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ARTICLE

Arguments in Support of a Constitutional Right to Atmospheric Integrity

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I. INTRODUCTION

The overwhelming scientific consensus is that, due to human activity, the global climate is changing in a manner that will be disruptive to human and ecological communities.[1] While climate change has been described as "one of the defining issues of our

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1. *See generally,* AM. ASS'N FOR THE ADVANCEMENT OF SCI., WHAT WE KNOW: THE REALITY, RISKS AND RESPONSE TO CLIMATE CHANGE (2014) [hereinafter AAAS] ("Based on well-established evidence, about 97% of climate scientists have concluded that human-caused climate change is happening."); INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, SUMMARY FOR POLICYMAKERS, CLIMATE CHANGE 2013: THE PHYSICAL SCIENCE BASIS: CONTRIBUTION OF WORKING GROUP I TO THE FIFTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (Thomas F. Stocker et al. eds., 2013), *available at* http://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WGIAR5_SPM_brochure_en.pdf [hereinafter IPCC 2013]; INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, SUMMARY FOR POLICYMAKERS, CLIMATE CHANGE 2014: IMPACTS, ADAPTATION, AND VULNERABILITY: CONTRIBUTION OF WORKING GROUP II TO THE FIFTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (Christopher B. Field et al. eds., 2014), *available at* http://ipcc-wg2.gov/AR5/images/uploads/IPCC_WG2AR5_SPM_Approved.pdf [hereinafter IPCC 2014]; NAT'L ACAD. OF SCI. & THE ROYAL SOC'Y, CLIMATE CHANGE EVIDENCE & CAUSES (2014) [hereinafter NAS AND THE ROYAL SOCIETY]; James Hansen et al., *Assessing "Dangerous Climate Change": Required Reduction of Carbon Emissions to Protect Young People, Future Generations and Nature,* PLOS ONE, Dec. 2013, at 1, *available at* http://www.plosone.org/article/fetchObject.action?uri=info%3Adoi%2F10.1371%2Fjournal.pone.0081648&representation=PDF.

time,"[2] the global community's response to date has been largely ineffective. For example, levels of greenhouse gases in the atmosphere have continued to rise[3] despite an agreement made by the majority of the world's nations in 1992 to stabilize atmospheric concentrations of greenhouse gases "at a level that would prevent dangerous anthropogenic interference with the climate system."[4] Scientific evidence strongly suggests that we have reached the threshold of dangerous anthropogenic interference.[5] Accordingly, now is the time for a concerted, worldwide effort to reduce greenhouse gas emissions. Within the United States, political and private sector responses to climate change could be guided by judicial recognition of a fundamental right to atmospheric integrity.

Constitutions ratify societies' highest values,[6] help to engage societies in public discourse about important issues,[7] supply an over-arching normative framework for directing policy,[8] provide a basis for requesting judicial relief and imposing meaningful responsibilities on governments,[9] and provide a degree of protection from daily politics where long-term goals frequently

2. *Foreword* to NAS AND THE ROYAL SOCIETY, *supra* note 1, at C2.

3. *See* EPA, CLIMATE CHANGE INDICATORS IN THE UNITED STATES: ATMOSPHERIC CONCENTRATIONS OF GREENHOUSE GASES (2014), *available at* http://www.epa.gov/climatechange/pdfs/print_ghg-concentrations-2014.pdf.

4. United Nations Framework Convention on Climate Change art. 2, May 9, 1992, S. Treaty Doc No. 102–38, 1771 U.N.T.S. 107, *available at* https://unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/conveng.pdf [hereinafter UNFCCC].

5. *See infra* Part II.

6. Bruce Ledewitz, *Establishing a Federal Constitutional Right to a Healthy Environment in Us and in Our Posterity,* 68 MISS. L.J. 565, 593 (1998); *see also,* John C. Dernbach, *Taking the Pennsylvania Constitution Seriously When It Protects the Environment: Part I – An Interpretative Framework of Article I, Section 27*, 103 DICK. L. REV. 693, 732 (1999) ("[C]onstitutional provisions represent an enduring commitment to the values and principles they contain.").

7. Joshua J. Bruckerhoff, *Giving Nature Constitutional Protection: A Less Anthropocentric Interpretation of Environmental Rights,* 86 TEX. L. REV. 615, 623 (2008) ("A constitutional right to a healthy environment also encourages greater civic involvement in environmental concerns and informs the public about the importance of environmental protection.").

8. *Id.* at 624.

9. Dernbach, *supra* note 6, at 723.

fall victim to short-term political gains.[10] Most significantly, a right to atmospheric integrity would serve as a counterweight to the presumed right to permanently alter the environment.[11] As presently construed, constitutionally-protected property rights reflect "our old attitude of oblivious destruction, as if the right to disrupt were inalienable."[12] However, if property and other presently-recognized rights were prudentially balanced against an equally fundamental right to atmospheric integrity, society would be directed toward a more sustainable path of development.[13]

Given the opportunity, therefore, the Supreme Court should recognize a fundamental right to atmospheric integrity in order to protect current and future Americans from the worst effects of climate change. A right to atmospheric integrity would also establish America's obligation to reduce greenhouse gas concentrations in the atmosphere to a level that will permit the global climate to remain within the range in which modern civilization has developed. That is, an obligation for the nation to do its part to return the atmospheric concentration of carbon dioxide (CO_2) to 350 parts per million (ppm).

10. Bruckerhoff, *supra* note 7, at 623. *See generally* Ledewitz, *supra* note 6, at 627 ("[T]he right to a healthy environment . . . will come to exist in light of a serious threat that ordinary political life is not capable of adequately addressing. If circumstances should come to that, even the ordinarily restrained judge should heed the words of Abraham Lincoln: 'The dogmas of the quiet past are inadequate for the stormy present and future. As our circumstances are new, we must think anew, and act anew.'").

11. Ledewitz, *supra* note 6, at 585–86; *see* Naomi Oreskes, *The Scientific Consensus on Climate Change: How Do We Know We're Not Wrong?*, *in* CLIMATE CHANGE: WHAT IT MEANS FOR US, OUR CHILDREN, AND OUR GRANDCHILDREN 65, 93 (Joseph F. C. DiMento & Pamela Doughman eds., 1st ed. 2007) ("To deny that global warming is real is precisely to deny that humans have become geological agents, changing the most basic physical processes of the earth. . . . We have changed the chemistry of our atmosphere, causing sea level to rise, ice to melt, and climate to change. There is no reason to think otherwise.").

12. Eric T. Freyfogle, *Should We Green the Bill?*, 1992 U. ILL. L. REV. 159, 170 (1992).

13. *See* Dernbach, *supra* note 6, at 718 ("When an environmental provision is written into the constitution, all constitutional decision making concerning other provisions must be reconciled with the Amendment whenever possible. That creates an obligation by the state to ensure that consideration and protection of constitutional values concerning the environment are made part of all state decision making.).

As used in this paper, "atmospheric integrity"[14] refers to the interrelated physical, chemical, and biological processes on planet Earth that enable human and non-human life now and in the future and recognizes that modern civilization has developed within the relatively stable, current geologic period known as the Holocene.[15] I chose to focus on atmospheric integrity, rather than more broadly on environmental integrity, because the health of terrestrial and aquatic habitats is inextricably tied to atmospheric stability. This assertion is not meant to minimize the multitude of harms impacting land and water. It is just that the magnitude of the climate crisis overwhelms all other environmental threats and will have obvious, detrimental impacts on humanity. Also, the determination of what constitutes a decent environment is a value judgment over which reasonable people will differ.[16] Conversely, focusing on a goal that can be measured with scientific accuracy will enable courts and policy makers to confidently measure progress toward (or away from) the goal.

In this paper I explore the establishment of a federal constitutional right to atmospheric integrity. I begin, in Part II, with a review of the threat presented by global climate change. In Part III, I discuss various conceptions of rights: constitutional, basic, natural, and human. I then review modes of constitutional

14. Other authors have described a similar concept using terms such as a "healthy", "healthful," "safe," or "clean" environment. *See, e.g.*, Noralee Gibson, *The Right to a Clean Environment*, 54 SASK. L. REV. 5, 16 (1990) ("[T]he right to a *clean* environment." (emphasis added)); Ledewitz, *supra* note 6; Neil A.F. Popovic, *Pursuing Environmental Justice with International Human Rights and State Constitutions,* 15 STAN. ENVTL. L.J. 338, 341, 345 (1996).

15. *Holocene*, NEW WORLD ENCYCLOPEDIA, http://www.newworldencyclopedia.org/entry/Holocene (last visited Jan. 29, 2015) ("Human civilization dates entirely to the Holocene.").

16. Alan Boyle, *Human Rights and the Environment: Where Next?*, 23 EUR. J. INT'L L. 613, 626 (2012); *see also,* Mont. Envtl. Info. Ctr. v. Dep't of Envtl. Quality, 988 P.2d 1236, 1246–48 (Mont. 1999) (discussing the debate among delegates to the 1972 Montana Constitutional Convention about whether to include descriptive terms of an environmental right in that state's constitution). "The majority felt that the use of the word 'healthful' would permit those who would pollute our environment to parade in some doctors who could say that if a person can walk around with four pounds of arsenic in his lungs or SO2 gas in his lungs and wasn't dead, that that would be a healthful environment." *Id.* at 1246 (citation omitted).

analysis and presently-recognized state and national constitutional environmental rights in Part IV. In Part V, I review *Robinson Township v. Commonwealth of Pennsylvania*[17] in which the Pennsylvania Supreme Court, for the first time, provided substantive interpretation of the environmental rights contained in the Commonwealth's constitution. Finally, in Part VI, I conclude that the Supreme Court may recognize a constitutional right to atmospheric integrity based on historical, doctrinal, prudential, ethical, and structural analysis.

II. CLIMATE CHANGE, A REAL AND IMMINENT THREAT

The Earth receives its energy from the sun in the form of solar radiation. Some of this radiation is reflected directly back into space, some is absorbed by the Earth's land and sea surfaces, and some is absorbed by greenhouse gases in the atmosphere.[18] Greenhouse gases, in turn, emit heat energy in all directions with the result that Earth's surface and lower atmosphere are warm compared to space.[19] Life as we know it would not be possible without this greenhouse effect. There can be, however, too much of a good thing. As levels of greenhouse gases in the atmosphere increase, so too do surface temperatures.[20]

Since the time of the industrial revolution, humanity has been mining carbon from the ground in the form of coal, oil, and natural gas and transferring it to the atmosphere in the form of carbon dioxide gas. Direct measurements of carbon dioxide in the atmosphere and air trapped in ice reveal that carbon dioxide concentrations are forty percent higher today as compared to levels prior to the industrial revolution.[21] The current atmospheric concentrations of carbon dioxide and two other greenhouse gases—methane and nitrous oxide—are presently at levels unprecedented in the last 800,000 years.[22] For the period

17. Robinson Twp. v. Commonwealth, 83 A.3d 901 (Pa. 2013).

18. NAS AND THE ROYAL SOCIETY, *supra* note 1, at B1. Greenhouse gases include carbon dioxide, methane, nitrous oxide, and water vapor. *Id.*

19. *Id.*

20. *Id.* at 10.

21. *Id.* at 5.

22. IPCC 2013, *supra* note 1, at 9.

starting 800,000 years ago and continuing up until the start of the twentieth century, atmospheric concentrations of carbon dioxide were in the range of 170 to 300 ppm.[23] Today, atmospheric concentrations of carbon dioxide have increased to nearly 400 ppm. [24] Research suggests that the last time that atmospheric concentrations of carbon dioxide approached 400 ppm was three to five million years ago.[25]

Since 1900, the Earth's average surface temperature has warmed by 0.8º C, with much of the increase occurring since the mid-1970s.[26] For sake of comparison, since the end of the last ice age 18,000 years ago, the global temperature increased by four to five degrees Celsius over about a 7,000 year period.[27] The Earth entered the present geologic period, the Holocene, about 10,000 years ago. Humanity and other species are adapted to the Holocene range of conditions.[28] The current speed of warming is more than ten times faster than any known natural sustained change on a global scale.[29] More worrisome is the fact that the pace of climate change over the next thirty to eighty years is projected to continue to be faster and more intense than it presently is.[30] Even if carbon dioxide emissions were to stop today—a wholly unrealistic possibility—excess carbon "will remain in and affect the climate system for many millennia."[31] Additionally, increased global temperatures will persist for many

23. NAS AND THE ROYAL SOCIETY, *supra* note 1, at 9.

24. *Id.*

25. *Id.* at 10.

26. *Id.* at 3.

27. *Id.* at 9.

28. Hansen et al., *supra* note 1, at 1, 15.

29. NAS AND THE ROYAL SOCIETY, *supra* note 1, at 9; *see also* Noah S. Diffenbaugh and C.B. Field, *Changes in Ecologically Critical Terrestrial Climate Conditions*, 341 SCI. 486, 486 (2013), *available at* http://www.sciencemag.org/content/341/6145/486.full.pdf ("Inertia toward continued emissions creates potential 21st-century global warming that is comparable in magnitude to that of the largest global changes in the past 65 million years but is orders of magnitude more rapid.").

30. COMM. ON UNDERSTANDING AND MONITORING ABRUPT CLIMATE CHANGE AND ITS IMPACTS ET AL., ABRUPT IMPACTS OF CLIMATE CHANGE: ANTICIPATING SURPRISES 5 (2013).

31. Hansen et al., *supra* note 1, at 6. "A pulse of CO_2 injected into the air decays by half in about 25 years as CO_2 is taken up by the ocean, biosphere and soil, but nearly one-fifth is still in the atmosphere after 500 years." *Id.* at 10.

centuries after emissions decline because of the persistence of carbon dioxide in the atmosphere and the thermal inertia of the ocean.[32]

The long-term consequences of global climate change are expected to be disruptive to human societies.[33] The changing climate could affect:

> human welfare, through changes in the supply of food and water; human health through wider spread of infectious vector-borne diseases, through heat stress and through mental illness; the economy, through changes in goods and services; and national security as a result of population shifts, heightened competition for natural resources, violent conflict and geopolitical instability.[34]

The "risk of severe economic disruption is rising."[35] Additional concerns include threats to coastal infrastructure and the welfare of the huge population currently living in low-lying areas.[36] Climate change will undoubtedly lead to human migration, displacement, and planned relocation, all of which have implications for political stability.[37]

32. Hansen et al., *supra* note 1, at 13; *see also*, NAS AND THE ROYAL SOCIETY, *supra* note 1, at 22 ("If emissions of CO_2 stopped altogether, it would take many thousands of years for atmospheric CO_2 to return to 'pre-industrial' levels due to its very slow transfer to the deep ocean and ultimate burial in ocean sediments. Surface temperatures would stay elevated for at least a thousand years, implying extremely long-term commitment to a warmer planet due to past and current emissions, and sea level would likely continue to rise for many centuries even after temperature stopped increasing.").

33. NAS AND THE ROYAL SOCIETY, *supra* note 1, at 19. *See generally* Seth Borenstein, *Warming Report Sees Violent, Sicker, Poorer Future*, ASSOCIATED PRESS, Nov. 2, 2013, http://bigstory.ap.org/article/warming-report-sees-violent-sicker-poorer-future.

34. Camilo Mora et al., *The Projected Timing of Climate Departure From Recent Variability,* 502 NATURE 183, 183 (2013) (internal citations omitted).

35. Justin Gillis, *U.N. Says Lag in Confronting Climate Woes Will be Costly,* N.Y. TIMES, Jan. 16, 2014, http://www.nytimes.com/2014/01/17/science/earth/un-says-lag-in-confronting-climate-woes-will-be-costly.html?_r=1.

36. NAS AND THE ROYAL SOCIETY, *supra* note 1, at 19.

37. José Riera, Senior Adviser to the Director of International Protection, U.N. High Comm'r for Refugees Headquarters, Challenges Relating to Climate Change Induced Displacement, Remarks at "Millions of People Without Protection: Climate Change Induced Displacement in Developing Countries" International Conference (Jan. 29, 20130) (transcript available at

The time at which climate in a given location will shift wholly outside the range of historic precedent will vary. The global ocean pH exceeded historical variability by 2008[38] due to the fact that oceans become more acidic as they absorb carbon dioxide and produce carbonic acid.[39] Researchers predict that near-surface air temperature of the average location on Earth will also move beyond historical variability by 2047 (plus or minus 14 years) under a business as usual scenario and by 2069 (plus or minus 18 years) under an emissions stabilization scenario.[40] Tropical areas will be the first to experience historically unprecedented climates because of the relatively small natural climate variability in the region.[41] By 2050, "most tropical regions will have every subsequent month outside of their historical range of variability."[42] The roughly one billion people currently living in tropical areas will bear the greatest environmental and social costs of climate change, yet they are the least responsible for—

http://www.unhcr.org/5151bf239.html). "In its 2012 report providing estimates of displacement provoked by natural disasters in 2011, the Norwegian Refugee Council's Internal Displacement Monitoring Centre (IDMC) reported that disasters have doubled over the last two decades from about 200 to more than 400 per year. The report found that in 2011, 14.9 million people were displaced within their own borders throughout the world due to natural disasters, mostly related to weather events such as floods and storms. Some 89% of the displacement occurred in Asia. The report concluded that the impact of climate change, such as changing rainfall patterns and increases in temperature, combined with rapid population growth, suggest that more and more people are likely to be affected by displacement." *Id.* at 3. *See also* Borenstein, *supra* note 33 ("Climate change indirectly increases risks from violent conflict in the form of civil war, inter-group violence and violent protests by exacerbating well-established drivers of these conflicts such as poverty and economic shocks." (quoting a leaked version of an IPCC draft report)).

38. Mora et al., *supra* note 34, at 185.

39. Hansen et al., *supra* note 1, at 7 ("Acidification arises as the ocean absorbs CO_2, producing carbonic acid, thus making the ocean more corrosive to the calcium carbonate shells (exoskeletons) of many marine organisms. Geochemical records show that ocean pH is already outside its range of the past several million years. Warming causes coral bleaching, as overheated coral expel symbiotic algae and become vulnerable to disease and mortality. Coral bleaching and slowing of coral calcification already are causing mass mortalities, increased coral disease, and reduced reef carbonate accretion, thus disrupting coral reef ecosystem health." (internal citations omitted)).

40. Mora et al., *supra* note 34, at 184.

41. *Id.* at 185.

42. *Id.*

and derive the least economic benefit from—the greenhouse gas emissions that are driving climate change.[43] The imminence of climate departure from recent historic variability underscores the urgency of mitigating greenhouse gas emissions in order to avoid widespread disruptions to human societies and global biodiversity.[44]

There has been some, albeit largely ineffective,[45] international movement toward a coordinated response to climate change. One hundred ninety-five nations have agreed under the 1992 U.N. Framework Convention on Climate Change (UNFCCC) to stabilize atmospheric concentrations of greenhouse gases "at a level that would prevent dangerous anthropogenic interference with the climate system."[46] The Convention further states that "such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened, and to enable economic development to proceed in a sustainable manner."[47] The UNFCCC entered into force on March 21, 1994.[48] Fifteen years later, the parties to the framework convention, including the United States, agreed in the Copenhagen Accord to limit global warming to below 2° C relative to pre-industrial times.[49] Current science, however, indicates that a 2° C increase in global temperature would be "disastrous" because:

> [H]umanity and nature, the modern world as we know it, is adapted to the Holocene climate that has existed more than 10,000 years. Warming of 1° C relative to 1880–1920 keeps global

43. Mora et al., *supra* note 34, at 186.

44. *Id*.

45. Hansen et al., *supra* note 1, at 17.

46. UNFCCC, *supra* note 4, art. 2. *See also* Daniel Bodansky, *The United Nations Framework Convention on Climate Change: A Commentary*, 18 YALE J. INT'L L. 451, 453–54 (1993).

47. UNFCCC, *supra* note 4, art. 2.

48. *Status of Ratification of the Convention*, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, http://unfccc.int/essential_background/convention/status_of_ratification/items/2631.php (last visited Oct. 1, 2014).

49. Hansen et al., *supra* note 1, at 2*; see also,* Bill McKibbon, *Global Warming's Terrifying New Math,* ROLLING STONE, July 19, 2012, http://www.rollingstone.com/politics/news/global-warmings-terrifying-new-math-20120719?page=5 (describing that the Copenhagen Accord is a purely voluntary agreement with no enforcement mechanism).

> temperature close to the Holocene range, but warming of 2° C, to at least the Eemian level, could cause major dislocations for civilization.[50]

While the situation is dire, there is still hope. Specifically, a return to approximately 350 ppm of carbon dioxide in the atmosphere would restore the Earth's energy balance.[51] This goal can be achieved this century by reducing greenhouse gas emissions six percent per year while also simultaneously effecting 100 GtC of carbon storage in the biosphere and soils (*e.g.,* through reforestation and improved agricultural practices).[52] If we delay emission reductions until 2020, a reduction rate of fifteen percent per year will be required to achieve 350 ppm in 2100.[53] Delay not only increases the magnitude of the necessary annual emission reductions, it also further imperils youth and future generations. Because the physical climate system has great inertia, there is already additional climate change "in the pipeline."[54] Temperatures will continue to increase due to the carbon that has already been emitted. Ongoing emissions will increase the total amount of carbon dioxide in the atmosphere and further increase Earth's energy imbalance and associated repercussions. As a consequence, youth and future generations are likely to inherit "a situation in which grave consequences are assured, practically out of their control, but not of their doing."[55]

50. Hansen et al., *supra* note 1, at 15. *See also,* A.J. Challinor et al., *A Meta-analysis of Crop Yield Under Climate Change and Adaptation*, 4 NATURE CLIMATE CHANGE 287 (2014), *available at* http://www.nature.com/nclimate/journal/v4/n4/full/nclimate2153.html ("Without adaptation, losses in aggregate production are expected for wheat, rice and maize in both temperate and tropical regions by 2 °C of local warming.").

51. Hansen et al., *supra* note 1, at 5.

52. *Id.* at 18.

53. *Id.* at 10.

54. *Id.* at 19.

55. *Id.* at 19–20.

III. WHAT ARE RIGHTS?

Rights protect people from threats to their physical well-being, political equality, or sense of dignity.[56] Where rights exist, there is a correlated duty levied upon others to act to alleviate the harm or to refrain from the harmful action itself.[57] Rights may be categorized as "constitutional," "basic," "natural," and/or "human." Constitutional rights are those textual and non-textual rights protected by a state or national constitution. Basic rights are those that are "essential to normal life" and which are a prerequisite to the practice of all other rights.[58] For example, air to breathe, water to drink, and food to eat are basic necessities of life. The concept of basic rights is conceptually similar to the seventeenth and eighteenth century concept of moral or "natural" rights.[59] According to Locke, Paine, Jefferson and others, natural rights, unlike legal or contractual rights, are universal and exist independently of government.[60]

The concept of human rights was first codified following the atrocities of World War II in the Universal Declaration of Human Rights (UDHR).[61] Human rights, like natural rights, exist independently of states; people have human rights because they are people, not because they live in a particular place.[62] Human rights, though, differ from natural rights in that the modifier "human" calls attention to the social context of the rights. [63] Human rights presume the existence of governments and define relationships between governments and citizens.[64] As such, human rights are "fundamental international moral and legal

56. RICHARD P. HISKES, THE HUMAN RIGHT TO A GREEN FUTURE: ENVIRONMENTAL RIGHTS AND INTERGENERATIONAL JUSTICE 36 (2009).

57. *Id.* at 41, 42, 46; *see also,* Freyfogle, *supra* note 12, at 165 ("A right cannot exist . . . without a corresponding duty to protect it.").

58. HISKES, *supra* note 56, at 39 (quoting HENRY SHUE, BASIC RIGHTS: SUBSISTENCE, AFFLUENCE, AND U.S. FOREIGN POLICY, 29–30, (2d ed. 1980)).

59. HISKES, *supra* note 56, at 26.

60. *Id.*

61. *Id.*

62. Popovic, *supra* note 14, at 352.

63. *See* HISKES, supra note 56, at 30.

64. *Id.*

norms which protect people . . . from severe but common social, political, and legal abuses."[65]

In recent years there has been a convergence of environmental rights with human rights.[66] There is presently no agreement on whether a human right to environmental integrity exists.[67] However, among scholars, "the idea of strong or even absolute—i.e. not subject to balancing—environmental fundamental rights seems to be gaining support."[68] One such proponent is Professor Richard P. Hiskes who makes a compelling argument that environmental rights are "emergent" human rights defined, in part, by a society's obligations to future generations of its own community.[69]

According to Hiskes, where an emergent risk threatens basic human needs, then protection from that harm takes the form of "emergent rights."[70] That is, to the extent that human interactions with the environment are harmful to both humans and the natural environment, these detrimental effects ought to generate human rights for protection from the detrimental effects.[71] Environmental rights "emerge" as rights when social impacts to the natural world reach a critical juncture.[72] Given the robust scientific evidence of anthropogenic climate change, we must, according to Hiskes' reasoning, acknowledge the necessity of a right to atmospheric integrity. Professor Hiskes concludes that, "environmental rights do exist and are unique for their expressly emergent character . . . . In their emergent nature and their unique relationship to time, environmental rights invoke

65. James Nickel, *The Human Right to a Safe Environment: Philosophical Perspectives on Its Scope and Justification,* 18 YALE J. INT'L L. 281, 288 (1993).

66. *See, e.g.,* Popovic, *supra* note 14, at 340.

67. *See generally* Boyle, *supra* note 16; Bruckerhoff, *supra* note 7; Gibson, *supra* note 14; Nickel, *supra* note 65.

68. Felix Ekardt, *Climate Change and Justice: Perspectives of Legal Theory, in* CLIMATE CHANGE AND THE LAW 63, 66 (Erkki J. Hollo et al. eds., 2013).

69. *See generally* HISKES, supra note 56.

70. *Id.* at 29–30.

71. *Id.* at 30.

72. *Id.* at 40. For example, "when degradation of soil, water, and air supplies become impossible to ignore, when human knowledge about how life impacts environment and vice versa becomes widespread—with the emergence of these factors in human history comes the understanding of the necessity of environmental rights." *Id.*

the possibility of intergenerational justice at least as it pertains to environmental protection and sustainability."[73] The intergenerational aspect of Hiskes' conception of environmental rights is grounded in a community's presumption of its own cross-generation existence.[74] That is, cultural continuity, including the passage of political institutions to future generations, gives rise to an obligation to respect the environmental human rights of future generations.[75]

Hiskes' conclusions evoke the theory of intergenerational equity, which states that:

> We, the human species, hold the natural environment of our planet in common with other species, other people, and with past, present and future generations. As members of the present generation, we are both trustees, responsible for the robustness and integrity of our planet, and beneficiaries, with the right to use and benefit from it for ourselves.[76]

The right to use and benefit from the natural environment is a generational right held by generations in relation to each other.[77] The right provides a moral basis for protecting the interests of all generations in a healthy and robust planet.[78] Intergenerational equity is defined by three normative principles: 1) each generation must conserve options such that it does not unduly restrict options available to future generations;[79] 2) each generation should maintain the quality of the planet so that it is passed on in no worse condition than that it which it was received;[80] and 3) each generation should provide its members with equitable rights of access to the legacy of past generations

73. HISKES, supra note 56, at 46.

74. *Id.* at 66.

75. *Id.* at 67.

76. Edith Brown Weiss, *In Fairness to Future Generations and Sustainable Development*, 8 AM. U. J. INT'L L. & POL'Y 19, 20 (1992) [hereinafter "Weiss, *In Fairness*"].

77. *See generally* Edith Brown Weiss, *Intergenerational Equity: A Legal Framework for Global Environmental Change, in* ENVIRONMENTAL CHANGE AND INTERNATIONAL LAW: NEW CHALLENGES AND DIMENSIONS 385 (Edith Brown Weiss ed., 1992) [hereinafter "Weiss, *Intergenerational Equity*"].

78. *See generally* Weiss, Intergenerational Equity.

79. *See infra* notes 249–54 and accompanying text.

80. *See infra* notes 257–58 and accompanying text.

and conserve access for future generations.[81] The concept of intergenerational equity has "gained significant traction both rhetorically and as a legally cognizable principle in domestic and international forums."[82]

The pronounced international commitment to protecting the environmental rights of future generations[83] can be found in the 1972 Stockholm Convention: "Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being, and he bears a solemn responsibility to protect and improve the environment for present and future generations."[84] Explicit protections of natural resources for future generations are incorporated in many international agreements, including the Rio Declaration on Environment and Development.[85] The 1992 Rio Declaration proclaims that humans "are entitled to a healthy and productive life in harmony with nature" and that the "right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations."[86] Over the past twenty years, sustainability—which is intended to extend justice across an intergenerational and global dimension—has become a key policy objective of the United Nations, the European Union, and many national governments.[87]

IV. INTERPRETATION OF CONSTITUTIONAL RIGHTS

The constitutions of many states and nations contain environmental rights. Up to thirty-one U.S. states and Puerto

81. Weiss, *In Fairness*, *supra* note 76, at 22–23.

82. Brett M. Frischmann, *Some Thoughts on Shortsightedness and Intergenerational Equity,* 36 LOY. U. CHI. L.J. 457, 462 (2005).

83. Ledewitz, *supra* note 6, at 663.

84. United Nations Conference on the Human Environment, Stockholm, Swed., June 5–16, 1972, 3, U.N. Doc. A/CONF.48/14/Rev.1 (1973).

85. *See generally* Weiss, *Intergenerational Equity*, *supra* note 77.

86. United Nations Conference on Environmental Development, Rio de Janeiro, Braz., June 3–14, 1992, *Rio Declaration on Environment and Development*, princs. 1, 3, U.N. Doc. A/CONF.151/26/Rev.1 (Vol. I), Annex I (Aug. 12, 1992).

87. Ekardt, *supra* note 68, at 65.

Rico reference the environment or natural resources in their constitutions.[88] Similarly, five dozen countries worldwide have constitutional provisions purporting to guarantee a fundamental right to a healthy, adequate, or quality environment.[89] An additional seventy national constitutions contain environmental policy directives and/or procedural rights,[90] which while not directly enforceable, can influence legislative policy and judicial interpretation.[91]

The descriptions of these constitutional environmental rights are as varied as they are numerous. For instance, the people of Massachusetts "shall have the right to clean air and water, freedom from excessive and unnecessary noise, and the natural, scenic, historic, and esthetic qualities of their environment."[92] In Michigan, the "conservation and development of the natural resources of the state are hereby declared to be of paramount public concern in the interest of the health, safety and general welfare of the people."[93] In Texas, the "preservation and conservation of all such natural resources of the State are each and all hereby declared public rights and duties."[94]

In both the sub-national and international context, environmental provisions of constitutions have rarely been

88. Popovic, *supra* note 14, at 355. *See also*, James May & William Romanowicz, *Environmental Rights in State Constitutions, in* PRINCIPLES OF CONSTITUTIONAL ENVIRONMENTAL LAW 305, 306 (James R. May ed., 2011) (finding that twenty-two states address environmental and natural resources issues); Janelle P. Eurick, *The Constitutional Right to a Healthy Environment: Enforcing Environmental Protection through State and Federal Constitutions*, 11 INT'L LEGAL PERSP. 185, 185 (2001) (finding twenty-one such provisions). The different figures result from differing definitions of what constitutes environmental provisions.

89. James R. May & Erin Daly, *Constitutional Environmental Rights Worldwide, in* PRINCIPLES OF CONSTITUTIONAL ENVIRONMENTAL LAW 329, 330 (James R. May ed., 2011).

90. James R. May, *Constituting Fundamental Environmental Rights Worldwide*, 23 PACE ENVTL. L. REV. 113, 114 (2006).

91. *See, e.g.,* May & Daly, *supra* note 89, at 331 (describing a Greek case in which a river was saved from being dammed by judicial interpretation of a policy directive).

92. MASS. CONST. art. XCVII.

93. MICH. CONST. art. IV, § 52.

94. TEX. CONST. art. XVI, § 59(a).

subjected to substantive interpretation.[95] This judicial reticence is due, among other reasons, to concerns about recognizing and enforcing emerging constitutional features and restraining economic development and property rights.[96] Furthermore, there are questions of scope. What exactly does "environment" refer to? Courts are often reluctant to enforce claims to a right with large and amorphous boundaries.[97] Similarly, what degree and specificity of harm is necessary to satisfy requirements for standing?[98] What degree of environmental degradation is permissible before a constitutional violation has been effected and, if a violation is found, what enforcement authority does a court have to impose a remedy?[99] The difficulty of the challenge of interpreting and upholding constitutional environmental rights should not negate the rights, however. Just as "our difficulties in drawing the parameters of the right to free speech leave unchallenged our belief in its necessity,"[100] so too should environmental rights be vindicated. Toward this end, adjudication of explicit constitutional environmental rights continues to evolve around the world and scholars have identified a "positive and powerful" trend in which "momentum is only likely to increase as courts become more comfortable with environmental rights protection and as environmental pressures grow."[101]

The answers to at least some of the questions presented above may be elucidated through the traditional modes of constitutional analysis described by Professor Philip Bobbitt in his book, *Constitutional Fate*.[102] Bobbitt described six types of analysis that the Supreme Court has used, individually and in combination, in interpreting the Constitution: textual, historical, doctrinal, prudential, structural, and ethical.[103] I will briefly

95. May & Romanowicz, *supra* note 88, at 307.
96. *Id.*
97. May & Daly, *supra* note 89, at 338.
98. *Id.*
99. *Id.*
100. HISKES, *supra* note 56, at 40.
101. May & Daly, *supra* note 89, at 331.
102. *See generally* PHILIP BOBBITT, *Book I: Constitutional Argument*, CONSTITUTIONAL FATE: THEORY OF THE CONSTITUTION 1 (1982).
103. *Id.*

introduce each concept here and provide a synopsis of the application of these modes to substantive due process analysis of non-textual rights. Where applicable, I will also provide examples of how the various modes of analysis have been applied to interpret environmental rights under state and national constitutions.

Textual arguments are those drawn from a present understanding – the "fair meaning" – of the words of the constitution without reference to extrinsic evidence.[104] Thus, a disregard of precedent is permissible because a contemporary reading of a particular passage may differ from an earlier understanding of the same text.[105] A constraint of the textual approach, of course, is that "in a Constitution of limited powers what is *not* expressed must also be interpreted."[106] In *Pedro Flores v. Corporación del Cobre, Codelco,* Chile's Supreme Court vindicated a textual constitutional right "to live in an environment free from contamination" by enjoining the dumping of copper mill tailings onto Chilean beaches.[107]

Historical arguments are based on a construction of the original understanding of a particular constitutional provision by, for example, referring to statements made by members of a constitutional convention.[108] Proponents of this approach are seeking "the authoritative reading in a particular context."[109] A primary shortcoming of this approach in the federal context is the scarcity of records documenting the full discussion of any given aspect of the original Constitutional Convention.[110] Where records do exist, they reveal that delegates often approved of particular language for disparate reasons.[111] The Supreme Court of Illinois relied upon historical analysis when it was called upon to construe the contours of the constitutional "right to a healthful

104. BOBBITT, *supra* note 102, at 7, 25, 34. "[T]he interpretation of the text is the one given by the man in the street." *Id.*at 32.

105. *Id.* at 33.

106. *Id.* at 38.

107. May & Daly, *supra* note 89, at 333 (citing CONSTITUCIÓN POLÍTICA DE LA REPÚBLICA DE CHILE [C.P.] art. 19(8)).

108. BOBBITT, *supra* note 102, at 9, 10.

109. *Id.* at 13.

110. *Id.* at 11.

111. *Id.* at 12.

environment."[112] Because the meaning of "healthful environment" was not clear from the constitutional text, the court looked to the drafting history of the article to conclude that "'healthful environment' was intended to refer to the relationship between the environment and human health. . . . The right to a 'healthful environment' was therefore not intended to include the protection of endangered and threatened species."[113] Illinois is representative of the national trend among courts that have considered the subject and have found that modifiers like "quality," "clean," or "adequate," protect human uses of natural resources rather than nature itself.[114]

Doctrinal arguments are those that assert principles derived from precedent or from judicial or academic commentary on precedent (*e.g.,* by reference to Restatements).[115] The doctrinal ideology is a principled approach based on premises of general applicability "which holds that fairness will result . . . if methods of judging which all concede are fair are followed scrupulously."[116] Doctrinal arguments focus more on the principle involved in a dispute, rather than upon the particular facts of a case.[117] Conceptually, doctrinal arguments would also seem to incorporate consideration of international norms where there is an absence of national precedent.

In contrast to doctrinal analysis, prudential arguments tend to be fact-dependent.[118] Prudential arguments come into play when courts are asked to give effect to competing constitutional

112. Glisson v. City of Marion, 720 N.E.2d 1034, 1042 (Ill. 1999); *see also* ILL. CONST. art. XI, § 1 ("The public policy of the State and the duty of each person is to provide and maintain a healthful environment for the benefit of this and future generations. The General Assembly shall provide by law for the implementation and enforcement of this public policy."); *id.* § 2 ("Each person has the right to a healthful environment. Each person may enforce this right against any party, governmental or private, through appropriate legal proceedings subject to reasonable limitation and regulation as the General Assembly may provide by law.")

113. *Glisson*, 720 N.E.2d at 1042.

114. May & Romanowicz, *supra* note 88, at 313.

115. BOBBITT, *supra* note 102, at 7, 45–52.

116. *Id.* at 43, 57.

117. *Id.* at 66, 70.

118. *Id.*

provisions.[119] Thus, the determination of which text should be given greater weight is a matter of prudence, which takes political and economic circumstances into account.[120] The Supreme Court of the Philippines undertook a form of prudential analysis in a case where it was asked to give meaning to the nation's constitutional right to life in combination with a constitutional policy directive that "[t]he State shall protect and advance the right of the people to a balanced and healthful ecology in accord with the rhythm and harmony of nature."[121] The court found for the plaintiffs (minor children who sought to cancel existing timber licenses and stop the issuance of new ones)[122] and determined that the right to a healthful ecology, coupled with the Philippine constitution's right to life provision, imposed "a solemn obligation" on the State to protect both interests because a failure to do so would condemn future generations "to inherit nothing but parched earth incapable of sustaining life."[123]

Structural arguments are based on the relative powers of governments (*i.e.,* among different branches of government and between federal and state governments) as defined by the Constitution as a whole.[124] The relevant text does not refer to express grants of power or particular prohibitions, but rather to those passages that, "by setting up structures of a certain kind, permit us to draw the requirements of the relationship among structures."[125]

Finally, Bobbitt includes ethical arguments, which he describes as "perhaps controversial" and also as often being "the animating argumentative factor in constitutional decision-

119. BOBBITT, *supra* note 102, at 61.

120. *Id.*

121. *See* May & Daly, *supra* note 89, at 334 (quoting CONST. (1987), art. II, sec. 15–16 (Phil.)).

122. Minors Oposa v. Factoran, Jr., G.R. No. 101083, 224 S.C.R.A. 792 (July 30, 1993) (Phil.).

123. May & Daly, *supra* note 89, at 334 (quoting Minors Oposa v. Factoran Jr., G.R. No. 101083, 224 S.C.R.A. 792 (July 30, 1993) (Phil.) (Feliciano, J, concurring)).

124. BOBBITT, *supra* note 102, at 74.

125. *Id.* at 80.

making."[126] Ethical arguments are not moral arguments in the sense that certain actions are either right or wrong.[127] Rather, they reflect the character or ethos of the American polity and compel solutions that comport with "the sort of people we are and the means we have chosen to solve political and customary constitutional problems."[128] Ethical arguments may be found in such notable cases as *Moore v. City of East Cleveland*,[129] *Meyer v. Nebraska*,[130] and *Pierce v. Society of Sisters*.[131] For example, in *Moore*, the Court found that a zoning ordinance that made it illegal for a grandmother to live with her son and two grandsons (only one of which was the son's son) was unconstitutional.[132] In his opinion announcing the judgment of the court, Justice Powell "placed the decision on an ethical ground."[133] Ethical arguments give "the Fourteenth Amendment's guarantee of due process a scope far exceeding the procedural, common, and historical understanding of the term."[134] They are "almost" substantive due process by another name because, "as applied to the analysis of state actions, ethical constitutional arguments usually appear in the form of substantive due process because the due process clause is the textual vehicle by which the ethos of limited government is applied to the states."[135]

126. BOBBITT, *supra* note 102, at 93.

127. *Id.* at 94.

128. *Id.* at 94–95.

129. Moore v. City of E. Cleveland, 431 U.S. 494 (1977).

130. Meyer v. Nebraska, 262 U.S. 390 (1923).

131. Pierce v. Soc'y of Sisters, 268 U.S. 510 (1925).

132. *Moore*, 434 U.S. at 496.

133. BOBBITT, *supra* note 102, at 96; *see Moore*, 431 U.S. at 503–05 (Justice Powell noted that, "T]he Constitution protects the sanctity of the family precisely because the institution of the family is deeply rooted in this Nation's history and tradition. . . . Ours is by no means a tradition limited to respect for the bonds uniting the members of the nuclear family. The tradition of uncles, aunts, cousins, and especially grandparents sharing a household along with parents and children has roots equally venerable and equally deserving of constitutional recognition. Over the years millions of our citizens have grown up in just such an environment, and most, surely, have profited from it. Even if conditions of modern society have brought about a decline in extended family households, they have not erased the accumulated wisdom of civilization, gained over the centuries and honored throughout our history, that supports a larger conception of the family.").

134. BOBBITT, *supra* note 102, at 99.

135. *Id.* at 100.

Substantive due process analysis refers to the application of these six traditional modes of analysis to interpretation of the word "liberty" in the due process clauses of the Fifth and Fourteenth Amendments to identify non-textual fundamental rights. [136] The existence of unenumerated rights is supported by the Ninth Amendment, which states, "[t]he enumeration in the Constitution, of certain rights, shall not be construed to deny or disparage others retained by the people."[137] Rather, the enumerated rights "act to give us a constitutional motif, a cadence of our rights, so that once heard we can supply the rest on our own."[138]

The Fifth and Fourteenth Amendments provide that no person shall be deprived of life, liberty or property without due process of law.[139] Liberty interests include "the rights to marry; to have children; to direct the education and upbringing of one's children; to marital privacy; to use contraception; to bodily integrity; and to abortion."[140] The Court is reluctant, though, to recognize new liberty interests under the doctrine of substantive due process.[141] Accordingly, the Court purports to undertake a rigorous, two-step analysis. The Court first considers whether asserted fundamental rights and liberties are "objectively, deeply rooted in this Nation's history and tradition . . . and implicit in the concept of ordered liberty such that neither liberty nor justice would exist if they were sacrificed."[142] Second, the Court requires that asserted fundamental liberty interests be carefully formulated and defined with precise language.[143]

In the international context, some nations have inferred environmental rights from other constitutionally entrenched

136. ERWIN CHEMERINSKY, CONSTITUTIONAL LAW 944–45 (3rd ed. 2009).

137. U.S. CONST. amend. IX; *See also,* Griswold v. Connecticut, 381 U.S. 479, 484 (1965).

138. BOBBITT, *supra* note 102, at 177.

139. U.S. CONST. amends. V, XIV.

140. Washington v. Glucksberg, 521 US 702, 720 (1997) (internal citations omitted).

141. *Id.* at 720.

142. *Id.* at 720–21 (internal quotations and citations omitted).

143. *Id.* at 721–23.

rights. [144] As with rights elucidated through substantive due process analysis, derivative environmental rights are those that are not expressed in the text of a constitution, but are found to reside in another independent constitutional right, such as the right to life.[145] For example, the Supreme Court of India found that the right to life encompasses a right to a quality environment.[146]

In many instances, courts will enlist numerous modes of constitutional analysis in a single case. For example, in a dispute[147] pitting mining interests against constitutional provisions stating that residents of Montana have a "right to a clean and healthful environment"[148] and that "[t]he state and each person shall maintain and improve a clean and healthful environment in Montana for present and future generations,"[149] the Montana Supreme Court considered the state constitution's text and structure along with relevant doctrine and history. Based on its analysis, the court concluded that

> [T]he right to a clean and healthful environment is a fundamental right because it is guaranteed by the Declaration of Rights found at Article II, Section 3 of Montana's Constitution, and that any statute or rule which implicates that right must be strictly scrutinized and can only survive scrutiny if the State establishes a compelling state interest and that its action is closely tailored to effectuate that interest and is the least onerous path that can be taken to achieve the State's objective.[150]

Montana is, thus, notable for being the first U.S. state to recognize a fundamental right to a clean and healthful

144. May & Daly, *supra* note 89, at 332, 335 (describing that derivative environmental rights are found in nations including India, Bangladesh, Nepal, and Pakistan).

145. *Id.* at 335.

146. *Id.* (The Supreme Court of India explicitly stated that the "[r]ight to life is a fundamental right under Article 21 of the Constitution and it includes the right of enjoyment of pollution-free water and air for full enjoyment of life." (citing Subhash Kumar v. State of Bihar, A.I.R. 1991 S.C. 420 (India)).

147. Mont. Envtl. Info. Ctr. v. Dep't of Envtl. Quality, 988 P.2d 1236 (Mont. 1999).

148. MONT. CONST. art. II, § 3.

149. *Id.* art. IX, § 1.

150. *Mont. Envtl. Info. Ctr.*, 988 P.2d at 1246.

environment. [151] In December 2013, Pennsylvania became the second state to recognize a similar fundamental right to a quality environment.[152]

V. EXPLICATION OF CONSTITUTIONAL ENVIRONMENTAL RIGHTS IN *ROBINSON TOWNSHIP V. COMMONWEALTH OF PENNSYLVANIA*

A. Overview of the Case

In *Robinson Township v. Commonwealth of Pennsylvania*,[153] the Pennsylvania Supreme Court held in a plurality decision that public natural resources are protected by the Pennsylvania Constitution as public trust assets, which the state has a fiduciary obligation to maintain,[154] and also that individuals cannot be deprived of their substantive due process rights with regard to their private enjoyment of property in violation of the Pennsylvania and U.S. Constitutions.[155] The case concerned a statute, Act 13 of 2012, that was intended to, among others things, permit optimal development of the Commonwealth's oil and gas resources.[156] Enactment of Act 13 was prompted by increases in natural gas drilling operations in the Marcellus Shale Formation in Northeastern Pennsylvania.[157] Prior to 2003,

151. Montana has subsequently been reluctant to entertain environmental rights cases. *See, e.g.,* Lohmeier v. Gallatin Cnty., 135 P.3d 775, 778 (Mont. 2006) (holding that plaintiffs did not establish a violation of their right to a clean and healthful environment sufficient to give them standing).

152. *See generally* Robinson Twp. v. Commonwealth, 83 A.3d 901 (Pa. 2013).

153. *Id.* at 956–57.

154. *See id.*

155. *Id.* at 1008.

156. *Id.* at 969. Other objectives included protecting the property rights of people residing in areas hosting oil and gas operations; and protecting natural resources, environmental rights, and values secured by the Constitution of Pennsylvania.

157. *Id.* at 915. The Marcellus Shale Sedimentary Bedrock Formation straddles portions of Pennsylvania, New York, Ohio, West Virginia, Virginia, Maryland, New Jersey, Kentucky, Tennessee, and Southern Ontario, Canada (beneath Lake Erie). *Marcellus Shale – Appalachian Basin Natural Gas Play,* GEOLOGY.COM, http://geology.com/articles/marcellus-shale.shtml (last visited Dec. 14, 2014).

it was not technologically feasible to sustain industrial-scale production of natural gas from the formation because of the limited size and scattered nature of the gas pockets.[158] With the advent of hydraulic fracturing or "fracking" and horizontal drilling, however, it is now possible to recover natural gas from unconventional sources on an industrial scale.[159]

Act 13 revised and re-codified Pennsylvania's Oil and Gas Act.[160] Two chapters, Chapter 32, which concerns well permitting, and Chapter 33, which prohibits local regulation of oil and gas operations, were at issue in the case. Per Chapter 32, the Department of Environmental Protection (DEP) "shall waive" requirements for setbacks from sensitive water resources provided that oil and gas operators submit water protection plans.[161] Industry was further accommodated by Section 3215(d), which prohibited municipalities from appealing DEP's decisions regarding well permits.[162]

Chapter 33, Local Ordinances Relating to Oil and Gas Operations, accomplished an unprecedented "displacement of

158. *Robinson Twp.*, 83 A.3d at 914.

159. *Id.*

160. *Id.* at 915.

> "The new chapters of the Oil and Gas Act are:
>
> Chapter 23, which establishes a fee schedule for the unconventional gas well industry, and provides for the collection and distribution of these fees;
>
> Chapter 25, which provides for appropriation and allocation of funds from the Oil and Gas Lease Fund;
>
> Chapter 27, which creates a natural gas energy development program to fund public or private projects for converting vehicles to utilize natural gas fuel;
>
> Chapter 32, which describes the well permitting process and defines statewide limitations on oil and gas development;
>
> Chapter 33, which prohibits any local regulation of oil and gas operations, including via environmental legislation, and requires statewide uniformity among local zoning ordinances with respect to the development of oil and gas resources; and
>
> Chapter 35, which provides that producers, rather than landowners, are responsible for payment of the unconventional gas well fees authorized under Chapter 23." *Id.*

161. *Id.* at 939 (citing 58 PA. CONS. STAT. § 3215(b)(4) (2012)).

162. 58 PA. CONS. STAT. § 3215(d) ("Notwithstanding any other law, no municipality or storage operator shall have a right of appeal or other form of review from the [Department of Environmental Protection]'s decision.").

prior planning, and derivative expectations, regarding land use, zoning, and enjoyment of property."[163] Section 3304 established requirements for uniform local ordinances that "shall allow for the reasonable development of oil and gas resources."[164] Accordingly, all political subdivisions were required to, among other things, authorize oil and gas operations as a permitted use in all zoning districts and were prohibited from imposing any restrictions on structural height, lighting or noise more stringent than those presently permitted for industrial uses within the zoning district. [165] Municipalities were also prohibited from imposing any "limits or conditions on subterranean operations or hours of operation of compressor stations and processing plants or hours of operation for the drilling of oil and gas wells or the assembly and disassembly of drilling rigs."[166]

Act 13 was signed into law on February 14, 2012. In response, a group of "citizens" filed a petition for review in the Commonwealth Court seeking a declaration that Act 13 was unconstitutional and a permanent injunction prohibiting application of Act 13.[167] An *en banc* panel of the Commonwealth Court held Act 13 unconstitutional in part and enjoined

163. *Robinson Twp*., 83 A.3d at 972.

164. 58 PA. CONS. STAT. § 3304(a).

165. *Id*. § 3304(b)(3), (5).

166. *Id.* § 3304(b)(10); *see also Robinson Twp*., 83 A.3d at 972. The remaining provisions of Chapter 33 establish enforcement mechanisms. For instance, Section 3306 authorizes civil actions against municipalities to enjoin enforcement of local ordinances deemed to be contrary to the provisions of Act 13 or the Commonwealth's Municipalities Planning Code. 58 PA. CONS. STAT. § 3306. Sections 3307 and 3308 impose significant financial consequences—in the form of shifting attorneys' fees and the withholding of unconventional gas well fees—on local governments that fail to accommodate Act 13. *Id.* §§ 3307, 3308.

167. *Robinson Twp*., 83 A.3d at 913–14 (The challengers, or "citizens," are several Pennsylvania municipalities, two residents and local officials, the Delaware Riverkeeper Network, and a physician.).

application of the implicated sections.[168] Both parties[169] cross-appealed to the Pennsylvania Supreme Court.[170]

B. Opinion Announcing the Judgment of the Court (OAJC)

The justices writing the OAJC utilized five[171] of Bobbitt's six analytical arguments to explicate the citizens' and state's rights and obligations under the Environmental Rights Amendment of the Pennsylvania Constitution, and also to assess the provisions of Act 13 against those rights. The Environmental Rights Amendment, Article 1, Section 27 of the Pennsylvania Constitution, states that:

> The people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic and esthetic values of the environment. Pennsylvania's public natural resources are the common property of all the people, including generations yet to come. As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of all the people.[172]

Article 1 of the Pennsylvania Constitution is the Commonwealth's Declaration of Rights, which reserves "certain inherent and indefeasible rights" to the people.[173] Such fundamental rights "are inherent in man's nature and preserved rather than created by the Pennsylvania Constitution."[174] Accordingly, Article 1 rights impose *structural* limitations on the power of state government. For example, the General Assembly's broad and flexible police power authorizes it to enact laws

168. *Id.* at 914 (referencing Robinson Twp. v. Commonwealth, 52 A.3d 463, 494 (Pa. Commw. Ct. 2012)).

169. The Commonwealth was represented by the Office of the Attorney General, the Public Utilities Commission, and the Department of Environmental Protection. *Id.* at 913–14.

170. *Id.* In addition to the constitutionality of Act 13, the parties raised claims concerning standing, ripeness, political question, special laws, and the separation of powers doctrine.

171. The justices applied structural, textural, historical, doctrinal, and prudential arguments. *See generally Robinson Twp.*, 83 A.3d 901.

172. PA. CONST. art. 1, § 27.

173. *Id.* art. 1, § 1.

174. *Robinson Twp.*, 83 A.3d at 948.

promoting public health, safety, and welfare, but such laws may not unreasonably infringe upon fundamental rights reserved to the people.[175] It is the duty of courts "to see to it that no right secured by the supreme law of the land is impaired or destroyed by legislation."[176]

The OAJC began its analysis of how Article 1, Section 27 restrains the exercise of police power by the government by undertaking a phrase-by phrase assessment of the *text* of the constitutional provision as the actual language is popularly understood.[177] In assessing the first clause—"[t]he people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic and esthetic values of the environment"—the court observed that the clause affirms a limitation on the state's power to act contrary to this right.[178] Moreover, the use of the word *preservation* "implicates a holistic analytical approach to ensure both the protection from harm or damage and to ensure the maintenance and perpetuation of an environment of quality for the benefit of future generations."[179] The reservation of this right in the people places an obligation on state and local government to refrain from "unduly infringing upon the right" and upon the judiciary to vindicate Section 27 rights.[180] The court recognized that "clean air" and "pure water" are relative attributes and, therefore, deference is due to agency expertise in making determinations about whether standards have been met.[181] Nonetheless, the court set a benchmark for judicial decisions based on the express purpose of Article 27 that decisions must provide a "bulwark against actual or likely degradation of, *inter alia,* our air and water quality."[182] Consequently, economic development may not proceed at the "expense of an unreasonable degradation of the environment."[183]

175. *Id.* at 947.
176. *Id.* at 929 (quoting Smyth v. Ames, 169 U.S. 466, 527–28 (1898)).
177. *Robinson Twp*., 83 A.3d at 943.
178. *Id.* at 948.
179. *Id.* at 951.
180. *Id*. at 952.
181. *Id.* at 953.
182. *Id* (quoting Mont. Envtl. Info. Ctr. v. Dep't of Envtl. Quality, 988 P.2d 1236, 1249 (Mont. 1999)).
183. *Robinson Twp*., 83 A.3d at 954.

Rather, the state must exercise its police power "in a manner that promotes sustainable property use and economic development."[184]

The second sentence of Article 27—"Pennsylvania's public natural resources are the common property of all the people, including generations yet to come"—reserves common ownership of public natural resources in the people, including those living and those yet to be born.[185] Such resources represent the "full array of resources implicating the public interest," including state-owned lands, waterways, and mineral rights, along with ambient air, surface and ground water, and wild flora and fauna.[186]

The final clause—"[a]s trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of all the people"—imposes both negative and affirmative duties on the Commonwealth.[187] The provision establishes that the Commonwealth, under the public trust doctrine, must manage the corpus of the trust (public natural resources) for the named beneficiaries (the people).[188] Because the Commonwealth, rather than the General Assembly, is named as the trustee of public natural resources, "all existing branches and levels of government derive constitutional duties and obligations with respect to the people."[189] The Commonwealth must refrain from acts that permit or encourage the degradation of public natural resources.[190] The Commonwealth must also act affirmatively to protect the environment via legislative action.[191] In fulfilling these two obligations, the Commonwealth must be cognizant of how decisions will impact all beneficiaries, including generations yet to come.[192] The court further noted that these duties "are tempered by legitimate development tending to improve upon the

184. *Id.*
185. *Id.*
186. *Robinson Twp.*, 83 A.3d at 955.
187. *Id.* at 949, 955.
188. *Id.* at 956.
189. *Id.* at 977.
190. *Id.* at 957.
191. *Id.* at 958.
192. *Robinson Twp.*, 83 A.3d at 959.

lot of Pennsylvania's citizenry, with the evident goal of promoting sustainable development."[193]

The court's textual interpretation of Article 27 is supported by the amendment's legislative *history*. When it was proposed in the 1969–1970 and 1971–1972 legislative sessions, the Environmental Rights Amendment received the unanimous assent of both chambers.[194] The Environmental Rights Amendment grew out of recognition that through centuries of virtually unrestrained exploitation[195] of lumber, game, and coal, Pennsylvanians had "uglified our land and . . . called it progress."[196] Aware of this history and the associated financial, health, and quality of life costs,[197] the drafters of the amendment sought to create a "legally enforceable right to protect and enhance environmental quality"[198] by giving the natural environment "the same Constitutional protection we give to our political environment."[199] On May 18, 1971, the voters of Pennsylvania ratified the proposed amendment by a margin of nearly four to one.[200] The *Robinson* court concluded that, through their ratification, the citizens had delegated public trust duties "concomitantly to all branches and levels of government in recognition that the quality of the environment is a task with both local and statewide implications, and to ensure that all government neither infringed upon the people's rights nor failed to act for the benefit of the people."[201] Additionally, the court observed that "Pennsylvania's past is the necessary prologue

193. *Id.* at 958.
194. *Id.* at 961.
195. *Id.* at 963.
196. *Robinson Twp.*, 83 A.3d at 961. Pennsylvania's history of environmental tragedies include the 1948 Donora smog incident in which corrosive industrial smoke caused twenty deaths by asphyxiation and sent 7,000 people to the hospital; the 1959 Knox Mine disaster in which the Susquehanna River disappeared into a coal vein; the discharge of mine water in 1961 from a Glen Alden mine that killed more than 300,000 fish; and the Centralia mine fire that started in 1962 and is still burning (and which led to the relocation of all residents in 1984).
197. *Id.* at 963.
198. *Id.* at 952.
199. *Id.* at 954
200. *Id.* at 962.
201. *Id.* at 963.

here: the reserved rights, and the concomitant duties and constraints, embraced by the Environmental Rights Amendment, are a product of our unique history."[202]

The Pennsylvania Supreme Court noted that nothing in its precedent offered substantive and controlling guidance with respect to the type of claims asserted by the citizens in this case.[203] The precedent that did exist weakened the import of the plain language of the constitution such that the viability of constitutional environmental claims was limited by whether the General Assembly had acted and by that body's policy choices. [204] The court rejected this precedent because it described the Commonwealth's obligations in much narrower terms than what was in the text of Article 27. It assumed that judicial relief is contingent upon and constrained by legislative action, and, most significantly, it had "the effect of minimizing the constitutional duties of executive agencies and the judicial branch, and circumscribing the abilities of these entities to carry out their constitutional duties independent of legislative control."[205] The court asserted that such precedent did not diminish the textual, organic rights contained in the Environmental Rights Amendment nor did it preclude the court from recognizing and enforcing the plain and original understanding of those rights.[206] Thus, the court rejected *doctrinal* arguments based on its "obligation to vindicate the rights of its citizens where the circumstances require it and in accordance with the plain language of the Constitution."[207]

202. *Robinson Twp.*, 83 A.3d at 976.

203. *Id.* at 969.

204. *Robinson Twp.*, 83 A.3d at 950, 955; *see also* Dernbach, *supra* note 6, at 696 ("In the first decision, *Commonwealth v. National Gettysburg Battlefield Tower*, the courts held that the Amendment created a self-executing public right, but that construction of an observation tower overlooking the Gettysburg Civil War battlefield would not violate that right. Shortly thereafter, in *Payne v. Kassab*, the commonwealth court developed a three-part test for applying the Amendment that utterly ignores the constitutional text, but which has been widely used ever since. The test is so weak that litigants using it to challenge environmentally damaging projects are almost always unsuccessful." (citations omitted)).

205. *Robinson Twp.*, 83 A.3d at 967.

206. *Id.* at 969.

207. *Id.*

Based on the structural, textual, historical, and doctrinal arguments described above, the court concluded that Pennsylvania's "organic charter . . . now explicitly guarantees the people's right to an environment of quality and the concomitant expressed reservation of a right to benefit from the Commonwealth's duty of management of our public natural resources."[208]

In applying the newly explicated rights and obligations to Act 13, the court also considered *prudential* arguments. The court was concerned that Act 13 upset the reasonable expectations of property owners, particularly those who purchased homes in residential areas with an expectation that the surrounding environment would continue to be conducive to family life.[209] Because Chapter 33 of Act 13 "fundamentally disrupted those expectations," the court held that the General Assembly transgressed its delegated police powers.[210] It further held particular portions of the Act unconstitutional because the provisions failed to satisfy the constitutional requirements that the General Assembly protect the corpus of the trust and treat all beneficiaries equally[211] or because the provisions failed to "ensure compliance with the express command of the Environmental Rights Amendment that the Commonwealth trustee 'conserve and maintain,' *inter alia,* the waters of the Commonwealth."[212]

C. Concurring Opinion

Justice Max Baer concurred in finding that portions of Act 13 were unconstitutional. He rested his decision, though, on a finding that these sections violated substantive due process as defined by precedent (*i.e., doctrinal* analysis).[213] Justice Baer used substantive due process to vindicate the existing right of

208. *Id.* at 976.
209. *Robinson Twp.*, 83 A.3d at 977.
210. *Id.*
211. *Id.* at 980.
212. *Id.* at 984.
213. *See id.* at 1008 ("[B]ecause these statutes force municipalities to enact zoning ordinances, which violate the substantive due process rights of their citizenries, they cannot survive constitutional scrutiny.").

quiet enjoyment of private property.[214] Application of substantive due process in this fashion protects individuals against "the exercise of power without any reasonable justification in the service of a legitimate governmental objective."[215] That is, the substantive due process guarantee protects individuals against the arbitrary and oppressive exercise of government power, regardless of the fairness of procedures used to implement the government policy.[216] Thus, challenges may be brought to "test whether government regulation of property is fundamentally rational."[217]

As a general rule per Article 1, Section 1 of the Pennsylvania Constitution and the Fifth and Fourteenth Amendments of the U.S. Constitution, no person may be deprived of his or her property rights without due process of law.[218] However, private property owners are subject to certain limitations on their use of property. The first is the precept *sic utere tuo ut alienum non laedas*.[219] That is, use your own property as not to injure your neighbors.[220] Zoning ordinances provide another limitation on the use of private property. Zoning ordinances were first developed in the early twentieth century "to combat the complexities of rapidly developing urban and industrial life."[221] In Pennsylvania, as in all states, municipalities derive their authority to zone from the legislature. Specifically, the Pennsylvania Municipalities Planning Code provides that "each municipality has the authority to enact, amend, and repeal

214. *Id. See generally* Vill. of Euclid v. Ambler Realty Co., 272 U.S. 365 (1926).

215. Cnty. of Sacramento v. Lewis, 523 U.S. 833, 846 (1998).

216. Daniels v. Williams, 474 U.S. 327, 331 (1986).

217. Robin Kundis Craig, *Due Process Challenges, in* PRINCIPLES OF CONSTITUTIONAL ENVIRONMENTAL LAW 277, 290 (James R. May ed., 2011) (citing Lingle v. Chevron USA, Inc., 544 U.S. 528, 542 (2005)).

218. *Robinson Twp.*, 83 A.3d at 1001; *see also* PA. CONST. art. 1, § 1 ("All men are born equally free and independent, and have certain inherent and indefeasible rights, among which are those of enjoying and defending life and liberty, of acquiring, possessing and protecting property and reputation, and of pursuing their own happiness.").

219. *Robinson Twp.*, 83 A.3d at 1001.

220. *Id.* at 931.

221. *Id.* at 1002 (citing Vill. of Euclid v. Ambler Realty Co., 272 U.S. 365, 386 (1926)).

zoning ordinances."[222] As this is a grant of authority from the legislature to municipal governments, the General Assembly may withdraw the delegated authority subject to an important limitation. The withdrawal of a grant of authority must be constitutionally permissible.[223] Thus, the issue for Justice Baer was, "May the General Assembly, through a law applicable statewide, remove *en toto* from local municipalities the apparatus it provided to vindicate the individual substantive due process rights of Pennsylvanian landowners?"[224] He concluded that "once a state authorizes political subdivisions to zone for the best interests of the health, safety and character *of their communities,* and zoning ordinances are enacted and relied upon by the residents of a community, the state may not alter or invalidate those ordinances, given their constitutional underpinning."[225]

Justice Baer began his analysis by noting that in a "run of the mill" zoning case, a citizen challenges a local zoning ordinance as violating his or her property rights without due process of law.[226] A challenger will succeed only if he or she can show that the government's interference with the property owner's right to enjoyment of his or her land does not bear "a substantial relationship to the health, safety, morals, or general welfare of the community."[227] Act 13, however, is unlike a typical zoning ordinance. Rather than limiting use of private property, Act 13 expands private property rights by mandating that municipalities permit residential and agricultural property owners to bring oil and gas operations onto their land.[228] Consequently, the government intrusion is not upon the landowner who wishes to have oil and gas operations on his or her property, but upon that landowner's neighbors.[229] Thus, "the

222. *Robinson Twp.*, 83 A.3d at 1002 (quoting Hoffman Mining Co. v. Zoning Hearing Bd. of Adams Twp., 32 A.3d 587, 603 (Pa. 2011)).

223. *Id.* at 1006.

224. *Id.* at 1002.

225. *Id.* at 1006. (internal quotations and citations omitted, emphasis in the original).

226. *Id.* at 1004.

227. *Id.* at 1003 (quoting Surrick v. Zoning Hearing Bd., 382 A.2d 105, 108 (Pa. 1977)).

228. *Robinson Twp.*, 83 A.3d at 1005.

229. *Id.*

General Assembly is mandating that municipalities pass land-use and zoning ordinances, which permit landowners, statewide, to violate *sic utere tuo ut alienum non laedas*"[230] and which fail to provide impacted neighbors with "any remedy when the inevitable damage to the enjoyment of private property occurs."[231]

Federal case law teaches that constitutionally valid zoning "is to be determined . . . by considering [the restriction] in connection with the circumstances and the locality"[232] and that "[l]and-use restrictions designate districts in which only compatible uses are allowed and incompatible uses are excluded."[233] Act 13 directly contradicts these edicts. That is, Act 13 "violates substantive due process because it does not protect the interests of neighboring property owners from harm, alters the character of neighborhoods and makes irrational classifications" (*e.g.,* it requires municipalities to allow drilling operations and the use of explosives in all zoning districts).[234] Contrary to *Village of Euclid*, "Sections 3215(b)(4) and (d), 3303, and 3304 not only allow entry of the pigs into the parlor, but further decree that local governments enact zoning ordinances that expressly permit those intrusions, without exception."[235]

For all of the reasons stated above, the lead and concurring opinions held that sections 3215(b)(4) and (d), 3303, and 3304 of Act 13 are unconstitutional.[236] Additionally, the court enjoined certain specified parts of chapters 32 and 33, which implement or enforce these invalidated provisions.[237] The lead opinion further directed the General Assembly to exercise its power in a manner that reasonably accounts for the environmental features of

230. *Id.*

231. *Id.* at 1008.

232. Vill. of Euclid v. Ambler Realty Co., 272 U.S. 365, 388 (1926).

233. City of Edmonds v. Oxford House, Inc., 514 U.S. 725, 732 (1995) (internal quotes omitted).

234. *Robinson Twp.,* 83 A.3d at 1006.

235. *Id.* at 1008; *see also Vill. of Euclid*, 272 U.S. at 388 ("A nuisance may be merely a right thing in the wrong place, like a pig in the parlor instead of the barnyard.").

236. *Robinson Twp.,* 83 A.3d at 1008.

237. *Id.* at 916.

affected locales in accordance with principles of sustainable development.[238]

IV. A CONSTITUTIONAL RIGHT TO ATMOSPHERIC INTEGRITY

Both Montana and Pennsylvania have constitutional text explicitly reserving a fundamental environmental right in the people. Despite the lack of corresponding text in the U.S. Constitution, the genesis of a federal right to atmospheric integrity may be found through historical, doctrinal, prudential, structural, and ethical analysis. I will begin, though, with a few words about the lack of textual support for a right to atmospheric integrity in the U.S. Constitution.

A. Text

Clearly, there is no explicit mention of atmospheric integrity in the U.S. Constitution.[239] This absence is likely due to the founding fathers' inability to imagine a world transformed by human activity. One commentator described the drafters of the Bill of Rights as "ecologically ignorant."[240] Certainly, the state of scientific knowledge in 1791 was less advanced than it is today. However, there is evidence that James Madison at least considered human impacts on the environment: "[I]t is difficult to believe that it lies with [mankind] so to remodel the work of nature as it would be remodelled [sic], by a destruction not only of individuals, but of entire species."[241] Madison insisted that the laws of nature forbade the destruction of entire species.[242]

238. *Id.* at 981.

239. Over the years, there have been unsuccessful attempts to add environmental rights to the constitution. *See generally* Carole L. Gallagher, *The Movement to Create an Environmental Bill of Rights: From Earth Day, 1970 to the Present,* 9 FORDHAM ENVTL. L.J. 107 (1997); Robin Kundis Craig, *Should there be a Constitutional Right to a Clean/Healthy Environment?*, 34 ENVTL. L. REP. 11013 (2004).

240. Freyfogle, *supra* note 12, at 160.

241. John F. Hart, *Fish, Dams, and James Madison: Eighteenth-Century Species Protection and the Original Understanding of the Takings Clause*, 63 MD. L. REV. 287, 316 (2004).

242. *Id.* at 291.

Whatever the drafters' actual knowledge, given that the purpose of the constitution is to provide for society's orderly progression through time "to ourselves and our posterity," [243] it can be presumed that the founders believed that the physical world would and should remain in a state hospitable to human life.

B. History

As noted above, historical arguments are based on a construction of the original understanding of a particular constitutional provision. Where there is an absence of an explicit provision, one can look to the historical understanding of a concept. For example, when asked to determine whether a law prohibiting assisted suicide violated Due Process, the Court examined "our Nation's history, legal traditions, and practices."[244] I concede that it would be futile to assert that our nation has a history and legal tradition of atmospheric protection beyond those protections afforded by the Clean Air Act. If one considers that atmospheric integrity is essential for human subsistence, however, the question becomes whether our nation has a history of recognizing intergenerational responsibility. I assert that conceptions of intergenerational responsibility can be traced back to ancient Greece and take the form of both an obligation to refrain from unduly burdening future generations and to pass along to posterity a better, more stable society.

During Aristotle's time, every Athenian who wished to become a citizen was required to take an oath which stated, in relevant part, "[m]y native land I will not leave a diminished heritage but greater and better than when I received it."[245] The concept of intergenerational responsibility was also expressed in Roman law nearly 1,500 years ago. The text of the *Institutes of Justinian* declared that, "[b]y the laws of nature, these things are common to mankind – the *air*, running water, the sea, and

243. U.S. CONST. pmbl.

244. Washington v. Glucksberg, 521 U.S. 702, 710 (1997).

245. John Wilson Taylor, *The Athenian Ephebic Oath,* 13 THE CLASSICAL JOURNAL 495, 499 (1918), *available at,* http://www.jstor.org/stable/3287904. Aristotle lived from 384–322 B.C.E. *Aristotle,* HISTORY.COM, http://www.history.com/topics/ancient-history/aristotle (last visited Dec. 20, 2014).

consequently the shores of the sea."[246] This ancient pronouncement provides the foundation of the Public Trust Doctrine, which holds that the sovereign (*i.e.,* the state) holds shared resources—the *jus publicum*—in trust for the public. Trustees have a fundamental, common law duty to preserve and maintain trust assets for both present and future beneficiaries of the trust.[247]

Expressions of intergenerational obligations may also be found in American political discourse from the very earliest days of the union up until the present. For example, John Adams wrote that he studied the useful science of government so that his grandchildren could pursue more cultured disciplines, such as painting and poetry.[248] Thomas Jefferson and James Madison also documented their thoughts on intergenerational obligations. Using land as an analogy for debt and civil law, Jefferson wrote to Madison,

> I set out on this ground, which I suppose to be self evident, '*that the earth belongs in usufruct to the living*;' that the dead have neither powers nor rights over it. The portion occupied by an

246. JUSTINIAN, THE INSTITUTES OF JUSTINIAN 158 (Thomas Collett Sandars ed. & trans., 1st Am. ed. 1876) (emphasis added). The *Institutes of Justinian* is one of three fundamental works of jurisprudence issued from 533 to 534 A.D by order of the Eastern Roman Emperor Justinian I. Collectively, the works were intended to be the sole source of Roman law. Roman law provides the foundation for our own Western legal tradition. *See* John W. Head, *Codes, Cultures, Chaos, and Champions: Common Features of Legal Codification Experiences in China, Europe, and North America*, 13 DUKE J. COMP. & INT'L L. 1, 38–39 (2003).

247. Mary C. Wood, *Atmospheric Trust Litigation Across the World*, *in* FIDUCIARY DUTY AND THE ATMOSPHERIC TRUST 99, 106, 109 n.59 (Ken Coghill et al. eds., 2012).

248. Letter from John Adams to Abigail Adams (May 12, 1780) (on file with in Adams Family Papers, Massachusetts Historical Society), *available at* http://www.masshist.org/digitaladams/archive/doc?id=L17800512jasecond&bc=%2Fdigitaladams%2Farchive%2Fbrowse%2Fletters_1779_1789.php ("The Science of Government it is my Duty to study, more than all other ~~Studies~~ Sciences: the Art of Legislation and Administration and Negotiation, ought to take Place, indeed to exclude in a manner all other Arts. I must study Politicks and War that my sons may have liberty to study ~~Painting and Poetry~~ Mathematicks and Philosophy. My sons ought to study Mathematicks and Philosophy, Geography, natural History, Naval Architecture, navigation, Commerce and Agriculture, in order to give their Children a right to study Painting, Poetry, Musick, Architecture, Statuary, Tapestry and Porcelaine." (alterations in original)).

> individual ceases to be his when himself ceases to be, and reverts to the society. . . . Then no man can by *natural right* oblige the lands he occupied, or the persons who succeed him in that occupation, to the paiment [sic] of debts contracted by him. For if he could, he might during his own life, eat up the usufruct of the lands for several generations to come, and then the lands would belong to the dead, and not to the living, which would be reverse of our principle.[249]

Jefferson went on to assert that the current generation may not burden future generations with debt or with a perpetual constitution. He stated that a nation should not contract more debt that it can repay within a generation (the duration of which he calculated to be nineteen years).[250] Similarly, he declared that, "[e]very constitution, then, and every law, naturally expires at the end of 19 years."[251] In response, Madison attacked each of Jefferson's proposals on practical grounds while generally accepting Jefferson's objective to make constitutions sensitive to the majority will of each successive generation because, to do otherwise, would be "an act of force and not of right."[252] Madison observed that obligations may, indeed, pass from one generation to the next, but stipulated that future generations should not be unduly burdened by contemporary decisions.[253] He wrote, "it would give me singular pleasure to see it first announced to the world in a law of the U. States, and always kept in view as a

249. Letter from Thomas Jefferson to James Madison (Sept. 6, 1789), *in* THE PAPERS OF THOMAS JEFFERSON DIGITAL EDITION (Barbara B. Oberg & J. Jefferson Looney eds., 2008) (hereinafter "Letter Sept. 6, 1789"). Usufruct refers to "the legal right of using and enjoying the fruits or profits of something belonging to another." WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY 1299 (1984).

250. Letter Sept. 6, 1789, *supra* note 249.

251. *Id.*

252. ADRIENNE KOCH, JEFFERSON AND MADISON: THE GREAT COLLABORATION 70, 73 (1950) (quoting Letter Sept. 6, 1789, *supra* note 249).

253. Letter from James Madison to Thomas Jefferson (Feb. 4, 1790), in 5 THE WRITINGS OF JAMES MADISON 437, 439, 441 (Gaillard Hunt, ed., 1904), *available at* http://oll.libertyfund.org/titles/1937#lf1356-05_head_163 ("There seems, then, to be some foundation in the nature of things; in the relation which one generation bears to another, for the descent of obligations from one to another. Equity may require it. Mutual good may be promoted by it. And all that seems indispensable in stating the account between the dead and the living, is to see that the debts against the latter do not exceed the advances made by the former.").

salutary restraint on living generations from *unjust* & *unnecessary* burdens on their successors."[254]

Thomas Paine similarly wrote in 1792 that,

> The Parliament or the people of 1688 . . . had no more right to dispose of the people of the present day, or to bind or to control them *in any shape whatever*, than the Parliament or the people of the present day have to dispose of, bind, or control those who are to live a hundred or a thousand years hence.[255]

Jefferson, Madison, and Paine were all writing in a political context. It is not too far of a stretch to assert, though, that their command that one generation not unduly burden another is applicable to the nation's response to climate change. Failure to act now to reduce atmospheric levels of greenhouse gases to levels compatible with climate stability will indeed "bind or control those who are to live a hundred or a thousand years hence."[256]

Nearly fifty years after Paine wrote *The Rights of Man*, Abraham Lincoln spoke to a group of students about positive responsibilities toward future generations. Specifically, he noted the duty

> to transmit [goodly land and a political edifice of liberty and equal rights], the former, unprofaned by the foot of an invader; the latter, undecayed by the lapse of time and untorn by usurpation, to the latest generation that fate shall permit the world to know. This task gratitude to our fathers, justice to ourselves, duty to posterity, and love for our species in general, all imperatively require us faithfully to perform.[257]

President Barack Obama, likewise, invoked our society's responsibility to future generations in his 2014 State of the Union Address. He stated, "when our children's children look us in the eye and ask if we did all we could to leave them a safer, more

254. *Id.* at 441 (emphasis in original).

255. THOMAS PAINE, THE RIGHTS OF MAN: BEING AN ANSWER TO MR. BURKE'S ATTACK ON THE FRENCH REVOLUTION 13 (Eckler 1892) (emphasis in original).

256. PAINE, *supra* note 255, at 13.

257. Abraham Lincoln, The Perpetuation of Our Political Institutions: Address before the Young Men's Lyceum of Springfield, Illinois (Jan. 27, 1838), *available at* http://patriotpost.us/documents/57 (last visited Oct. 4, 2014).

stable world, with new sources of energy, I want us to be able to say yes, we did."[258] History and current discourse thus demonstrate both an obligation to refrain from unduly burdening future generations and to pass along a stronger, more stable society.

History also tells us that Madison and his contemporaries accepted regulation of natural resources, specifically laws that required mill dam operators to accommodate migratory fish, as being broadly aimed at public utility and beneficial to the community at large.[259] This perception is at odds with modern case law concerning regulatory takings.[260] During Madison's time, there was "wide consensus among contemporary legislators that the constitutional rights of affected landowners were not violated by accommodating the public's interest in natural abundance, instead of sacrificing the public good in order to maximize the value of private property."[261] Accordingly, the fish-passage laws and the broader concern for the public utility of natural resources that they reflect should be "recognized as part of the American legal tradition that was already established when the Constitution and the Bill of Rights were adopted."[262] In other words, "the history of the early fish-passage laws should lead the Court to affirm 'the constitutional power of the State to insist that its natural advantages shall remain unimpaired by its citizens' in the context of habitat preservation laws"[263], including climate change laws and regulations.

C. Doctrine

Doctrinal arguments for constitutional rights are derived from precedent or from commentary on precedent. Admittedly, U.S. precedent supporting a constitutional environmental right is

258. *President Barack Obama's State of the Union Address*, THE WHITE HOUSE (Jan. 28, 2014), http://www.whitehouse.gov/the-press-office/2014/01/28/president-barack-obamas-state-union-address.

259. Hart, *supra* note 241, at 315.

260. *See, e.g.*, Lucas v. S.C. Coastal Council, 505 U.S. 1003 (1992).

261. Hart, *supra* note 241, at 289.

262. *Id.* at 290.

263. *Id.* at 317 (quoting Hudson Cnty. Water Co. v. McCarter, 209 U.S. 349, 356–57(1908) (Holmes, J. delivered the opinion of the court)).

poor. Federal courts have consistently found that there are no constitutionally-protected environmental rights pursuant to the Fifth, Ninth, and Fourteenth Amendments.[264] At least one federal court, however, has expressed its opinion that constitutional recognition of a fundamental right to environmental integrity may one day be recognized. In response to a cause of action claiming that,

> [t]he right to enjoy the beauty of God's creation, and to live in an environment that preserves the unquantified amenities of life, is part of the liberty protected by the Fifth and Fourteenth Amendments to the Constitution of the United States . . . and is also one of those unenumerated rights retained by the people . . . as provided in the Ninth Amendment, [265]

the Federal District Court for the Eastern District of Arkansas stated that "[s]uch claims, even under our present Constitution, are not fanciful and may, indeed, some day, in one way or another, obtain judicial recognition."[266] The court went on to state, however, that the plaintiffs had "not stated facts which would under the present state of the law constitute a violation of their constitutional rights."[267] Similarly, in a dissent to an opinion[268] that denied standing to the Sierra Club to challenge the development of a ski resort in the Sierra Nevada Mountains, Justice Douglas implicitly recognized a basic right to a clean and healthy environment.[269] These sympathetic responses indicate

264. Gallagher, *supra* note 239, at 117.

265. Envtl. Def. Fund, Inc. v. Corps of Eng'rs of U. S. Army, 325 F. Supp. 728, 739 (D. Ark. 1971).

266. *Id.*

267. *Id.*

268. Sierra Club v. Morton, 405 U.S. 727, 741–42 (1972) (Douglas, J., dissenting).

269. Gallagher, *supra* note 239, at 110. In another case, *Environmental Defense Fund Inc. v. Hoerner Waldorf Corp.*, a federal judge wrote, "I have no difficulty in finding that the right to life and liberty and property are constitutionally protected. Indeed the Fifth and Fourteenth Amendments provide that these rights may not be denied without due process of law, and surely a person's health is what, in a most significant degree, sustains life. So it seems to me that each of us is constitutionally protected in our natural and personal state of life and health. But the constitutional protection is against governmental action either federal or state." Envtl. Def. Fund Inc. v. Hoerner Waldorf Corp., 3 ENVTL. L. REP. 20794, 20794 (D. Mont. 1970). As plaintiffs

that the notion of a fundamental right to environmental integrity is not without merit.

As demonstrated by the holding in *Robinson Township,* precedent can be rejected, particularly when courts accept historical evidence of constitutional intent. After all, the doctrine of *stare decisis* is not an inexorable command.[270] The court in *Robinson Township* looked to the legislative history of the Environmental Rights Amendment to determine that legislators and citizens intended that article 1, section 27 should compel the Commonwealth of Pennsylvania to exercise its police power in a manner that fosters sustainable development while respecting the reserved rights of the people to a clean, healthy, and esthetically-pleasing environment.[271] Similarly, courts should consider that James Madison—the author of the Bill of Rights, including the takings clause of the Fifth Amendment—accepted regulation of natural resources on private property for the benefit of the community at large. [272] Correctly understood, then, the takings clause should not be read as an impediment to the protection of environmental quality in the name of the public good.

Courts are not strictly limited to domestic precedent, however. They may look to international law for respected reasoning and guidance. Per the authority of the Supremacy Clause,[273] the Supreme Court has stated that "[i]nternational law is part of our law, and must be ascertained and administered by the courts of justice of appropriate jurisdiction as often as questions of right depending upon it are duly presented for their determination" and that courts should refer to "customs and usages of [c]ivilized nations, . . . not for . . . speculations . . . concerning what the law ought to be, but for trustworthy evidence of what the law really is."[274] Indirect incorporation of international law is an established and appropriate means of

alleged no federal or state action in their pleadings, however, the opinion fell short of recognizing constitutionally-protected rights to a clean and healthful environment. *Id.*; *see also* Gallagher, *supra* note 239, at 113–14.

270. Lawrence v. Texas, 539 U.S. 558, 560 (2003).

271. *See generally,* Robinson Twp. v. Commonwealth, 83 A.3d 901 (Pa. 2013).

272. Hart, *supra* note 241, at 315.

273. U.S. CONST. art. VI, § 2.

274. The Paquete Habana, 175 U.S. 677, 700 (1900).

guiding, interpreting and applying domestic law, particularly with regard to the broad, normative standards set by international human rights law.[275] In fact, "[o]ver the years, a growing number of federal and state courts have referred explicitly to the UN Charter, the Universal Declaration [of Human Rights] and other international human rights instruments to determine the content and contours of various rights guaranteed by U.S. law."[276]

There has been a "greening" of international human rights law such that human rights courts and treaty bodies are seeing an increase in environmental cases implicating human rights.[277] "Human rights law does not protect the environment *per se*."[278] Rather, "the right to private life, or the right to life, can be used to compel governments to regulate environmental risks, enforce environmental laws, or disclose environmental information."[279] The Office for the High Commissioner on Human Rights reported in 2009 that:

> [w]hile the universal human rights treaties do not refer to a specific right to a safe and healthy environment, the United Nations human rights treaty bodies all recognize the intrinsic link between the environment and the realization of a range of human rights, such as the right to life, to health, to food, to water, and to housing.[280]

275. HISKES, *supra* note 56, at 7 ("the concepts of human rights have increasingly been accepted as norms governing the behavior of states."); Nickel, *supra* note 65, at 285; Popovic, *supra* note 14, at 373.

276. Popovic, *supra* note 14, at 369 (quoting Richard B. Lillich, *The Constitution and International Human Rights*, 83 AM. J. INT'L L. 851, 859–60 (1989)); *see, e.g.*, Roper v. Simmons, 543 U.S. 551, 554 (2005) (The Court looked to international law for guidance and determined that, "[t]he overwhelming weight of international opinion against the juvenile death penalty is not controlling here, but provides respected and significant confirmation for the Court's determination that the penalty is disproportionate punishment for offenders under 18.").

277. Boyle, *supra* note 16, at 614.

278. *Id.* at 615.

279. *Id.*

280. *Id.* at 617 (citing U.N. Secretary-General, *Report of the OHCHR on the Relationship Between Climate Change and Human Rights*, ¶ 18, U.N. Doc. A/HRC/10/61 (Jan. 15, 2009)).

Thus, in considering whether there is a right to atmospheric integrity, courts should consider that international human rights instruments, such as the Universal Declaration of Human Rights[281] and the International Covenant on Economic, Social, and Cultural Rights,[282] protect fundamental rights as well as the basic necessities of life that are threatened by catastrophic climate change. Under international law, the United States has assumed obligations to respect, protect, and fulfill human rights.[283] These responsibilities would be further heightened if the Court were to recognize a right to atmospheric integrity as an emergent human right.[284]

Additionally, courts should consider international environmental declarations and conventions, including the 1972 Stockholm Declaration of the Human Environment,[285] the 1992 Rio Declaration on Environment and Development,[286] and the 1992 United Nations Framework Convention on Climate Change (UNFCCC).[287] By considering both international human rights and environmental law, courts may incorporate respect for basic and human rights, environmental integrity, and economic development into their decisions.[288]

D. Prudence

Prudential arguments take political and economic circumstances into account. Given the overwhelming evidence that human-caused climate change is imposing "current impacts with significant costs and extraordinary future risks to society

281. Universal Declaration of Human Rights, G.A. Res. 217 (III) A, U.N. Doc. A/RES/217(III) (Dec. 10, 1948) (establishing the right to life, liberty and security of person).

282. International Covenant on Economic, Social, and Cultural Rights, G.A. Res. 2200A (XXI), U.N. Doc. A/RES/2200A(XXI) (Jan. 3, 1976) The U.S. has signed, but not ratified the resolution..

283. *What are Human Rights,* UNITED NATIONS HUMAN RIGHTS, http://www.ohchr.org/EN/Issues/Pages/WhatareHumanRights.aspx (last visited Dec. 20, 2014).

284. *See supra* notes 69–75 and accompanying text.

285. *See supra* note 84 and accompanying text.

286. *See supra* notes 85–86 and accompanying text.

287. *See supra* notes 46–49 and accompanying text.

288. *See* Boyle, *supra* note 16, at 627.

and natural systems,"[289] and that the costs of inaction greatly outweigh the costs of reducing greenhouse gas emissions,[290] the prudent course of action is to start reducing emissions immediately. A 2006 study revealed "[t]he benefits of strong, early action on climate change outweigh the costs."[291] In particular, the report estimated that failure to mitigate climate change will cost at least five percent—and maybe as much as twenty percent—of global gross domestic product (GDP) each year, "now and forever."[292] Ignoring climate change will damage economic growth and potentially create risks of major disruption to economic and social activity.[293] As temperatures increase, aggregate economic damages will accelerate.[294] Climate change is projected to slow economic growth, hinder poverty reduction efforts, erode food security, and prolong existing and create new poverty traps, particularly in urban areas and emerging hunger hotspots.[295]

Alternatively, the cost of reducing emissions (*i.e.,* mitigation) could be limited to one percent of global GDP each year.[296] Mitigation, with opportunities for growth and development along the way, therefore, represents a wise investment.[297] Effective early action is "the pro-growth strategy for the longer term, and it can be done in a way that does not cap the aspirations for growth of rich or poor countries."[298] Thus, climate science[299] and economic analysis both provide prudential arguments for immediate action to reduce greenhouse gas emissions.

289. AAAS, *supra* note 1, at 1.

290. NICHOLAS STERN, STERN REVIEW: THE ECONOMICS OF CLIMATE CHANGE, at vi (2006).

291. STERN, *supra* note 290, at i.

292. *Id.* at vi.

293. *Id.* at ii.

294. IPCC 2014, *supra* note 1, at 13.

295. *Id*. at 21.

296. STERN, *supra* note 290, at vi.

297. *Id.* at i.

298. *Id.* at viii; *cf.* Independence Hall Ass'n, *The Electric Ben Franklin*, USHISTORY.ORG, http://www.ushistory.org/franklin/quotable/quote67.htm (last visited Mar. 30, 2014). This argument may also be phrased in terms of an historical argument by referencing Benjamin Franklin's famous adage that an ounce of prevention is worth a pound of cure.

299. *See supra* Part II.

E. Ethical

Ethical arguments reflect the character or ethos of the American polity and compel solutions that comport with "the sort of people we are."[300] The American identity is defined largely by individualism.[301] This notion must be tempered, however, by our nation's Judeo-Christian heritage, which teaches social responsibility. For example, Jewish theology teaches that there are ethical obligations for the living to "live equitably within the boundaries of what the Earth can sustain" and an obligation to extend that process to generations of humans and nonhumans still unborn. [302] Christian teachings similarly invite environmental stewardship. For example, *A Southern Baptist Declaration on the Environment and Climate Change* invokes scripture to motivate climate action: "We must care about environmental and climate issues because we are called to love our neighbors, to do unto others as we would have them do unto us and to protect and care for the 'least of these.'"[303] Likewise, Catholic teachings indicate that "creation is the beginning and the foundation of all God's works" and, consequently, "[t]he environment must be seen as God's gift to all people, and the use we make of it entails a shared responsibility for all humanity, especially the poor and future generations."[304]

I include these references here not to blur the line between church and state. Rather, I seek to demonstrate that accepting shared responsibility for the physical world and vulnerable populations, including those yet to be born, is consistent with

300. BOBBITT, *supra* note 102, at 95.

301. Freyfogle, *supra* note 12, at 170.

302. Lawrence Troster, *Judaism*, *in* THE ENCYCLOPEDIA OF SUSTAINABILITY, VOL. 1: THE SPIRIT OF SUSTAINABILITY 255 (Willis Jenkins, ed. 2010).

303. *A Southern Baptist Declaration on the Environment and Climate Change,* SOUTHERN BAPTIST ENVIRONMENT & CLIMATE INITIATIVE, http://www.baptistcreationcare.org/node/1 (last visited Mar. 30, 2014) (citing *Matthew* 22:34–40; 7:12; 25:31–46).

304. Pope Benedict XVI, Message of His Holiness Pope Benedict XVI for the Celebration of World Peace Day (Jan. 1, 2010) (transcript available at http://www.vatican.va/holy_father/benedict_xvi/messages/peace/documents/hf_ben-xvi_mes_20091208_xliii-world-day-peace_en.html#_edn1 (last visited Dec. 20, 2014)).

"millennia of moral teaching."[305] In *Bowers v. Hardwick,* Justice Burger observed in a concurring opinion that "[t]o hold that the act of homosexual sodomy is somehow protected as a fundamental right would be to cast aside millennia of moral teaching."[306] While *Bowers* was overruled by *Lawrence v. Texas*, Justice Burger's reasoning is relevant to the articulation of a right to atmospheric integrity.[307] Concern for the well-being of creation and vulnerable populations is "firmly rooted in Judeo-Christian moral and ethical standards"[308] of Western civilization and, thus defines "the sort of people we are."[309] Furthermore, the *Lawrence* court reasoned that changes in the laws and traditions of the past fifty years were of greater relevance and "show[ed] an emerging awareness that liberty gives substantial protection to adult persons in deciding how to conduct their private lives in matters pertaining to sex."[310] There has been no comparable change in Judeo-Christian attitudes toward social responsibility: the millennia of moral teachings continue to be affirmed.[311] Additionally, concepts of intergenerational equity have "deep roots in the religious, cultural, and legal traditions of the

305. Bowers v. Hardwick, 478 U.S. 186, 197 (1986), *overruled by* Lawrence v. Texas, 539 U.S. 558 (2003).

306. *Id*.

307. *Lawrence*, 539 U.S. 558.

308. *Id*. at 196 (Burger, C.J., concurring).

309. BOBBITT, *supra* note 102, at 94–95.

310. *Lawrence*, 539 U.S. at 572.

311. Philip Pullella, *Pope Francis Preparing Encyclical on the Environment, Vatican say*s, HUFFINGTON POST (Jan. 24, 2014, 7:28 PM), http://www.huffingtonpost.com/2014/01/25/pope-francis-envionment_n_4662499.html ("[Pope Francis,] who took his name from the saint seen as the patron of the animals and the environment, is writing an encyclical on man's relationship with nature."). *See also,* Peter Adriance, *Faith Communities Stress Moral Dimension of Carbon Pollution at EPA,* HUFFINGTON POST (Feb. 12, 2014, 12:50 PM), http://www.huffingtonpost.com/peter-adriance/faith-communities-stress-_b_4769649.html; *see generally* CATHOLIC CLIMATE COVENANT, http://catholicclimatecovenant.org/ (last visited Mar. 30, 2014); *Mission & History*, INTERFAITH POWER & LIGHT, http://www.interfaithpowerandlight.org/about/mission-history/ (last visited Dec. 20, 2014) (stating that Interfaith Power & Light seeks to combat global warming through the promotion of energy conservation, energy efficiency, and renewable energy); *About GreenFaith*, GREENFAITH, http://greenfaith.org/about (last visited Dec. 20, 2014).

world."[312] As such, the concept is also familiar to Americans from non-Judeo-Christian backgrounds.

F. Structural

The legislative, executive, and judicial branches are co-equal branches of government. Within this scheme, it is "emphatically the province and duty of the judicial department to say what the law is."[313] Thus, the Supreme Court has the authority to articulate constitutional rights. Once such rights are recognized, it is also the judiciary's duty to "to see to it that no right secured by the supreme law of the land is impaired or destroyed by legislation."[314] Courts are thus "uniquely qualified to recognize and safeguard important principles and values."[315]

The right to atmospheric integrity such that the climate does not shift beyond the relatively stable range of the Holocene epoch (*i.e.,* the last 10,000 years) during which modern human society has evolved is surely an important value worth safeguarding. The current Congress is ineffective, if not outright hostile, in its efforts to craft a meaningful response to climate change. There is a profound disconnect between scientific knowledge and public perception about the risk of highly damaging impacts of climate change.[316] Ninety-seven percent of climate scientists agree that human-caused climate change is occurring.[317] In light of this strong degree of scientific consensus, it is astounding that over half of the Republican members of the House of Representatives (fifty-five percent) and Senate (sixty-six percent) reject human-

312. Weiss, *Intergenerational Equity*, *supra* note 77, at 8–9 (citing Islamic law, Judeo-Christian tradition, European and American civil law, socialist legal tradition, African customary law, and non-theistic traditions, such as Shinto).

313. Marbury v. Madison, 5 U.S. 137, 177 (1803).

314. Smyth v. Ames, 169 U.S. 466, 528 (1898), *overruled by* Fed. Power Comm'n v. Natural Gas Pipeline Co., 315 U.S. 575 (1942).

315. Dernbach, *supra* note 6, at 733.

316. AAAS, *supra* note 1, at 3.

317. Emily Atkin, *This One Simple Graphic Explains the Difference Between Climate Science and Climate Politics,* CLIMATE PROGRESS (Mar. 27, 2014, 1:38 PM), http://thinkprogress.org/climate/2014/03/27/3419542/climate-science-vs-climate-politics-graphic/ ("[O]f 10,855 climate studies published in peer-reviewed journals during 2013, 2 rejected anthropogenic global warming.").

cause climate change.[318] Consequently, there is little hope for an effective response to climate change from current federal legislators.

The executive branch has a more positive record on climate change[319] and is currently developing regulations to limit emissions from power plants per its authority under the Clean Air Act.[320] The executive branch's efforts alone are inadequate to meet the scope of the challenge presented by climate change, however. Into this void, the Court may establish a constitutional right to atmospheric integrity based on the arguments presented here.

Once established, it would be the duty of the legislative and executive branches to create and implement a coherent strategy for action that incorporates consideration for atmospheric integrity into all governmental decisions.[321] The courts would retain responsibility for weighing the protection of atmospheric integrity against other equally valid and necessary constitutional protections, particularly property rights. The end result will necessarily be, as in *Robinson Township*, an emphasis on sustainable development wherein economic development must be reconciled with natural resources protection.

In vindicating a constitutional right to atmospheric integrity, the judiciary could impose requirements for 1) production of a national climate recovery plan to reduce greenhouse gas emissions nationwide at a rate of six percent per year, and 2) an annual accounting from the federal government in which the executive branch documents the nation's annual emissions and progress toward reaching the six percent per year reduction

318. *Id*.

319. *See e.g.*, Preparing the United States for the Impacts of Climate Change, Exec. Order No. 13,653, 78 Fed. Reg. 66,819 (Nov. 6, 2013); U.S. DEP'T OF STATE, UNITES STATES CLIMATE ACTION REPORT 2014 (2014); EXEC. OFFICE OF THE PRESIDENT, THE PRESIDENT'S CLIMATE ACTION PLAN (2013), *available at* http://www.whitehouse.gov/sites/default/files/image/president27sclimateactionplan.pdf.

320. *See* Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66,496, 66,496 (Dec. 15, 2009) ("The Administrator finds that six greenhouse gases taken in combination endanger both the public health and the public welfare of current and future generations."); *see also* Adriance, *supra* note 311.

321. *See* Dernbach, *supra* note 6, at 726.

target.[322] Given the necessary requirements for oversight and scientific literacy that such an equitable solution would require, the judiciary may want to establish a specialized climate court to handle the complicated task.

IV. CONCLUSION

The Court has recognized that "the full scope of the liberty guaranteed by the Due Process Clause cannot be found in or limited by the precise terms of the specific guarantees elsewhere provided in the Constitution."[323] Indeed, the Court has repeatedly recognized new fundamental liberty rights.[324] It is now time for the Court to recognize a right to atmospheric integrity. Our nation's history, traditions, and ethos provide evidence of "deeply rooted"[325] intergenerational obligations, which impose both positive and negative duties on the present generation (*i.e.,* do not unduly burden future generations and provide a strong, more stable society for future generations).

Precedent embraces the precept that property rights must be exercised in such as manner as not to injure neighbors (*i.e., sic utere tuo ut alienum non laedas*). If one considers neighbors in time, as well as neighbors in geographic space, the same principle may be used to restrain current exploitation of carbon resources. Additionally, international law reflects broad, normative standards that human rights, environmental integrity, and economic development should be balanced. Also, more than half of the world's constitutions—and nearly all that have been adopted since 1972—include a constitutional provision regarding environmental quality.[326] The international trend is, thus, toward greater legal recognition of environmental rights.

322. *See National Greenhouse Gas Emissions Data,* EPA (Apr. 5, 2014), http://www.epa.gov/climatechange/ghgemissions/usinventoryreport.html (stating that the EPA currently maintains an inventory of total annual U.S. greenhouse gas emissions and removals).

323. Moore v. City of E. Cleveland, 431 U.S. 494, 502 (1977).

324. *See, e.g.,* Lawrence v. Texas, 539 U.S. 558, 578 (2003).

325. Washington v. Glucksberg, 521 U.S. 702, 721 (1997).

326. May, *supra* note 90, at 114*; see also,* Dernbach, *supra* note 6, at 697 ("Nearly all national constitutions adopted or revised since 1972 have included a constitutional right to a decent environment.").

Science and economics indicate that the prudent course forward—in order to maintain a world in which liberty and justice are possible[327]—is to immediately begin reducing greenhouse gas emissions. Science also provides a "careful description"[328] to orient policymakers in their efforts to protect the asserted right. That is, returning to a concentration of less than or equal to 350 ppm of carbon dioxide in the atmosphere will likely "stabilize climate without further global warming."[329] Thus, once a right to atmospheric integrity is established by the Court, under its duty to "say what the law is,"[330] annual targets are available as "guideposts for responsible decisionmaking"[331] by the judicial, executive, and legislative branches, as well as by the private sector.

By securing a fundamental right to atmospheric integrity, the United States could become a leader in the global response to climate change and, by example, lead other nations in a transition to a low-carbon economy. As the *Robinson Township* court found, the way forward must reconcile economic development with the conservation of natural resources. One state's actions will not be sufficient, though. The nation, indeed the world as a whole, must embrace sustainable development such that we can meet our current needs without jeopardizing the ability of future generations to do the same. While the challenges are great, we need to focus on the goal of climate stability. As James Madison observed many years ago:

> it is so much easier to descry the little difficulties immediately incident to every great plan, than to comprehend its general & remote benefits, that further light must be added to the Councils of our Country before many truths which are seen through the medium of Philosophy, become visible to the naked eye of the ordinary politician.[332]

327. *Glucksberg*, 521 U.S. at 720–21 (Fundamental rights are "implicit in the concept of ordered liberty, such that neither liberty nor justice would exist if they were sacrificed" (internal quotations omitted)).

328. *Id.* at 703, 721, 724.

329. Hansen et al., *supra* note 1, at 5.

330. Marbury v. Madison, 5 U.S. 137, 177 (1803).

331. Chavez v. Martinez, 538 U.S. 760, 776 (2003).

332. Hunt, *supra* note 253, at 441.

Until such time as politicians open their eyes to the challenges and opportunities presented by climate change, the courts have a crucial role in defining and defending the right to atmospheric integrity.