

Fracking and the Public Trust Doctrine: This Land Is Their Land, But After *Robinson*, Might This Land Really Be Our Land?

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Introduction

CURRENTLY, FEDERAL LAW in the United States affords citizens virtually no protections from the very real and catastrophic ramifications of hydraulic fracturing (fracking).¹ Although fracking presents a lucrative industry, especially appealing to economically depressed rust belt states,² the potential risks cannot be left unattended. A December 2013 Pennsylvania Supreme Court decision, *Robinson Township v. Commonwealth*,³ marked a pivotal moment in the fight to ensure responsible, sustainable development. The court, finding a state law that prohibited localities from banning fracking unconstitutional, grounded its decision in an amendment to the Pennsylvania Constitution that codified the public trust doctrine.⁴ Abroad, a number of countries have already recognized the need to equip citizens with sub-

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1. See *infra* Part I.B.1; see also *Hydraulic Fracturing: The Process*, FRACFOCUS (July 20, 2010), <http://fracfocus.org/hydraulic-fracturing-how-it-works/hydraulic-fracturing-process> (detailing how fracking is an increasingly popular method for harvesting subterranean natural gas reserves, whereby fluid, containing water, proppants, and chemicals, is injected into ground wells under high pressure, creating fissures in subterranean rock formations, creating a more free flow of natural gas).

2. Nelson D. Schwartz, *Boom in Energy Spurs Industry in the Rust Belt*, N.Y. TIMES (Sept. 8, 2014), <http://www.nytimes.com/2014/09/09/business/an-energy-boom-lifts-the-heart-land.html> (exploring the role natural gas has played in Ohio's economic resurgence).

3. 83 A.3d 901 (2013).

4. PA. CONST. art. I, § 27 ("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.").

stantive protections from dangerous development practices and enshrined the public trust doctrine in their national constitutions. This Note argues that the public trust doctrine, exemplified in *Robinson*, offers a clear path toward sustainable development on a global scale.

Part I will provide background on fracking, its potential risks, and the current regulatory scheme. Part II will discuss the evolution of the public trust doctrine and its international proliferation. Part III will identify Pennsylvania's constitutional incorporation and application of the public trust doctrine in *Robinson*. Part IV will briefly outline why that approach is both desirable and transferrable on a national and international scale.

I. Background

The International Energy Agency estimates that, if expansion of gas supply resources continues, global demand for natural gas could increase fifty percent by 2035.⁵ During this time, natural gas production is expected to triple, giving it more than a twenty-five percent share of the overall global energy market and making it the world's second largest energy source after oil.⁶ With recently discovered gas reservoirs in Brazil and Argentina expected to increase Central and South American production and demand, natural gas could occupy as much as thirty percent of the region's total energy matrix by 2030.⁷ Additionally, substantial reserves in Mexico,⁸ Canada,⁹ China,¹⁰ and across Europe¹¹ make natural gas extraction inevitable and the need for sustainable production evident.

The United States Energy Information Administration projects that natural gas production could increase by nearly thirty percent and that shale production will account for almost half of all American natural gas by 2035.¹² Natural gas deposits exist in subterranean shale

5. INT'L ENERGY AGENCY, GOLDEN RULES FOR A GOLDEN AGE OF GAS: WORLD ENERGY OUTLOOK SPECIAL REPORT ON UNCONVENTIONAL GAS 10 (Robert Priddle ed., 2012).

6. *Id.* at 10–11.

7. Marcos Veiga, *Latin America's Growing Economy Presents Opportunities in Oil, Gas, Petrochemicals*, UOP, <http://www.uop.com/latin-americas-growing-economy-presents-opportunities-oil-gas-petrochemicals> (last visited Feb. 20, 2015).

8. INT'L ENERGY AGENCY, *supra* note 5, at 111.

9. *Id.* at 108.

10. *Id.* at 115.

11. *Id.* at 120.

12. Rachel A. Kitze, *Moving Past Preemption: Enhancing the Power of Local Governments Over Hydraulic Fracturing*, 98 MINN. L. REV. 385, 388–89 (2013) (citing Mason Inman, *Estimates Clash for How Much Natural Gas in the United States*, NAT'L GEOGRAPHIC (Feb. 29, 2012), <http://news.nationalgeographic.com/news/energy/2012/03/120301-natural-gas-reserves->

rock formations across the United States, including the Barnett Shale in Texas; the Fayetteville Shale in Arkansas; the Woodford Shale in Oklahoma; the Haynesville Shale in Arkansas, Texas, and Louisiana; and the Bakken Shale in North Dakota.¹³ The largest, however, is the Marcellus Shale, spanning West Virginia, Ohio, Pennsylvania, and New York,¹⁴ and providing these economically-depressed rust belt states with the potential for economic prosperity.¹⁵ Natural gas production has arrived.

A. The Fracking Problem

Natural gas is typically highly dispersed in rock formations underground, rather than occurring in a concentrated location.¹⁶ Hydraulic fracturing has emerged as a cost-effective technique to recover natural gas. The process creates fractures in the rock formations that are intended to stimulate gas flow and produce a larger and more cost-effective yield.¹⁷ First, wells are drilled vertically to penetrate the shale formation, hundreds or thousands of feet below the surface, and then sometimes extended thousands of feet horizontally.¹⁸ To facilitate fissures in the rock, hydraulic fluids—typically consisting of water, proppants,¹⁹ and chemical additives—are injected into the well at high pressures.²⁰ The internal pressure of the rock formation then forces the fracturing fluid back to the surface, bringing with it brines, metals, radionuclides, hydrocarbons, and, hopefully, the coveted natural

united-states; U.S. ENERGY INFO. ADMIN., ANNUAL ENERGY OUTLOOK 2012 92 (June 2012), [http://www.eia.gov/forecasts/aeo/pdf/0383\(2012\).pdf](http://www.eia.gov/forecasts/aeo/pdf/0383(2012).pdf).

13. U.S. DEP'T OF ENERGY, MODERN SHALE GAS DEVELOPMENT IN THE UNITED STATES: A PRIMER 16–24 (2009) (providing an overview of each shale formation).

14. *Id.* at 21.

15. Kitze, *supra* note 12, at 389–90 (citing Shaun A. Goho, *Municipalities and Hydraulic Fracturing: Trends in State Preemption*, 64 PLAN. & ENVTL. L. 3, 3 (July 2012). *See also* *America's Energy: Economy*, ENERGYFROMSHALE.ORG, <http://www.energyfromshale.org/american-energy/economy> (last visited Apr. 12, 2015).

16. *The Process of Hydraulic Fracturing*, EPA, <http://www2.epa.gov/hydraulicfracturing/process-hydraulic-fracturing> (last updated Aug. 11, 2014).

17. *Id.*

18. *Id.*

19. Proppants are granular material, often sand or ceramic beads, which are transported with the fracking fluid that fills the fracture and “props” it open once the high-pressure pumping stops, creating a permeable channel through which the natural gas can freely flow. *See* CARDNO ENTRIX, HYDRAULIC FRACTURING STUDY: PXP INGLEWOOD OIL FIELD 8 (Oct. 10, 2012), http://www.eenews.net/assets/2012/10/11/document_ew_01.pdf; *Proppants and Fracking Fluids*, SAVE THE WATER (June 5, 2012), <http://savethewater.org/proppants-fracking-fluids> (discussing proppant materials, additives, and use).

20. *The Process of Hydraulic Fracturing*, *supra* note 16.

gas.²¹ The fracturing fluid is then injected underground for disposal, treated and reused, or processed by a treatment facility and discharged into surface waters.²² The process carries with it significant environmental and public safety concerns.

1. Environmental Concerns

EarthJustice, a non-profit organization whose mission is to ensure all people have a right to a healthy environment, maintains that fracking fluid “is laced with toxic chemicals that have not been fully tested or disclosed to the public.”²³ According to the Pennsylvania Department of Environmental Protection, current fracking fluid can include up to 435 different ingredients containing 344 different chemicals.²⁴ It is common for a single well to inject more than a million gallons of fluid into the earth during the fracturing phase.²⁵ As this fluid returns to the surface, it is filtered through an ethylene glycol solution that separates the natural gas from the water and fracking fluid.²⁶ This contaminated water is then stored in evaporation pits to be covered with top soil²⁷ or sent to public wastewater treatment plants ill-suited to adequately filter it.²⁸ The result is that pits of potentially dangerous chemical residue are permitted to evaporate or simply covered and forgotten,²⁹ and millions of gallons of partially treated water reenter the watershed—the impacts of which remain uncertain.³⁰

21. *Id.*

22. *Id.*

23. *Fact Sheet: On Fracking*, EARTHJUSTICE, <http://earthjustice.org/features/campaigns/fact-sheet-on-fracking> (last visited Feb. 19, 2014).

24. *Human Health Risks*, SWARTHMORE C. ENVTL. STUD. CAPSTONE, <http://www.swarthmore.edu/environmental-studies-capstone/human-health-risks> (last visited Mar. 8, 2015).

25. Theo Colborn et al., *Natural Gas Operations from a Public Health Perspective*, 17 HUM. & ECOLOGICAL RISK ASSESSMENT: AN INT’L J. 1039, 1040 (2011), available at <http://cce.cornell.edu/EnergyClimateChange/NaturalGasDev/Documents/PDFs/fracking%20chemicals%20from%20a%20public%20health%20perspective.pdf>.

26. *Id.* at 1041.

27. *Id.*

28. *Human Health Risks*, *supra* note 24.

29. David Martin Davies, *More Fracking Produces More Open Waste Pits*, MARKETPLACE (Oct. 14, 2014), <http://www.marketplace.org/topics/sustainability/more-fracking-produces-more-open-waste-pits> (recounting a landowner’s health and safety concerns with the pit disposal method and noting the troubling dearth of state and federal oversight).

30. *Human Health Risks*, *supra* note 24 (hypothesizing that the millions of gallons of chemicals released into rivers and streams could, if left unchecked, permanently damage important drinking water reservoirs across the country).

2. Public Safety Concerns

Although the companies' fluid recipes are proprietary, the ingredients are not. Of the 344 chemicals, many of which offer no safety information, seventy-five percent are known to cause skin, eye, or sensory irritation; forty to fifty percent could affect the brain and nervous system, the immune and cardiovascular systems, and the kidneys; thirty-seven percent could affect the endocrine system; and twenty-five percent can cause reproductive, mutagenic, or cancerous complications.³¹ Gas drilling requires constant use of diesel-fueled equipment, both for the operation of machinery and transportation of products.³² The result of this overuse, termed "gas field ozone," "has created a previously unrecognized air pollution problem in rural areas, similar to that found in large urban areas, and can spread up to 200 miles beyond the immediate region where gas is being produced."³³ This ozone causes irreversible damage to the lungs, leading to asthma and chronic obstructive pulmonary diseases and has a similarly devastating effect on flora, including conifers, aspen, and forage.³⁴ A Pennsylvania homeowner's experience in a previously rural, non-industrialized area of Southwestern Pennsylvania is illuminating.³⁵

During the initial well construction process, daily and continuous truck traffic caused structural damage to her home, road collapse, large amounts of dust, deterioration in air quality, and significant noise pollution.³⁶ After fracking operations began, the family's well water, which had served the home for the past century, deteriorated significantly and "'began to stink like rotten eggs and garbage with a sulfur chemical smell.'"³⁷ The air, too, began "'to smell of rotten eggs, sulfur, and chemicals,'" infiltrating the home and seeping into the

31. Colborn et al., *supra* note 25, at 1039; see also *Chemicals in Natural Gas Operations: Introduction*, THE ENDOCRINE DISRUPTION EXCHANGE, <http://endocrinedisruption.org/chemicals-in-natural-gas-operations/introduction> (last visited Mar. 6, 2014) (breaking down and analyzing specific chemicals used in drilling procedures).

32. *Hydrofracking*, CITIZENS CAMPAIGN FOR THE ENVIRONMENT, <http://www.citizenscampaign.org/campaigns/hydro-fracking.asp> (last updated Aug. 14, 2014).

33. Colborn et al., *supra* note 25, at 1042.

34. *Id.*

35. See also Keith Bradsher, *China Takes On Big Risks in Its Push for Shale Gas*, N.Y. TIMES (Apr. 12, 2014), <http://www.nytimes.com/2014/04/12/business/international/china-takes-on-big-risks-in-its-push-for-shale-gas.html> (discussing recent explosion at rural fracking site in Jiaoshizen, China, and the threats that fracking poses to workplace safety, public health, and the environment).

36. *Robinson Twp. v. Pennsylvania*, 83 A.3d 901, 937 (Pa. 2013).

37. *Id.*

family's possessions.³⁸ Several pets died as a result of exposure to contaminated water, and the homeowner and her children suffered from "severe health problems such as constant and debilitating headaches, nosebleeds, nausea, difficulty and shortness of breath, skin rashes and lesions, bone and muscle pain, inability to concentrate, and severe fatigue."³⁹ Despite renunciation of the risks and repudiation of responsibility from the gas industry, the human and environmental consequences of fracking are enduring and disastrous.⁴⁰

B. Limited Regulatory Power

Energy independence has become a political talking point.⁴¹ In light of political and economic instability abroad, focus on foreign energy dependence is magnified, and fracking, as a potential path toward energy independence, has become a hot-button issue.⁴² Not wanting to dampen the prospective economic benefits or make political headlines, the federal government has trod lightly—seemingly aiming to appease the fracking industry. At the federal level, no comprehensive regulations govern fracking.⁴³

1. No Federal Pronouncement

Although at least ten federal acts conceivably touch fracking activities, regulation is vague, and enforcement is virtually non-existent.⁴⁴

38. *Id.* at 938.

39. *Id.*

40. See Mose Buchele, *Texas Family's Nuisance Complaint Seen As Win Against Fracking*, NPR (May 2, 2014), <http://www.npr.org/2014/05/02/308796539/texas-family-s-nuisance-complaint-seen-as-win-against-fracking> (discussing a landmark victory for fracking opponents where a Texas jury awarded a family nearly three million dollars after fracking operations caused the family serious health complications including rashes, dizziness, nosebleeds, and stomach and respiratory issues).

41. See *Advancing American Energy*, THE WHITE HOUSE, <http://www.whitehouse.gov/energy/securing-american-energy> (last visited Feb. 20, 2015) ("President Obama's All-of-the-Above Energy Strategy is making America more energy independent and supporting jobs. . . . Our all-of-the-above strategy aims to harness American innovation and develop a diverse portfolio of American-made energy."); see also *Republican Platform, America's Natural Resources*, GOP, <http://gop.com/platform/americas-natural-resources/> (last visited Mar. 10, 2015) ("Republicans advocate an all-of-the-above diversified approach, taking advantage of all of our American God-given resources. That is the best way to advance North American energy independence.").

42. See Chris Boling, Note, *Hydraulic Fracturing and Chemical Disclosure: What You Do Not Know Could Hurt You!*, 46 LOY. L.A. L. REV. 257, 259 (2012).

43. David B. Spence, *Federalism, Regulatory Lags, and the Political Economy of Energy Production*, 161 U. PA. L. REV. 431, 447 (2013).

44. See generally ADAM VANN ET AL., CONG. RESEARCH SERV., R43152, HYDRAULIC FRAC- TURING: SELECTED LEGAL ISSUES 34 (2014) (discussing implications of Safe Drinking Water

The Safe Drinking Water Act (SDWA) directs the U.S. Environmental Protection Agency (EPA) to regulate the underground injection of fluids to protect underground sources of water.⁴⁵ Confusion among the states and the federal courts as to whether fracking procedures were to be regulated led to an explicit congressional pronouncement.⁴⁶ The Energy Policy Act of 2005 amended the SDWA and makes clear that regulation excludes “the underground injection of fluids or propping agents (other than diesel fuels) pursuant to hydraulic fracturing operations related to oil, gas, or geothermal production activities.”⁴⁷

Although the Clean Water Act’s prohibition against the “discharge of any pollutant” into navigable waterways,⁴⁸ the Clean Air Act’s “reduced emissions completions” requirement,⁴⁹ and the Comprehensive Environmental Response, Compensation, and Liability Act’s (CERCLA) “hazardous substance” liability⁵⁰ do apply to fracking, their efficacy is limited by opaque industry practices.⁵¹ Manufacturers and industry representatives remain reluctant to disclose information about the chemicals used in their fracking cocktails, maintaining the recipes are proprietary and constitute valuable trade secrets.⁵² Although the public cannot adequately inform itself of the hazards, nor can the government effectively enforce federal law without that information, public outcry from citizens, environmental groups, and politicians has not generated a solution. In 2013, two bills⁵³ were introduced into both the House and Senate, proposing amendments

Act (SDWA), Energy Policy Act, Clean Water Act, Clean Air Act, Resource Conservation and Recovery Act, Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), National Environmental Policy Act, Toxic Substances Control Act, Occupational Safety and Health Act, Emergency Planning, and Community Right-to-Know Act on fracking).

45. *Id.* at 1.

46. *See, e.g.,* Legal Envtl. Assistance Found., Inc. v. U.S. E.P.A., 118 F.3d 1467 (11th Cir. 1997) (challenging whether hydraulic fracturing procedures fell within the SDWA’s definition of “underground injection”).

47. VANN ET AL., *supra* note 44, at 5–6.

48. *Id.* at 7.

49. *Id.* at 8.

50. *Id.* at 13.

51. *See* Kate Galbraith, *Seeking Disclosure on Fracking*, N.Y. TIMES (May 30, 2012), <http://www.nytimes.com/2012/05/31/business/energy-environment/seeking-disclosure-on-fracking.html> (highlighting lack of national regulations relating to disclosure of drilling fluid ingredients, and detailing disparate state reporting schemes and trade secret exceptions).

52. VANN ET AL., *supra* note 44, at 19.

53. H.R. 1921, 113th Cong. (2013); Fracturing Responsibility and Awareness of Chemicals Act, S. 1135, 113th Cong. (2013).

to the SDWA that would remove the fracking exception and mandate the disclosure of chemical ingredients.⁵⁴ Both bills died at the committee stage without debate or a formal vote.⁵⁵ In the absence of meaningful federal assistance, states and municipalities have assumed primary regulatory responsibility.

2. State Approaches

Regulation of natural gas production creates a complex interplay between state and local governments. Regulation “implicates the state’s interest in safe and efficient development of its natural resources and the local government’s interest in regulating land uses to protect the public from harm to property values, health, and the environment.”⁵⁶ When both state and local concerns are implicated, however, the states ordinarily maintain dominion.⁵⁷ The extent—and constitutionality—of that authority remains unclear.

a. Zoning

Local governments have broad power to protect public health and welfare.⁵⁸ Some local governments have used zoning and land use ordinances as a method of prohibiting fracking altogether, either temporarily or permanently.⁵⁹ Most often, however, this power is exercised through land use ordinances that regulate the manner in which land can be used and the extent of permissible damage.⁶⁰ Local governments, given their proximity to the populous and acute awareness of localized concerns, might seem the most appropriate genesis for fracking regulation,⁶¹ but the practical reach of those ordinances can be quite limited. Because any local ordinance attempting to prohibit

54. VANN ET AL., *supra* note 44, at 31.

55. *H.R. 1921 (113th): Fracturing Responsibility and Awareness of Chemicals Act of 2013*, GOVTRACK.US, <https://www.govtrack.us/congress/bills/113/hr1921> (last visited Mar. 6, 2014); *S. 1135 (113th): FRAC Act*, GOVTRACK.US, <https://www.govtrack.us/congress/bills/113/s1135> (last visited Mar. 6, 2014).

56. VANN ET AL., *supra* note 44, at 26.

57. *Id.* at 26–27.

58. Jonas Armstrong, *What the Frack Can We Do? Suggestions for Local Regulation of Hydraulic Fracturing in New Mexico*, 53 NAT. RESOURCES J. 357, 364 (2013).

59. See *Local Actions Against Fracking*, FOOD & WATER WATCH, <http://www.foodandwaterwatch.org/water/fracking/fracking-action-center/local-action-documents> (last visited Mar. 6, 2014) (listing municipalities that have prohibited fracking).

60. Armstrong, *supra* note 58, at 364.

61. See Annie Decker, *Preemption Conflation: Dividing the Local from the State in Congressional Decision Making*, 30 YALE L. & POL’Y REV. 321, 355 (2012) (recognizing localities’ ability to tailor laws to local conditions, innovate, and serve as useful partners in specific ventures).

fracking entirely is likely to be preempted,⁶² local regulation is typically limited to secondary issues such as siting, aesthetics, noise levels, and hours of operation.⁶³ Although state level regulations have the ability to create a more stable, predictable, and uniform regulatory scheme with the advantage of better-funded enforcement mechanisms,⁶⁴ there is noticeable discord between state and local governments in terms of regulation.⁶⁵

b. Preemption

Basic principles of federalism, delegating power horizontally across branches of government and vertically to more local levels, are equally applicable at the state government level.⁶⁶ Despite a municipality's broad police power to protect "the health, safety, and welfare of the community," municipalities are ultimately state creations, having only as much authority as the state elects to provide constitutionally or by statute.⁶⁷ States can preempt local control over fracking regulation through express, conflict, or field preemption.⁶⁸ States can exert differing levels of control over local ability to regulate depending on the scope of legislation enacted and type of preemption employed. Colorado courts, for example, would analyze each local regulation individually to determine whether or not it, in fact, conflicts with state law, while such an inquiry is unnecessary in a state like West Virginia, which has occupied the field of oil and gas development completely.⁶⁹

Although preemption carries with it the possibility of creating a baseline of protection—preventing a “race to the bottom”⁷⁰—the disparate approaches and potentially inflammatory political nature of regulation has sparked legal challenges and created an uncertain legal

62. See *infra* Part I.B.2.ii.

63. Armstrong, *supra* note 58, at 364–65.

64. Kitze, *supra* note 12, at 393–94.

65. *Id.* at 395.

66. Armstrong, *supra* note 58, at 370.

67. Kitze, *supra* note 12, at 392.

68. *Id.*

69. *Id.* at 396; compare *Town of Frederick v. N. Am. Res. Co.*, 60 P.3d 758, 765 (Colo. App. 2002) (holding that state law did not preempt the entirety of a municipal oil and gas drilling ordinance, but that the ordinance's setback, noise abatement, and visual impact provisions were preempted), with *Ne. Natural Energy, LLC v. City of Morgantown*, No. 11-C-411, 2011 WL 3584376, at *9 (W. Va. Cir. Ct. Aug. 12, 2011) (holding that the W. Va. CODE § 22-6, *et seq.* (1994) gives exclusive control of the area of oil and gas development to the West Virginia Department of Environmental Protection).

70. Kitze, *supra* note 12, at 394.

framework.⁷¹ Local ordinances are the most intimate manifestation of democracy at work. The continuing battles over state versus local authority to regulate fracking are indicative of a persistent dissatisfaction with state-centered regulatory schemes.⁷² As one scholar has noted, “Preemption inhibits the ability of local communities to create and fulfill their own unique visions of how they will live.”⁷³ The fracking debate transcends politics, economics, and doctrinal interpretation—implicating rights “inherent to mankind.”⁷⁴

II. The Public Trust Doctrine

The concept of the public trust was first codified in the sixth century when Emperor Justinian wrote, “[T]he following things are by natural law common [property for] all—the air, running water, the sea, and consequently the sea-shore.”⁷⁵ English common law developed to embrace this principle by obligating the Crown to protect lands and resources for the benefit of all its subjects.⁷⁶

In 1821, the doctrine came to America. In *Arnold v. Mundy*,⁷⁷ the Supreme Court of New Jersey recognized “by the law of nature, which is the only true foundation of all the social rights,” the waters and the land under the water were common property and were to be held by the sovereign “in trust for all the citizens.”⁷⁸ The United States Supreme Court appeared to endorse the doctrine, although certainly not explicitly, in its 1892 decision in *Illinois Central Railroad Co. v. Illinois*, finding the state could not grant to the railroad lakefront property for development because the public retained a trust interest in the property.⁷⁹ Despite the Court’s vagueness, *Illinois Central* became

71. Compare *Norse Energy Corp. USA v. Town of Dryden*, 964 N.Y.S.2d 714 (N.Y. App. Div. 2013) (upholding ban on fracking under local zoning power), *leave to appeal granted* 972 N.Y.S.2d 535 (N.Y. 2013), with *Range Res.-Appalachia, LLC v. Salem Twp.*, 964 A.2d 869, 874 (Pa. 2009) (striking down local ordinance that attempted to regulate fracking procedures).

72. Kitze, *supra* note 12, at 412.

73. *Id.* at 395 (citing Jerrold A. Long, *Sustainability Starts Locally: Untying the Hands of Local Governments to Create Sustainable Communities*, 10 WYO. L. REV. 1, 33–34 (2010)).

74. *Robinson Twp. v. Pennsylvania*, 83 A.3d 901, 948 n.36 (Pa. 2013) (quoting *Driscoll v. Corbett*, 69 A.3d 197, 208 (Pa. 2013)).

75. J. INST. 2.1.1.

76. Harry R. Bader, *Antaeus and the Public Trust Doctrine: A New Approach to Substantive Environmental Protection in the Common Law*, 19 B.C. ENVTL. AFF. L. REV. 749, 751 (1992).

77. 6 N.J.L. 1 (N.J. 1821).

78. *Id.* at 11–12, 42.

79. *Ill. Cent. R.R. Co. v. Illinois*, 146 U.S. 387, 462 (1892).

the basis for numerous decisions employing the public trust doctrine primarily to protect public access to waterways.⁸⁰

A. Sax Revival

After World War II, the doctrine fell into relative disuse as a legal tool until 1970 when law professor Joseph Sax precipitated its modern revival in his article *The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention*.⁸¹ Sax conceived the doctrine to be a “useful tool of general application for citizens seeking to develop a comprehensive legal approach to resource management problems.”⁸² Sax portrays the doctrine as primarily a judicial tool, allowing courts to “mend perceived imperfections in the legislative and administrative process.”⁸³ Explicitly, he characterizes the concept of the public trust as “a medium for democratization.”⁸⁴ Although Sax might have envisioned the doctrine as a delicate balance of procedural and substantive protections, he nonetheless outlined a doctrine that affords citizens a powerful tool—a legal right the public can enforce against the government in the interest of advancing contemporary environmental concerns.⁸⁵

The public trust doctrine is based upon the fundamental understanding that some natural resources are essential to the continuing well-being of communities. The doctrine aims to protect resources “not because it is either an ethical thing to do or a positive amenity, but because these resources are absolutely essential for human physical, spiritual, and economic well-being.”⁸⁶ By placing the state under a fiduciary obligation to protect trust resources and prevent private appropriation, the doctrine aims to limit the impact of reckless, economically driven conduct that has the potential to “jeopardize our very existence.”⁸⁷ The doctrine does not stifle development or prevent change, but rather guards against potentially destabilizing changes

80. See William D. Araiza, *Democracy, Distrust, and the Public Trust: Process-Based Constitutional Theory, the Public Trust Doctrine, and the Search for a Substantive Environmental Value*, 45 UCLA L. REV. 385, 396–97 (1997); see, e.g., *City of Milwaukee v. State*, 214 N.W. 820 (Wis. 1927); *In re Crawford County Levee & Drainage Dist. No. 1*, 196 N.W. 874 (Wis. 1924); *Adams v. Elliott*, 174 So. 731 (Fla. 1937).

81. Joseph L. Sax, *The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention*, 68 MICH. L. REV. 471 (1970).

82. *Id.* at 474.

83. *Id.* at 509.

84. *Id.*

85. *Id.* at 556–57.

86. Bader, *supra* note 76, at 755.

87. *Id.*

that threaten the expectations, resources, and well-being of future generations.⁸⁸ The public trust doctrine promotes sustainable development—evolutionary, not revolutionary, change.

Courts have begun to provide context and foundation for the modern public trust doctrine in the decades following Sax's articulation.⁸⁹ Among the most important was *Nat'l Audubon Soc'y v. Superior Court* (the Mono Lake Case), in which the California Supreme Court broadened the scope of the public trust to include not just flowing waters, but also inland bodies of water and water rights.⁹⁰ Courts have also considered, often with differing results, whether the public trust extends to public access,⁹¹ water rights,⁹² water quality,⁹³ fish and wildlife resources,⁹⁴ and air resources.⁹⁵

B. International Endorsement

Although the foregoing cases are noteworthy and innovative in their own right, expansion of the public trust doctrine internationally has far outpaced development in the United States. Nearly every national constitution adopted or amended since 1972 has included a constitutional right to a decent environment.⁹⁶ A number of countries have explicitly enshrined the trust principles in national constitutions, affording their citizens substantive protections of natural resources. At least ten nations have an established body of public trust law: India, Pakistan, the Philippines, Uganda, Kenya, Nigeria, South Africa, Brazil, Ecuador, and Canada.⁹⁷ International approaches to environmental conservation and human protection from environmental

88. Michael C. Blumm & Rachel D. Guthrie, *Internationalizing the Public Trust Doctrine: Natural Law and Constitutional and Statutory Approaches to Fulfilling the Saxion Vision*, 45 U.C. DAVIS L. REV. 741, 754 (2012).

89. See, e.g., *State v. Superior Court (Lyon)*, 625 P.2d 239, 244–46 (Cal. 1981) (concerning Clear Lake); *State v. Superior Court (Fogerty)*, 625 P.2d 256, 259–60 (Cal. 1981) (concerning Lake Tahoe).

90. 658 P.2d 709, 732 (Cal. 1983).

91. Richard M. Frank, *The Public Trust Doctrine: Assessing Its Recent Past & Charting Its Future*, 45 U.C. DAVIS L. REV. 665, 674 (2012). See, e.g., *Matthews v. Bay Head Improvement Ass'n*, 471 A.2d 355, 358 (N.J. 1984) (finding public trust easement to cross private land to access ocean).

92. Frank, *supra* note 91, at 675. See *Nat'l Audubon Soc'y*, 658 P.2d 709.

93. Frank, *supra* note 91, at 677.

94. *Id.* at 677–78.

95. *Id.* at 679–80.

96. Dinah Shelton, *Challenges to the Future of Civil and Political Rights*, 55 WASH. & LEE L. REV. 669, 682 (1998).

97. Blumm & Guthrie, *supra* note 88, at 745.

exploitation are more explicit and expansive.⁹⁸ A few examples are illustrative.

The Supreme Court of India first recognized the public trust in a 1996 opinion that rooted the doctrine in common law and cited both *Illinois Central Railroad* and Professor Sax's article.⁹⁹ Three years later, the court located the doctrine in the right to life language of the national constitution and suggested the doctrine's natural law origins protected it from political reversal.¹⁰⁰ The doctrine extends to protect all natural resources and aims to ensure intergenerational equity.¹⁰¹ Pakistan's Supreme Court has also implicitly recognized the doctrine by explicitly holding that their country's constitutional guarantee of life includes environmental health.¹⁰² Although case law is sparse, it is clear that the government of Pakistan has a duty to protect water resources, and it appears that duty extends to all natural resources.¹⁰³

The Supreme Court of the Philippines recognized the doctrine in a 1987 constitutional amendment requiring the state to "protect and advance the right of the people to a balanced and healthful ecology in accord with the rhythm and harmony of nature," as well as inherent in natural law principles of self-preservation and self-perpetuation.¹⁰⁴ The doctrine is expansive, extending to the management, conservation, and equitable distribution of all natural resources.¹⁰⁵ Both the Ugandan and Kenyan Supreme Courts have found constitutional and statutory bases for the doctrine and recognized that the protections serve traditional functions, as well as unique moral, cultural, spiritual, and medicinal purposes.¹⁰⁶

The most apparent effect of the public trust's recognition abroad is a relatively small, yet continually expanding body of environmental law. In the long-run, the public trust has the potential to positively impact the international community in ways beyond simply protecting natural resources. From a sociological point of view, continued expansion and increased support for the public trust raises hopes for a more united international community. The presence of an environmental

98. *Id.* at 746.

99. *M.C. Mehta v. Kamal Nath* (1997) 1 S.C.C. 388 (India), 17–18, available at <http://www.ielrc.org/content/e9615.pdf>.

100. Blumm & Guthrie, *supra* note 88, at 762–63.

101. *Id.* at 763–65.

102. *Id.* at 766.

103. *Id.* at 769.

104. *Id.* at 771–74.

105. *Id.* at 774–75.

106. *Id.* at 777–85.

global order, secured at least in part with the creation of soft law through legal precedent, theoretically reduces the likelihood of a single rogue state prioritizing the interests of itself over the greater community.¹⁰⁷ That type of pressure will have the primary effect of reducing the existence of environmentally harmful policies and also a secondary effect of altering the political structure that implemented it. The rise of a powerful international public trust community has the potential to force systemic, and sustainability-driven change in countries currently dominated by market-driven neoliberal ideology.¹⁰⁸ As one scholar eloquently surmised, “[T]he Public Trust Doctrine’s reach seems constrained only by the imagination of those who would protect both the natural world and the public’s right to the sustainable use of that world.”¹⁰⁹ With the resurgence of the public trust still in its infancy, the ultimate extent of that reach remains boundless.

From a rights-based perspective, the link between environmental degradation and internationally guaranteed human rights cannot be discounted.¹¹⁰ Environmental challenges under the public trust doctrine will inevitably invite discourse around rights to life, health, clean water, clean air, and of course a healthy environment. An emphasis on these rights, and an opportunity for participation from the communities most affected, increases pressure on violating governments.¹¹¹ This emphasis offers hope for better environmental decision making and a more robust body of recognized basic human rights.¹¹² While global environmental human rights have not yet attained the inviolate status enjoyed by the rights implicit in the public trust doctrine, some believe it inevitable.¹¹³ Although the United Nations Human Rights Commission’s 1994 Draft Principles on Human Rights and the Environment remain unratified, a 2005 report to the Commission documented the “‘repeated and increasing recognition of a human-rights

107. Sheila Jasanoff, *A World of Experts: Science and Global Environmental Constitutionalism*, 40 B.C. ENVTL. AFF. L. REV. 439, 440 (2013).

108. Blake Hudson, *Global Environmental Constitutionalism Symposium at Widener Law*, ENVIRONMENTAL LAW PROF BLOG (Apr. 11, 2014), http://lawprofessors.typepad.com/environmental_law/2014/04/global-environmental-constitutionalism-symposium-at-widener-law.html.

109. David Takacs, *The Public Trust Doctrine, Environmental Human Rights, and the Future of Private Property*, 16 N.Y.U. ENVTL. L.J. 711, 718 (2008).

110. Dinah Shelton, *Human Rights, Health & Environmental Protection: Linkages in Law & Practice* 24 (World Health Org., Health & Human Rights Working Paper Series No. 1, 2002).

111. *Id.*

112. *Id.*

113. Takacs, *supra* note 109, at 725.

based approach to environmental protection.’”¹¹⁴ Currently, nearly all regional and global human rights’ bodies identify links between environmental degradation and internationally protected human rights, and more than one hundred nations guarantee resource protection and a right to a healthy environment.¹¹⁵

Whether rooted in constitutional precedent, statute, fundamental rights, natural law, or international norms, the message is consistent. That message epitomizes “the longstanding idea that some parts of the natural world are gifts of nature so essential to human life that private interests cannot usurp them, and so the sovereign must steward them to prevent such capture.”¹¹⁶

III. *Robinson Township. v. Commonwealth*

No language in the United States Constitution has yet been interpreted to include public trust principles. Some state constitutions do contemplate natural resources or environmental protection. Three states—Hawaii,¹¹⁷ Illinois,¹¹⁸ and Massachusetts¹¹⁹—provide environmental protection in constitutional amendments that direct legislative action and prescribe public policy. Pennsylvania,¹²⁰ Montana,¹²¹ and Rhode Island¹²² are the only states to enshrine individual environmental rights alongside political rights in a constitutional fashion.¹²³ Citizens recently exercised those rights in the fracking context in what the Pennsylvania Supreme Court deemed an unprecedented challenge to vindicate fundamental constitutional rights.¹²⁴

114. *Id.* at 725–26; *see also* MARCELLO MOLLO ET AL., EARTHJUSTICE, ENVIRONMENTAL RIGHTS REPORT 1 (2005), *available at* http://earthjustice.org/sites/default/files/library/references/2005_ENVIRONMENTAL_RIGHTS_REPORTrev.pdf.

115. Takacs, *supra* note 109, at 726.

116. *Id.* at 718.

117. HAW. CONST. art. XI, §§ 1, 9.

118. ILL. CONST. art. XI, §§ 1, 2.

119. MASS. CONST. amend. XCVII.

120. PA. CONST. art. I, § 27.

121. MONT. CONST. art. II, § 3 (“All persons are born free and have certain inalienable rights. They include the right to a clean and healthful environment . . .”).

122. R.I. CONST. art. I, § 17 (“[I]t shall be the duty of the general assembly to provide for the conservation of the air, land, water, plant, animal, mineral and other natural resources of the state, and to adopt all means necessary and proper by law to protect the natural environment of the people . . .”).

123. *Robinson Twp. v. Pennsylvania*, 83 A.3d 901, 962 (Pa. 2013).

124. *Id.* at 976.

A. Act 13

Act 13 of 2012,¹²⁵ amending the Pennsylvania Oil and Gas Act,¹²⁶ comprised of sweeping legislation affecting Pennsylvania's environment and the exploitation and recovery of natural gas in the Marcellus Shale. The Commonwealth viewed Act 13 as a comprehensive reform of oil and gas laws, driven by policy determinations to promote development of vast natural gas reserves, encouraging energy self-sufficiency, and ensuring uniformity of local zoning ordinances throughout the state.¹²⁷ The citizens, on other hand, characterized Act 13 as a blunt one-size-fits-all accommodation of the oil and gas industry that worked a remarkable revolution on zoning that would change the character of existing neighborhoods and affect planning for future growth.¹²⁸ Four provisions of Act 13, §§ 3303, 3304, 3215(b), 3215(d), comprised the heart of the constitutional challenge.

Section 3303 professed environmental acts to be of statewide concern and stated the legislature's intent to occupy the entire field of oil and gas regulation by preempting and superseding all local regulation of oil and gas operations.¹²⁹ Section 3304 instituted uniformity among local ordinances, by obligating some local action and precluding other action, in order to allow reasonable development of oil and gas resources.¹³⁰ Local governments were, for example, required to authorize oil and gas operations as a permitted use in all zoning districts, while being prohibited from limiting hours of operation for oil and gas industry operations.¹³¹ Section 3304 effectively reduced local zoning power to "*pro forma*" acceptance of the General Assembly's industry accommodation.¹³²

Section 3215(b) imposed modest well setback requirements¹³³ near wetlands and bodies of water, but then provided a waiver to those restrictions simply upon submission of a plan identifying additional

125. H.B. 1950, 196th Gen. Assemb., Reg. Sess. (Pa. 2012).

126. 58 PA. CONS. STAT. §§ 2301–3504 (2012).

127. *Robinson Twp.*, 83 A.3d at 933.

128. *Id.* at 936–38.

129. *Id.* at 970.

130. *Id.*

131. *Id.* at 970–71.

132. *Id.* at 972.

133. *Id.* at 972–73. Section 3215(b)(2) provided that "[t]he edge of the disturbed area associated with any unconventional well site must maintain a 100-foot setback from the edge of any solid blue lined stream, spring or body of water as identified on the most current 7½ minute topographic quadrangle map of the United States Geological Survey." *Id.*

safety measures.¹³⁴ Remarkably, Act 13 placed the burden on the Pennsylvania Department of Environmental Protection (DEP) to prove “that the [setback] conditions were *necessary* to protect against a probable harmful impact of the public resources.”¹³⁵ Section 3215(d) created a system by which municipalities could submit written, non-binding comments detailing local conditions and circumstances that the DEP should consider in making determinations. Section 3215(d) went on to provide that DEP determinations were final and unappealable.¹³⁶

The Supreme Court of Pennsylvania agreed Act 13 worked a remarkable revolution upon Pennsylvania’s existing zoning regimen.¹³⁷ The court’s constitutional analysis, too, is remarkable.

B. Basis of Decision

The Supreme Court of Pennsylvania, relying on the Pennsylvania Constitution, legislative history, natural law principles, and environmental and economic realities, spoke unequivocally in favor of sustainable development. The court found unconstitutional §§ 3303, 3304, and 3215 as impermissible encroachments of the inherent and infeasible guarantees in the Environmental Rights Amendment of the Pennsylvania Constitution.¹³⁸

Article I, section 27 of the Declaration of Rights in the Pennsylvania Constitution,¹³⁹ the Environmental Rights Amendment, identifies protected rights, prevents the state from acting in certain ways, and establishes a framework for the state to participate affirmatively in the development and enforcement of these rights.¹⁴⁰

The first clause grants citizens an affirmative “right to clean air, pure water, and to the preservation of natural, scenic, historic, and

134. *Id.* at 973. Section 3215(b)(4) provided that “[t]he Department shall waive the distance restrictions upon submission of a plan identifying additional measures, facilities or practices to be employed during well site construction, drilling and operations necessary to protect the waters of this Commonwealth.” *Id.*

135. *Id.* (emphasis added).

136. *Id.* at 973–74.

137. *Id.* at 971.

138. *Id.* at 978–85.

139. PA. CONST. art. I, § 27 (“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.”).

140. *Robinson Twp.*, 83 A.3d at 950.

esthetic values.”¹⁴¹ The rights guaranteed in Article I of the Declaration of Rights, including the Environmental Rights Amendment, “are inherent in man’s nature and preserved rather than created by the Pennsylvania Constitution,”¹⁴² meaning regulation must be subordinate to enjoyment of the right.¹⁴³ Notably, the court recognized that the “inviolable” nature of these rights implies that economic development cannot take place at the expense of unreasonable environmental destruction—thus requiring the state to promote sustainable economic development.¹⁴⁴

The second and third clauses embody the public trust doctrine. The second clause establishes common ownership of resources, without explicitly defining the scope of that ownership.¹⁴⁵ The court identified the current conception of public natural resources to include state-owned lands, waterways, mineral reserves, ambient air, surface and groundwater, and wild flora and fauna, while also acknowledging that the term is adaptable to conform to societal concerns.¹⁴⁶ The third clause establishes the State’s duties with respect to these natural resources.¹⁴⁷ As trustee, the State is a fiduciary obligated to act toward the corpus of the trust—the public natural resources—with prudence, loyalty, and impartiality.¹⁴⁸ To meet its fiduciary duty, the State must prohibit activity, whether direct or indirect, that threatens to degrade, diminish, or deplete resources, as well as act affirmatively to protect the environment through legislative action.¹⁴⁹ Moreover, the State must execute these duties with the interest of the beneficiaries—all Pennsylvanians, including future generations—in mind.¹⁵⁰ That obligation requires a holistic balancing that considers the potential long-term consequences.¹⁵¹ The court summarized that the express duties to conserve and maintain can be “tempered by legitimate develop-

141. PA. CONST. art. I, § 27.

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

143. *Id.* at 951.

144. *Id.* at 954.

145. PA. CONST. art. I, § 27 (“Pennsylvania’s public natural resources are the common property of all the people, including generations yet to come.”).

146. *Robinson Twp.*, 83 A.3d at 955.

147. PA. CONST. art. I, § 27 (“As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of all the people.”).

148. *Robinson Twp.*, 83 A.3d at 957.

149. *Id.* at 957–58.

150. *Id.* at 958–59.

151. *Id.* at 959 (“Dealing impartially with all beneficiaries means that the trustee must treat all equitably in light of the purposes of the trust.”).

ment tending to improve upon the lot of Pennsylvania's citizenry, with the evident goal of promoting sustainable development."¹⁵²

C. Practical Outcome

Relying on section 27 and the public trust doctrine, the court struck down §§ 3303, 3304, and 3215 as unconstitutional, recognizing that the natural gas industry "has and will have a lasting, and undeniably detrimental" effect on resources essential to life, health, and liberty.¹⁵³

Section 3303, which purported to preempt the regulatory oil and gas field to the exclusion of all local legislation, impermissibly commanded municipalities to ignore obligations to conserve and maintain natural resources under section 27.¹⁵⁴ Recognizing separation of powers principles, and echoing the intimate nature of local government,¹⁵⁵ the court reasoned that Act 13 ordered localities to accommodate new and invasive practices, fundamentally disrupting local citizens' environmental expectations.¹⁵⁶ Act 13 unequivocally "command[ed] municipalities to ignore their obligations under Article I, section 27 and further direct[ed] municipalities to take affirmative actions to undo existing protections."¹⁵⁷

Section 3304, which made industrial uses a matter of right in *all* zoning districts and prevented even modest locally tailored protections, failed to prevent degradation, diminution, and depletion of public natural resources. These drastic changes to existing zoning schemes "alter[ed] existing expectations of communities and property owners and substantially diminish[ed] natural and esthetic values of the local environment."¹⁵⁸ The Act's "blunt approach," disregarding the disparate effects that differently situated communities would endure, failed to manage the trust for the benefit of all people.¹⁵⁹ Despite the undoubted urgency with which the political branches must move to secure the economic benefits of natural gas development, that urgency cannot be permitted to supersede constitutional demands.¹⁶⁰ The trustee's actions must be measured by benefits "be-

152. *Id.* at 958.

153. *Id.* at 975.

154. *Id.* at 978.

155. *See supra* Part I.B.2.i.

156. *Robinson Twp.*, 83 A.3d at 977.

157. *Id.* at 978.

158. *Id.* at 979.

159. *Id.* at 980.

160. *Id.* at 981–82.

stowed upon all citizens in their utilization of natural resources,” rather than by “the balance sheet profits and appreciation realized from resource operations.”¹⁶¹ In an unabashed call for sustainable development, the court recalled section 27’s legislative history, recounting that “‘the measure of our progress is not just what we have but how we live’”¹⁶²

Section 3215, which created a seemingly universal waiver to well setback provisions, failed to establish meaningful substantive standards by which to conserve and maintain environmental resources. Without legislative guidance on the meaning of the term “necessary,” the court appraised the setback waiver provision of § 3215(b) as an invitation for “arbitrary [government] decision-making with a disparate impact on trust beneficiaries.”¹⁶³ Subsection (d), moreover, marginalized participation by residents, business owners, and elected representatives with the creation of a permit scheme that did not guarantee consideration of local concerns or provide an appeal process.¹⁶⁴ Ultimately, the court found that the statutory scheme “dilutes the Department’s authority to regulate and enforce adequate environmental standards, and fosters departures from the goal of sustainable development.”¹⁶⁵

IV. Moving Forward

It would be difficult to conceive of a more sweeping endorsement of the concept of the public trust than *Robinson*. The court suggested Pennsylvania’s unique industrial past to be the necessary prologue to *Robinson*.¹⁶⁶ Ostensibly, that might hold true. Pennsylvania has been pivotal in the rise and fall of U.S. industrialism—first oil, then steel, and now rust. Natural gas today, like oil and steel of yesterday, promises economic prosperity at the expense of environmental degradation. *Robinson*, and its welcomed recognition of the need to balance economic self-determination with environmental self-preservation,

161. *Id.* at 978.

162. *Id.* (quoting COMMONWEALTH OF PA. LEGIS. JOURNAL, GEN. ASSEMB. 154-118, 1970 Sess., at 2270 (1970)).

163. *Id.* at 984.

164. *Id.* at 984, 932 n.19.

165. *Id.*

166. *Id.* at 976. The court described Pennsylvania’s cultivation of coal, oil, and steel to retrospectively be “a shortsighted exploitation of its bounteous environment, affecting its minerals, its water, its air, its flora and fauna, and its people,” and suggested section 27’s rights and duties are a unique attempt to restore Pennsylvania’s pure beauty that William Penn first witnessed upon his arrival in the seventeenth century. *Id.*

however, ought not be limited to its facts or to Pennsylvania's circumstance. Pennsylvania's "shortsighted exploitation of its bounteous environment"¹⁶⁷ is not *sui generis*, but a prevailing global practice that calls for urgent attention.¹⁶⁸ Air pollution, water pollution, and hydrocarbons are global risks.¹⁶⁹ Former Pennsylvania governor and first director of the United States Forest Service, Gifford Pinchot, believed that the "very existence of our nation, and of all the rest, depends on conserving the resources which are the foundations of its life."¹⁷⁰ Sustainable development is more necessary now than ever.¹⁷¹

A. Endorsement and Example for the International Community

Recent incorporation of the public trust doctrine into national constitutions abroad has the potential to bring disparate segments of the international community to the forefront of the global environmental debate. Although gaps both in terms of coverage and participation in environmental treaties continue to make meaningful international environmental standards a fantasy,¹⁷² a global consensus continues to emerge.¹⁷³ Environment and economy are quickly accel-

167. *Id.*

168. Nidaa Bakhsh & Brian Swint, *Fracking Spreads Worldwide*, BLOOMBERG BUSINESS (Nov. 14, 2013), <http://www.bloomberg.com/bw/articles/2013-11-14/2014-outlook-shale-fracking-goes-global> (speculating that a record number of shale wells may be drilled internationally in 2014).

169. See *Climate Change*, UNITED NATIONS, <http://www.un.org/en/globalissues/climate-change> (last visited May 4, 2014) (arguing that the increase in greenhouse gases—exacerbated by the burning of fossil fuels—leads to irreversible ecosystem changes, threatening environments as diverse as the Amazon rainforest and the Arctic tundra); *Climate Change Impacts*, ENVIRONMENTAL DEFENSE FUND, <http://www.edf.org/climate/climate-change-impacts> (last visited May 4, 2014) (explaining that rising global temperatures threaten to reduce arctic glaciers, raise sea levels, increase flooding and droughts, spark devastating heat waves, and diminish air quality).

170. John C. Dernbach, *Taking the Pennsylvania Constitution Seriously When It Protects the Environment: Part I—An Interpretative Framework for Article I, Section 27*, 103 DICK. L. REV. 693, 716–17 (1999).

171. See Jeffrey D. Sachs, *Jeffrey Sachs: The Necessity for Sustainable Development*, S.F. BAY GUARDIAN ONLINE (Jan. 31, 2012), <http://www.sfbg.com/bruce/2012/01/31/jeffrey-sachs-necessity-sustainable-development> (suggesting that because the global population is expected to exceed nine billion by 2050, practices that limit CO₂ emissions are necessary to prevent irreversible environmental effects, understand our fate, and embrace sustainable development).

172. GLOBAL PROJECT FINANCE, HUMAN RIGHTS AND SUSTAINABLE DEVELOPMENT 70–71 (Sheldon Leader & David Ong eds., 2011).

173. See *The Need for a New Global Agreement on Climate Change*, UNITED NATIONS, <http://www.un.org/wcm/content/site/climatechange/pages/gateway/the-negotiations/the-need-for-a-new-global-agreement> (last visited May 4, 2014) (recognizing that with stronger scientific evidence about the effects of climate change, there is a growing sense of urgency for stronger international action, and calling for new agreements that address the needs of

erating into a seamless web of local, regional, national, and global cause and effect.¹⁷⁴ Healthy, responsible economic growth in developing countries is stifled by protectionism, intolerable debt burdens, unreliable development finance, and disdain from the developed world, the United States, and the West.¹⁷⁵

For the international community, the implications of *Robinson's* holding—requiring dedication to evolutionary, not revolutionary, sustainable development—should not be understated. In a remarkable shift away from historical Western hegemony, *Robinson* recognized that “it is not man who must adapt himself to technology but technology which must be adapted to man.”¹⁷⁶ Nobel Prize-winning author Gabriel Garcia Marquez remarked that for much of the developing world, the “crucial problem has been a lack of conventional means to render our lives believable.”¹⁷⁷ Although there is much work to be done, *Robinson* should be seen as an endorsement of the emerging international approach to sustainable development and as a sign of hope for a global consensus. The public trust doctrine has the potential to establish a conventional environmental protection mechanism with the flexibility for unique application, and the legitimacy to cultivate Marquez's believability. The courts, as the gatekeepers of the government's fiduciary duties, shall lay the foundation, case by case, for a global public trust.

B. A Call to Action at Home

The message from the international community and *Robinson* undeniably promises that the public trust can provide a remedy for environmental wrongs. “Environmental amendments to state or national constitutions are attractive, however, only if they can be applied in a meaningful way.”¹⁷⁸ *Robinson*, which provides both a thorough constitutional interpretation of the theoretical groundings and a practical

developing countries while safeguarding the economic interest of industrialized countries).

174. WORLD COMMISSION ON ENVIRONMENT & DEVELOPMENT, OUR COMMON FUTURE, FROM ONE EARTH TO ONE WORLD I.2.15 (1987), available at <http://www.un-documents.net/ocfov.htm#1.2>.

175. *Id.* at I.2.17–18.

176. *Robinson Twp. v. Pennsylvania*, 83 A.3d 901, 954 (Pa. 2013).

177. Gabriel García Márquez, Nobel Lecture: The Solitude of Latin America (Dec. 8, 1982), available at http://www.nobelprize.org/nobel_prizes/literature/laureates/1982/marquez-lecture.html.

178. Dernbach, *supra* note 170, at 698.

application of the substantive doctrine, creates a legal framework for proliferation of public trust principles.

The most obvious and powerful large-scale implementation of the public trust doctrine, either procedurally or substantively, would come through incorporation in the Due Process Clause of the Fourteenth Amendment. Given the United States Supreme Court's current composition and contemporary due process jurisprudence, however, neither the creation of a new fundamental right nor a broadening of life or liberty language seems a practical possibility for extending substantive environmental rights.¹⁷⁹ Joseph Sax, however, recognizing the inherently political nature of the substantive aspect of the public trust, suggested a more subtle, yet profound procedural role for the courts.¹⁸⁰

Undoubtedly, the judiciary can accurately be described as an institutional medium aimed at promoting intelligent public policy.¹⁸¹ Courts, although operating with tremendous freedom in passing upon the wisdom of those policies, are "too sophisticated and restrained" to nakedly announce a policy illegal because it is unwise; rather, they more regularly stall such policies either by requiring additional administrative justification, or by returning the issue to the political sphere.¹⁸² Insulated from, but keenly aware of, the role of majoritarian politics, the courts are more akin to the gatekeeper than "the ultimate guardian of the public weal."¹⁸³ Courts aim to achieve democratization—typically either by requiring intervention to represent the underrepresented, or by requiring the legislature to make a transparent policy decision.¹⁸⁴ Even the most activist and interventionist courts, rather than looking to usurp legislative power, look to "thrust[] decision making upon a truly representative body."¹⁸⁵ Incorporation of the public trust doctrine as an aspect of procedural due process will give citizens the chance to retain a material role in local

179. See *United States v. Carlton*, 512 U.S. 26, 39 (1994) (Scalia & Thomas, JJ., concurring) (categorizing the concept of "substantive due process" as an oxymoron rather than a constitutional right).

180. Sax, *supra* note 81, at 558 ("It should be obvious that courts operate with an extraordinary degree of freedom and that the procedural devices they employ are very significantly determined by their attitudes about the propriety of the policies which are before them.").

181. *Id.* at 557–58.

182. *Id.*

183. *Id.* at 559.

184. *Id.* at 558.

185. *Id.* at 559.

environmental decision making,¹⁸⁶ and allow courts to achieve their democratizing goals.

Judicial enforcement of the public trust is the most efficacious starting point, not only because of its legitimizing insulation from electoral politics, but also because that action pays tribute to the Founders' most profound vision for democratic courts. James Madison reflected that "[i]n framing a government which is to be administered by men over men, the great difficulty lies in this: you must first enable the government to control the governed; and in the next place oblige it to control itself."¹⁸⁷ Judicial oversight is as necessary in the enforcement of public resource trusts as it is in private trusts.¹⁸⁸ Just as private trustees are judicially accountable to their beneficiaries, so too are the legislative and executive branches of government accountable to the beneficiaries of the public trust.¹⁸⁹

Evoking the spirit of *Marbury v. Madison*,¹⁹⁰ the court in *Robinson* recognized that, while separation of powers principles are incumbent upon all branches of government, "our finding that this particular legislation crosses this constitutional line is not a substitution of our own preferences for those of the General Assembly."¹⁹¹ To the contrary, "the notion that judicial decisions passing upon such challenges represent 'judicial legislation'—unless the legislative act is rubber-stamped—misconceives our own duty."¹⁹² That solemn duty, in the public trust context, is the balancing of the preservation of rights and sovereign powers of future generations—the quintessential unrepresented minority—with the careless materiality of the current political majority.¹⁹³

186. Because preemption threatens meaningful individual participation in local governance, the incorporation of the public trust doctrine may be one route to keep these decisions local. See *supra* Part I.B.2.ii.

187. THE FEDERALIST NO. 51, at 294 (James Madison).

188. Brief of Law Professors as Amici Curiae in Support of Appellants Seeking Reversal, *Sanders-Reed ex rel. Sanders-Reed v. Martinez*, No. 33,110, 2015 WL 1120403, at *22 (N.M. Ct. App. Mar. 27, 2014) [hereinafter Brief of Law Professors], available at <http://ourchil drenstrust.org/sites/default/files/NMLawProfAmicus.pdf> (relying in large part upon *Robinson* in encouraging New Mexico to invoke the protections of the public trust doctrine).

189. *Id.* at *11–12 (quoting *Ariz. Ctr. for Law in Pub. Interest v. Hassell*, 837 P.2d 158, 169 (Ariz. Ct. App. 1991)).

190. *Marbury v. Madison*, 5 U.S. (1 Cranch) 137, 177 (1803) ("It is emphatically the province and duty of the judicial department to say what the law is.").

191. *Robinson Twp. v. Pennsylvania*, 83 A.3d 901, 985 n.62 (Pa. 2013).

192. *Id.*

193. Brief of Law Professors, *supra* note 188, at 20–21.

Although federal treatment would set a clear priority for environmental concerns,¹⁹⁴ the political landscape makes that an unlikely reality.¹⁹⁵ Constitutional changes at the state level, however, are more practical and, without the national political flare, have the potential to create a more significant impact. More than two-thirds of state constitutions, and every one written since 1959, contain provisions concerning protection and preservation of natural resources and the environment.¹⁹⁶ At the state level, it is possible to garner the political support necessary to create a right to a healthy environment that is considered on par with, and enforceable to the same extent as, other political rights. It is possible to recognize, and for courts to enforce, environmental rights as among the group of select rights “inherent to mankind, and thus secured rather than bestowed by the Constitution.”¹⁹⁷ Ultimately, it must be the task of curious law students, dedicated professors, and seasoned practitioners to produce provocative legal scholarship that fuels debate, urges public outcry, and forces political and judicial action.¹⁹⁸

194. See Alec L. *ex rel.* Loorz v. McCarthy, 561 F. App’x 7 (D.C. Cir. 2014) (requesting review of a claim, which had originally been dismissed on the grounds that the public trust doctrine is a matter of state law only, seeking to obligate the federal government to develop and implement a comprehensive climate recovery plan).

195. The U.S. District Court for the District of Columbia explained that the case “is about the fundamental nature of our government and our constitutional system,” and dismissed the case, reasoning that “a sweeping court-imposed remedy is [not] the appropriate medicine for every intractable problem.” Alec L. v. Jackson, 863 F. Supp. 2d 11, 17 (D.D.C. 2012). The Court of Appeals for the D.C. Circuit affirmed, *per curiam*, without a published opinion. Alec L., 561 F. App’x 7. Despite submission of dozens of amicus briefs representing interests ranging from economics, national security, government, faith, human rights, and business, one commentator succinctly exposed the greater forces at play. He presciently opined it “difficult to imagine [the U.S. Supreme Court] taking up this public trust doctrine case” after having fashioned the Citizens United framework giving corporations emitting greenhouse gases the ability to spend unlimited sums of political money to preserve their right to the status quo. Jeff Nesbit, *Who Speaks for the Earth?*, U.S. NEWS & WORLD REP. (Nov. 10, 2014), <http://www.usnews.com/news/blogs/at-the-edge/2014/11/10/who-speaks-for-the-earth>.

Indeed, the U.S. Supreme Court denied the petition on December 8, 2014, without comment. Alec L. *ex rel.* Loorz v. McCarthy, 135 S. Ct. 774 (2014).

196. Dernbach, *supra* note 170, at 698.

197. Robinson Twp. v. Pennsylvania, 83 A.3d 901, 948 n.36 (Pa. 2013) (quoting Driscoll v. Corbett, 69 A.3d 197, 208 (Pa. 2013)).

198. See, e.g., Dernbach, *supra* note 170; John C. Dernbach, *Taking the Pennsylvania Constitution Seriously When it Protects the Environment: Part II—Environmental Rights and Public Trust*, 104 DICK. L. REV. 97 (1999). Professor Dernbach’s articles were foundational to the reasoning in *Robinson*. 83 A.3d at 953, 954 (citing both of Dernbach’s articles). He continues his push for greater environmental protection, presenting webinars exploring the implications of, and avenues for, expanding *Robinson*, and most recently participating in a symposium at Widener University with scholars from around the globe, titled *Global Envi-*

Conclusion

Professor Sax passed away on March 9, 2014.¹⁹⁹ He recently remarked, “[I]f you’re going to work on issues like environmental protection, you have to be opportunistic in the sense that you wait until the time is ripe, and then you can get some things done.”²⁰⁰ Fracking and its attendant risks are real.²⁰¹ The obligations Pennsylvania assumes are noble, and the rights it guarantees are novel. *Robinson’s* remarkable and courageous application of the public trust doctrine stands as a testament abroad and a revelation at home. The upshot is achievement of a quintessential American ideal, perhaps most profoundly professed by troubadour trustee Woody Guthrie—“Nobody living can ever stop me, [a]s I go walking that freedom highway; [n]obody living can ever make me turn back. This land was made for you and me.”²⁰² After *Robinson*, it might finally be that this land belongs to you and me.

ronmental Constitutionalism. See Global Environmental Constitutionalism Symposium at Widener Law, ENVTL. LAW PROF BLOG (Apr. 11, 2014), http://lawprofessors.typepad.com/environmental_law/2014/04/global-environmental-constitutionalism-symposium-at-widener-law.html.

199. Douglas Martin, *Joseph Sax, Who Pioneered Environmental Law, Dies at 78*, N.Y. TIMES (Mar. 10, 2014), <http://www.nytimes.com/2014/03/11/us/joseph-l-sax-who-pioneered-legal-protections-for-natural-resources-dies-at-78.html>.

200. *Id.*

201. *See supra* Part I.A.

202. *This Land Is Your Land*, OFFICIAL WOODY GUTHRIE WEBSITE, http://www.woodyguthrie.org/Lyrics/This_Land.htm (last visited Mar. 19, 2015) (Woody Guthrie Publications, Inc. & TRO-Ludlow Music, Inc. 1956).