NO-ANALOGUE FUTURE: CHALLENGES FOR THE LAWS OF NATURE IN A WORLD WITHOUT PRECEDENT

Sean M. Kammer[*†]

I'd like to share a revelation that I've had during my time here. It came to me when I tried to classify your species. I realized that you're not actually mammals. Every mammal on this planet instinctively develops a natural equilibrium with the surrounding environment, but you humans do not. You move to an area and you multiply and multiply until every natural resource is consumed and the only way you can survive is to spread to another area. There is another organism on this planet that follows the same pattern. Do you know what it is? A virus. Human beings are a disease, a cancer of this planet. You are a plague, and we are the cure.

Agent Smith to Morpheus, Matrix (1999).[1]

---

* Dr. Sean M. Kammer is an associate professor at the University of South Dakota School of Law, where he teaches foundations of law, environmental law, and several natural resources law courses.

† The author would like to thank the organizers of and participants at the University of Washington Junior Environmental Law Scholars Workshop, especially Eric T. Freyfogle, Daniel H. Lutz, Todd Wildermuth, Holly Doremus, Alexandra B. Klass, James W. Coleman, and Sarah H. Adams-Schoen, for their comments regarding an earlier partial draft of this Article. He wishes to thank his colleagues Allen Madison, Hannah Haksgaard, Tom Simmons, and Ramon Ortiz for reviewing and commenting on the completed manuscript. Finally, he wishes to thank his research assistants, Christopher Rush Storz and Sarah Christopherson, for all of their indispensable help along the way.

1. THE MATRIX (Warner Bros. & Village Roadshow Films 1999).

[A]nd God said unto them, [b]e fruitful, and multiply, and replenish the earth, and subdue it: and have dominion over the fish of the sea, and over the fowl of the air, and over every living thing that moveth upon the earth.

Genesis 1:28.[2]

All man's troubles arise from the fact that we do not know what we are and do not agree on what we want to be.

D.M. Templemore, You Shall Know Them (1953).[3]

INTRODUCTION

It has been almost 20 years since prominent atmospheric chemist Paul J. Crutzen and biologist Eugene F. Stoermer introduced the idea that we have entered a new geological epoch, one they called the "[A]nthropocene."[4] To Crutzen and Stoermer, the term—interpreted literally as *the age of man*—best encapsulated the profound impact humans have had on the global environment and the planet's most fundamental cycles.[5] Since that time, the concept of the Anthropocene has gained traction—so much so that the International Commission on Stratigraphy, the body charged with developing and maintaining the *official* geological time scale, is now considering whether to officially designate this new epoch.[6] One group of scientists recently summarized the Anthropocene as a recognition that:

> [H]uman imprint on the global environment is now so large that . . . it is leaving . . . the environment within which human societies themselves have developed. Humanity itself has become a global geophysical force, equal to some of the 'great forces of Nature' in terms of Earth System functioning.[7]

---

2. *Genesis* 1:28 (King James).

3. D.M. Templemore, *Epigraph to* VERCORS, YOU SHALL KNOW THEM 1 (Rita Barisse trans., 1953).

4. Paul J. Crutzen & Eugene F. Stoermer, *The "Anthropocene,"* GLOBAL CHANGE NEWSL. (The Int'l Geosphere-Biosphere Programme, Stockholm, Sweden), May 2000, at 1, 17–18.

5. *Id.*; Louis J. Kotzé, *Rethinking Global Environmental Law and Governance in the Anthropocene*, 32 J. ENERGY & NAT. RES. L. 121, 122 (2014).

6. Will Steffen et al., *The Anthropocene: From Global Change to Planetary Stewardship*, 40 AMBIO 739, 741 (2011).

7. *Id.* (citation omitted).

Indeed, humans have come to dominate the Earth in many ways. First, we have taken carbon stored in the ground and burnt it into the atmosphere, which results in the greenhouse effect and a warming climate.[8] As of now, the concentrations of carbon dioxide have reached levels unmatched over the last three million years.[9] Second, we have degraded the biosphere and contributed to a collapse in biodiversity; some are going so far as to call it the "Sixth Extinction," placing it on par with five other mass extinctions in the Earth's distant past.[10] Finally, we have altered the flows or cycles of important biogeochemicals, including water, nitrogen, and phosphate.[11] We have drained wetlands, constructed dams, and taken nitrogen from the atmosphere and phosphorous from the ground to be used in fertilizers.[12] In all, over 80% of the Earth's ice-free land is under direct human influence, and 90% of photosynthesis on Earth occurs in "anthropogenic biomes"—ecological communities modified by and for humans.[13]

Inasmuch as we have indeed entered a new geological epoch, it presents enormous challenges to a civilization built entirely within the previous epoch, the Holocene.[14] Beginning roughly 12 thousand years ago, the Holocene is defined by its relatively stable climate.[15] Indeed, it was precisely this stability that allowed human communities to expand and to harness the Earth's physical processes so thoroughly.[16] It appears, however, we are rapidly approaching—if not already surpassing—thresholds of human influence on nitrogen and phosphate flows, greenhouse gas emissions, and the loss of biodiversity. Thereby, we risk pushing the Earth system into a catastrophic state.[17] We are entering an era without any analogue in the Earth's history.

The apparent successes of humans in harnessing the Earth's forces have increased the security and well being of humans—or at least particular human communities. This encouraged the development of a worldview whereby humans see themselves as independent of, and separate from, the

---

8. ELIZABETH KOLBERT, THE SIXTH EXTINCTION 108 (2014).

9. Stephanie Pappas, *Atmospheric Carbon Dioxide Breaks 3-Million-Year Record*, LIVE SCI. (May 10, 2013), https://www.livescience.com/29437-carbon-dioxide-record-broken.html.

10. KOLBERT, *supra* note 8, at 3.

11. James N. Galloway et al., Climate Change Impacts in the United States: Biogeochemical Cycles 351 (2014), http://nca2014.globalchange.gov/report/sectors/biogeochemical-cycles.

12. *Id.*

13. CHRISTOPHE BONNEUIL & JEAN-BAPTISTE FRESSOZ, THE SHOCK OF THE ANTHROPOCENE 9 (David Fernbach trans., 2016).

14. Will Steffen et al., *Planetary Boundaries: Guiding Human Development on a Changing Planet*, SCI., Feb. 13, 2015, at 1259855-1, 1259855-1.

15. *Id.*

16. *Id.*

17. *Id.* at 1259855-3 to 5.

rest of the Earth's biome.[18] As ethnographer Bruno Latour described it in *We Have Never Been Modern*, this *modern* way of thinking arose from a separation of discourses between descriptions of Nature[19]—relegated to the discipline of Science—and society—relegated to the disciplines of History and Politics.[20] To be *modern* is to believe in progress, to see a past burdened by faith and irrationality and a present (and future) wherein rationality dominates human experience.[21] It is to see a dark past of human enslavement—both by Nature itself and by other humans acting on irrational values—contrasted with a future of enlightened freedom and promise.[22]

Our vulnerability as we enter a new epoch—itself a product of this modern way of thinking—shows that the Moderns' conquest of a Nature separate from humanity was never more than an illusion.[23] As environmental law scholar Louis J. Kotzé recently observed:

> The Anthropocene also heralds the 'public death of the modern understanding of Nature'; it signals 'the demise of particular imaginings of Nature, of a set of symbolic inscriptions that inferred a singular Nature, at once external and internal to humans and human life.' Also expressed as the 'end of nature,' such a vision affects the social context that determines the relationship between people and the environment, or the human-environment interface. To be sure, a changed vision of the environment (nature) in the context of the Anthropocene heralds many 'Earth-shaking historical moments that have sequentially redefined the relationship between humans and the rest of nature.'[24]

---

18. Jan G. Laitos & Lauren Joseph Wolongevicz, *Why Environmental Law Fails*, 39 WM. & MARY ENVTL. L. & POL'Y. REV. 1, 4 (2014); William Leiss, *Modern Science, Enlightenment, and the Domination of Nature: No Exit?*, FAST CAPITALISM (2007), https://www.uta.edu/huma/agger/fastcapitalism/2_2/leiss.html.

19. I will continue to capitalize Nature so as to make clear I am referring to a human construct rather than to something that objectively exists "out there."

20. BRUNO LATOUR, WE HAVE NEVER BEEN MODERN 27 (Catherine Porter trans., 1993) [hereinafter LATOUR, NEVER BEEN MODERN].

21. *Id.* at 38.

22. BRUNO LATOUR, AN INQUIRY INTO MODES OF EXISTENCE: AN ANTHROPOLOGY OF MODERNS 8–9 (Catherine Porter trans., 2013) [hereinafter LATOUR, AN INQUIRY].

23. I use the capitalized "Modern" to refer to the people who, over the past five hundred years or so, have been acculturated to view the world in modernist terms and even to think of themselves as modern people.

24. Kotzé, *supra* note 5, at 135.

The Modern myth has now been shattered. Thus, the Anthropocene not only marks the end of the Holocene, the era in which various human civilizations have developed, but also signals the end of our Modern experiment.[25]

The problem is that those fighting against the most negative aspects of the Anthropocene continue to affirm the basic tenets of Modernity[26]—the very philosophy that has caused our predicament in the first place. This is the case in our attempts at using law to preserve a wilderness that remains free from our control or even influence, to protect wildlife and maintain biodiversity from human-induced threats, and to address the potentially devastating impacts of anthropogenic climate change.[27] In all of these legal discourses and policy discussions, humans are still at the center—still in control.[28] We are at once exploiters and protectors, masters and servants. We are the stewards to whom Nature is a gift, as in Genesis, and at the same time, we are destroyers, invaders, and *viruses*—a *plague*. As a legal and social movement, environmentalism is, at its best, a corrective to the logic of Modern, industrial capitalism. However, it is not just the excesses of Modern life that have led to our current predicament, but the language and ideas of Modernity itself.[29] To find solutions and to build the necessary infrastructure for a new consensus, it is this language and set of ideas that must be discarded.

This Article proceeds in three parts. Part I outlines the so-called *wilderness idea*, a concept at the core of not just Modern preservation law, but Modern environmental law more generally.[30] Part II examines the

---

25. LATOUR, NEVER BEEN MODERN, *supra* note 20, at 9.

26. *See* LATOUR, AN INQUIRY, *supra* note 22, at 10 (stressing the lack of a distinction between Nature and society).

27. *See e.g.*, Robert L. Glicksman & George Cameron Coggins, *Wilderness in Context*, 76 DENV. U. L. REV. 383, 387 (1999) (stating that while the Wilderness Act was the first preservationist legislation, statutory compromises still preserved human interest).

28. *See id.* (stating that the Wilderness Act contains compromises allowing for continued exploitation of natural resources); *see also* Zygmunt J.B. Plater, *Human-Centered Environmental Values Versus Nature-Centric Environmental Values: Is This the Question?*, 3 MICH. J. ENVTL. & ADMIN. L. 273, 274, 276 (2014) (discussing a congressional hearing that evaluated the benefits of the Endangered Species Act focused on human-centered roles of endangered species, such as the Cone Snail).

29. *See generally* Eric T. Freyfogle, *Wilderness and Culture*, 44 ENVTL. L. 1149, 1169–70 (2014) (arguing that discourses on wilderness reflect deficiencies in the way humans understand the world and our place in it, ultimately, leading to continued patterns of misuse or abuse of the physical world); Mark DeLaurier, The Human-Nature Relationship as Portrayed in Newspaper Coverage of Global Warming 3–4 (2012) (unpublished Ph.D. dissertation, Washington State University) (studying the impact of the media's framing of Nature in its climatechange coverage and how it ultimately constrains the debate).

30. *See infra* Part I (discussing how modern environmental law links humanism with the wilderness idea).

tensions in the legal and cultural frameworks of preservation, which the Anthropocene has fully exposed.[31] Finally, Part III examines the discourses surrounding climate change mitigation, adaptation, and the need for a new philosophical foundation on which any effort to address climate change must ultimately be built.[32] Ultimately, the Article concludes with a call for Moderns to come to terms with reality, including the interdependency of humans and their physical surroundings, the dynamism and persistent evolution of the Earth's systems, and the limited—but still important—role of science in defining who we are and deciding who we want to be.

I. THE PRESERVATION OF WILD NATURE IN THE HOLOCENE

The Modernism that underlies human notions of preserving Nature primarily consists of two related philosophies: humanism and scientism.[33] With roots in Christianity, humanism refers to the notion of humans as special and separate from the rest of the physical world.[34] This philosophy, which forms the heart of Modernist faith, is one of progress, freedom, and ultimately salvation.[35] In Christianity, this manifests itself in the notion that holding a faith in God and living in a certain way will free believers from the burdens of mortality and the constraints of the physical world, ultimately saving their essential *being-ness*—their *souls*—for all eternity.[36] For Moderns, humanism is linked not with religion, but with scientism.[37] Scientism represents the notion that humanity can continually improve lives by applying reason and the ever-growing corpus of scientific knowledge.[38] As with Christianity, the goal of scientism remains to free humanity from the constraints and capriciousness of Nature—the defining traits of which are destruction and extinction.[39]

---

31. *See infra* Part II (discussing the contradictions between modern legal and cultural conceptions of Nature and Man).

32. *See infra* Part III (discussing new ways of framing the debate over climate change).

33. LATOUR, NEVER BEEN MODERN, *supra* note 20, at 36.

34. *Id.* at 13.

35. *See* Peter D. Schmid, Comment, *Religion, Secular Humanism and the First Amendment*, 13 S. ILL. U. L.J. 357, 372 (1989) (declaring that humanism rejects traditional notions, promotes powerful humans, and aims for absolute equality).

36. *See, e.g.*, CORNELIUS FRANCIS MURPHY, JR., PERSON AND SOCIETY IN AMERICAN THOUGHT xii, 69 (2007) (describing Christianity as a spiritual fellowship that requires specific action to make it to the Kingdom of Heaven).

37. Schmid, *supra* note 35, at 373.

38. *See id.* (stating that "[m]an had become master of his own destiny" through science).

39. *See* TZVETAN TODOROV, IMPERFECT GARDEN: THE LEGACY OF HUMANISM 23 (Carol Cosman trans., 2002) (stating that science, like religion, desires a freedom from natural constraints).

The humanist concept is embedded in the *wilderness idea*.[40] This idea though—like the Nature-human dichotomy itself—actually originated centuries before the Modern era, potentially as far back as the 9th century.[41] The word is rooted in the combination of two Common Germanic words—*wilde* and *deor*—which translate respectively to *wild* and *beast*.[42] In Old English, people knew a place to be *wilddeoren* if it contained wild animals.[43] Over time, this word evolved to become wilderness. In the 14th century, the word gained widespread acceptance when John Wycliffe and his associates used the word to describe uninhabited deserts in the first English translation of the Bible.[44]

Wilderness represents the purest form of Nature against which Moderns define humanity.[45] Although there is no one true definition of *wilderness*, in all cases it embodies the absence of features that define *human-ness*.[46] This part provides a brief history of the wilderness concept, focusing on the development of legal regimes aimed at protecting it and the wildlife that are central to it. Even as the preservation of legally designated wilderness areas has been one of the most successful—and popular—environmental legal regimes, it is based on concepts developed specifically for the conditions of the Holocene.[47] These concepts might not fit so well with the realities we face as we enter a new epoch.

A. Preserving Wilderness in the Holocene

While wilderness is now seen largely as something to be preserved or protected, this has not always been the case. Rather, for centuries, people largely thought of wilderness as something negative—something to be avoided or eradicated, not celebrated.[48] As historian Roderick Nash summarized the medieval European view, wilderness "was instinctively understood as something alien to man—an insecure and uncomfortable environment against which civilization had waged an unceasing struggle."[49] In a more spiritual vein, Europeans generally viewed wilderness as a

40. RODERICK FRAZIER NASH, WILDERNESS AND THE AMERICAN MIND 2 (4th ed. 2001).

41. David Henderson, *American Wilderness Philosophy*, INTERNET ENCYCLOPEDIA PHIL., http://www.iep.utm.edu/am-wild/ (last visited Dec. 10, 2017).

42. *Id.*

43. *Id.*

44. NASH, *supra* note 40, at 2–3.

45. *Id.* at 3.

46. *Id.*

47. *Wilderness Act*, WILDERNESS SOC'Y, http://wilderness.org/article/wilderness-act (last visited Dec. 10, 2017).

48. NASH, *supra* note 40, at 8.

49. *Id*.

godless place of evil spirits and demons.[50] In this way, wilderness has been a major justification—if not a primary impetus—for the European imperial project of the last five hundred years, including the Europeans' conquest of North America.[51] Puritan John Winthrop, for example, rationalized his group's pilgrimage to America by arguing it would be wrong to allow the whole continent "to lie waste" by remaining undeveloped or otherwise outside of Christian civilization's influence.[52]

Still, as early as the late 17th century, a small number of Europeans began to see value in wilderness.[53] In contrast to the predominant view, they associated wilderness not with evil spirits, but with God.[54] John Ray manifested this view in his 1691 treatise, *The Wisdom of God Manifested in the Works of Creation*. Ray presented wild Nature as having a sublime beauty bestowed from God.[55] In this way, the very features—solitude, chaos, and mystery—that had made wilderness so foreboding came to be seen as a way for Man to get closer to God.[56]

For a time, though, it seemed that the closer one was to wilderness, the more negatively they viewed it.[57] Positive associations with wilderness seemingly had much to do with a building resentment toward urban, industrialized life. This resentment made many romanticize an idyllic past when men were closer to Nature.[58] This is likely why Euro-Americans, given their proximity to the *frontier*—the supposed line between civilization and wilderness—and their lag in industrialization, as compared to their English counterparts, tended to view wilderness more negatively well into the 19th century.[59] As Alexis de Tocqueville observed in the 1830s, Americans obsessed over their wilderness, seeing it as a chief obstacle to progress.[60]

However, a small group of Americans—most famously including Henry David Thoreau and Ralph Waldo Emerson—began celebrating the

---

50. *Id*.
51. *Id*.
52. *Id*. at 31.
53. *Id*. at 44.
54. *Id*. at 44–55.
55. *See* JOHN RAY, THE WISDOM OF GOD MANIFESTED IN THE WORKS OF CREATION (7th ed. 1717), http://www.jri.org.uk/ray/wisdom/wisdom_of_god.pdf (attempting to reconcile his faith in God with his belief in science, finding that the beauty of science was in its divine origin); NASH, *supra* note 40, at 44.
56. NASH, *supra* note 40, at 44–45.
57. *Id*. at 23.
58. *Id*. at 43.
59. *Id*.
60. *Id*. at 23.

virtues of wilderness in their mid-19th century writings.[61] Like their counterparts in Europe, they too believed that wilderness was a place to encounter and even know God, and they too resented the rapid pace and rampant materialism of urban life.[62] Thoreau saw what he considered to be Nature as an alternative aspiration to that which industrialized society held.[63] He discovered, through his explorations of Nature, a way to specifically criticize "the superficiality and the downright evils of American society."[64]

Later in the 19th century, these views combined with a sense of American exceptionalism to inspire a movement aimed at preserving certain areas in their wilderness—or Natural—state.[65] Theodore Roosevelt, for instance, advocated for wilderness preservation due to its unique recreation opportunities. He argued that wilderness areas were places where American men could test, validate, exhibit, and fortify the masculine qualities of "hardihood, self-reliance, and resolution . . . ."[66] In the view of Roosevelt and others, not only were cities too crowded or too busy, but also they were a threat to America's continued greatness, one forged in small, frontier communities.[67] John Muir, who founded the Sierra Club in 1892 to preserve Natural areas, represented this viewpoint when he described men as "tired, nerve-shaken, over-civilized people . . . . [a]wakening from the stupefying effects of the vice of over-industry and the deadly apathy of luxury, . . . [and as] trying as best they can to mix and enrich their own little ongoings with those of Nature" by wandering in wilderness.[68] Many had pointed to the supposed frontier as serving these same functions Roosevelt and Muir attributed to wilderness areas.[69] Accordingly, the apparent closing of the frontier late in the century brought a sense of urgency to preserve wilderness areas as a remnant of the frontier experience.[70] And just as athletic sports, such as jousting and fencing, were

---

61. *Id.* at 84–85.

62. *Id*. at 86–87.

63. BOB PEPPERMAN TAYLOR, OUR LIMITS TRANSGRESSED: ENVIRONMENTAL POLITICAL THOUGHT IN AMERICA 15 (Wilson Carey McWilliams & Lance Blanning eds., 1992).

64. *Id.*

65. NASH, *supra* note 40, at 96.

66. THEODORE ROOSEVELT, THE WILDERNESS HUNTER 19 (1893).

67. Jedediah Purdy, *American Natures: The Shape of Conflict in Environmental Law*, 36 HARV. L. REV. 169, 198 n.127 (2012).

68. JOHN MUIR, OUR NATIONAL PARKS 1 (1981); *About the Sierra Club*, SIERRA CLUB, http://www.sierraclub.org/about (last visited Dec. 10, 2017).

69. *E.g.*, Frederick J. Turner, *The Significance of the Frontier in American History*, *in* THE FRONTIER IN AMERICAN HISTORY 1 (Henry Holt & Co., 1920).

70. Ashley K. Hoffman & Sean M. Kammer, *Smoking Out Forest Fire Management: Lifting the Haze of an Unaccountable Congress and Lighting up a New Law of Fire*, 60 S.D. L. REV. 41, 62, 62 n.167 (2015).

fashioned to replicate the economic fact of war or physical combat between men after it had disappeared, the creation of protected *wilderness areas* would provide "a means for allowing the more virile and primitive forms of outdoor recreation to survive the receding economic fact of pioneering."[71]

The first areas dedicated to preserving Nature were primarily seen as parks.[72] New York took the lead in the middle of the 19th century in setting aside parks at Niagara Falls, the Catskills, and the Adirondacks.[73] Then, in 1864, Congress deeded Yosemite to the State of California for the establishment of the nation's first wildland park. Congress established the first *national park* eight years later at the headwaters of the Yellowstone River in northwestern Wyoming.[74] When establishing Yellowstone National Park, Congress called on the Secretary of Interior to "provide for the preservation, from injury or spoliation, of all timber, mineral deposits, natural curiosities, or wonders within said park, and their retention in their natural condition," while also providing suitable accommodations for visitors.[75]

Intended for visitor enjoyment, national parks contained some features that wilderness advocates today would consider the antithesis of Nature, including roads, permanent structures, lodging accommodations, and concessions.[76] For instance, in the debates leading up to the establishment of a national park at Crater Lake in Oregon, one proponent of the park's creation envisioned the improvement of "the routes of approach," construction of "a plain but comfortable hotel" with an elevator allowing visitors to "descend to the water without great exertion," and the provision of "a steam launch" on the lake.[77] He argued that the furnishing of these amenities, which together would surely make Crater Lake "Yosemite's great rival on the Pacific Coast," depended first upon its designation as a national park.[78] These developments were indeed incorporated into the legislation establishing a national park there, and allowed—as an exception to its general prohibition on commercial or business enterprises—for restaurant and hotel keepers to apply for permits to "establish places of

---

71. ALDO LEOPOLD, *Wilderness as a Form of Land Use*, *reprinted in* THE GREAT NEW WILDERNESS DEBATE 75, 79 (J. Baird Callicott & Michael J. Nelson eds., 1998).

72. Hoffman & Kammer, *supra* note 70, at 63.

73. Patricia E. Salkin, *Regional Planning in New York State: A State Rich in National Models, Yet Weak in Overall Statewide Planning Coordination*, 13 PACE L. REV. 505, 529–30, 533–35 (1993).

74. Yellowstone National Park Protection Act, ch. 24, 17 Stat. 32 (1872) (codified as amended in 16 U.S.C. § 21(b) (2012)).

75. *Id.*

76. *Id.* § 22.

77. Earl Morse Wilbur, *Description of Crater Lake*, *in* 1 MAZAMA: A RECORD OF MOUNTAINEERING IN THE PACIFIC NORTHWEST 149 (1897).

78. *Id.*

entertainment . . . [and] accommodation" within the park.[79] Above all, national parks were about tourism, and some of their primary proponents were the railroad corporations that would bring the visitors to them.[80]

After national parks were transferred to the newly formed Forest Service in 1905, Chief Forester Gifford Pinchot believed that utilitarian, commercial uses could be perfectly consistent with the parks' preservationist objectives.[81] Preservationists vehemently disagreed.[82] When San Francisco proposed the construction of a dam in the Hetch Hetchy valley within the Yosemite National Park, these conflicting views came to head. Sierra Club founder Muir famously compared the project to destroying a temple, while Pinchot favored the proposal.[83] Pinchot won this fight, but the anger he engendered among the wilderness community ultimately led to Congress forming the National Park Service (NPS) in 1916 and transferring jurisdiction of existing and new national parks to that agency.[84]

While the Forest Service was generally pro-development in its early history—and arguably still is today—the agency did make some strides in protecting wild areas as early as the 1920s.[85] In 1924, Aldo Leopold, then an assistant forester, succeeded in establishing the first wild preserve within the national forest system in Gila National Forest in New Mexico.[86] The agency also set aside portions of the Superior National Forest in Minnesota for preservation purposes.[87] Later that decade, the Department of Agriculture promulgated a regulation for the establishment and management of *primitive areas*.[88] While this regulation, known as L-20, sought to preserve areas in a relatively natural condition for the purposes of education and recreation, it also allowed extractive industries to continue.[89]

---

79. Act Establishing Crater Lake National Park, ch. 820, 32 Stat. 202, 203 (1902) (codified as amended at 16 U.S.C. §§ 121–28 (2012)).

80. ALFRED RUNTE, ALLIES OF THE EARTH: RAILROADS AND THE SOUL OF PRESERVATION 15–16 (2006).

81. *Gifford Pinchot (1865-1956)*, FOREST HIST. SOC'Y, https://foresthistory.org/research-explore/us-forest-service-history/people/chiefs/gifford-pinchot-1865-1946/ (last visited Dec. 10, 2017).

82. Hoffman & Kammer, *supra* note 70, at 48.

83. JOHN MUIR, THE YOSEMITE 261–62 (1912).

84. SAMUEL P. HAYS, THE AMERICAN PEOPLE AND THE NATIONAL FORESTS 13, 45 (2009).

85. Sandra Zellmer, *A Preservation Paradox: Political Prestidigitation and an Enduring Resource of Wilderness*, 34 ENVTL. L. 1015, 1066 (2004) [hereinafter Zellmer, *Paradox*].

86. *Id.* at.

87. *Id.* at 1066 n.356.

88. *Id.* at 1066.

89. *Id.*

While its initial step in protecting wilderness was tepid, the Forest Service got more aggressive in the 1930s.[90] This was primarily due to the leadership of Bob Marshall, who headed the agency's Division of Recreation and Lands.[91] In 1939, the agency issued regulations that superseded the L-20 regulation.[92] Known as the U-Regulations, these new rules established a system with three categories of protected lands: *primitive*, *wilderness*, and *wild*—the latter two being much more restrictive.[93] Within the *wilderness* and *wild* categories, there would be no roads, no motorized transportation, no commercial timber harvests, and no hotels, lodges, or similar facilities.[94] The primary difference between the two categories was that *wilderness* areas were required to be at least 100,000 acres in size, while *wild* areas could be as small as 5,000 acres.[95] By 1963, the agency managed nearly 15 million acres in this system.[96]

Still, many did not trust the Forest Service and its commitment to protecting wilderness values.[97] For instance, Howard Zahniser—the man known as the architect of the Wilderness Act—argued in 1951 that statutory wilderness protection was necessary in order "to stabilize the system and prevent successive administrative decisions to decrease the size of the [administrative wilderness] system."[98] Wilderness advocates feared that the Forest Service would either reduce the amount of land covered by its U-Regulations or reduce the protections accorded them once it received sufficient "pressure from commodity interests . . . ."[99] This distrust had deep roots.[100] Some suspected that the Forest Service established its system of *wilderness* and *wild* areas simply for political cover to prevent lands from being designated National Parks and transferred to NPS jurisdiction, not out of any legitimate preservationist motive.[101]

---

90. Steve Holmer, *A Conservation History of The National Forests*, UNIFIED FOREST DEF. CAMPAIGN 13, http://www.greenpeace.org/usa/wp-content/uploads/legacy/Global/usa/planet3/PDFs/a-conservation-history-of-the.pdf (last visited Dec. 10, 2017).

91. *Id.*

92. *Id.*

93. *Id.*

94. *Id.*

95. *Id.*

96. *Id.* at 16.

97. Michael McCloskey, *The Wilderness Act of 1964: Its Background and Meaning*, 45 OR. L. REV. 288, 297 (1966).

98. *Id.*

99. *Id.*

100. James P. Gilligan, The Development of Policy and Administration of Forest Service: Primitive and Wilderness Areas in the Western United States 221 (1953) (unpublished Ph.D. dissertation, University of Michigan).

101. *Id.*

Partly due to Zahniser's efforts, Congress codified wilderness preservation as a policy of the United States in 1964.[102] To further this policy, Congress established a National Wilderness Preservation System composed of federally owned lands that Congress designated to be managed in a way that ensures "the preservation of their wilderness character . . . ."[103] Following the Modern tradition, Congress defined "wilderness" as "an area where the earth and its community of life are *untrammeled by man*, where man himself is a visitor who does not remain," as opposed to those areas "where man and his own works dominate the landscape . . . ."[104] Frustratingly, the Wilderness Act itself lacks a definition of *untrammeled*.[105] However, its plain meaning is to be free of restraint, unhindered, unimpeded, unencumbered, or unrestricted.[106] This definition makes sense, as each of these words are proxies for *wild*[107]—the root of wilderness. It also aligns with how Zahniser defined the term, being land that is not subject to "*human controls and manipulations that hamper the free play of natural forces . . . .*"[108]

Congress also included a separate, more concrete definition of a *wilderness area*, one that seemingly provides more detail of the *wilderness* Congress intended to preserve.[109] It indicates that wilderness is land of "primeval character and influence, without permanent improvements or human habitation"; it is land protected in its "natural conditions"; it is land

---

102. McCloskey, *supra* note 97, at 298.

103. National Wilderness Preservation System, 16 U.S.C. § 1131(a) (2012).

104. *Id.* § 1131(c) (emphasis added).

105. *Id.*

106. *Untrammeled*, WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY, UNABRIDGED, 2513 (1971) ("not confined or limited: not hindered," or "being free and easy").

107. *See Unrestrained Synonyms, Unrestrained Antonyms*, MERRIAM-WEBSTER THESAURUS, https://www.merriam-webster.com/thesaurus/unrestrained (last visited Dec. 10, 2017) (listing "wild" as a related word); *Unhindered Synonyms, Unhindered Antonyms*, MERRIAM-WEBSTER THESAURUS, https://www.merriam-webster.com/thesaurus/unhindered (last visited Dec.. 10, 2017) (listing "wild" as a related word); *Impede Synonyms, Impede Antonyms*, MERRIAM-WEBSTER THESAURUS, https://www.merriam-webster.com/thesaurus/impeded (last visited Dec. 10, 2017) (listing "hinder" as a synonym, making unimpeded a synonym for unhindered and thus a related word to wild); *Encumber Synonyms, Encumber Antonyms*, MERRIAM-WEBSTER THESAURUS, https://www.merriam-webster.com/thesaurus/encumbered (last visited Dec. 10, 2017) (listing "hinder" as a synonym, making unencumbered a synonym for unhindered and thus a related word to wild); *Unrestricted Synonyms, Unrestricted Antonyms*, MERRIAM-WEBSTER THESAURUS, https://www.merriam-webster.com/thesaurus/unrestricted (last visited Dec. 10, 2017) (listing "unrestrained" as a synonym, making unrestricted a related word to wild).

108. Douglas W. Scott, *"Untrammeled," "Wilderness Character," and the Challenges of Wilderness Preservation*, 2001 WILD EARTH 72, 72, 75 [hereinafter Scott, *Untrammeled*] (quoting Letter from Howard Zahniser to C. Edward Graves (Apr. 25, 1959), *in* THE WILDERNESS WRITINGS OF HOWARD ZAHNISER 161 (Mark Harvey ed., 2014)), https://www.wilderness.net/toolboxes/documents/awareness/Doug%20Scott%20-Untrammeled-Wildern ess%20Character_article.pdf.

109. 16 U.S.C. § 1131(c).

that "appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable"; it is land with "outstanding opportunities for solitude or a primitive and unconfined type of recreation"; and it is land of a size sufficient to be preserved in an "unimpaired condition."[110] Scholars and land managers have long debated the relationship between these two definitions.[111] The authors of the preeminent treatise on wilderness management, for instance, contended the first definition—seemingly requiring wilderness to be preserved in its *untrammeled* condition—represented an ideal rather than a definition of what was actually to be preserved, while the second definition was intended to be the "working definition based on reality."[112] However, any description in the legislative history of the first definition representing an *ideal* was in reference to the question of which areas were worthy of wilderness designation, as opposed to the *wilderness* to be preserved once an area is designated.[113] Zahniser, for one, was concerned that the system would exclude some areas "worthy of preservation as wilderness" based on their having, "at the outset of such handling," some "inconsistent features."[114] Zahniser thought "it would be impractical and unwise to require lands be completely untrammeled prior to being designated, but he fully expected wilderness areas, once designated, to be untrammeled into the future."[115] Taking these two definitions together, then, wilderness must be untrammeled, primeval, natural, and unimpaired. Experts generally collapse these four terms into two, however, in understanding *wilderness character* as including *untrammeled-ness* (or wildness) and *naturalness* (or pristineness).[116]

---

110. *Id.*

111. Scott, *Untrammeled*, *supra* note 108, at 72.

112. JOHN C. HENDEE & CHAD P. DAWSON, WILDERNESS MANAGEMENT: STEWARDSHIP AND PROTECTION OF RESOURCES AND VALUES 109–10 (3d ed. 2002); *see also* Peter A. Appel, *Wilderness and the Courts*, 29 STAN. ENVTL. L.J. 62, 74, 77 (2010) (following Hendee and Dawson in arguing the statute contains both "definitions and aspirations," with the "untrammeled" character being merely an "ideal of wilderness"); Nathan L. Stephenson & Constance I. Millar, *Climate Change: Wilderness's Greatest Challenge*, 28 PARK SCI. 34, 34 (2011–12) (characterizing the definition that wilderness be "untrammeled" as the "idealized concept of wilderness").

113. Scott, *Untrammeled*, *supra* note 108, at 75.

114. *National Wilderness Preservation Act: Hearings Before the Comm. on Interior and Insular Affairs*, 88th Cong. 68 (1963) (statement of Howard Zahniser, Exec. Dir., Wilderness Soc'y); *National Wilderness Preservation Act: Hearings on S. 4 Before the S. Comm. on Interior & Insular Affairs*, 88th Cong. 68 (1963) (statement of Howard Zahniser, Exec. Dir., Wilderness Society).

115. Sean Kammer, *Coming to Terms with Wilderness: The Wilderness Act and the Problem of Wildlife Preservation*, 43 ENVTL. L. 83, 106–07 (2013).

116. *E.g.*, Sandra Zellmer, *Wilderness, Water, and Climate Change*, 42 ENVTL. L. 313, 322–24 (2012); Gordon Steinhoff, *Interpreting the Wilderness Act of 1964*, 17 MO. ENVTL. L. & POL'Y REV. 492, 497–98 (2010); Peter Landres, *Developing Indicators to Monitor the "Outstanding Opportunities" Quality of Wilderness Character*, 2004 INT'L J. WILDERNESS 8, 8–9. It should be noted that these two

Accordingly, the Act prohibits many activities associated with human civilization. Generally, the Act does not allow commercial enterprises or permanent roads.[117] Moreover—except as "necessary to meet minimum requirements" for fulfilling the purpose of the Act—it also prohibits: temporary roads; the use of motor vehicles, motorized equipment, or motorboats; the landing of aircrafts; the use of mechanized transportation; and the construction of any structures.[118]

By most accounts, the Wilderness Act has been a huge success, perhaps unrivaled in American legal-political history. Indeed, from its original roughly nine million acres in 1964, the wilderness system has steadily grown and now encompasses about 110 million acres of designated land.[119] It has grown in good economic times as well as bad, with governments led by Democrats and Republicans.[120] As former solicitor of the Interior Department, John D. Leshy, recently concluded, "the Act is a majestic achievement, truly remarkable for a nation with a deep commitment to economic development, rapid transportation and private property rights, and infused with a distrust of government, particularly the national government."[121]

B. Protecting Wildlife in the Holocene

Wildlife is integral to wilderness.[122] Nevertheless, preserving wilderness has not been the exclusive mechanism for protecting wildlife over the past century.[123] Rather, the United States has sought to protect wildlife more directly by prohibiting certain activities linked to their

---

features are sometimes referred to in other terms. Greg Aplet, for instance, saw wildness as the umbrella term, which incorporated notions of freedom (or untrammeled-ness) and naturalness, while David Cole saw naturalness as the umbrella term, being comprised of untrammeled-ness and pristineness. Gregory H. Aplet, Essay, *On the Nature of Wildness: Exploring What Wilderness Really Protects*, 76 DENV. U. L. REV. 347, 351, 353, 355 (1999) ("Freedom, an essential ingredient of wildness . . . was beautifully captured by the drafters of the Wilderness Act in the word 'untrammeled.'"). Aplet also associates "'a natural state' as integral to the definition of 'wild.'" *Id.* at 353; *see* David N. Cole et al., *Naturalness and Beyond: Protected Area Stewardship in an Era of Global Environmental Change*, 25 GEORGE WRIGHT SOC'Y F. 36, 36, 38 (2008) [hereinafter Cole, *Naturalness*] ("Central to the notion[] of protect[ing] [U.S. wilderness areas] . . . has been the concept of maintaining 'naturalness . . . .'").

117. 16 U.S.C. § 1131(c) (2012).

118. 16 U.S.C. § 1133(c) (2012).

119. Appel, *supra* note 112, at 65.

120. *Id.*

121. John D. Leshy, *Legal Wilderness: Its Past and Some Speculations on Its Future*, 44 ENVTL. L. 549, 589 (2014).

122. Tinamarie Ekker, *The Idea of Wilderness*, 10 INT'L J. WILDERNESS 15, 15–16 (2004).

123. *See* Glicksman & Coggins, *supra* note 27, at 387–88 (stating pollution control acts as another mechanism for conservation/preservation).

destruction, enacting measures to protect essential habitats, and requiring actions to recover species deemed to be in danger of extinction.[124] It has established wildlife refuges on its public lands, made conservation one of many multiple uses for which all public lands are managed, and passed various laws protecting particular species from harmful acts.[125]

The federal government has recognized the importance of wildlife when managing public lands.[126] In addition to the designation of formal *wilderness* areas and national parks, Congress in 1966 established a system of National Wildlife Refuges with the primary mission of "conservation . . . and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats . . . for . . . present and future generations . . . ."[127] As with wilderness, the refuge system has greatly expanded from its humble origins to include over 150 million acres of land and water across the country.[128] The Fish and Wildlife Service (FWS), the agency charged with managing the refuge system, claims it now provides habitat for over 700 species of birds, over 200 species of mammals, over 200 reptile and amphibian species, and more than 1,000 species of fish.[129] In addition, according to FWS, "[m]ore than 380 threatened or endangered plants or animals are protected on wildlife refuges."[130] Additionally, Congress has provided for wildlife conservation to be among the devoted *uses* for national forests and all unreserved lands.[131] In 1960, Congress specified five uses for national forests, including recreation, range, timber, watershed protection, and wildlife and fish.[132] Then, in 1976, Congress declared it the United States' policy that management of public lands, unless otherwise designated, be based on "multiple use and sustained yield."[133] "Multiple use" was further defined as:

---

124. *Id.* at 406.

125. *See* National Wildlife Refuge Administration Act of 1966, 16 U.S.C. § 668dd(a)(1) (2012), *amended by* National Wildlife Refuge System Improvement Act of 1997, Pub. L. No. 105-57, 111 Stat. 1252 (1997) (codified as amended at 16 U.S.C. §§ 668dd–668ee (2006)) (organizing fish and wildlife conservation areas into the National Wildlife Refuge System); Federal Land Policy and Management Act of 1976, 43 U.S.C. § 1701(a)(7)–(8) (2012) (establishing conservation as one of the multiple uses of public land); s*ee, e.g.*, Endangered Species Act of 1973, 16 U.S.C. § 1533 (2012) (providing for the determination, listing, and protection of specific endangered and threatened species).

126. *See* 43 U.S.C. § 1701(a)(8) (directing the government to manage public lands in a way that protects environmental values and to provide habitat for wildlife and fish on "certain public lands").

127. 16 U.S.C. § 668dd(a)(2).

128. *National Wildlife Refuge System: Overview*, U.S. FISH & WILDLIFE SERV. (2013), https://www.fws.gov/refuges/about/pdfs/NWRSOverviewFactSheetApr2013revNov032013.pdf.

129. *Id.*

130. *Id.*

131. Multiple-Use Sustained-Yield Act of 1960, 16 U.S.C. § 528 (2012).

132. *Id.*

133. Federal Land Policy and Management Act of 1976, 43 U.S.C. § 1701(a)(3), (a)(7) (2012).

> [T]he use of some land for less than all of the resources; a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources, including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historical values . . . .[134]

At the height of the environmental movement in the early 1970s, Congress passed the most comprehensive species-protection law, the Endangered Species Act (ESA).[135] Congress intended the ESA, passed in 1973, "to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved . . . ."[136] The ESA's protective mechanisms are triggered when a species—or subspecies—is listed as either endangered or threatened.[137] Along with the listing of a species, the Secretary of Interior may designate a *critical habitat* for the species, a designation that ensures additional protections for such areas.[138] Once a species is listed, the ESA prohibits anyone from importing or exporting, *taking*, or engaging in any commerce involving members of that species.[139] It also prohibits the federal government itself from taking, funding, or approving of actions likely to jeopardize the continued existence of the species.[140] Before taking any action likely to affect a listed species, the acting agency must *consult* with FWS or National Marine Fisheries Service (NMFS) to ensure the proposed action will not jeopardize the species.[141] Finally, unlike most other environmental programs, the ESA is much more than simply a *do-no-harm* statute.[142] It requires FWS or NMFS to work with states in developing plans for the recovery of listed species.[143]

According to the ESA, the Secretary must decide whether to list a species as endangered or threatened "solely on the basis of the best

---

134. *Id.* § 1702(c).

135. 16 U.S.C. §§ 1531–44 (2012).

136. *Id.* § 1531(b).

137. *Id.* § 1533(d).

138. *Id.* § 1533(a)(3)(A).

139. *Id.* § 1538(a)(1); *see also id.* § 1532(19) (defining "take" to mean "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct").

140. *Id.* § 1536(a)(2).

141. *Id.* § 1536(a)(1)–(2) (detailing the consultation goals for all federal agencies).

142. *See id.* § 1531(b) (declaring that the purpose of the ESA is to affirmatively conserve species and their habitats).

143. *Id.* § 1533(f)(2).

scientific and commercial data available to him . . . ."[144] Further, when federal agencies consult with FWS or the NMFS, they determine whether the proposed action is "likely to jeopardize the continued existence" of the species or result in the destruction or adverse modification of its critical habitat.[145] This too is a purely scientific finding.[146] Finally, where recovery plans have been successful, the government must use "objective, measurable criteria" for delisting, criteria that mirror those used in deciding whether to list the species in the first place.[147]

While more controversial than the preservation of wilderness, the ESA has been successful to a degree. While only about 1% of species listed have recovered to the point of being delisted,[148] the vast majority of listed species were on pace for recovery as of 2005, according to a report by the Center for Biological Diversity.[149] More than two hundred species had been saved that otherwise would have likely disappeared.[150] Regardless of their popularity and success, however, the legal regimes for protecting both wilderness and wildlife have faced challenges in recent years due to their unfitness for confronting the pervasive impacts of humans on their environment.[151] Part II outlines these challenges and proposes a way forward to address them.

II. THE PRESERVATION OF WILD NATURE IN A WORLD DOMINATED BY MAN

The Anthropocene effectively collapses the Modern foundations on which conservationist laws were constructed. The wilderness idea in particular is problematic both in its understanding of Man and in its conception of Nature.[152] At the same time, the notion of preventing the extinction of species based on the application of science once species are

144. *Id.* § 1533(b)(1)(A). An "endangered species" is further defined as one "in danger of extinction throughout all or a significant portion of its range," a "threatened species" as one "likely to become an endangered species within the foreseeable future . . . ." *Id.* § 1532(6), (20).

145. *Id.* § 1536(a)(2).

146. *Id.*

147. *Id.* § 1533(f)(1)(B)(ii).

148. J. Michael Scott et al., *Recovery of Imperiled Species Under the Endangered Species Act: The Need for a New Approach*, 3 FRONTIERS ECOLOGY & ENV'T 383, 384 (2005) [hereinafter Scott, *Recovery*].

149. EDWARD O. WILSON, HALF-EARTH: OUR PLANET'S FIGHT FOR LIFE 56 (2016) [hereinafter WILSON, HALF-EARTH].

150. *Id*.

151. *See infra* Part II (discussing the problems that environmental legal regimes based on Modernist assumptions face in coping with the challenges of the Anthropocene).

152. As with Nature, this Article will use the capitalized "Man" to refer to the Modern construction, not to the human species as it exists "out there."

already endangered is proving infeasible as we enter the Earth's sixth mass extinction event.[153] While preserving areas of wilderness and protecting certain species from extinction were both well-meaning goals, and while they have undoubtedly provided various social benefits, we must have a frank discussion as to which values we prioritize and what our ultimate goals are. As challenges of the Anthropocene intensify, it will become even more crucial that we see past the Modernist myth and wisely dedicate our limited preservation resources.

A. The Trouble in Defining "Nature" in the Context of Wilderness Preservation

Members of Congress, in passing the Wilderness Act, and wilderness advocates, in pushing for it, likely anticipated that protecting designated areas from direct human interferences would be sufficient to the preservation of their Natural or wilderness character. Arguably, however, that has not been the case. Federal land agencies increasingly face questions regarding the meaning of the Act's preservationist mandate when designated areas are threatened not by direct and immediate human impacts, but rather by human influences on a much larger scale, including those that typify the Anthropocene.[154]

The Anthropocene has seemingly exposed a fundamental contradiction in the laws of wilderness, namely between the mandate to preserve pristine Nature and the requirement to maintain an area's wildness. In 2000, for instance, a group of prominent wilderness managers, including Peter Landres, pointed to the dilemma in managing wilderness both for naturalness and wildness.[155] This dilemma arose from the awareness that the naturalness of virtually all areas—including protected wilderness areas—has been "compromised by . . . human actions," such that "some form of manipulation . . . is proposed to restore this naturalness."[156] Managers have proposed—and in some cases undertaken—manipulative measures to *restore* Nature, including: the setting of fires to replicate or restore the Natural fire regime; the eradication of *invasive* species; the

153. KIERAN SUCKLING ET AL., EXTINCTION AND THE ENDANGERED SPECIES ACT 6 (2004), https://www.biologicaldiversity.org/publications/papers/ExtinctAndESA.pdf.

154. Kammer, *supra* note 115, at 84–85.

155. PETER B. LANDRES ET AL., USDA FOREST SERV. PROCEEDINGS, RMRS-P-15-VOL-5, NATURALNESS AND WILDNESS: THE DILEMMA AND IRONY OF MANAGING WILDERNESS 377–78 (2000), http://www.fs.fed.us/rm/pubs/rmrs_p015_5/rmrs_p015_5_377_back.pdf.

156. *Id.*

reintroduction, promotion, or translocation of *native* species of vegetation and fish; and the controlling of soil erosion.[157]

The supposed dilemma facing wilderness managers is based on a particular understanding of the Nature that the Wilderness Act required be preserved—one ostensibly free of human influence.[158] Less obviously, this dilemma also allows human activities deemed restorative of Nature's attributes to influence Nature, since any restoration would obviously be both a trammeling and an influence, even if it were deemed a *positive* one.[159] This definition is thus seemingly consistent with the Modernist notion of humans only being a negative force on Nature, which is a view that may indeed be central to the wilderness idea.[160] When humans act in positive ways toward Nature, they cease being *human*—they become part of Nature.[161]

This understanding of Nature—as applied to wilderness areas—also violates a fundamental tenet of statutory construction: namely the rule against interpreting statutory terms or provisions in a way that renders any "clause, sentence, or word" as "superfluous, void, or insignificant."[162] First, it renders superfluous the incorporation of *untrammeled* in the definition of wilderness. If wilderness areas were to be protected from even indirect and unintentional human influences, then the specification that these areas not

---

157. William C. Fischer, *Wilderness Fire Management Planning Guide*, USDA FOREST SERV. 5 (1984), https://www.fs.fed.us/rm/pubs_int/int_gtr171.pdf (providing examples of fire management in wilderness areas and defining "[w]ilderness fire management" as "the deliberate response to and use of fire through the execution of technically sound plans under specific prescriptions for the purpose of achieving stated wilderness management objectives"); Wilderness Watch, Inc. v. U.S. Fish & Wildlife Serv., 629 F.3d 1024, 1026–27 (9th Cir. 2010); Wolf Recovery Found. v. U.S. Forest Serv., 692 F. Supp. 2d 1264, 1268 (D. Idaho 2010); Californians for Alt. to Toxics v. U.S. Fish & Wildlife Serv., 814 F. Supp. 2d 992, 997, 1000 (E.D. Cal. 2011); GARY VEQUIST, USDA FOREST SERV. PROCEEDINGS, RMRS-P-49, ECOLOGICAL RESTORATION OF DEGRADED WILDERNESS ECOSYSTEMS: REMOVING EXOTIC PLANTS AND INTRODUCING PRESCRIBED FIRE TO RESTORE NATURAL DIVERSITY IN TWO NATIONAL PARK WILDERNESS AREAS 507 (2007), https://www.fs.fed.us/rm/pubs/rmrs_p049/rmrs_p049_506_509.pdf (describing the exotic plant management component of the Theodore Roosevelt National Park restoration plan).

158. *See* 16 U.S.C. § 1131(c) (defining wilderness as "an area where the earth and its community of life are untrammeled by man . . . . [a]n area of wilderness is . . . undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation").

159. *See, e.g.*, *Wilderness Watch*, 629 F.3d at 1028 (discussing the Bureau of Land Management's argument that the positive influence of its efforts to restore bighorn sheep made its intervention in the sheep's environment consistent with the Wilderness Act).

160. William Cronon, *The Trouble with Wilderness: Or, Getting Back to the Wrong Nature*, 1996 ENVTL. HIST. 1, 7–9.

161. You can see manifestations of this in the Euro-American treatment of indigenous peoples. The myth of such peoples living in balance with nature—as opposed to dominating or exploiting it, including through the institution of private property—was used to justify the seizure of land and resources from them.

162. Kammer, *supra* note 115, at 111 (quoting TRW Inc. v. Andrews, 534 U.S. 19, 31 (2001)).

be trammeled—not be manipulated or cultivated—is deprived of all meaning. Second, it contradicts those provisions of the Wilderness Act that explicitly allow for human activities and influences, including the specification of the statute's purpose that such areas be used and enjoyed.[163] Finally, inasmuch as the definition is cited to allow for humans to manipulate areas to restore natural conditions, it outright contradicts the *untrammeled* requirement.[164] As environmental philosopher Gordon Steinhoff characterized it, the dilemma wilderness managers—and courts, for that matter—face is not due to the Wilderness Act giving them conflicting requirements, but rather "because 'natural conditions' has been misinterpreted."[165]

We must define "natural conditions" in a way that supplements—not contradicts—the Wilderness Act's *untrammeled* requirement, the core of the wilderness idea. This is easily done. As I recently explained:

> The term ["natural conditions"] was used in the statement of purpose as a contrast to those conditions arising from lands being occupied and modified by humans. It was used in the definition of wilderness areas as a contrast to the state of being "developed" by humans, such as through the construction (or imposition) of "permanent improvements" or settlements. In neither case was the mandate to preserve "natural conditions" meant to exclude all human influences from wilderness areas. As courts have acknowledged, "Congress did not mandate that the [agencies] preserve the wilderness in a museum diorama, one that we might observe only from a safe distance, behind a brass railing and a thick glass window." Considering the naturalness and wildness requirements together, managing agencies must seek to keep areas untrammeled, both by visitors and by themselves (through the exercise of self-restraint), and they must also restrict or prohibit certain other uses which might not constitute "trammeling" but do impair "natural conditions" as defined, such as the construction of roads or structures, the establishment of commercial enterprises, or the use of motorized transportation.

163. 16 U.S.C. § 1133(b).

164. Kammer, *supra* note 115, at 112; Zellmer, *Paradox*, *supra* note 85, at 1041–42 (2004); Aplet, *supra* note 116, at 355; David N. Cole, *Ecological Manipulation in Wilderness—An Emerging Management Dilemma*, 2 INT'L J. WILDERNESS 15, 15–18 (1996) [hereinafter Cole, *Ecological Manipulation*].

165. Steinhoff, *supra* note 116, at 521.

> This is the mandate, and it is singular and without contradictions.[166]

I stand by this legal argument.

However, given that the wilderness idea is a relic of a Modernist viewpoint now exposed as myth, the deeper question is whether wilderness is worth preserving in the way that the law now seems to require. Twelve years after prompting some serious self-reflection within the wilderness community, Bill Cronon in 1995 fully entered the debate over wilderness when he published an article called *The Trouble with Wilderness: Or, Getting Back to the Wrong Nature* in the New York Times Magazine.[167] In this article, Cronon criticized the wilderness idea for allowing people living in an "urban-industrial civilization . . . to evade responsibility for the lives we actually lead."[168] As he further explained,

> By imagining that our true home is in the wilderness, we forgive ourselves the homes we actually inhabit. In its flight from history, in its siren song of escape, in its reproduction of the dangerous dualism that sets human beings outside of nature—in all of these ways, wilderness poses a serious threat to responsible environmentalism at the end of the twentieth century.[169]

Cronon was not against preserving areas as wilderness *per se*.[170] Rather, his worry was that by devoting energies to only the most remote, pristine places, we in essence degraded the less pristine Nature where we actually live—the Nature with which we come into contact every day, the Nature we directly impact in our day-to-day behaviors.[171]

Others have gone much further in arguing for all public lands to be managed according to a *wise use* paradigm—a model built about the utilitarian conservation of Pinchot.[172] Pinchot's philosophy regarding the

---

166. Kammer, *supra* note 115, at 112–13 (quoting Wilderness Watch v. U.S. Fish & Wildlife Serv., 629 F.3d 1024, 1033 (9th Cir. 2010); 2A NORMAN J. SINGER & SHAMBIE SINGER, STATUTES AND STATUTORY CONSTRUCTION § 47:37 (7th ed. 2012 & Supp. 2016).

167. Cronon, *supra* note 160, at 7; *see also* Janny Scott, *An Environmentalist on a Different Path; A Fresh View of the Supposed "Wilderness" and Even the Indians' Place in It*, N.Y. TIMES (Apr. 3, 1999), http://www.nytimes.com/1999/04/03/arts/environmentalist-different-path-fresh-view-supposed-wilderness-even-indians.html (recounting how Cronon "infuriated" environmentalists when he published his New York Times Magazine article).

168. Cronon, *supra* note 160, at 17.

169. *Id.*

170. *Id.*

171. *Id.* at 17, 19.

172. Scott W. Hardt, *Federal Land Management in the Twenty-First Century: From Wise Use to Wise Stewardship*, 18 HARV. ENVTL. L. REV. 345, 349 (1994).

management of a land's renewable resources was to make decisions "from the standpoint of the greatest good of the greatest number in the long run."[173] Recently, industry groups have intensified their efforts to open up lands now dedicated to conservation of wilderness, wildlife, or more generally Nature to extractive, commercial uses, so long as it is in keeping with Pinchot's maxim.[174] Now known to some as the *wise use* movement, these groups have begun to emphasize the concept of the Anthropocene, particularly its premise that no land or water is completely beyond the reach of human influence.[175] If *wilderness* exists only as an idea, and if that idea no longer describes reality—if it ever did—then what is it that wilderness areas and other Nature preserves are preserving or saving?[176]

However, despite all the criticisms of the wilderness idea, wilderness areas themselves still provide great value to American society.[177] They are valuable for the opportunities for recreation and scientific study they offer, for the conservation services they provide, and for their preservation of historical or cultural artifacts.[178] This is true even if they are not as separated from human civilization as Moderns once may have thought, and even if they are not completely uninfluenced. More importantly, they still have the power to inspire awe and humility among both visitors and managers—something we need now more than ever. That being said, preserving areas of *wilderness* will not save humans from the Anthropocene.[179] Politicians and land bureaucrats should not treat preserved wilderness areas as if they can make up for how people live their lives far away from wilderness. No amount of ecological interventions in wilderness areas can save us from ourselves. Wilderness is worth keeping, but it is not a conservation panacea.

B. The Trouble in Defining "Man" in the Context of Wilderness Preservation

The Anthropocene has not only exposed contradictions in Modern understandings of Nature, but it has also highlighted problems in defining

173. DAVID A. CLARY, TIMBER AND THE FOREST SERVICE 22 (1986).

174. WILSON, HALF-EARTH, *supra* note 149, at 71, 74.

175. *Id.*

176. *Id.* at 74.

177. Lloyd C. Irland, *Economics of Wilderness Preservation*, 7 ENVTL. L. 51, 53–54 (1976).

178. *Id.*

179. *See* James Ming Chen, *The Fragile Menagerie: Biodiversity Loss, Climate Change, and the Law*, 93 IND. L.J. 1, 61–62 (forthcoming 2017) https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2862882 (arguing that the wilderness principle and wilderness policy provide insufficient protection for biodiversity, and arguing that, in the context of the Anthropocene, humanity needs to protect biodiversity if only to ensure its own survival).

the other component of the Nature-Man duality: Man.[180] Specifically, on which side do Moderns place non-European—and ostensibly *uncivilized*—peoples?

Euro-Americans have typically answered this question by placing indigenous peoples they encountered on the side of Nature.[181] For example, James Sullivan wrote in an 1801 legal treatise on Massachusetts property law that if not for "the institutions of their parent country"—by which Sullivan meant property—settlers "would have found themselves altogether in a state of nature, and in a much worse condition than the savages, whom they found in the wilderness."[182] Then, in an 1820 speech commemorating the "First Settlement of New England," Daniel Webster described a feeling "too strong to be resisted . . . which inspires and awes us," a feeling inspired by being on the spot where, according to Webster, "Christianity, and civilization, and letters made their first lodgment, in a vast extent of

---

180. In this Article, I use the masculine "Man" to refer to humans, as that is nearly always the term Moderns have used. This includes the Wilderness Act, which followed a long legal tradition of relegating women to a second-class status if not ignoring them altogether. It, for instance, defines wilderness as being "untrammeled by *man*," as a place where "*man* himself is a visitor who does not remain" and where "the imprint of *man*'s work [is] substantially unnoticeable." 16 U.S.C. § 1131(c) (2012) (emphasis added). However, both in designations and in management, decision makers make no distinction based on biological sex or gender identity. An area trammeled by women, occupied by women, and showing signs of having been worked by women is just as ineligible for inclusion. And it is just as unacceptable for female managers to manipulate the ecologies of such areas once they are designated. Paradoxically, the designation "Man" includes women.

181. *See* JAMES SULLIVAN, THE HISTORY OF LAND TITLES IN MASSACHUSETTS 16 (I. Thomas & E.T. Andrews eds., 1801) (characterizing "savages" as an element of wilderness and nature).

182. *Id.* Citing to a Lockean notion of property, Sullivan argued Indians were incapable of acquiring it:

> As property is defined by Mr. Locke, and other great men, there may be a question, how far the savages had acquired one in the soil of this wilderness. It is said that property is originated by separating something, not before especially appropriated, and annexing to it the labour of man. Thus, the deer in the forest, where there is a right in common to hunt, the fish in the sea, where there is a right in common to fish, becomes the property of him, who kills the one, or takes the other. The tree, in the forest of a wilderness, holden in common, as the exclusive right of no one man, or determinate number, or particular description of men, becomes the property of him, who fells, and removes the same from the piece of soil which produced it. . . . [The savages of North America] had a degree of cunning, by which they laid snares for the animals of the wilderness; but they had no idea of taming, or reducing them, when caught, to the direction of the rein.

Id. at 23, 27; *see also* 3 NATHAN DANE, A GENERAL ABRIDGEMENT AND DIGEST OF AMERICAN LAW: WITH OCCASIONAL NOTES AND COMMENTS 214 (Cummings, Hilliard & Co. 1824) (noting in a discussion of what constituted "waste" that "[t]his is a new country, where, except in some parts, of late years, the great object has been to destroy trees, to clear up the land, and to bring the wilderness or natural forests into cleared lands for cultivation and pasturing").

country, covered with a wilderness, and peopled by roving barbarians."[183] In 1897, Theodore Roosevelt wrote that nine-tenths of what had by then become incorporated into the United States was *wilderness*, even though he recognized Indians had long ago settled much of that territory.[184] Even after the Civil War, according to Roosevelt, most of the western United States "still remained primeval wilderness, inhabited only by roving hunters and formidable tribes of Indian nomads, and by the huge herds of game on which they preyed."[185] As these quotes demonstrate, the presence of Indians seemed to be a defining component of wilderness.[186] As Mark David Spence summarized this point of view in his influential work, *Dispossessing the Wilderness*, "forests were wild because Indians and beasts lived there, and Indians were wild because they lived in the forests."[187]

The notion of Indians being part of the wilderness even inspired early preservationist efforts.[188] In 1832, George Catlin became perhaps America's first prominent wilderness advocate when he called for much of the Great Plains to be designated as a wilderness park.[189] To Catlin, it was not just the grand herds of bison that justified the protection of those lands, but also the presence of indigenous peoples, whom Catlin considered the bison's "joint tenants."[190] As he described what he saw and felt from his perch along the banks of the Missouri River:

> It is a melancholy contemplation for one who has travelled as I have, through these realms, and seen this noble animal [the bison] in all its pride and glory, to contemplate it so rapidly wasting from the world, drawing the irresistible conclusion too,

---

183. EDWIN P. WHIPPLE, *A Discourse, Delivered at Plymouth, December 22, 1820*, *in* THE GREAT SPEECHES AND ORATIONS OF DANIEL WEBSTER 27 (Fred B. Rothman ed., 1993). To Webster, what separated Europeans from Indians was not the institution of property, but their political understandings, intelligence, and education: "Here was man, indeed, unprotected, and unprovided for, on the shore of a rude and fearful wilderness; but it was politic, intelligent, and educated man. Every thing was civilized but the physical world." *Id.* at 36.

184. THEODORE ROOSEVELT, *The American Wilderness: Wilderness Hunters and Wilderness Game* (1897), *reprinted in* THE GREAT NEW WILDERNESS DEBATE 63, 66 (J. Baird Callicott & Michael J. Nelson eds., 1998).

185. *Id.* at 69.

186. *See* WHIPPLE, *supra* note 183, at 27 (mentioning that Indians were a principal feature of the wilderness and part of the wilderness scene); MARK DAVID SPENCE, DISPOSSESSING THE WILDERNESS: INDIAN REMOVAL AND THE MAKING OF THE NATIONAL PARKS 10 (1999) (associating American Indians with wilderness).

187. SPENCE, *supra* note 186, at 10.

188. GEORGE CATLIN, LETTERS AND NOTES ON THE MANNERS, CUSTOMS, AND CONDITION OF THE NORTH AMERICAN INDIANS 262 (1841).

189. *Id.*

190. *Id.* at 261.

> which one must do, that its species is soon to be extinguished, and with it the peace and happiness (if not the actual existence) of the tribes of *Indians who are joint tenants with them*, in the occupancy of these vast and idle plains.[191]

In the division of the world between Man and Nature, Moderns such as Catlin considered Indians and other indigenous peoples to be on the side of Nature.[192]

Ironically, as a serious wilderness preservation movement took root in the late 19th century, the setting aside of parks or preserves often included the exclusion of Indians—long generally seen as part of, if not integral to, wilderness—from those areas.[193] While Catlin sought to preserve wilderness in part as a (misguided) way to protect Indian peoples and their cultures, later in the century, the designation of national parks would serve as yet one more justification for the removal of Indian communities and the eradication of their cultures.[194] For instance, groups of Crows, Bannocks, Shoshones, Salish, Nez Perces, and Northern Paiutes had occupied the first national park, Yellowstone—using it both for hunting and gathering and for ceremonial purposes—before the park's establishment in 1872.[195] Still, the first decades of Yellowstone's existence were dominated by military and legal efforts to remove Indians from the park, as well as by efforts to promote the myth that Indians had never been there in the first place.[196] Many accepted as truth that Indians had long avoided the area due to their fears of the park's celebrated geothermal features.[197] Similar stories can be—and have been—told about Yosemite, Glacier, Mount Rainier, and even Mesa Verde national parks.[198]

Scholars have proffered several related explanations for the apparent shift from a conception of *Indian wilderness* to an *uninhabited wilderness* requiring the removal of Indians and their histories.[199] Some have

---

191. *Id.* (emphasis added).

192. *Id.* at 262.

193. CAROLYN MERCHANT, AMERICAN ENVIRONMENTAL HISTORY 168 (2007).

194. *Id.*; *see also* CATLIN, *supra* note 188, at 262 (advocating for the preservation of wilderness in order to protect Indian tribes).

195. SPENCE, *supra* note 186, at 56, 58.

196. *Id.* at 56–60.

197. *Id.* at 55.

198. In the case of Mesa Verde, whose primary purpose was to preserve "ancient" Pueblo ruins, the story was not that Indians had never occupied the area, but rather that they had long ago disappeared. With no Indians occupying the land in the interim, this cleared the path for the process of Manifest Destiny. MERCHANT, *supra* note 193, at 167.

199. Both views denied Indians their humanity. The notion of an "Indian wilderness" did so explicitly by relegating Indians to the nature side of the Nature-human dichotomy, while the "uninhabited wilderness" idea did so by denying Indians their history and their existence.

emphasized an "increased racism" toward Indians of the West brought about by the quickening pace of Manifest Destiny and its attendant violent conflicts.[200] According to this view, these Indian peoples, once considered "picturesque and 'noble' Indians who freely roamed through a distant region," by the end of the century had come to live on "coveted lands within the national domain," such that they had "regressed into 'treacherous, blood thirsty savages.'"[201]

A problem with these explanations for the victory of the uninhabited wilderness ideal over Catlin's *Indian wilderness* is that it never happened at all. The notion of Indians as part of wilderness never fully dissipated, but rather continued to influence the federal government's approach to its land domain well into the 20th century.[202] For instance, in 1930, Bob Marshall, founder of the Wilderness Society, called for the establishment of federal wilderness areas where the only human improvements allowed would be trails and temporary shelters, since they were "common long before the advent of the white race . . . ."[203] To Marshall, wilderness, at the time of Columbus's "immortal debarkation," included not just those areas uninhabited or untouched throughout history, but rather virtually the entire continent.[204] A few decades later, a Department of Interior report on the management of national parks—in response to criticisms from wilderness purists—recommended "[a]s a primary goal . . . that the biotic associations within each park be maintained, or where necessary recreated, as nearly as possible in the condition that prevailed when the area was first visited by the white man," thereby treating all Indians as either part of such "biotic associations" or as people unable to act upon them.[205]

---

200. Isaac Kantor, *Ethnic Cleansing and America's Creation of National Parks*, 28 PUB. LAND & RES. L. REV. 41, 48 (2007).

201. SPENCE, *supra* note 186, at 30; *see also* Kantor, *supra* note 200, 46–48 (describing John Muir's views of Indians as representative of the shift in Euro-American conception of Indians in relation to wilderness). Kantor also attributed the shift primarily to the "increased racism" toward Indians due to the increased hostilities between white Americans and Indians in the latter half of the nineteenth century. *Id.* at 48.

202. SPENCE, *supra* note 186, at 10.

203. ROBERT MARSHALL, THE PROBLEM OF THE WILDERNESS (1930), *reprinted in* THE GREAT NEW WILDERNESS DEBATE 85–86 (J. Baird Callicott & Michael J. Nelson eds., 1998).

204. *Id.* at 85. Marshall continued: "Even such tribes as the Incas, Aztecs and Pueblos made few changes in the environment in which they were born." He seemingly admired the ability of Indians to live within wilderness, as he praised their philosophy which never included the notion that "progress is proportional to the amount of alteration imposed upon nature . . . ." *Id.* at 86. Marshall's writing represents what is typically called the myth of the "noble savage," meant to be a positive label and a connective thread between Indians and preservationists, but really derogatory and racist.

205. A.S. LEOPOLD ET AL., WILDLIFE MANAGEMENT IN THE NATIONAL PARKS (1963), *reprinted in* AMERICA'S NATIONAL PARK SYSTEM: THE CRITICAL DOCUMENTS 210, 213 (Lary M. Dilsaver ed., 2d ed. 2016).

That viewpoint continues to influence management of designated *wilderness* areas, even today, despite claims to the contrary.[206] Since passage of the Wilderness Act in 1964, management of the areas within the system it created has forced land managers, judges, and legal scholars to develop legal definitions of exactly what this *wilderness* is that is to be preserved.[207] In doing so, some have advocated for a definition of *wilderness* or Nature as being entirely free from human influence.[208] This has the seeming benefit of being a hardline rule, with *humans* on one side and *wilderness* on the other.[209] However, in practice, these same advocates typically exclude from *naturalness* only a certain subset of human activities performed by *Modern* people.[210] In one of the first scholarly articles substantively analyzing *wilderness* as a legal category, Daniel Rohlf and Douglas L. Honnold contended that one key ingredient of *wilderness* is that it "possess[es] an ecology that functions as it did for thousands of years prior to the arrival of *nonaboriginal* humans . . . ."[211] More recently, David N. Cole, a research biologist for the Forest Service's Aldo Leopold Wilderness Research Institute, summarized what he saw as the most common definition of "naturalness" as being those "conditions that are similar to what would have existed in the absence of *post-aboriginal* humans."[212] This explains why environmental historian Bill Cronon's 1983 work demonstrating that New England Indian peoples not only inhabited, but in fact exploited and transformed their lands prior to European settlement, caused such a panic among the wilderness community, even leading to what has been hailed as "The Great New Wilderness Debate."[213]

This relatively recent debate suggests that Catlin's assumptions regarding the relationship of Indians to Nature never really disappeared. While Indians had come to be separated from a particular wilderness ideal, the *wilderness* that park advocates and preservationists sought to protect

---

206. Daniel Rohlf & Douglas L. Honnold, *Managing the Balances of Nature: The Legal Framework of Wilderness Management*, 15 ECOLOGY L.Q. 249, 255 (1988).

207. Cole, *Naturalness*, *supra* note 116, at 38.

208. *Id.*

209. *Id.*

210. Cole, *Ecological Manipulation*, *supra* note 164, at 16.

211. Rohlf & Honnold, *supra* note 206, at 255 (emphasis added).

212. Cole, *Ecological Manipulation*, *supra* note 164, at 15 (emphasis added) (citation omitted). In a later article, Cole stated that "[n]atural is usually taken to mean that the influence of *post-Columbian peoples* should be generally absent." David N. Cole, *Soul of the Wilderness: Natural, Wild, Uncrowded, or Free?*, 6 INT'L J. WILDERNESS 5, 5 (2000) [hereinafter Cole, *Soul of the Wilderness*] (emphasis added).

213. WILLIAM CRONON, CHANGES IN THE LAND: INDIANS, COLONISTS, AND THE ECOLOGY OF NEW ENGLAND 41–44, 127–28 (1983); *see* J. Baird Callicott & Michael P. Nelson, *Introduction* to THE GREAT NEW WILDERNESS DEBATE: AN EXPANSIVE COLLECTION OF THE WRITINGS DEFINING WILDERNESS 1, 11 (1998) (crediting Cronon's work for sparking the whole debate in the first place).

was not *all* wilderness, but rather small islands chosen for their unique and breathtaking features and for their capacity to honor American greatness.[214] When John Muir encountered a group of Mono Indians near Yosemite, he later described them as having "no right place in the landscape," a place that was otherwise a "fresh wilderness—a manuscript written by the hand of Nature alone . . . ."[215] Muir was not referring to their disconnection from wilderness generally, but merely from that particular piece of it.[216] Wilderness areas like Yosemite were not the savage, dangerous wilderness of which Indians had for so long been a part, but rather a manifestation of Nature—of Eden, of God—here in America, a representation of American character perhaps, but not of the country itself.[217] Indians had no place—not now, not in the past, and certainly not in the future—in *this* wilderness, even as they continued to represent all other wildernesses, the bulk of which had already been so successfully transformed and incorporated into civilization.[218]

The recent literature on the Anthropocene is replete with implicit references to an *Indian wilderness*—of indigenous peoples acting within Nature while Modern Europeans act upon it or transform it.[219] For instance, Bill McKibben, in *End of Nature*, while recognizing that North America "was not entirely unaltered by man when the [European] colonists arrived," still contended much of the continent was still wilderness at the time, as the "previous occupants had treated it fairly well."[220] McKibben then went on to wax poetic about the beauty and grandeur of the American wilderness, even citing to George Catlin for his favorite historical description of the landscape, one wherein he painted the picture of a lovely, quiet valley near the Missouri.[221] McKibben unfortunately compared this passage to Genesis—as it, for him, acts "as a baseline, a reminder of where *we* began"—despite the fact that different Indian communities had used, occupied, and altered that land for thousands of years.[222] For all too many, the period Catlin captured—the *history* he depicted—symbolizes the end of

214. Kantor, *supra* note 200, at 62 (quoting JOHN MUIR, NATURE WRITINGS 372–73 (William Cronon ed., 1997)).

215. *Id.* at 46–47.

216. *Id.* Kantor uses this passage as evidence for how disconnected Indians had come to be from Nature generally, in the American mind.

217. *Id.*

218. *Id.*

219. *See, e.g.*, BILL MCKIBBEN, THE END OF NATURE 42 (Random House Trade Paperback ed., 2006) (describing tribal territories as wilderness, and distinguishing that wilderness from the "dark and forbidding" European wilderness).

220. *Id.*

221. *Id.* at 44.

222. *Id.* at 45 (emphasis added).

something, not the beginning.[223] But to McKibben, history had not yet touched the central North American plains, at least outside of Euro-American forts, such that he could lament, without irony, that "[s]uch visions of the world as it existed outside human history became scarcer with each year that passed . . . ."[224]

In the introduction to the second edition of *End of Nature*, McKibben even acknowledged the legitimacy of the criticism that his entire premise of there being an *end of nature* was misguided, since humans have, in fact, altered their environments for thousands of years. He went so far as to say such an objection was "of course . . . true."[225] He recognized the degree to which we have "changed the places where we lived, the places where we grew our food, and even to some extent the wilderness surrounding them" ever since we "[e]merg[ed] into the world hairless, slow, and relatively weak," armed only with "our largish brains."[226] He recognized specifically how Indians burned forests and grasslands to improve hunting.[227] This is all good. But he ignored Indians' advances in agriculture and their building of large cities, and he ignored their role in driving to extinction an entire continent of megafauna.[228] Even worse, though, he then compared the work of Indians to that of "the beaver" in contrasting it with that of Modern humans.[229] Thus, in 1989, he echoed Catlin's racist comparison of Plains Indians to bison from the 1830s.[230] He acknowledged the theoretical untenability of the Modernist distinction between *Modern* humans and those

223. *See, e.g.*, *id.* ("If this passage had a little number at the start of each sentence, it could be Genesis; it sticks in my mind as a baseline, a reminder of where we began."); JEROLD S. AUERBACH, EXPLORERS IN EDEN 72 (2006) (explaining that Catlin "worked in a frenzy of energy to depict 'the living monuments of a noble race' . . . before they disappeared from the stage of history").

224. MCKIBBEN, *supra* note 219, at 45.

225. *Id.* at xix.

226. *Id.*

227. *Id.*

228. *See, e.g.*, William E. Doolittle, *Agriculture in North America on the Eve of Contact: A Reassessment*, 82 ANNALS ASS'N AM. GEOGRAPHERS 386, 388 (1992) (describing the "substantial landscape modification" of pre-contact Native agriculture); Gary Haynes, *The Catastrophic Extinction of North American Mammoths and Mastodonts*, 33 WORLD ARCHAEOLOGY 391, 393 (2002) (positing that early North American humans, not climate change, drove megafauna to extinction).

229. MCKIBBEN, *supra* note 219, at xix. Interestingly, McKibben is not the only writer to compare the works of humans to that of beavers. *See* RICHARD WHITE, THE ORGANIC MACHINE 12 (1995) (describing beaver dams and hydraulic dams as functionally similar works). White does so from a post-modernist perspective, however, essentially contending that the construction of large dams on the Columbia River was not fundamentally different from the work of beavers in constructing their own dams.

230. *Id.*; *see also,* CATLIN, *supra* note 188, at 247 (equating the "great importance in [the] vast wilderness" of buffalo to that of Plains Indians).

who preceded and co-exist with them, just before he reinforced Modernity's central claim—categorical *differences* among human communities.[231]

McKibben's basis for drawing a distinction between the types of alterations indigenous peoples performed on Nature and the types undertaken by Modern Europeans is apparently that the impacts of indigenous peoples were local, while the effects of Modern humans—as the Anthropocene proves—are global.[232] Beyond the criticism that what McKibben identifies as a distinction in type is really a mere difference in scale, his argument actually fails for a much more obvious reason. That is, people may have been altering the global climate for thousands of years.[233] Paleoclimatologist William Ruddiman recently found that humans from as far back as 5,000 years ago had already sufficiently altered the composition of the atmosphere through farming, animal domestication, and deforestation to delay the next glaciation—to extend the stable climate that typifies the Holocene.[234] Talk about having a global impact.

Any attempt to distinguish among peoples based on principles of Modernity must fail. More than that, in terms of altering the functioning of the Earth, self-identified *Moderns* are not even that different from life forms that existed not three hundred years ago, not three thousand years ago, not three million years ago, but *three billion* years ago.[235] It was around that time that communities of cyanobacteria invented a process meant to secure them a continuous, renewable energy supply.[236] Specifically, they took carbon from the atmosphere and replaced it with oxygen.[237] With this process, which scientists now identify as photosynthesis, cyanobacteria made it possible for the development of an ozone layer and for the evolution of more complex life forms, including animals.[238]

The truth is that life forms have always altered the global environment.[239] The distinction between Moderns and pre-Moderns, between Europeans and indigenous peoples, between explorers and *natives*, and between history and pre-history has always been arbitrary. It has

---

231. *See* MCKIBBEN, *supra* note 219, at xix (acknowledging criticism of his failure to recognize that humans had altered their environment "for centuries," and dismissing those criticisms by distinguishing the actions of Indians from Europeans).

232. *See id.* (equating the level of alteration caused by Indians burning forests with that of beavers building a dam, and describing global warming as "the largest imaginable" disruption of nature "[s]hort of wide-scale nuclear war").

233. BONNEUIL & FRESSOZ, *supra* note 13, at 14.

234. *Id.*

235. *Id.* at 58.

236. *Id.*

237. *Id.*

238. *Id.*

239. *Id.* at 4.

always been founded on a particular subjective perspective rather than on any objective reality.[240] The irony is that a philosophy built upon the capacity of Man for rational thought cannot stand up to rational scrutiny. For whatever else it is, the Anthropocene is a global phenomenon, one that presents profound challenges for humanity—not just Man (as understood by Moderns).[241] Our response to the Anthropocene cannot be rooted in a muddled thinking that excludes billions of people from the conversation.

C. The Trouble in Preserving Biodiversity in the Midst of a Mass Extinction

Extinctions are natural, far more so than early evolutionary biologists, including Charles Darwin, recognized.[242] However, mass extinctions—that is, a rapid loss in both the amount and the diversity of life—are extremely rare.[243] In the four-plus billion-year history of the Earth, there have been only five such events.[244] According to some scientists, though, we are now in the midst of a sixth mass extinction.[245] In one recent study, a group of biologists concluded that over the last century, the average rate of vertebrate species loss was as much as one hundred times the background rate—the average rate throughout the Earth's history excluding the past mass extinction events.[246] This study only further confirmed previous studies and what biologists have long believed. In one 1998 poll, 70% of biologists believed not only that the Earth was already in the midst of a mass extinction, but that human existence itself might be threatened as a result.[247] More famously, Edward O. Wilson wrote in 2002 that the Earth could lose half of its higher life forms within the century unless humans altered their disruptive patterns.[248] As of now, almost one-third of all

240. Fabrice G. Renaud et al., *Tipping from the Holocene to the Anthropocene: How Threatened Are Major World Deltas?*, 5 CURRENT OPINION ENVTL. SUSTAINABILITY 644, 646, 650 (2013), http://www.sciencedirect.com/science/article/pii/S1877343513001553.

241. Robert Macfarlane, *Generation Anthropocene: How Humans Have Altered the Planet for Ever*, GUARDIAN (Apr. 6, 2016), https://www.theguardian.com/books/2016/apr/01/generation-anthropocene-altered-planet-for-ever.

242. Gerardo Ceballos et al., *Accelerated Modern Human-induced Species Losses: Entering the Sixth Mass Extinction*, SCI. ADVANCES, June 2015, at 3.

243. KOLBERT, *supra* note 8, at 15–16.

244. *See id.* at 16 (indicating the time periods of five previous mass extinctions as evidenced by marine fossil records).

245. Ceballos, *supra* note 242, at 3.

246. *Id.* at 1.

247. Press Release, Am. Museum of Nat. History, Nat. Survey Reveals Biodiversity Crisis: Sci. Experts Believe We Are in the Midst of Fastest Mass Extinction in Earth's History (Apr. 20, 1998) http://www.mysterium.com/amnh.html.

248. EDWARD O. WILSON, THE FUTURE OF LIFE xxiii (2002) [hereinafter WILSON, THE FUTURE OF LIFE].

species that have been properly assessed are considered at threat of extinction, and many more remain to be assessed.[249]

The architects of the ESA certainly did not anticipate this.[250] Indeed, as leading ESA scholar Holly Doremus summarized the situation, "[t]he issues that arouse so much conflict today were virtually ignored" by those who promoted and passed the ESA.[251] It is not just that the ESA's drafters failed to anticipate the issues the law would face, but that they, as Doremus noted, "assume[d] an unrealistically static vision of nature," one the Anthropocene has fully exposed as a myth.[252] Instead, ecologists now fully understand that the processes that comprise the physical world are dynamic, complex, and connected, which is why Doremus was right when she warned in 2010 that continuing with the conservation strategies embedded in the ESA will doom us to failure.[253]

In response to the increasing rate of extinction, some wildlife and conservation experts have developed new conservation strategies and concepts that challenge the ESA framework.[254] Some now recognize that many species, even if reaching numbers designated in their respective recovery plans, will perhaps permanently depend upon human interventions for their continued existence.[255] In 2005, for instance, a group of scholars, including J. Michael Scott and Dale D. Goble, concluded that, given the nature of the threats and their increasing scale and intensity, full recovery in the sense of self-sufficiency was no longer a realistic goal for the bulk of listed species.[256] It was in this article that Scott and his team developed the concept of "Conservation Reliant Species" (CRS), a term to be applied to those species that are consigned to rely upon further—and perhaps perpetual—human interventions for their existence.[257] They proposed five factors for defining a species as conservation reliant: (1) threats to the species are known and treatable; (2) threats are pervasive and recurrent (e.g., nest parasites or non-native predators); (3) threats render the species at risk of extinction, absent ongoing conservation management;

---

249. Eric V. Hull, *Protecting Endangered Species in an Era of Climate Change: The Need for a Smarter Land Use Ethic*, 31 GA. ST. U. L. REV. 579, 580 (2014).

250. Holly Doremus, *The Endangered Species Act: Static Law Meets Dynamic World*, 32 WASH. U. J.L. & POL'Y 175, 178 (2010) [hereinafter Doremus, *Static Law*].

251. *Id.* at 175.

252. *Id*.

253. *Id*. at 176.

254. *See, e.g.*, Scott, *Recovery*, *supra* note 148, at 385, 387 (proposing the conservation-reliant species framework for species that will never recover under the ESA framework).

255. *See id.* at 386 (arguing that most listed species are "conservation-reliant" species and require ongoing human intervention to sustain populations).

256. *Id.* at 384.

257. *Id.* at 386–87.

(4) management actions sufficient to counter threats have been identified and can be implemented; and (5) federal, state, or local governments, in cooperation with private or tribal interests, are capable of carrying out required management actions as long as necessary.[258]

While the CRS concept has gained popularity since 2005, it has not gone unchallenged, especially regarding its implications for the ESA.[259] The team led by Scott and Goble has generally implied—if not explicitly stated—that CRS designees should be delisted once they reach sufficient population numbers, so long as proper formal agreements are in place to ensure management for their continued survival.[260] The ESA, they argued in 2012, while being "an effective approach for recognizing taxa that are on the brink of extinction and defining the steps needed to reverse their downward trajectory," did not anticipate the need for "continuing intervention, even for 'recovered' species . . . ."[261] They went even further in contending that "continued listing under the ESA for many currently listed species may not be the best way to achieve long-term persistence," since the strict mandates of the ESA "may preclude some appropriate management actions."[262]

In 2012, a group of scholars led by Daniel J. Rohlf argued that the concept of CRS, while perhaps useful in terms of prompting a necessary conversation, had only managed to muddy the waters of the delisting process by introducing considerations of politics and regulation into the inquiry.[263] They noted that FWS had only used the term to support delisting species that still required human interventions to *maintain* their recovery.[264] They were rightly concerned at the prospect of the CRS concept subverting the preservationist mission at the heart of the ESA and unduly introducing political considerations into what should be solely a biological/ecological determination. As Rohlf and his colleagues lamented, the current definition of CRS allows FWS "to decide unilaterally what constitutes a recovered wolf distinct population segment under the guise of relying on the agency's technical expertise."[265] They thus proposed an entirely new definition of

---

258. *Id.* at 384.

259. *See* Daniel J. Rohlf et al., *Conservation-reliant Species: Toward a Biology-based Definition*, 64 BIOSCIENCE 601, 601 (2014) (stating that current CRS definitions confuse legal issues with biological concepts); *see*, *e.g.*, Dale D. Goble et al., *Conservation-Reliant Species*, 62 BIOSCIENCE 869, 870 (2012) (describing the CRS concept and its associated challenges).

260. Scott, *Recovery*, *supra* note 148, at 384, 387; Goble, *supra* note 259, at 870.

261. Goble, *supra* note 259, at 871.

262. *Id.*

263. Rohlf, *supra* note 259, at 601.

264. *Id.* at 608.

265. *Id.* (emphasis omitted).

CRS, one they claimed was entirely "based on biology."[266] This definition was based entirely upon the degree to which a species needs human intervention of either individual members of the particular species or their environment to persist.[267]

Unfortunately, Rohlf and his colleagues were blinded by their own faith in the strictures of Modernity, as two fallacies in their argument indicate. First, they read language into the ESA that is not there.[268] At least three times they declared that "self-sufficiency in the wild" is the standard by which species are to be considered recovered and thus be delisted.[269] This standard does not exist in the ESA itself.[270] Indeed, the ESA even explicitly requires that FWS "tak[e] into account those efforts, if any, being made by any State or foreign nation, or any political subdivision of a State or foreign nation, to protect such species, whether by predator control, protection of habitat and food supply" in both listing and delisting decisions.[271] Second, they criticized the prevailing definition of CRS for "[i]mproperly mixing science and law," thereby leading to "confusion."[272] Both of these notions are rooted in Modern myths, one assuming there can be a *wild* completely independent of *human* influence, the other assuming it is possible for science to remain independent from *law*, by which the authors surely mean values.[273]

Despite the pretensions of those who passed the ESA and other wildlife preservation laws, they never fully insulated ESA decision-making from politics. The ESA has been politicized from the start.[274] The first major test of the Act's scope came when FWS blocked the Tennessee Valley Authority's completion of the Tellico Dam based upon the project's adverse effects on the critical habitat of the snail darter, a fish that nobody even knew existed a decade earlier—a species that had no commercial value.[275] The TVA challenged FWS's decision, and the resulting case made it to the Supreme Court and provided an important test case for the law's insulation from political concerns—from the weighing of the various costs and

---

266. *Id.*

267. *Id.* at 609–10.

268. *Id.* at 609.

269. *Id.*

270. *See* 16 U.S.C. § 1532(3) (2012) (providing no definition for recovery, only referencing delisting as "the point at which the measures provided . . . are no longer necessary").

271. *Id.* § 1533(b)(1)(A).

272. Rohlf, *supra* note 259, at 606.

273. *Id.* at 607.

274. John Buse, *A Different Perspective on the Endangered Species Act at 40: Responding to Damien M. Schiff*, 38 ENVIRONS ENVTL. L. & POL'Y J. 145, 150 (2014).

275. Tenn. Valley Auth. v. Hill, 437 U.S. 153, 153, 162, 187 (1978).

benefits that affect various constituencies.[276] The Supreme Court, taking Congress at its word, upheld FWS's decision to halt the dam's construction, reasoning in unequivocal language that the clear purpose of the ESA "was to halt and reverse the trend toward species extinction, whatever the cost."[277]

The separation between scientific and political decision-making—between facts and values—proved illusory.[278] After the Supreme Court's decision effectively blocked completion of the Tellico Dam, Congress created a committee that it empowered to grant exemptions from the ESA: (1) where the proposed action was of regional and national importance; (2) where the benefits of the exemption clearly outweighed the benefits of any available alternatives; and (3) where there were no reasonably prudent alternatives.[279] Because of its power in either saving a species or condemning it to extinction, this committee came to be known as the "God Squad."[280] The first task of the God Squad was to consider an exemption for the Tellico Dam.[281] Even though the vast majority of the Tellico Dam project had already been completed, the God Squad did not grant it an exemption based on the utter lack of economic justification for the dam in the first place.[282] One member of the committee concluded, "I hate to see the snail darter get the credit for stopping a project that was so ill-conceived and uneconomic in the first place."[283] That political maneuver having failed, Congress simply responded by exempting the Tellico Dam from the ESA's operation via an appropriations rider, a practice that has become all too common.[284]

The so-called *forest wars* of the Pacific Northwest are another prime example of the illusory separation between scientific and political decision-

---

276. *Id.* at 153–54, 169.

277. *Id.* at 155, 184.

278. *See id.* at 154 (holding that Congress designed the ESA to give endangered species priority over economic interests, thereby merging political with scientific decision-making).

279. The Committee is to be composed of seven members, including: the Standing Secretaries of Agriculture, of the Army, and of the Interior; the Acting Chairman of the Council of Economic Advisors; the Acting Administrators of the Environmental Protection Agency and the National Oceanic and Atmospheric Administration; and one individual from an affected state. 16 U.S.C. §§ 1536(e)(2), (h)(1)(A).

280. Plater, *supra* note 28, at 285.

281. *Id.*

282. *Id.*

283. *Id.* at 286.

284. *E.g.*, Consolidated Appropriations Act of 2016, Pub. L. No. 114-113, 129 Stat. 2242 (2015) (prohibiting the Army Corps of Engineers from using funds to study the Mississippi River and its tributaries, as authorized by the Water Resource Development Act of 2007).

making.[285] In January 1987, GreenWorld, an environmental advocacy group, fired the first shot in these wars when it petitioned FWS to list the Northern Spotted Owl as endangered under the ESA.[286] In July of that year, FWS acted on the petition and began a status review of the subspecies' viability.[287] As part of that review, Dr. Mark Shaffer, the agency's expert on population viability, concluded that "continued old growth harvesting is likely to lead to the extinction of the subspecies in the foreseeable future," a finding he thought "argue[d] strongly for listing the subspecies as threatened or endangered at this time."[288] FWS solicited peer reviews of Shaffer's study, and all agreed with his ultimate prognosis. Despite these findings, in December 1987, FWS decided that listing the spotted owl was not warranted.[289]

Conservation groups—including GreenWorld—challenged FWS's decision in a federal court in Seattle, Washington.[290] Like the vast majority of judicial reviews of administrative actions over the past several decades, the Administrative Procedure Act governed the court's review.[291] Congress passed that law in 1946 to answer the dilemma that baffled jurists and administrators alike through the late 19th century, namely the relative roles of the executive bureaucracy and the judiciary in implementing and enforcing statutory law—and hence in establishing new legal precedents.[292] Congress sided heavily with the bureaucracy in providing for courts to review administrative factual findings and policy preferences only as to whether they were "arbitrary and capricious."[293] Even with its narrow field of vision, however, the court saw enough to overturn FWS's decision.[294] Particularly, Judge Thomas Zilly, writing for the court, criticized FWS for ignoring expert opinions, including that of its own expert, on the spotted owl's population viability, and for failing to provide any factual or scientific basis for its own conclusions.[295] He thus ordered the agency to

---

285. *See* Jim Furnish & Dan Chu, *Twenty Years of the Northwest Forest Plan: Guest Opinion*, OREGONIAN (Apr. 11, 2014, 2:45 PM), http://www.oregonlive.com/opinion/index.ssf/2014/04/twenty_years_of_the_northwest.html (identifying the tension between clearcutting national forests and the complete shutdown of timber management during the "forest" or "timber wars" of the 1980–90s).

286. *See* U.S. GEN. ACCOUNTING OFFICE, GAO-89-79, ENDANGERED SPECIES: SPOTTED OWL PETITION EVALUATION BESET BY PROBLEMS 5 (1989) (discussing how GreenWorld's petition to FWS cited loss of habitat and numbers of spotted owls).

287. N. Spotted Owl v. Hodel, 716 F. Supp. 479, 481 (W.D. Wash. 1988).

288. *Id.*

289. *Id.*

290. *Id.* at 479–80.

291. *Id.* at 481.

292. Administrative Procedure Act, 5 U.S.C. §§ 551–59 (2012).

293. *Id.*

294. *Hodel*, 716 F. Supp. at 483.

295. *Id.* at 482.

provide additional analysis and to reconsider the petition in light of the court's opinion.[296]

Less than two years after its initial decision not to list the spotted owl, FWS reversed itself in concluding that listing was indeed warranted, but that was not the end of controversy.[297] With its listing, finalized in June of 1990, FWS declined to designate any "critical habitat" for the species, deeming it "not 'determinable.'"[298] This sparked another round of litigation before the same court and judge.[299] Again, Judge Zilly was limited in his inquiry as to whether the agency's decision was adequately supported—whether it provided legitimate reasons and considered all relevant data.[300] Again, he found the agency's determination to be lacking. He found that FWS "fail[ed] to direct this Court to any portion of the administrative record which adequately explains or justifies the decision not to designate critical habitat for the northern spotted owl."[301] He thus ordered the agency to reconsider designating critical habitat for the spotted owl and to issue a final rule by the end of April 1991.[302]

As the deadline for the FWS's critical habitat designation neared, the Bureau of Land Management (BLM),[303] which has jurisdiction over roughly 264 million acres of the federal domain, adopted a management plan for protecting Northern Spotted Owl populations, while also providing for logging in their habitat.[304] Called the "Jamison Strategy," this plan authorized timber sales totaling roughly 750 million board feet of timber over the next two fiscal years.[305] BLM promulgated the plan without consulting with FWS to ensure it was "not likely to jeopardize the continued existence of [the northern spotted owl] . . . or result in the destruction or adverse modification of [its critical] habitat," as the ESA required for all federal "agency actions" likely to affect the owl.[306] BLM contended that the plan did not itself constitute an "action" and instead

296. *Id.* at 483.

297. N. Spotted Owl v. Lujan, 758 F. Supp. 621, 623 (W.D. Wash. 1991).

298. *Id.*

299. *Id.* at 622–23.

300. *Id.* at 624.

301. *Id.* at 627.

302. *Id.* at 629.

303. BLM was formed in 1946 by combining the General Land Office and the Grazing Service and was charged with managing unreserved federal public lands. *National History*, BUREAU OF LAND MGMT., https://www.blm.gov/about/history/timeline (last visited Dec. 11, 2017).

304. Victor M. Sher, *Travels with Strix: The Spotted Owl's Journey Through the Federal Courts*, 14 PUB. LAND L. REV. 41, 49 (1993).

305. *Id.*

306. *Id.* at 49–50 & n.50 (quoting 16 U.S.C. § 1536(a)(2) (2012)).

consulted with FWS as to each individual timber sale.[307] The problem with such an approach, according to environmentalists, is that the tendency in reviewing each site-specific action separately is to minimize or ignore the cumulative impacts of all the actions taken together.[308] Thus, environmental groups once again sued to protect the Northern Spotted Owl, this time suing BLM in federal court in Oregon for its failure to consult FWS as to its Jamison Strategy.[309] Judge Robert Jones found that BLM indeed violated the ESA, and he enjoined BLM from implementing the plan.[310] BLM then appealed to the Ninth Circuit Court of Appeals, which agreed with Jones.[311] The Ninth Circuit, in March 1992, enjoined BLM from entering into any of the 1991 timber sales until it completed the ESA's formal consultation process.[312] The following January, Jones permanently enjoined all sales that may affect the endangered owl.[313]

As with the TVA over a decade earlier, BLM found itself appealing to the God Squad to permit its desired actions.[314] Indeed, it read the writing on the wall even before the Ninth Circuit's decision.[315] In September 1991, BLM petitioned the Secretary of Interior to call together the God Squad—officially the Endangered Species Committee (ESC)—to consider whether it should exempt 13 of its proposed sales (covering over 4,000 acres) from the ESA's otherwise strict mandates not to jeopardize listed species and the resulting harsh economic impacts.[316] In this case, the Committee found such conditions satisfied and exempted 13 of the BLM's proposed sales from the ESA.[317]

Even the God Squad's decision did not end the controversy, however. Environmental groups challenged the granting of the exemption, alleging that the BLM failed to comply with all the statutory requirements in availing itself of the exemption.[318] First, they contended that the BLM did

307. Lane Cty. Audubon Soc'y v. Jamison, 958 F.2d 290, 293 (9th Cir. 1992).

308. *See e.g.*, Laura Hartt, Case Comment, Pacific Coast Federation of Fishermen's Associations v. NMFS*: A Case Study on Successes and Failures in Challenging Logging Activities with Adverse Cumulative Effects on Fish and Wildlife*, 32 ENVTL. L. 671, 685 (2002) (discussing an example of environmentalists challenging agency site-specific determinations on cumulative impact grounds); Sher, *supra* note 304, at 52.

309. *Lane Cty. Audubon Soc'y*, 985 F.2d at 292.

310. *Id.* at 293.

311. *Id.* at 290, 293.

312. *Id.* at 293.

313. Sher, *supra* note 304, at 51.

314. *Id.*

315. *Id.* at 52.

316. *See* Portland Audubon Soc'y v. Endangered Species Comm., 984 F.2d 1534, 1537 (9th Cir. 1993) (highlighting both the colloquial name for the ESC and these BLM petitions).

317. *Id.* at 1536.

318. Sher, *supra* note 304, at 52.

not adequately consult with the FWS in the first place, as Judge Jones and the Ninth Circuit had found.[319] Second, they argued that the BLM did not "previously prepare[]" an environmental impact statement assessing the impacts upon endangered species and their critical habitats prior to seeking the exemption, as required.[320] Third, they alleged numerous procedural defects in how the ESC considered the BLM's petition, including treating the proceedings as a rulemaking rather than a trial-like adjudication, thereby allowing for unofficial contacts among committee members, interested parties, and others—including members of the White House staff—throughout the decision-making process.[321] Moreover, environmental groups pointed to a conflict of interest—actually multiple conflicts of interest—for Solicitor General Thomas Sansonetti, who was concurrently representing the BLM in related litigation while also serving as counsel for the ESC and chief counsel for the FWS.[322] These irregularities led the *Oregonian* editorial board to observe that President George H. W. Bush's administration was "manipulating the input before a federal hearings judge so the output will be favorable to the timber industry, irrespective of the facts of the matter . . . ."[323] Shortly after a federal court granted the environmentalists' request for an evidentiary hearing and, in so doing, agreed that the ESC's decisions were adjudicatory in nature, the BLM—by this time under the direction of President Bill Clinton's administration—withdrew its proposal to pursue the 13 sales for which it had sought the ESC exemptions in the first place.[324] The agency also pledged not to sell timber in the future except in strict accordance with the ESA.[325]

The Clinton administration then established an inter-agency task force to develop a plan for managing all federal forests—including national forests and parks in addition to BLM lands—within the Northern Spotted Owl's range.[326] Its work culminated in the Northwest Forest Plan, which amended existing management plans for 19 national forests and seven BLM districts from northern California to Washington, in all covering 24.5

---

319. *Id.*

320. *Id.* at 53.

321. *Id.*

322. *Portland Audubon Soc'y*, 984 F.2d at 54.

323. Sher, *supra* note 304, at 56.

324. Michael C. Blumm & Tim Wigington, *The Oregon & California Railroad Grant Lands' Sordid Past, Contentious Present, and Uncertain Future: A Century of Conflict*, 40 B.C. ENVTL. AFF. L. REV. 1, 27 (2013).

325. *See id.* at 29–30 ("President Clinton stated that any management changes necessary to address the economic needs of timber communities and protect long-term forest health would be based on sound science, provide sustainable and predictable timber harvests, and end government gridlock.").

326. *Id.* at 30–31.

million acres of federal land.[327] Its goal was to protect the spotted owl's old-growth habitat while still allowing for a stable and sustainable timber industry in the region.[328] To protect the spotted owl and other species, it set aside over seven million acres of old-growth forest as "late successional reserves" and over two million acres of riparian areas as "riparian reserves."[329] To preserve the timber industry, it recognized about four million acres of "matrix" lands where most of the timber harvests would occur.[330] Resolution of the matter depended not on the science regarding the various threats to the spotted owl or on the amount of risk to its future existence, but rather a political balancing of the ends served by the ESA and those served by sustaining the region's timber industry.[331]

Beyond that history, politics is also baked into the ESA's inherent procedures. There is no escaping it. First, decisions regarding whether to list a species can never be made "solely on the basis of the best scientific and commercial data available," as the ESA requires.[332] While scientists can produce findings—always with some degree of uncertainty—regarding the risk of extinction within a particular time frame, they cannot objectively determine when that risk rises to the level of that species being "in danger" or "likely to become . . . endangered."[333] Rather, that determination requires a judgment call regarding how much risk is too much and how much certainty should be required before potentially curtailing economic activity.[334] In short, it requires a subjective policy choice. This choice likely involves the value placed on the species in question, the value of the activities that listing a species would potentially stop or curtail, and the value placed on the ESA's mission itself.[335] It is far from objective, far from scientific. Even determining what constitutes a species is a subjective determination to some degree, though scientists have advocated for particular models they think the scientific community should follow.[336] Despite the involvement of scientists, these are political decisions. One can

---

327. *Id.*

328. *Id.* at 31.

329. *Id.* at 31–32.

330. *Id.* at 32.

331. *See id.* at 30 (explaining that the President established "three inter-agency working groups" to "develop a set of management options that would comply with federal environmental laws, promote biological diversity, and produce a sufficient amount of timber").

332. 16 U.S.C. § 1533 (2012).

333. *Id.* §§ 1532(6), (20); Doremus, *Static Law*, *supra* note 250, at 183.

334. *Id.* at 192.

335. Holly Doremus, *Listing Decisions Under the Endangered Species Act: Why Better Science Isn't Always Better Policy*, 75 WASH. U. L.Q. 1029, 1035 (1997) [hereinafter Doremus, *Listing Decisions*].

336. Doremus, *Static Law*, *supra* note 250, at 183.

say the same for decisions regarding whether to designate a "distinct population segment," whether to designate a critical habitat, whether a proposed action is likely to jeopardize a listed species, and whether a listed species has recovered to the point where reclassification or delisting is warranted.[337]

Regardless of the continued viability of the CRS concept, Congress designed the ESA based on Modernist assumptions formed in the Holocene, particularly a view of extinctions as unnatural disturbances we should seek to prevent at all costs and a belief that taking a *hands-off* approach—preventing *takes* and limiting economic development on certain land parcels—in response to threats would be sufficient to preserve biodiversity.[338] These assumptions must be reassessed. Given the limited resources devoted to the cause of environmental protection, including biodiversity conservation, we must be honest as to what we are trying to achieve—and what is possible to achieve. We must also establish a legal framework that recognizes the degree to which values—rather than scientific *fact*—inherently play a role in the decision-making process. A better match between the law and the actual mechanics of implementing it will ensure fewer resources are tied up in justifying decisions legally and politically, thereby leaving more resources to dedicate to finding future solutions.

III. COMBATING CLIMATE CHANGE IN A WORLD WITHOUT NATURE

Although the Anthropocene concept is still relatively new, one of its predominant features—anthropogenic climate change—has been a concern of scientists for decades, if not centuries.[339] As early as the first decades of the 19th century, in fact, European scientists became aware of a natural "greenhouse effect," whereby certain gases absorbed infrared heat reflected from the Earth.[340] In 1861, for example, Irish scientist John Tyndall demonstrated that some gases, including water vapor, play a role in warming the atmosphere and the Earth's surface.[341] He also recognized the importance of this process to life on Earth, particularly in higher

337. *See* 16 U.S.C. §§ 1532(3), (16), 1533(a)(3)(A)(i), 1536(a)(2) (outlining these decision-making processes).

338. Doremus, *Static Law*, *supra* note 250, at 182.

339. Richard Black, *A Brief History of Climate Change*, BBC NEWS (Sept. 20, 2013), http://www.bbc.com/news/science-environment-15874560.

340. *Id.*

341. *Id.*

latitudes.[342] This aqueous vapour, he explained, is "more necessary to the vegetable life of England than clothing is to man . . . ."[343] The science continued to develop so that, in 1882, H.A. Phillips could conclude in *Nature* that "increasing pollution of the atmosphere will have a marked influence on the climate of the world."[344]

As a major topic of political concern and media focus, however, climate change is still a relatively new phenomenon.[345] Discussions of climate change have largely been built on the Modern constructs embedded in the wilderness idea, as filtered through the environmental politics of the last 50 years.[346] In framing the issue primarily in humanistic and scientific terms, those pushing governments to take action in regards to climate change have unwittingly invited criticism and constrained the debate to the detriment of their movement.[347]

A. The Invention of the Modern "Environment"

The wilderness idea and the notion of conserving Nature underlie the Modern environmental movement and the enactment and implementation of *pollution control* laws of the 1960s and 1970s.[348] These laws greatly expanded restrictions on the polluting of water and air, and they imposed tighter regulations on the manufacture, distribution, and use of toxic

342. DALE JAMIESON, REASON IN A DARK TIME: WHY THE STRUGGLE AGAINST CLIMATE CHANGE FAILED—AND WHAT IT MEANS FOR OUR FUTURE 13 (2014).

343. Black, *supra* note 339. Even earlier in the 19th century, Jean Baptiste Joseph Fourier speculated that gases in the atmosphere were trapping heat reflected from the Earth's surface, thereby warming the surface. JAMIESON, *supra* note 342, at 13. Later in the century, Svante Arrhenius, a chemist from Sweden, pointed to the "selective absorption" of heat by certain atmospheric gases, primarily "aqueous vapor and carbonic acid." Although these gases are only "present in the air in small quantities," he found they were still capable of absorbing "considerable quantities of heat." S. Arrhenius, *On the Influence of Carbonic Acid in the Air upon the Temperature of the Earth*, 9 ASTRONOMICAL SOC'Y OF THE PAC. 14, 15 (1897).

344. H.A. Philips, *Pollution of the Atmosphere*, 27 NATURE 127, 127 (1882). Even before these scientific discoveries, climate change had already been a significant social and political issue, even if the mechanics of it were speculative. In 1821, for instance, socialist Charles Faurier challenged "civilized industry" in part due to what he saw as a "decline in the health of the globe," including "climatic disorders" that he thought were "inherent to civilized culture . . . ." BONNEUIL & FRESSOZ, *supra* note 13, at 257.

345. Black, *supra* note 339.

346. *Id.*

347. *See generally* HAYDEN WASHINGTON & JOHN COOK, CLIMATE CHANGE DENIAL: HEADS IN THE SAND (2011) (analyzing and refuting climate change denial).

348. Robinson Meyer, *How the U.S. Protects the Environment From Nixon to Trump—A Curious Person's Guide To The Laws That Keep The Air Clean And The Water Pure*, ATLANTIC (Mar. 29, 2017), https://www.theatlantic.com/science/archive/2017/03/how-the-epa-and-us-environmental-law-works-a-civics-guide-pruitt-trump/521001/.

substances and on the disposal of waste.[349] Although protecting—or improving—public health was a principal motivation for each of these laws, the stories environmentalists tell about the movement more generally reinforce the Modernist views of Nature—or the environment—as something external to humanity, and of environmentalism as being aimed at either reducing the extent to which humans degrade Nature or restoring Nature to some past—implicitly pristine or *wild*—state.[350] The traditional narrative is the following: Rachel Carson's *Silent Spring* alerted people to the dangers of pesticides, smog events in Los Angeles, London, Pittsburgh, and other cities exposed the dangers of industrial emissions, and the 1969 fire on the Cuyahoga River in Cleveland highlighted how polluted our waterways had become.[351] Public outrage translated into political mobilization, which in turn led to political victories establishing the most robust system of environmental protection on Earth.[352] In short, humans unwittingly degraded Nature to such a degree that they finally awoke to the havoc they were wreaking, and they have been redressing the situation ever since by limiting human intrusions into Nature.[353]

From word one, Carson's *Silent Spring* embodies the Modernist foundations of the environmental movement of the last half-century.[354] Carson even opened the book with a dedication and a quote to an observation that "[m]an has lost the capacity to foresee and to forestall," and that "[h]e will end by destroying the [E]arth."[355] The first chapter then

---

349. *Id.*

350. Even the word "pollution" connotes a nature separate from humans, one that can only be encroached upon, violated, or degraded. Black's Law Dictionary, for example, equates "pollut[ing]" with corrupting, defiling, or contaminating. *Pollute*, BLACK'S LAW DICTIONARY (10th ed. 2014).

351. Peter Dykstra, *History of Environmental Movement Full of Twists, Turns*, CNN (Dec. 15, 2008), http://www.cnn.com/2008/TECH/science/12/10/history.environmental.movement/index.html.

352. This narrative is so compelling that I begin my environmental law classes by playing Randy Neumann's 1972 track "Burn On," a song about the Cuyahoga River fire, even though I find the narrative seriously problematic. It is a great way to hook students, right? The Earth Day Network explains the birth of Earth Day in 1970 very much in this narrative framework:

> Although mainstream America largely remained oblivious to environmental concerns, the stage had been set for change by the publication of Rachel Carson's New York Times bestseller *Silent Spring* in 1962. The book represented a watershed moment, selling more than 500,000 copies in 24 countries, and beginning to raise public awareness and concern for living organisms, the environment and links between pollution and public health.

The History of Earth Day, EARTH DAY NETWORK, http://www.Earthday.org/about/the-history-of-Earth-day/#sthash.0SYqV9Wx.dpuf (last visited Dec. 11, 2017).

353. Robert V. Percival, *Regulatory Evolution and the Future of Environmental Policy*, U. CHI. LEGAL F. 159, 160 (1997).

354. *See generally*, RACHEL CARSON, SILENT SPRING (1962) (detailing the negative impacts of human activity on the environment).

355. Albert Schweitzer, *Epigraph* to RACHEL CASON, SILENT SPRING v (1962).

provides a portrait of a fictional town "where all life seemed to live in harmony with its surroundings," that is until humans—in all their humanness—disturbed this Natural balance and "silenced the rebirth of new life in this stricken world."[356]

Environmental law scholar Jebediah Purdy has shown how the environmental movement was built upon an invention of "the environment" as "an encompassing category of problems and political commitments."[357] This category allowed for the proliferation of nuclear weapons (and the prospects of nuclear war), the United States military's use of herbicides and defoliants in Vietnam, the agricultural use of pesticides in the United States, the darkened air in cities across the United States, the Cuyahoga River catching fire, and a general malaise regarding technology and the fate of the American worker to be viewed through the same prism: a master narrative of ecological crisis.[358] This category was built on the wilderness idea and notions of conserving *nature*, to be sure, but it was broader than anything that had come before.[359] As Purdy explained, "[t]he 1960s saw environmental language break far outside the confines of the traditional concern with specific acreage, land use issues, and recreational and aesthetic values."[360]

According to Purdy, this invention of "the environment" as a category and the use of environmental crisis as a "moral master narrative of modern life," as he called it, combined with other secondary developments to form the Modern environmental movement.[361] The first was the notion of apocalypse: the belief—or at least fear—that the further existence of humanity itself was at stake.[362] The second was a tightening of the link between environmental and public-health concerns with the notion of environmental degradation as a poison.[363] The third was the notion that the root causes of environmental harms were degraded or distorted human values.[364] The final development was a claim that addressing environmental problems might not just ameliorate an unfolding crisis, but could also

356. CARSON, *supra* note 354, at 1–3.

357. Jedediah Purdy, *The Politics of Nature: Climate Change, Environmental Law, and Democracy*, 119 YALE L.J. 1122, 1173 (2010).

358. *Id.* at 1174–77; TED NORDHAUS & MICHAEL SHELLENBERGER, BREAK THROUGH: FROM THE DEATH OF ENVIRONMENTALISM TO THE POLITICS OF POSSIBILITY 21–23 (2007).

359. Purdy, *supra* note 357, at 1160, 1175–76.

360. *Id.* at 1174–75.

361. *Id.* at 1177.

362. *Id.*

363. *Id.* at 1178.

364. *Id.*

provide a guide for humans to make the world an all-around better place moving forward.[365]

This crisis narrative required an acknowledgment that humans are in fact dependent upon Nature for their continued existence.[366] They can never be entirely *free* in the way the Moderns envisioned. As ecologist Barry Commoner wrote in 1971, "[s]uddenly we have discovered what we should have known long before: that the ecosphere sustains people and everything that they do . . . ."[367] In this way, mainstream environmentalism may seem to repudiate the central tenets of Modernist faith. However, the movement still reserved a special place for humans. They might be dependent upon Nature for their survival—much like every other species—but still only humans have the capacity to manage their physical environment for their own conscious ends, mainly through the application of natural sciences.

This is why the language of environmentalism is largely one of science.[368] The reliance of the environmental movement on scientific discourse is part of a much broader political trend, wherein important decisions are increasingly relegated to experts rather than ordinary people.[369] While Moderns largely believed a more technocratic form of government would lead to a more rational and efficient form of governance, it has also precipitated a backlash from people who feel they have lost their political voice.[370] While conflicts over the ESA demonstrate this tension to some degree, the debate over the science of climate change provides the most startling example of this resurgence in anti-intellectualism in the United States.[371]

---

365. *Id.* at 1179.

366. *Id.* at 1177–78.

367. BARRY COMMONER, THE CLOSING CIRCLE 12 (1972).

368. ROBERT J. BRULLE, AGENCY DEMOCRACY AND NATURE 173–74, 191 (2000). Brulle criticized the myopia of mainstream environmentalists. He wrote:

> Reform environmentalism has been unable to develop a meaningful political vision of how to create an ecologically sustainable society. Without this vision, it lacks the means to engender widespread political support. . . . Instead, environmental politics takes the form of technical and legal debates carried out within a limited community of lawyers and scientists that is heavily biased in favor of industrial interests.

Id. at 192.

369. *Id.*

370. *Id.* at 273.

371. *Id.* at 273–74.

B. Climate "Skeptics" and a Loss of Faith in Science

In his 2006 award-winning documentary, *An Inconvenient Truth*, and book by the same name, Al Gore implored the audience to "remember the lesson of the CFC battle: that cool heads can prevail and alter the course of environmental change for the better."[372] This illustrates Gore's approach in the film and the approach of advocates for climate change mitigation more broadly: the problem is defined as one for science to resolve, and one for which science has already provided the necessary answers, even if they are *inconvenient*.[373] For various reasons, this discourse has failed to mobilize the public or to form the necessary consensus as to which actions, if any, need to be taken.[374]

Communications scholar Maxwell T. Boykoff, whose research focuses on the manner in which groups of people create meaning from climate science, and how those meanings ultimately influence climate policies, considered 1988 as the year major news outlets began seriously covering climate change.[375] This, Boykoff claimed, was due to NASA scientist James Hansen's testimony before Congress regarding the need to address climate change, Margaret Thatcher's dire warnings regarding climate change, and an intense heat wave that swept across North America that summer.[376] Since that time, public concern among the media and politicians has ebbed and flowed, but it has never abated.

From the start, news coverage pitted scientific perspectives against those skeptical—if not in outright denial—of climate science.[377] For instance, in 2002, a year after the chief administrator of the United States National Oceanic and Atmospheric Administration (NOAA) declared there to be "a better scientific consensus on [global warming] than on any issue I know—except maybe Newton's second law of dynamics," the Washington Post cited to "numerous uncertainties [that] remain about global warming's cause and effect."[378] These uncertainties apparently included the role of humans in contributing to climate change, despite an overwhelming

372. AL GORE, AN INCONVENIENT TRUTH 295 (2006).

373. AN INCONVENIENT TRUTH at 1:15:25 (Lawrence Bender Productions & Participant Productions 2006).

374. BRULLE, *supra* note 368, at 273–74.

375. Maxwell T. Boykoff & Jules M. Boykoff, *Balance as Bias: Global Warming and the US Prestige Press*, 14 GLOBAL ENVTL. CHANGE 125, 127 (2004), http://sciencepolicy.colorado.edu/admin/publication_files/2004.33.pdf.

376. *Id.*

377. *Id.* at 130.

378. *Id.* at 125.

scientific consensus on that subject.[379] From 1988 to 2002, in fact, just over half of all coverage in the *prestige press*[380] in the United States gave "roughly equal attention" to the two sides: one being the scientific view that humans were a cause of global warming, the other being that "exclusively natural fluctuations" could explain any observed temperature increases.[381] Another third emphasized the scientific consensus while still presenting the science-denial side.[382] That means less than one-third gave no heed at all to science deniers.[383]

This implicit equating of scientific findings regarding climate change with the scientifically unfounded claims of science deniers certainly contributes to people thinking the science is much less certain than it actually is.[384] From the start of this millennium, never have as many as two-thirds of Americans believed in anthropogenic climate change.[385] When climate change legislation seemed a real possibility in 2010, only half of Americans even believed in the existence of the problem, much less took it seriously given the myriad of other issues facing society.[386] In 2016, almost three-quarters of Americans did not believe there to be a "scientific consensus" on the existence of anthropogenic climate change, while only slightly over one-third even believed it to be a majority position.[387] It is not just that the public does not trust what scientists are telling it, but also that the public is grossly misinformed as to what scientists are even saying.[388]

Making the problem worse is the tendency among the media to label deniers of the strong scientific consensus as *climate skeptics*.[389] In 2014, a number of scientists wrote a letter to media organizations arguing they should stop using the word *skeptic* to refer to climate *deniers*.[390] As they explained the distinction in the letter:

---

379. *Id.* at 129.

380. The "prestige press," for the purposes of Boykoff's study, includes the New York Times, the Los Angeles Times, the Washington Post, and the Wall Street Journal. *Id.* at 125.

381. *Id.* at 129.

382. *Id.*

383. *Id.*

384. *Id.*

385. Lydia Saad & Jeffrey M. Jones, *U.S. Concern About Global Warming at Eight-Year High*, GALLUP (Mar. 16, 2016), http://www.gallup.com/poll/190010/concern-global-warming-eight-year-high.aspx.

386. *Id.* (presenting a figure titled "How Much Americans Worry About Global Warming").

387. CARY FUNK & BRIAN KENNEDY, PEW RES. CTR., THE POLITICS OF CLIMATE 26–27 (2016), http://assets.pewresearch.org/wp-content/uploads/sites/14/2016/10/14080900/PS_2016.10.04_Politics-of-Climate_FINAL.pdf

388. *Id.* at 28.

389. Mark Boslough et al., *Deniers Are Not Skeptics*, CTR. FOR SKEPTICAL INQUIRY (Dec. 5, 2014), http://www.csicop.org/news/show/deniers_are_not_skeptics.

390. *Id.*

> [S]kepticism promotes scientific inquiry, critical investigation, and the use of reason in examining controversial and extraordinary claims. It is foundational to the scientific method. Denial, on the other hand, is the *a priori* rejection of ideas without objective consideration. . . . As scientific skeptics, we are well aware of political efforts to undermine climate science by those who deny reality but do not engage in scientific research or consider evidence that their deeply held opinions are wrong. The most appropriate word to describe the behavior of those individuals is "denial." Not all individuals who call themselves climate change skeptics are deniers. But virtually all deniers have falsely branded themselves as skeptics. By perpetrating this misnomer, journalists have granted undeserved credibility to those who reject science and scientific inquiry.[391]

In addition to the amount of coverage given to deniers, labeling them skeptics gives them a credibility they do not merit, while also depriving scientists of credibility they do merit by implicitly presenting them as non-skeptical, and thus unscientific.

All of this leads to a sense among the public that scientists are hiding something, or trying to pull something over on the public—one the fossil fuel industry and politicians can exploit. In late 1997, as delegates representing over a hundred states met in Kyoto, Japan to negotiate a treaty to address climate change, conservative columnist Charles Krauthammer noted the degree of uncertainty in climate models before accusing scientists of attempting to quash discussion of those uncertainties.[392] Indeed, to Krauthammer, scientists were climate *fundamentalists* unable even to consider uncertainties— "uncertainty is a feeling foreign to [them]."[393]

Not much has changed in 20 years. Americans just elected to the presidency a man, Donald J. Trump, who believes climate change to be a complete fabrication, as his Twitter feed attests. Trump famously tweeted in November 2012 that "[t]he concept of global warming was created by and for the Chinese in order to make U.S. manufacturing non-competitive."[394]

---

391. *Id.*

392. Charles Krauthammer, Opinion, *Global Warming Fundamentalists*, WASH. POST (Dec. 5, 1997), https://www.washingtonpost.com/archive/opinions/1997/12/05/global-warming-fundamentalists/cba9d4c1-806e-4815-8755-cf9e975a8c2e/.

393. His support was a statement of one scientist, Stephen Schneider, in which Schneider claimed it was "journalistically irresponsible to present both sides" of the climate debate, combined with Schneider's conclusions from almost three decades earlier, that the bigger threat was global cooling from human use of aerosols. *Id.*

394. Donald J. Trump (@realDonaldTrump), TWIITER (Nov. 6, 2012, 2:15 PM) https://twitter.com/realDonaldTrump/status/265895292191248385?ref_src=twsrc%5Etfw&ref_url=http

In late July 2014, Trump nonsensically complained about it being "really cold outside in New York," asking rhetorically, "[w]here the hell is GLOBAL WARMING???"[395] "We need some fast!" he exclaimed in truly Trumpian fashion.[396] Earlier that month he accused the always nefarious "[t]hey" with changing "the term to CLIMATE CHANGE when the words GLOBAL WARMING didn't work anymore."[397] This, of course, is not true. Rather, "climate change" more accurately depicts the various features of climate beyond temperature. The Earth is still warming.[398] Still, evoking cold weather to disprove global warming and to mock the term "climate change" has been a recurring theme for Trump, one that reveals his utter lack of scientific understanding.[399] The important thing is not that Trump tweeted these conspiracy theories regarding the climate movement; it is that people bought them.[400]

While nobody would accuse Trump of being an *intellectual*—indeed that was a large part of his appeal in the 2016 campaign—even the supposed intellectual heavyweights of the Republican Party endorse views similar to Trump's.[401] Like Krauthammer, they frequently accuse scientists

---

%3A%2F%2Fwww.businessinsider.com%2Fdonald-trump-climate-change-global-warming-environment-policies-plans-platforms-2016-10. Upon Trump's election, China rebutted this accusation by noting how it had worked with previous United States' administrations because it fully realizes how serious a threat climate change presents. 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.

395. Donald J. Trump (@realDonaldTrump), TWITTER (July 28, 2014, 6:47PM), [hereinafter Trump Really Cold Tweet] https://twitter.com/realDonaldTrump/status/493935815207043072.

396. *Id.*

397. Donald J. Trump (@realDonaldTrump), TWITTER (July 14, 2014, 4:19 PM), https://twitter.com/realDonaldTrump/status/488825209189711873.

398. Caitlyn Kennedy & Rebecca Lindsey, *What's the Difference Between Global Warming and Climate Change?*, CLIMATE.GOV (June 17, 2015), https://www.climate.gov/news-features/climate-qa/whats-difference-between-global-warming-and-climate-change.

399. Trump Really Cold Tweet, *supra* note 395.

400. *See, e.g.*, Brian Kennedy, *Clinton, Trump Supporters Worlds Apart on Views of Climate Change and Its Scientists*, PEW RES. CTR. (Oct. 10, 2016), http://www.pewresearch.org/fact-tank/2016/10/10/clinton-trump-supporters-worlds-apart-on-views-of-climate-change-and-its-scientists/ (explaining that although 50% of all registered U.S. voters believe humans are the primary cause of climate change, only 22% of Trump supporters believe so).

401. *See, e.g.*, Graham Readfearn, *Checking Ted Cruz's Climate Science Denial Howlers*, GUARDIAN (Feb. 10, 2016, 8:01 PM), https://www.theguardian.com/environment/planet-oz/2016/feb/11/checking-ted-cruzs-climate-science-denial-clangers (identifying Ted Cruz and Marco Rubio as climate change deniers); Jim Schutze, *As the National GOP Leaps into the 20th Century, Ted Cruz and His Texas Pals Cling to the 19th*, DALL. OBSERVER (Dec. 10, 2012, 11:13 AM), http://www.dallasobserver.com/news/as-the-national-gop-leaps-into-the-20th-century-ted-cruz-and-his-texas-pals-cling-to-the-19th-7134366 ("Cruz [has been] described as the 'intellectual heavyweight of the Tea Party . . . ."); David Brooks, Opinion, *The Paul Ryan and Marco Rubio Moment*, N.Y. TIMES (Oct. 30, 2015), https://www.nytimes.com/2015/10/30/opinion/the-paul-ryan-and-marco-rubio-moment.html?action=click&pgtype=Homepage&module=opinion-c-col-right-region&region=opinion-c-col-right-reg

of breaking their scientific vows of skepticism in order to silence those holding different views regarding climate change.[402] For instance, in December 2015, in the heat of the Republican presidential nomination battle, Senator Ted Cruz of Texas held a hearing regarding climate science in his Space, Science, and Competitiveness Subcommittee.[403] The hearing's title, *Data or Dogma? Promoting Open Inquiry in the Debate over the Magnitude of Human Impact on Earth's Climate*, revealed Cruz's intentions.[404]

This hearing was nothing but a thinly veiled attack on climate science built on the notion that scientists are quashing any debate regarding climate change. Cruz opened the hearing by listing a few supposedly "inconvenient facts" he insisted debunked climate "[d]ogma": first, "[t]he Ar[c]tic is not ice-free. This year's minimum sea ice extent was well above the record low observed in 2011"; second, "[i]n the Antarctic, a recent study from the Journal of Glaciology indicates that ice is not only not decreasing, but is in fact increasing in mass, directly contrary to what the global warming alarmists had told us would be happening"; third, "[a]ccording to the satellite data, there has been no significant global warming for the past 18 years."[405] Unfortunately for Cruz, scientists have not ignored these *facts*, but rather studied them and their impacts on climate models.[406]

---

ion&WT.nav=opinion-c-col-right-region&_r=0 (arguing that Marco Rubio is one of the "wonkiest" Republicans alive today).

402. *Data or Dogma? Promoting Open Inquiry in the Debate over the Magnitude of Human Impact on Earth's Climate: Hearing Before the Subcomm. on Space, Sci., and Competiveness of the S. Comm. on Commerce, Sci., and Transp.*, 114th Cong. 99 (2015) (statement of Sen. Ted Cruz, Chairman, S. Comm on Commerce, Sci., and Transp.) ("[T]oday the global warming alarmists . . . label[] anyone who dares point to the actual science as a denier, which is, of course, the language of religion. . . . And anytime you hear people saying scientists should not question the conventional wisdom, you are hearing someone advocating essentially for the abolition of science.").

403. *Id.* at 1.

404. *Id.*

405. Press Release, U.S. Senator for Tex. Ted Cruz, Sen. Cruz Confronts the Dogma of Climate Change Alarmism (Dec. 8, 2015), https://www.cruz.senate.gov/?p=press_release&id=2548.

406. *See, e.g.*, Natasha Vizcarra, *Arctic Sea Ice Extent Settles at Fourth Lowest in the Satellite Record*, NAT'L SNOW & ICE DATA CTR. (Oct. 6, 2015), http://nsidc.org/news/newsroom/PR_2015melts eason (noting that summer sea ice in 2015 was higher than the minimum recorded a few years earlier, but explaining that the result nonetheless indicates that arctic sea ice is in decline); Kate Ramsayer, *Antarctic Sea Ice Reaches New Record Maximum*, NASA (Oct. 7, 2014), https://www.nasa.gov/content/goddard/antarctic-sea-ice-reaches-new-record-maximum (noting that Antarctic ice extent reached a new maximum in 2014, but explaining that this data is still consistent with global-scale climate change predictions); Brian Kahn, *No Pause in Global Warming*, SCI. AM. (June 4, 2015), https://www.scientificamerican.com/article/no-pause-in-global-warming/ (discussing a study that suggests the global warming hiatus hypothesis was wrong, and noting that the Intergovernmental Panel on Climate Change itself "highlighted" the hypothesis in its most recent report).

Regarding the *sea ice extent* in the Arctic, this is a measure that is highly susceptible to short-term fluctuations in weather patterns.[407] Far from ignoring this data, the National Snow and Ice Data Center (NSIDC)—an organization whose activities are funded by federal agencies, and should therefore exemplify Cruz's alleged conspiracy between politicians and scientists—openly recognized that 2015's *minimum sea ice coverage*—a measure taken at the end of the melting season—was only the fourth lowest on record, with 2012 being the lowest.[408] Of course, climatologists also recognize that the important comparisons are not year to year, but rather decade to decade, given the natural annual variations in sea ice coverage.[409] On this point, the NSIDC concurred with the rest of the scientific community that the trend line is pointing downward.[410] "Arctic sea ice has now been declining at a rate of 13.4 percent per decade relative to the 1981 to 2010 average," the NSIDC reported, with "[t]he nine lowest September ice extents over the satellite record [all occurring] in the last nine years."[411]

Regarding his second point, the growth of Antarctic sea ice was neither unexpected nor *inconvenient*. As Claire Parkinson, a senior scientist at NASA's Goddard Space Flight Center, explained in 2014, "[j]ust as the temperatures in some regions of the planet are colder than average, even in our warming world, Antarctic sea ice has been increasing and bucking the overall trend of ice loss."[412] In no way has this phenomenon flustered climatologists.[413] In no way does the scientific community seek to ignore this data.[414] As early as 1996, the Intergovernmental Panel on Climate Change (IPCC) had this to say regarding the Antarctic ice sheet: "Even if Antarctica were too warm in the future, its mass balance is expected to become more positive: The rise in temperature would be insufficient to initiate melt but would increase snowfall."[415]

---

407. *Frequently Asked Questions on Arctic Sea Ice*, NAT'L SNOW & ICE DATA CTR., http://nsidc.org/arcticseaicenews/faq/ (last visited Dec. 11, 2017).

408. Vizcarra, *supra* note 406.

409. *Frequently Asked Questions on Arctic Sea Ice*, *supra* note 407.

410. Vizcarra, *supra* note 406.

411. *Id.*

412. Ramsayer, *supra* note 406.

413. *See, e.g.*, *id.* ("Sea ice as a whole is decreasing as expected, but just like with global warming, not every location with sea ice will have a downward trend in ice extent . . . .").

414. *See id.* (stating that, while there is a prominent theory, scientists are still researching other explanations for this data).

415. WORKING GRP. II, INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, THE REGIONAL IMPACTS OF CLIMATE CHANGE 92 (Robert T. Watson et al., eds., 1998) (citation omitted) http://www.ipcc.ch/ipccreports/sres/regional/index.php?idp=46.

Cruz's third point—regarding the supposed pause in warming since 1998—was one Cruz has made many times before.[416] It in no way shows a conspiracy among scientists to hide the truth from policy makers and the wider public.[417] Indeed, the so-called *climate hiatus* thesis came from an IPCC report from 2013.[418] It later proved unfounded. Indeed, 16 of the 17 hottest years on record have all occurred in the 21st century, with the 17th occurring just two years earlier in 1998, the hottest on record at that time.[419] The years 2014, 2015, and 2016 have each set new records.[420] It seems the so-called *hiatus* or *pause* is over, if it ever occurred at all.[421]

In addition to sharing their views about the dangers of climate change, some scientists have also come to see climate deniers themselves as existential threats.[422] A month before the 2016 presidential election, for instance, renowned—and, in some circles, infamous—climatologist Michael Mann published an opinion piece on EcoWatch with a headline of *Yes—Donald Trump Is a Threat to the Planet*.[423] To Mann, the stakes of the election could not have been bigger.[424] Indeed, he concluded the piece with a warning: "The future of this planet could quite literally lie in the balance."[425] Accordingly, Mann and a handful of other climate scientists started a petition titled "*Scientists Against Trump*" in an effort to "speak out

---

416. Chris Mooney, *Ted Cruz Keeps Saying that Satellites Don't Show Global Warming. Here's the Problem*, WASH. POST (Jan. 29, 2016), https://www.washingtonpost.com/news/energy-environment/wp/2016/01/29/ted-cruz-keeps-saying-that-satellites-dont-show-warming-heres-the-problem/?utm_term=.1fbda14fe993.

417. *See* Nathaniel L. Bindoff et al., *Detection and Attribution of Climate Change: From Global to Regional*, *in* CLIMATE CHANGE 2013: THE PHYSICAL SCIENCE BASIS, CONTRIBUTION OF WORKING GROUP I TO THE FIFTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 867, 870, 878, 881 (Judit Bartholy et al., eds., 2013), http://www.climatechange2013.org/images/report/WG1AR5_ALL_FINAL.pdf (discussing a period of regional cooling from 1979–2010).

418. *Id.* at 870.

419. Andrea Thompson, *2016 Was the Hottest Year on Record*, SCI. AM. (Jan. 18, 2017), https://www.scientificamerican.com/article/2016-was-the-hottest-year-on-record/.

420. Justin Gillis, *Earth Sets a Temperature Record for the Third Straight Year*, N.Y. TIMES (Jan. 18, 2017), https://www.nytimes.com/2017/01/18/science/earth-highest-temperature-record.html.

421. *E.g.*, Bala Rajaratnam et al., *Debunking the Climate Hiatus*, 133 CLIMATIC CHANGE 129, 130 (2015) ("[T]here is no hiatus in the increase in the global mean temperature . . . ."); Thomas R. Karl et al., *Possible Artifacts of Data Biases in the Recent Global Surface Warming Hiatus*, 348 SCI. 1469, 1472 (2015) ("Newly corrected and updated global surface temperature data from NOAA's NCEI do not support the notion of a global warming 'hiatus.'"); Chelsea Harvey, *Global Warming 'Pause' Never Happened, Scientists Say*, WASH. POST (Sept. 17, 2015), https://www.washingtonpost.com/news/energy-environment/wp/2015/09/17/new-statistical-studies-dismantle-the-notion-of-a-global-warming-pause/?u tm_term=.ee0a041bf547; Kahn, *supra* note 406.

422. Michael Mann, *Yes—Donald Trump Is a Threat to the Planet*, ECOWATCH (Oct. 3, 2016, 7:49 AM), http://www.ecowatch.com/michael-mann-climate-change-2028789080.html.

423. *Id.*

424. *Id.*

425. *Id.*

about the irreparable harm that would be done by a climate change-denying, anti-science-driven Trump presidency."[426]

The efforts of scientists have not been limited to the rhetorical or symbolic. Many scientists and environmentalists now seek for Exxon-Mobil and other fossil fuel companies to be held liable for their lies regarding the links between fossil fuel combustion and climate change.[427] This came in the wake of a September 2015 Inside Climate News report finding that one of Exxon's scientists had concluded in 1977—over a decade before NASA first sounded the global-warming alarm—that "the most likely manner in which mankind is influencing the global climate is through carbon dioxide release from the burning of fossil fuels . . . ."[428] Yet, the company continuously misled its shareholders and the broader public about climate change and even funded efforts to discredit the science.[429] In the weeks after the report broke, a chorus of politicians, environmentalists, and climatologists demanded the federal government investigate Exxon-Mobil and the rest of the industry for possible anti-racketeering violations.[430] In one letter, 20 climatologists compared what Exxon-Mobil had done to the tactics of tobacco companies and concluded with a demand:

> The methods of these organizations are quite similar to those used earlier by the tobacco industry . . . . [I]t is imperative that these misdeeds be stopped as soon as possible so that America and the world can get on with the critically important business of finding effective ways to restabilize the Earth's climate, before even more lasting damage is done.[431]

---

426. *Id.*; *see Scientists Say: "Donald Trump Is Not Who We Are*," NOT WHO WE ARE, https://act.notwhoweare.us/petitions/members-of-the-scientific-community-say-donald-trump-is-not-who-we-are?akid=&source= (promoting a petition for Scientists Against Trump).

427. Mary Christina Wood & Dan Galpern, *Atmospheric Recovery Litigation: Making the Fossil Fuel Industry Pay to Restore a Viable Climate System*, 45 ENVTL. L. 259, 263–64 (2015).

428. Neela Banerjee et al., *Exxon: The Road Not Taken*, INSIDE CLIMATE NEWS (Sept. 16, 2015), https://insideclimatenews.org/news/15092015/Exxons-own-research-confirmed-fossil-fuels-role-in-global-warming.

429. *Id.*

430. Katherine Bagley, *350,000 Sign Petition Asking for Federal Probe of Exxon*, INSIDE CLIMATE NEWS (Nov. 19, 2015), https://insideclimatenews.org/news/19112015/petition-exxon-mobil-climate-change-federal-probe-attorney-general; Greg Laden, *Letter to President Obama: Investigate Deniers Under RICO*, SCI. BLOGS: GREG LADEN'S BLOG (Sept. 19, 2015), http://scienceblogs.com/gregladen/2015/09/19/letter-to-president-obama-investigate-deniers-under-rico/.

431. Laden, *supra* note 430. The orchestrated efforts of the fossil fuel industry and others to curate doubt as to climate change science has been covered extensively. *E.g.*, DAVID MICHAELS, DOUBT IS THEIR PRODUCT 198, 201 (2008) (explaining that ExxonMobil funded scientists to create "uncertainty" in climate science); JAMES HOGGAN & RICHARD LITTLEMORE, CLIMATE COVER-UP: THE CRUSADE TO DENY GLOBAL WARMING 79–80 (2009) (finding that, over a ten-year period, ExxonMobil

The efforts seemingly paid off: in early November 2015, New York Attorney General Eric Schneiderman launched a formal investigation into Exxon-Mobil's practices.[432] U.S. Virgin Islands Attorney General Claude Walker later followed suit.[433]

The irony is that these actions have only emboldened climate deniers in their distrust of scientists and the climate movement's use of science. After Schneiderman met with 15 state attorneys general and Al Gore in late-March 2016 to brief his colleagues on the status of his investigation, Fox News reported—in its *news* section—that the meeting "sheds new light on an evolving campaign against the fossil fuel industry . . . ."[434] Columnists for the cable and online news behemoth were less subtle. Chris Horner, for instance, wrote an opinion piece with the headline: *Email bombshell: Attorneys General worked with Green groups to punish political opponents*.[435] In it, Horner alleges that Schneiderman and "other politically aligned AGs, secretly teamed up with anti-fossil fuel activists to launch investigations against groups whose political speech challenged the global warming policy agenda."[436] "The latest email release," Horner concluded,

---

invested millions in think tanks dedicated to questioning the science of climate change); NAOMI ORESKES & ERIK M. CONWAY, MERCHANTS OF DOUBT 246–47 (2010) ("ExxonMobil's support for doubt-mongering and disinformation is disturbing but hardly surprising."); ERIC POOLEY, THE CLIMATE WAR: TRUE BELIEVERS, POWER BROKERS, AND THE FIGHT TO SAVE THE EARTH 39–41 (2010) (emphasizing that ExxonMobil created "doubt about the credibility of the science"); KATHY MULVEY & SETH SHULMAN, UNION OF CONCERNED SCIENTISTS, THE CLIMATE DECEPTION DOSSIERS 19 (2015), http://www.ucsusa.org/sites/default/files/attach/2015/07/The-Climate-Deception-Dossiers.pdf. This was not the first time scientists had entered this fray. In 2007, the Union of Concerned Scientists reported that Exxon had deliberately "manufacture[d] uncertainty on climate change." That was months after tobacco companies had been found liable for violating the Racketeer Influenced and Corrupt Organizations Act (RICO). The report stated, "ExxonMobil has underwritten the most sophisticated and successful disinformation campaign since Big Tobacco misled the public about the incontrovertible scientific evidence linking smoking to lung cancer and heart disease . . . ." Paul Barrett & Matthew Philips, *Can ExxonMobil Be Found Liable for Misleading the Public on Climate Change?*, BLOOMBERG (Sept. 7, 2016), https://www.bloomberg.com/news/articles/2016-09-07/will-exxonmobil-have-to-pay-for-mislead ing-the-public-on-climate-change. In 2012, the Union of Concerned Scientists co-sponsored a workshop titled *Establishing Accountability for Climate Change Damages: Lessons from Tobacco Control*. SETH SHULMAN, UNION OF CONCERNED SCIENTISTS, ESTABLISHING ACCOUNTABILITY FOR CLIMATE DAMAGES: LESSONS FROM TOBACCO CONTROL 1–2 (2012), http://www.climateaccountability .org/pdf/ Climate%20Accountability%20Rpt%20Oct12.pdf.

432. Barret & Phillips, *supra* note 431.

433. *Id.*

434. *Report Reveals Secret Meeting by Environmentalists to Target Exxon, Oil Industry*, FOX NEWS (Apr. 13, 2016), http://www.foxnews.com/politics/2016/04/13/report-reveals-secret-meeting-by-environmentalists-to-target-exxon-oil-industry.html.

435. Chris Horner, *Email Bombshell: Attorneys General Worked with Green Groups to Punish Political Opponents*, FOX NEWS (Apr. 18, 2016), [hereinafter Horner, *Bombshell*] http://www.foxnews.com/opinion/2016/04/18/email-bombshell-attorneys-general-worked-with-green-groups-to-punish-political-opponents.html.

436. *Id.*

"strongly suggests a financial incentive for AGs to pursue their political opponents, rather than merely silencing and scaring away support for those who dare disagree with their extreme global warming agenda."[437]

Notice the themes. First, the meeting was secret, implying there was something to hide.[438] Second, the climate movement is motivated not by a rational analysis of predicted costs and benefits stemming from climate change, but rather by an irrational hatred of fossil fuels.[439] Third, the actions of Exxon were not deliberate lies designed to maximize profits with no regard for public safety, but rather *political speech*, which is among the most protected—and sacred—forms of expression in the United States.[440] Finally, the climate movement is motivated by selfish financial interests, despite its pretensions to the contrary, and seeks to silence anyone who gets in its way.[441] These are all common themes within the climate-denial community.[442]

Politicians got involved in the backlash, too. In May 2016, the House Committee on Science, Space, and Technology began looking into the conduct of 20 attorneys general who had announced they were cooperating

---

437. *Id.* In a follow-up column, Horner referred to the investigation as "persecut[ion]" and alleged a "cover-up." Chris Horner, *Persecuting Climate Skeptics: The Cover-Up Continues*, FOX NEWS (June 29, 2016), [hereinafter Horner, *Skeptics*] http://www.foxnews.com/opinion/2016/06/29/persecuting-climate-skeptics-cover-up-continues.html.

438. Horner, *Bombshell*, *supra* note 435.

439. *Id.* The column even portrayed a Rockefeller nonprofit known to be backing the climate movement as "anti-fossil fuel Rockefeller interests . . . ." The Rockefellers made their fortune on oil. *Id.*

440. *Id.*

441. *Id.* In December 2015, another columnist, Curt Levey, argued companies were being punished merely for "expressing doubts." He linked it to a general attack on free speech on college campuses in the name of "political correctness." Curt Levey, *Climate Change vs. Free Speech: Punishing Fossil Fuel Companies for Expressing Doubt*, FOX NEWS (Dec. 1, 2015), http://www.foxnews.com/opinion/2015/12/01/climate-change-vs-free-speech-punishing-fossil-fuel-companies-for-expressing-doubt.html.

442. *E.g.*, Shirfa, *Tax-Funded "Climate Change" Activists Demand Arrest of "Non-Believers*," TAMMYBRUCE (Sept. 21, 2015), http://tammybruce.com/2015/09/tax-funded-climate-change-activists-get-unhinged-demand-arrest-of-non-believers.html; Marc Morano, *Debate No More! Jailed for Scientific Dissent?! Twenty Climate Scientists, Including Top UN Scientist, Call for RICO Investigation of Climate Skeptics in Letter to Obama*, CLIMATEDEPOT (Sept. 17, 2015, 1:36 PM), http://www.climatedepot.com/2015/09/17/twenty-climate-scientists-including-top-un-scientist-call-forrico-investigation-of-climate-skeptics-in-a-letter-to-obama-argue-skeptics-guilty-of-disinformation-like-tobacco-companies/; Judith Curry, *US Scientists Have "Signed Death Warrant for Science,"* GLOBAL WARMING POL'Y F. (Sept. 18, 2015), https://www.thegwpf.com/us-scientists-have-signed-death-warrant-for-science/; Alex Newman, *Pseudo-scientists Demand Obama Prosecute Climate Realists*, NEW AM. (Sept. 21, 2015), https://www.thenewamerican.com/tech/environment/item/21618-pseudo-scientists-demand-obama-prosecute-climate-realists; Nancy Smith, *Climate Change Hijinks: Shame on These 20 University Scientists*, SUNSHINE ST. NEWS (Oct. 16, 2015, 9:00 PM), http://sunshinestatenews.com/story/climate-change-hijinks-shame-these-20-university-scientists.

in the investigation of Exxon-Mobil.[443] Characterizing the investigation as an "effort[] to criminalize scientific dissent," the Committee argued the actions of the attorneys general ran afoul of their duty to act "as the guardian of the legal rights of the citizens . . . ."[444] Accordingly, the Committee announced that it "intends to continue its vigorous oversight of the coordinated attempt to deprive companies, nonprofit organizations, and scientists of their First Amendment rights and ability to fund and conduct scientific research free from intimidation and threats of prosecution . . . ."[445] These politicians thus framed the issue as one pitting the climate movement against those scientists who are skeptical about climate change and should be able to express their skepticism without fear of prosecution.[446] This framing is the same framing mainstream media has used for decades.[447] Deniers are the *skeptics*, while climate scientists are the *deniers* of any new information that might be contrary to their beliefs or interests.[448] It is wrong, of course, but that does not mean it is ineffective in swaying public opinion.

While these attacks on the climate science community may seem absurd to some, they are also an understandable reaction to changes in our political economy over the last century. They represent a popular resentment of our technocracy, one that has left most people feeling like they no longer have a political voice.[449] Over a half-century ago, American physicist, Harvey Brooks observed that much of the supposed progress of the 20th century could "be described in terms of the transfer of wider and wider areas of public policy from politics to expertise."[450] One of the fundamental tenets of the so-called *progressive movement* in the first

---

443. Press Release, Comm. on Sci., Space, & Tech., Comm. Stands Firm on Investigation into Green 20 (June 20, 2016), https://science.house.gov/news/press-releases/committee-stands-firm-investigation-green-20.

444. *Id.*

445. *Id.*

446. *Id.*

447. Alison Anderson, *Media, Politics and Climate Change: Towards a New Research Agenda*, 3 SOC. COMPASS 166, 166, 174 (2009).

448. Aaron M. McCright, *The Social Bases of Climate Change Knowledge, Concern, and Policy Support in the U.S. General Public*, 37 HOFSTRA L. REV. 1017, 1018 (2009); Christopher Booker, *Climate Change: This Is the Worst Scientific Scandal of our Generation*, TELEGRAPH (Nov. 28, 2009, 6:10 PM), http://www.telegraph.co.uk/comment/columnists/christopherbooker/6679082/Climate-change-this-is-the-worst-scientific-scandal-of-our-generation.html.

449. *See* James D. Fine & Dave Owen, *Technocracy and Democracy: Conflicts Between Models and Participation in Environmental Law and Planning*, 56 HASTINGS L.J. 901, 903 (2005) (defining the public concern with technocratic, science-based decision-making).

450. FRANK FISCHER, CITIZENS, EXPERTS, AND THE ENVIRONMENT: THE POLITICS OF LOCAL KNOWLEDGE 5 (2000) (quoting Harvey Brooks, *Scientific Concepts and Cultural Change*, 94 DAEDALUS 66, 68 (1965)).

decades of the century was that progress would occur through government taking "a 'scientific' approach to social and economic questions" rather than relying upon democratic processes to resolve conflicts of values.[451] The trend in governance that progressives represented has continued into the new century. As political scientist Frank Fischer argued in 2000, "[w]ith regard to the public, it becomes increasingly clear that in many policy domains, politics more and more becomes a struggle between those who have expertise and those who do not."[452] The dominance of experts in policy-making is especially clear, Fischer pointed out, in highly technical fields like environmental policy.[453]

It should not be surprising, therefore, for citizens to resent their relegation to a "bit part[]" in this political drama and to come to question science itself.[454] Scientists justify their lofty position in policy-making based on the distinction between *facts* and *values*.[455] Because scientists employ methods designed to ensure reliability in making observations, then use cold logic to derive factual truths from those observations, it is okay, they say, for them to have greater power than average citizens.[456] It is not the scientists—as human beings with individual desires and values—who have the power, after all, but rather science itself. They are merely the messengers.[457] Yet the close relationship between scientific and political

---

451. SAMUEL P. HAYS, CONSERVATION AND THE GOSPEL OF EFFICIENCY 267 (1959). Hays analogized progressives to preachers of a new religion, their faith being in a "gospel of efficiency." *Id.* at 122–24. Hays thus showed continuities between premodern religious faith and modern scientific governance. *Id.*

452. FISCHER, *supra* note 450, at 23. The reasons, according to Fischer, are that experts hold a social position in between the elites and the public, and that they use a language that presents "an intimidating barrier for lay citizens seeking to express their disagreements in the language of everyday life." *Id.*

453. *Id.*

454. BRULLE, *supra* note 368, at 192; *see also* JAMIESON, *supra* note 342, at 4 (attributing the backlash against the scientific community as being rooted in ignorance of science, which leads to "disillusionment when science does not deliver the goods or when scientists turn out to be as petty and selfish as the rest of us").

455. FISCHER, *supra* note 450, at 18–19.

456. *Id.*

457. Interestingly, lawyers and judges have made similar arguments throughout American history. In the late 19th century, a view of law as being a science came to dominate the legal field. Known as "classical legal thought," this legal philosophy saw law as a cohesive and uniform structure, one from which judges and attorneys could deduce specific rules and apply them to specific cases predictably, impartially, and consistently. *See* Robert W. Gordon, *Legal Thought and Legal Practice in the Age of American Enterprise 1870–1920*, *in* PROFESSIONS AND PROFESSIONAL IDEOLOGY IN AMERICA 70, 89 (Gerald L. Geison ed., 1983) (arguing that the central task in making law *scientific* was indeed "to make the whole system formally realizable, that is, to standardize the definition of rights and duties," so that parties and lawyers could predict how law would apply to particular activities and judges could "enforce the rules without exercising any discretion of [their] own"); WILLIAM M. WIECEK, THE LOST WORLD OF CLASSICAL LEGAL THOUGHT: LAW AND IDEOLOGY IN AMERICA, 1886–1937 90–91

institutions ironically betrays that very independence and "open[s] the door to a closer public scrutiny" regarding the legitimacy of the scientific project itself.[458] As scientists themselves publicly defend the scientific enterprise, citizens see that scientists are "interested laypersons in their own scientific projects."[459]

The more scientists seek political legitimacy, the more they beg the question of the objectivity of individual scientific projects or theories and, indeed, of science itself. Schneider has found that even "[w]hen the scientist merely acknowledges the credibility of some contentious information or endorses actions that affect stakeholders differentially"—as is certainly the case with climate change mitigation—"opposing advocates often presume the scientist is spinning the information for some client's benefit."[460] This is why more than half of Americans still do not believe in anthropogenic climate change; why only one-third believe "climate scientists understand 'very well' whether climate change is occurring"—much less what its causes are or the best ways to address it—why less than one-third believe research findings to be "influenced by the best available evidence 'most of the time'"; and why more people believe research findings regarding climate change to be based on the scientists' desire to advance their careers than believe them to be impartial or objective.[461]

People also intuitively sense that some of the answers experts provide to policy makers—and defend to the public—are based on subjective values, not scientific or technical expertise.[462] It is a statement of values, for instance, to label Donald Trump a threat to the planet in an attempt to

---

(1998) (arguing that legal science was "an aspiration to universality, certainty, and truth, achieved through techniques of systematic investigation and inductive reasoning"); MORTON J. HORWITZ, THE TRANSFORMATION OF AMERICAN LAW, 1780-1860 256–57 (1977) (arguing that depoliticizing law "has always been a central aspiration of the American legal profession").

458. FISCHER, *supra* note 450, at 54.

459. *Id.* at 55.

460. Stephen H. Schneider, *Mediarology: The Roles of Citizens, Journalists, and Scientists in Debunking Climate Change Myths*, CLIMATECHANGE (2011), http://stephenschneider.stanford.edu/Mediarology/Mediarology.html.

461. FUNK & KENNEDY, *supra* note 387, at 22, 26–27, 29.

462. *See* FISCHER, *supra* note 450, at 19 ("[S]ociologists have long complained that the . . . attempt to separate facts and values reflects a profound misunderstanding of the inherent link between social action and social values."); JAMIESON, *supra* note 342, at 67. Jamieson linked climate denial not just to a growing distrust in science, but to a broader backlash against all representatives of expertise—including not just scientists, but also journalists, policy experts, and anyone with an advanced degree. The breakdown of any trust in journalists as gatekeepers of information is especially troubling to Jamieson. As he surmised, "[t]he loss of epistemological privilege and authority, indicated by the decline of the mainstream media, has led to the democratization of resentment, expressed in the rise and increasing power of both social media and the Internet, and in particular the influence of some of the Internet's most noxious sites." JAMIESON, *supra* note 342, at 91.

influence people's votes, as Michael Mann did.[463] While Mann might be able to use his scientific expertise to predict the likely effects of Trump's policies on the planet, labeling them a threat implies a value judgment of those effects as inherently negative. It implies that any person who does not see those effects as negative—and it is worth noting that not everybody will suffer at the hands of climate change, much less suffer equally[464]—does not just live by a different code of values, but is objectively wrong. Likewise, it is a statement of values to demand prosecutors devote their limited prosecutorial resources to investigate—and potentially bring charges against—fossil-fuel companies regarding their conduct on climate change. It implies that the harms brought about by the companies' efforts to mislead the public are sufficient or important enough for the state to use its limited resources to punish the companies. Now, all of these value statements—implied or explicit—may seem obvious to those acculturated to accept the Modernist notion of scientific progress, but they are values just the same. Far from being *obvious*, they are unendingly contestable, as experience has now shown us.

None of this is to say that the language of scientists and the climate movement is a primary—or even a substantial—cause of climate denial. On this point, there are many causes.[465] However, the apparent politicization of the scientific process likely at least contributes to climate denialism, and this is one cause that the climate movement and the scientific community can address by themselves. Where science is no longer trusted, scientists and the climate movement should no longer pretend science has all the answers. For one, it is not true. Most, if not all, policy decisions we have

---

463. Mann, *supra* note 422.

464. FED. NAT'L CLIMATE ASSESSMENT AND DEV. ADVISORY COMM., CLIMATE CHANGE IMPACTS IN THE UNITED STATES: THE THIRD NATIONAL CLIMATE ASSESSMENT 11–12 (Jerry M. Melillo, Terese Richmond & Gary W. Yohe eds., 2014), http://s3.amazonaws.com/nca2014/low/NCA3_Climate _Change_Impacts_in_the_United%20States_LowRes.pdf.

465. *E.g.*, Richard J. Lazarus, *Super Wicked Problems and Climate Change: Restraining the Present to Liberate the Future*, 94 CORNELL L. REV. 1153, 1174–75 (2009) (arguing that the nature of human psychology makes humans prone to denying the severity of temporally distant and uncertain consequences); Lisa Grow Sun, *Disaster Mythology and Availability Cascades*, 23 DUKE ENVTL. L. & POL'Y 73, 80–81 (2012) (implying that public officials who know anthropogenic climate change is real, but believe their constituents do not, may *acquiesce* to climate denial for reputational or policy reasons and thus perpetuate denial); Carlo C. Jaeger et al., *The Psychology of Denial Concerning Climate Mitigation Measures: Evidence from Swiss Focus Groups*, 11 GLOBAL ENVTL. CHANGE 107, 111–12 (2000) (arguing that people tend to downplay the severity of climate change in order to help deny their responsibility for it and thus to avoid cognitive dissonance caused by the conflict between their lifestyles and their values); Elke U. Weber & Paul C. Stern, *Public Understanding of Climate Change in the United States*, 66 AM. PSYCHOLOGIST 315, 321 (2011) (discussing how climate deniers exploited U.S. media and psychological knowledge to propagate and perpetuate their narrative).

relegated to science implicate values in addition to facts.[466] For another, a large segment of the citizenry is no longer listening.[467] The climate movement must therefore shift the conversation. The only other option is to continue shouting into the wind while the world burns.

C. Humanism As Constraining Debate

It is not just the overreliance upon scientific discourse that has constrained the debate over climate change and ultimately hindered effective action. Even as evidence has accumulated regarding the intricate relationship between humans and all other organisms and physical material comprising the biosphere, a Modern emphasis on the categorical separateness of humanity from Nature continues to dominate popular discussion of the climate change problem.[468] As with the overreliance upon scientific discourse, this has hindered the search for meaningful solutions.

In a 2012 dissertation, Mark Andrew DeLaurier found that two types of discourses—both built upon the Nature-human dichotomy—dominate media coverage of climate change: one portrays a Nature that is distant from humans or out of human reach, while the other presents climate change as a challenge to human domination or control of Nature, a control that must be maintained or even expanded if we are to regain order.[469] Both are Modernist conceptions,[470] despite their apparent contradiction: how can Nature be dominated by humans if it is beyond their reach? The only way to square this circle is to see humans as the antithesis—no, the death—of Nature. Nature, while capable of being dominated, remains Natural so long as it continues to be free; however, to the degree Nature is dominated, it ceases to exist as Nature.[471]

In the *nature-out-of-reach* discourse, as DeLaurier labeled it, "[h]umans are presented as occupying one place" and time, with Nature

---

466. Detlof von Winterfeldt, *Bridging the Gap Between Science and Decision Making*, 110 PROC. NAT'L. ACAD. SCI. U.S. 14055 (2011), http://www.pnas.org/content/110/Supplement_3/14055.full.pdf.

467. William R. L. Anderegg & Gregory R. Goldsmith, *Public Interest in Climate Change over the Past Decade and the Effects of the "Climategate" Media Event*, 9 ENVTL. RES. LETTERS 1 (2014).

468. *See* Black, *supra* note 339 (showing the progress toward understanding the human impact on the climate).

469. Anderegg & Goldsmith, *supra* note 467; DeLaurier, *supra* note 29, at 39–40, 61.

470. *See e.g.*, LATOUR, NEVER BEEN MODERN, *supra* note 20, at 13 (stating that the separation between humans and nonhumans is essential to Modern thought); LATOUR, INQUIRY, *supra* note 22, at 9 (noting that the dawning of the Anthropocene indicates that humans have equaled geologic processes in Earth-altering power).

471. DeLaurier, *supra* note 29, at 3–4.

occupying another.[472] Examples of this include portrayals of carbon emissions as unlikely to impact Nature, or of Natural elements—such as solar or wind energy—as being difficult for humans to harness.[473] It can also be seen in emphases on the institutional, political, or physical obstacles that stand in the way of humans "bridging the gap" with Nature.[474] In the *struggle-for-control* discourse, humans struggle either to defeat or to manage Nature.[475] In the first type, humans are "battling, fighting, [] tackling," or combating climate change, whereas in the second type they "control, capture, trap, rein, stem, limit, curb, reduce, and slow."[476] In the *nature-out-of-reach* discourse, too much human influence destroys Nature, as if humanity were a virus or a plague.[477] In the *struggle-for-control* discourse, humans are stewards of a Nature provided for their comfort, so long as they can establish and maintain control over it.[478] Both discourses present different frames, but tell the same story.

Leaders in the climate movement continue to adopt these discourses. Writing in 1989, for example, Bill McKibben—perhaps the most famous non-politician member of the movement—argued that not only have humans degraded Nature, they have effectively killed it.[479] "In the past," he noted, "we spoiled and polluted parts of that nature . . . . But that was like stabbing a man with toothpicks: though it hurt, annoyed, degraded, it did not touch vital organs, block the path of the lymph or blood."[480] However, things are fundamentally different now, according to McKibben. "[Q]uite by accident," he contended, "it turned out that the carbon dioxide and other gases we were producing in our pursuit of a better life . . . could alter the power of the sun, could increase its heat," thereby also "chang[ing] the patterns of moisture and dryness, breed storms in new places, breed deserts."[481] In short, Nature is no more. In his 2005 introduction to that

---

472. *Id.* at 39.
473. *Id.* at 39–40.
474. *Id.* at 40.
475. *Id.*
476. *Id.* at 40–41 (emphasis omitted).
477. *Id.*
478. *Id.*
479. MCKIBBEN, *supra* note 219, at 41.
480. *Id.* at 40–41.
481. *Id.* at 41 (emphasis omitted). Though writing years before the term "Anthropocene" existed, McKibben provided the model by which this new—yet still informal—epoch would be understood. French historians Christophe Bonneuil and Jean-Baptiste Fressoz recently summarized the official narrative of the Anthropocene:

> '[W]e,' the human species, unconsciously destroyed nature to the point of hijacking the Earth system into a new geological epoch. In the late twentieth century, a handful of Earth system scientists finally opened our eyes. So now we know; now we are aware of the global consequences of human action.

book's second edition, he even contended that the planet looks fundamentally different than it did in 1968, when humans first saw what their planet looked like from space.[482] "The planet doesn't look like that or behave like that anymore," he implored.[483] "[T]here's more blue and less white, more cyclones swirling in the tropics. It's a different Earth; we might as well hold a contest to pick a new name."[484]

The movement's political leaders also repeatedly portray the Earth as something separate from humanity, and Nature as something that must be saved from the effects of human dominion.[485] The politician most associated with the climate movement, Al Gore, exemplifies these tendencies.[486] In his 1992 book *Earth in the Balance: Ecology and the Human Spirit*, Gore—then a United States senator—argued for a global response to climate change, which he considered an existential threat.[487] Gore wrote of humans disrupting the balance of Nature and of a "violent collision between human civilization and the [E]arth[.]"[488] The book's title alone leaves little doubt as to what Gore saw as the stakes of this confrontation: the Earth itself hangs in the balance.[489]

Gore was perhaps ahead of his time with *Earth in the Balance*, as the climate issue was not yet salient in the United States.[490] With his 2006 documentary *An Inconvenient Truth*, however, Gore's timing could not have been better. Gore released the film the year after large hurricanes—one of the predicted impacts of climate change—devastated New Orleans and just weeks after the Intergovernmental Panel on Climate Change emphasized the urgency of the issue in its fourth climate assessment's first installment. The documentary became one of the top-grossing documentaries of all time, and undoubtedly played a role in Gore receiving the Nobel Peace Prize a year later.[491] In it, Gore further explores the same

---

BONNEUIL & FRESSOZ, *supra* note 13, at xii.

482. MCKIBBEN, *supra* note 219, at xiv.

483. *Id.*

484. *Id.*

485. *See* AL GORE, EARTH IN THE BALANCE: ECOLOGY AND THE HUMAN SPIRIT 20–21, 23, 25, 27, 30 (1992) (inquiring: "Why haven't we launched a massive effort to save our environment?").

486. *Id*. at 25 (describing "humankind's assault on the earth" and a "startling image of nature out of place").

487. *Id.* at 14, 22.

488. *Id.* at 27.

489. Interestingly, Gore himself recognized the danger of precisely this sort of thinking. *Id.* at 2, 34.

490. Stuart Capstick et al., *International Trends in Public Perceptions of Climate Change over the Past Quarter Century*, 6 WIREs CLIMATE CHANGE 35, 38, 40 (2015), http://onlinelibrary.wiley.com/doi/10.1002/wcc.321/epdf.

491. Pat Aufderheide, *An Inconvenient Truth*, CINEASTE, Winter 2006, at 50, 52 (reviewing AN INCONVENIENT TRUTH (Lawrence Bender Productions 2006)); Thomas Rosteck & Thomas S. Frentz,

themes from *Earth in the Balance*, particularly that Nature is in a state of crisis—a state humans have caused and only humans can cure.[492] The film opens with a striking juxtaposition. First, the audience is taken to a sublime scene of a wooded stream on a calm, sunny day.[493] In a soft voice, Gore beckons us to "look at that river gently flowing by," to "notice the leaves rustling with the wind," to listen to the birds, tree frogs, and (in the distance) a cow, to "feel the grass" beneath our feet.[494] He then summarizes the experience for us: "it's like taking a deep breath and going, 'Oh yeah, I forgot about this.'"[495] The film then transitions to snippets of Gore's own hectic life—one spent in airports, in taxis, at campaign spots, and sitting before flashing screens—before cutting to photographs taken of the Earth from space.[496] "Isn't that beautiful?" Gore asks—obviously rhetorically.[497] The message is obvious: the pristine streams of this Earth—indeed the Earth itself—are at risk, and we (and all our modern conveniences) are to blame.[498] This is all before the opening credits.[499]

In his eight years as president, Barack Obama succeeded Gore as flag-bearer of the climate movement.[500] He has done so largely by continuing Gore's rhetorical framing of climate change.[501] In his speech accepting the Democrat party's nomination for president in 2008, for instance, Obama predicted that "generations from now, we will be able to look back and tell our children . . . this was the moment when the rise of the oceans began to slow and our planet began to heal."[502] During his term, Obama often emphasized the indirect benefits of climate change mitigation, especially

---

Myth and Multiple Readings in Environmental Rhetoric: The Case of An Inconvenient Truth, 95 Q.J. SPEECH 1, 2 (2009); JAMIESON, *supra* note 342, at 52.

492. AN INCONVENIENT TRUTH, *supra* note 373, at 1:23:37.

493. *Id.* at 0:00:40.

494. *Id.* at 0:01:03.

495. *Id.* at 0:01:16.

496. *Id.* at 0:01:55. To the knowledgeable viewer, this probably hearkens to Carl Sagan's use of the first photograph of the Earth taken from space, one that has come to be known as the "pale blue dot," for similar purposes to Gore's. *Id.* at 1:27:00.

497. *Id.* at 0:05:45.

498. *Id.* at 0:01:48.

499. *Id.* at 0:04:19.

500. *See A Historic Commitment to Protecting the Environment and Addressing the Impacts of Climate Change*, THE WHITE HOUSE: PRESIDENT BARACK OBAMA, https://obamawhitehouse.archives.gov/the-record/climate (last visited Dec. 12, 2017) (discussing President Obama's climate change related actions during his presidency).

501. Emily Schultheis, *Obama Calls Paris Agreement "A Turning Point for Our Planet,"* CBS NEWS (Oct. 5, 2016), https://www.cbsnews.com/news/obama-calls-paris-agreement-a-turning-point-for-our-planet/.

502. Jeff Goodell, *Obama Takes on Climate Change: The Rolling Stone Interview*, ROLLING STONE (Sept. 23, 2015), http://www.rollingstone.com/politics/news/obama-takes-on-climate-change-the-rolling-stone-interview-20150923 (emphasis omitted).

the economic advantages of developing a domestic clean energy industry. However, he ended his term on the same note he began his general election bid in 2008 when he defended the Paris Accord in 2016 by arguing that it "gives us the best possible shot to save the one planet we've got."[503]

The 2016 presidential election only heightened the rhetoric. Gore's group Climate Reality tweeted in the days before the election that "[o]ur planet's future depends on your vote," followed by a sarcastic "[n]o pressure."[504] Not a month earlier, Gore himself similarly argued that "[o]ur planet can't afford denial on climate or opposition to solutions."[505] Perhaps one of the most vocal Democratic leaders on the climate change issue was Bernie Sanders, who made it an important part of his primary campaign and continued to push the issue in support of Hillary Clinton's general election bid.[506] In the days before the election, he announced he was voting for Clinton primarily because "the future of the planet is at stake."[507]

These portrayals of the issue serve to constrain the debate regarding climate change. As DeLaurier concluded, they "perpetuat[e] the domination of the natural world that has led to the overconsumption of resources" in the first place, and ultimately impede the consideration of important policy choices.[508] The *nature-out-of-reach* discourse specifically "privileges dominant human interests," since a nature-out-of-reach is not one to which humans need to be concerned.[509] The 2012 Republican Platform is an

---

503. Schultheis, *supra* note 501.

504. Climate Reality (@ClimateReality), TWITTER (Nov. 4, 2016, 3:32 AM), https://twitter.com/ClimateReality/status/794487394254946304.

505. Al Gore (@AlGore), TWITTER (Oct. 11, 2016, 12:33 PM), https://twitter.com/algore/status/785926399509102592.

506. *See Issues: Combating Climate Change to Save the Planet*, BERNIESANDERS.COM https://berniesanders.com/issues/climate-change/ (last visited Dec. 12, 2017) (providing a description of Sanders's platform on climate change).

507. Bernie Sanders (@BernieSanders), TWITTER (Nov. 7, 2016 7:44 PM), https://twitter.com/BernieSanders/status/795834453868347393. Sanders continues to tweet about climate change. *E.g.*, Bernie Sanders (@BernieSanders), TWITTER (Dec. 31, 2016 5:58 PM), https://twitter.com/BernieSanders/status/815376503437283328 ("Fossil fuel companies are willing to destroy the planet for short-term profits. That is just incomprehensible."); Bernie Sanders (@BernieSanders), TWITTER (Dec. 22, 2016 8:27 AM), https://twitter.com/BernieSanders/status/811971476186419200 ("Believing in climate change is not optional at this point. Neither is taking action to save the planet."); Bernie Sanders (@BernieSanders), TWITTER (Nov. 23, 2016 1:31 PM), https://twitter.com/BernieSanders/status/801538745623343105 ("There can be no compromise on the issue of climate change, which is a threat to the entire planet."); Bernie Sanders (@BernieSanders), TWITTER (Jan. 1, 2017 8:45 AM), https://twitter.com/BernieSanders/status/815599922225496064 ("When we fight we're fighting for the future—the future of the planet in terms of climate change . . . .").

508. DeLaurier, *supra* note 29, at 15.

509. *Id.* at 126.

excellent example of this.[510] It mocked President Obama's inclusion of climate change as a "national security" threat: Obama's strategy, the Platform proclaimed, "subordinates our national security interests to environmental, energy, and international health issues, and elevates 'climate change' to the level of a 'severe threat' equivalent to foreign aggression."[511] The subtext is clear: climate change is Natural, while national security is *human*, yet the President is attempting to conflate them in an effort to prioritize the Natural over the *human*. As if to alleviate any doubts as to its meaning, the Platform then criticized Obama for the word "climate" occurring in his strategy "more often than Al Qaeda, nuclear proliferation, radical Islam, or weapons of mass destruction."[512] In other words, a Natural phenomenon like climate should have no place—much less a prominent one—in a debate about national security, but should instead be relegated to the realm of environmental policy, one that does not rank highly on the list of Americans' concerns—in part because of the distance between humans and Nature.

Similarly, the *struggle-for-control* discourse, though recognizing some relationship between the human and the Natural, promotes humans either keeping Nature at a distance or subjugating Nature for human ends.[513] If Nature is an adversary, then it is something to fear—something either to keep at a distance or act aggressively toward without remorse.[514] If Nature is something to be managed, then it is something that continually needs to be constrained or dominated.[515] Each of these ideas has led us to the Anthropocene in the first place.

Yet many in the climate movement continue to present the issue as one of saving Nature.[516] They continue to believe that showing the threats to Nature from climate change is itself a sufficient call to action.[517] Here, Gore's *An Inconvenient Truth* is again illustrative. The film's emphasis was on showing that climate change is real and detailing its impacts on Nature and, indirectly, on certain human communities such as New Orleans.[518] This film was supposedly a call to political action, one that won Gore

---

510. *We Believe in America: 2012 Republican Platform*, THE AMERICAN PRESIDENCY PROJECT (Aug. 27, 2012), http://www.presidency.ucsb.edu/ws/?pid=101961 (dismissing President Obama's campaign strategy of including climate change as a national security threat).

511. *Id.*

512. *Id.*

513. *Id.*

514. *Id.*

515. DeLaurier, *supra* note 29, at 99.

516. Schultheis, *supra* note 501; *see generally* GORE, *supra* note 372 (focusing on saving nature).

517. GORE, *supra* note 372.

518. AN INCONVENIENT TRUTH, *supra* note 373, at 0:31:07.

global acclaim and even earned him a Nobel Peace Prize,[519] but very little of the film was devoted to the actual choices human communities now face. The narrative structure of the film is of Gore's awakening to the dangers of climate change, his gallant efforts to inform the public of what he has learned, and his repeated frustrations at the public's refusal to act.[520] Gore never asks himself whether he has fully made his case.[521] The closest Gore comes to recognizing that there is more to this issue is when he highlights the ongoing debate in many human communities between promoting the economy and protecting the environment.[522] However, he then dismisses that debate as a "false choice"; "if we do the right thing," he assures the audience, the environment will be protected and economies will prosper.[523] In addition to providing little evidence to back his claim, he also seems to assume that both the *economy* and the *environment* are one-dimensional, such that an action or occurrence is either *good* or *bad*.[524] He fails to recognize that an environment some consider *good* can be considered *bad* by others—same for the *economy*.[525] The real question remains not just unanswered, but unasked: what do we want our *economy* and *environment* to be?

If the Earth were really in danger of being destroyed by climate change, presenting that case would surely speak for itself. But such depictions do not represent reality. The Earth is not at risk of being destroyed at the hands of humans.[526] However, certain values we attach to *the Earth* as a concept—to Nature—are at risk. Inasmuch as the Earth is to be destroyed, there is nothing humans can do about it, as libertarian 2016 presidential candidate Gary Johnson pointed out.[527] When asked whether he believed in climate change, he first implicitly criticized advocates for

519. The Nobel Foundation, *The Nobel Peace Prize 2007*, NOBELPRIZE.ORG, https://www.nobelprize.org/nobel_prizes/peace/laureates/2007 (last visited Dec. 12, 2017).

520. AN INCONVENIENT TRUTH, *supra* note 373, at 0:15:14.

521. *See, e.g.*, Gregg Easterbrook, *Ask Mr. Science: The Moral Flaws of Al Gore's* An Inconvenient Truth, SLATE (May 24, 2006, 6:05 AM), http://www.slate.com/articles/arts/culturebox/2006/05/ask_mr_science.html (stating that Gore's argument is ineffective because *An Inconvenient Truth* "spends too little time on what audiences might do about global warming").

522. AN INCONVENIENT TRUTH, *supra* note 373, at 1:17:05.

523. *Id.* at 1:18:10.

524. *Id.* at 1:21:08.

525. *See, e.g.,* Easterbrook, *supra* note 521 (pointing out that Gore's claim that fossil fuel use is "deeply unethical" fails to consider whether deprivation of fossil fuels would also be unethical).

526. Ker Than, *Earth Will Survive Global Warming, But Will We?*, LIVE SCI. (Feb. 1, 2007), https://www.livescience.com/1293-earth-survive-global-warming.html.

527. Andrew Grant, *Sun's Future, 250 Light-Years Away*, 184 SCI. NEWS 12, 12 (2013); Mary Bowerman, *Gary Johnson: Forget About Climate Change, Sun Will Someday Encompass Earth*, USA TODAY (Sept. 23, 2016), https://www.usatoday.com/story/news/politics/onpolitics/2016/09/23/gary-johnsonlibertarian-presidential-candidate-climate-change-sun-encompass-Earth/90898928/.

climate change mitigation for not taking the "long-term view" before lecturing the assembled reporters that "[i]n billions of years, the sun is going to actually grow and encompass the Earth, right? So global warming is in our future . . . ."[528] Pundits and members of the climate movement mocked Johnson for his answer,[529] but he had an important point—whether it was intended or not: the planet will survive anthropogenic climate change, but will still meet its end in the most extreme climate-change event of its history, and there's nothing we can do about that.[530]

Neither humanity nor the Earth will exist forever.[531] Saving either is frankly impossible.[532] Thus, our goals must be more modest. We must first decide whether our goals are human-centric or something more holistic. Answering that question, though, is just the start. Even if we decide our goals should be centered on the well-being of humans, that does not resolve our dilemma, for what does *well being* mean? Is our goal, for instance, to maximize the positive experiences of humans? Is it to maintain human populations and to ensure that the human species persists for as long as possible? Or rather, is our aim to minimize human suffering, a goal that might allow for human populations to decline and for humans ultimately to disappear? If we decide our goals are more holistic, should we minimize human impacts on the Earth's fundamental systems, including its many diverse ecosystems, or should we rather minimize the suffering of living organisms, even if that suffering is not human induced? Each of these goals might counsel in favor of different approaches. We cannot decide on a means until we know the desired end.

CONCLUSION

Humans have grown accustomed to the Holocene. Unsurprisingly, they have developed sets of customs, beliefs, and laws befitting that epoch—one known for its stability. In the United States, these include notions of humans having separated themselves from Nature through the application of their rational minds and development of the scientific method, and of preserving a wild Nature uninfluenced by—and completely apart from—

528. Bowerman, *supra* note 527.

529. Kaylee Anderson, *Gary Johnson's Stance on Climate Change Is Medieval*, MINN. DAILY (Oct. 11, 2016), http://www.mndaily.com/article/2016/10/gary-johnsons-stance-on-climate-change-is-medieval.

530. Than, *supra* note 526.

531. Jillian Scudder, *The Sun Won't Die for 5 Billion Years, So Why Do Humans Have Only 1 Billion Years Left on Earth?*, PHYSORG: THE CONVERSATION (Feb. 13, 2015), https://phys.org/news/2015-02-sun-wont-die-billion-years.html.

532. *Id.*

humanity. Long criticized by academics, this philosophical construct has now been completely undermined by our recognition that we have entered a new epoch—the Anthropocene—one typified not by stability, but by change, and one wherein the supposed gap between Man and Nature has been closed.[533]

While preserving areas of wilderness and protecting certain species from extinction were both well-meaning goals, the conditions we face in the Anthropocene no longer match the assumptions policymakers and preservationists made in constructing these legal frameworks.[534] In particular, these people seemingly assumed that protecting designated areas from direct human interferences would be sufficient to preserve their Natural character. They also assumed protecting endangered species from direct and harmful human actions would be sufficient to preserve populations of wildlife.[535] Both assumptions were rooted in a static view of Nature—one of a Nature in balance if not for direct human disturbances—that is no longer defensible.[536] The tensions between the assumptions embedded in these preservationist laws and the ecological realities have exposed fundamental contradictions that we must address if we are to provide proper direction for land and wildlife managers moving forward.

In so doing, we must focus on what type of relationship we want to facilitate with one another and with our physical surroundings. Rather than pretending to rely upon science to answer the difficult decisions we will increasingly face, we must recognize the proper role of scientific knowledge: namely that it is capable of describing physical phenomena but incapable of telling us what our responses to that information should be. Rather than attempting to manage parcels of land based on an idyllic, pristine past—before Moderns began degrading their Nature—we must recognize that fundamental changes are occurring and will continue to take place for the foreseeable future. Rather than attempting to save all species we find to be in danger of extinction from their fate, and doing so on a piecemeal approach, we must recognize that extinctions are likely to far exceed the background rate for the next century or more.

More generally, rather than attempting to *save* the Earth from *unnatural* changes, we must recognize that we are part of an intricately complex and dynamic web of living organisms, relationships, and

---

533. Will Steffen et al., *The Anthropocene: Conceptual and Historical Perspectives*, 369 PHIL. TRANSACTIONS ROYAL SOC'Y A, 842, 843 (2011).

534. Nicholas A. Robinson, *Keynote: Sustaining Society in the Anthropocene Epoch*, 41 DENV. J. INT'L L. & POL'Y 467, 488 (2012).

535. Doremus, *Static Law*, *supra* note 250, at 205–06.

536. *Id.* at 182.

processes. We may indeed be unique among organisms in our ability to deliberate among a range of options and to consciously manipulate our physical environment to serve our desired ends. It is time we embrace that, while also recognizing our limitations and appreciating the opportunity costs of each action we might take. After all, in a *no-analogue future*, we can no longer pretend to be bound by precedent from the distant past. As Jean Bruller noted over a half-century ago, we may still not know "*what* we are" or *why* we are, but we best decide—however tentatively—"what we *want to be*."[537] This will not solve "man's troubles,"[538] but it is a start.

537. Templemore, *supra* note 3, at 1 (emphasis added).
538. *Id.*