18</sup>

The court recognized 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.”<sup>19</sup> The court did not order the Department of Ecology (Ecology) to undertake additional actions to implement these legal findings, instead relying upon Ecology’s assurance it would comply with the Governor’s directive to promulgate a Clean Air Rule capping and regulating carbon dioxide

16. See, e.g., *Center for Biological Diversity v. Lubchenco*, 758 F. Supp. 2d 945, 952 (N.D. Cal. 2010) (“NMFS addressed ocean acidification, which is a result of increased carbon dioxide in the atmosphere, stating that it ‘may impact ribbon seal survival and recruitment through disruption of trophic regimes that are dependent on calcifying organisms,’ but that the ‘nature and timing of such impacts are . . . extremely uncertain.”); *Alaska Oil & Gas Ass’n v. Pritzker*, 2014 WL 3726121 at \*8 (D. Alaska 2014).

17. MARY CHRISTINA WOOD, *NATURE’S TRUST: ENVIRONMENTAL LAW FOR A NEW ECOLOGICAL AGE* (Cambridge Univ. Press 2014); *Atmospheric Trust Litigation*, OUR CHILDREN’S TRUST, <http://ourchildrenstrust.org/atl> (last visited May 16, 2015).

18. *Foster v. State Dep’t of Ecology*, No. 14-2-25295-1, 2015 WL 7721362, at \*8 (Wash. Super. Ct. Nov. 19, 2015).

19. *Id.*

emissions pursuant to the state Clean Air Act.<sup>20</sup>

Soon thereafter, in another Atmospheric Trust Litigation case, a Magistrate Judge in the District of Oregon recommended against dismissal of constitutional and public trust claims brought against the United States government:

The debate about climate change and its impact has been before various political bodies for some time now. Plaintiffs give this debate justiciability by asserting harms that befall or will befall them personally and to a greater extent than other segments of society. It may be that eventually the alleged harms, assuming the correctness of plaintiffs' analysis of the impacts of global climate change, will befall all of us. But the 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. This is especially true when such harms have an alleged disparate impact on a discrete class of society.<sup>21</sup>

The Magistrate Judge recognized that courts have a proper role in resolving the climate crisis, in a way that harmonizes statutory environmental law with public trust and constitutional considerations:

As also noted, at a minimum, the EPA is charged with regulating greenhouse gas emissions to protect the public health. While the efficacy of any proposed regulations is perhaps beyond the expertise of the court, it can evaluate competing experts on either side of the issues and direct the EPA to take a hard look at the best available scientific evidence. The court need not dictate any regulations, only direct the EPA to adopt standards that prevent the alleged constitutional harm to the youth and future generation plaintiffs, should plaintiffs prevail in demonstrating such is possible.<sup>22</sup>

In the atmospheric trust context, courts are taking a

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20. *Id.*

21. Order Denying Motions to Dismiss at 8, *Juliana v. United States*, No. 6:15-cv-01517-TC (D. Or. April 8, 2016), <http://ourchildrenstrust.org/sites/default/files/16.04.08.OrderDenyingMTD.pdf>.

22. *Id.* at 14.

verifiable hard look at agency claims that enough is being done to address climate change and are beginning to implement enforceable remedies. In Washington, after Ecology withdrew its proposed Clean Air Rule, a process originally found by the court to remedy the atmospheric trust claims, youth went back to court and received an order directing the agency to promulgate the rule by the end of the year, a form of relief never before issued by an American court of law.<sup>23</sup> In doing so, the court made several notable findings, including:

The effect of climate change on water supplies, public health, coastal storm damage, wildfires and other impacts will be costly unless additional actions are taken to reduce greenhouse gases . . . [C]urrent science establishes that rapidly increasing global warming causes an unprecedented risk to the earth including land, sea and atmosphere and all living plants and creatures. . . Washington faces serious economic and environmental disruptions from the effects of climate change.<sup>24</sup>

Shortly thereafter, the Massachusetts Supreme Court became the second court in the country to order administrative action on climate change in another atmospheric trust litigation case. In *Kain v. Department of Environmental Protection*, the court held that Massachusetts state law “requires the department to promulgate regulations that establish volumetric limits on multiple greenhouse gas emissions sources, expressed in carbon dioxide equivalents, and that such limits must decline on an annual basis.”<sup>25</sup> The court found that “the department is well equipped to say what actual reductions in emissions sources and source categories can be achieved because it has already inventoried emissions from every source and source category of emissions in the

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23. Transcript of Hearing and Bench Ruling at 20, *Foster v. State Dep’t of Ecology*, No. 14-2-25295-1, 2015 WL 7721362 (Wash. Super. Ct. April 29, 2016), <http://westernlaw.org/sites/default/files/2016.04.29-WA%20ATL%20Final%20Decision%20Bench%20Ruling%20Transcript.pdf> (“The reason I’m doing this is because this is an urgent situation. This is not a situation that these children can wait on. 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.”).

24. *Foster v. State Dep’t of Ecology*, No. 14-2-25295-1, 2015 WL 7721362, at 24 (Wash. Super. Ct. May 16, 2016).

25. *Kain v. State Dep’t of Env’tl. Protection*, 474 Mass. 278, 280 (2016).

Commonwealth . . . .”<sup>26</sup>

Even in the Endangered Species Act context, courts are beginning to acknowledge what the leading climate scientists have been explaining for decades, i.e. that certain species are in harm’s way and agencies have a responsibility to take this scientific reality into account when managing threatened and endangered species. As to the wolverine:

No greater level of certainty is needed to see the writing on the wall for this snow-dependent species standing squarely in the path of global climate change. It has taken us twenty years to get to this point. It is the undersigned’s view that if there is one thing required of the [U.S. Fish and Wildlife] Service under the ESA, it is to take action at the earliest possible, defensible point in time to protect against the loss of biodiversity within our reach as a nation. For the wolverine, that time is now.<sup>27</sup>

Similarly, Oregon District Court Judge Simon, who inherited the long-standing legal battle to get the operations of the federally-operated dams on the Snake and Columbia Rivers compliant with the Endangered Species Act, recognized that “since the 1990s, there have been significant developments in the scientific information relating to climate change and its effects”<sup>28</sup> and characterized the “best available information” on climate change as follows:

Climate change implications that are likely to have harmful effects on certain of the listed species [e.g. salmon] include: warmer stream temperatures; warmer ocean temperatures; contracting ocean habitat; contracting inland habitat; degradation of estuary habitat; reduced spring and summer stream flows with increased peak river flows; large-scale ecological changes, such as increasing insect infestations and fires affecting forested lands; increased rain with decreased snow; diminishing snow-packs; increased flood flows; and increased susceptibility to fish pathogens and parasitic organisms that are generally not injurious to

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26. *Id.*

27. *Defenders of Wildlife v. Jewell*, No. CV 14-246-M-DLC, 2016 WL 1363865, at \*29 (D. Mont. April 4, 2016).

28. *Nat’l Wildlife Fed’n v. Nat’l Marine Fisheries Serv.*, No. 3:01-cv-00640, 2016 WL 2353647, at \*17 (D. Or. May 4, 2016).

their host until the fish becomes thermally stressed. Even a single year with detrimental climate conditions can have a devastating effect on the listed salmonids.<sup>29</sup>

The court held that NOAA Fisheries analysis of the climate change impacts on ESA-listed salmon was legally insufficient:

NOAA Fisheries' analysis does not apply the best available science, overlooks important aspects of the problem, and fails properly to analyze the effects of climate change, including: its additive harm, how it may reduce the effectiveness of the reasonable and prudent alternative actions, particularly habitat actions that are not expected to achieve full benefits for decades, and how it increases the chances of an event that would be catastrophic for the survival of the listed endangered or threatened species.<sup>30</sup>

NOAA Fisheries' cries of "scientific uncertainty" were soundly rejected by the court: "uncertainty does not excuse NOAA Fisheries from conducting an analysis using the best available science regarding climate change and its effects" and the court remanded the matter back to the agency.<sup>31</sup>

Only time will tell whether the judicial branch will persevere in holding the executive and legislative branches accountable for applying the current climate science and ensuring the future habitability of planet earth. What is clear today is that novel and creative legal approaches to climate change are being asserted and offer hope for resolving the unprecedented climate crisis facing society. Courts of law stand as a bulwark against the infringement of individual rights, and can serve to inspire much-needed societal change with the swipe of a pen:

In fact, as Petitioners assert and this court finds, their 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 emission of GHG's before doing so becomes first too costly and then too late.<sup>32</sup>

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29. *Id.* at 14–15.

30. *Id.* at 15.

31. *Id.* at 99, 148.

32. *Foster v. State Dep't of Ecology*, No. 14-2-25295-1, 2015 WL 7721362, at \*5 (Wash. Super. Ct. Nov. 19, 2015).