

THE “GREENING” OF THE GLOBAL JUDICIARY

ROBERT V. PERCIVAL*

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I. INTRODUCTION

Throughout history the judiciary has played a key role in the development and implementation of principles of environmental law. Courageous, far-sighted judges have intervened at critical stages in history to articulate and apply key principles of law, particularly when other branches of government ignored festering environmental problems. Judges around the world are now becoming more sophisticated in handling environmental matters, and countries are establishing and expanding specialized environmental courts.

This article begins by describing the history of judicial involvement in environmental cases, starting with the common law the United States inherited from Britain and continuing through the rapid growth of environmental legislation in the final decades of the twentieth century. It then discusses the more recent growth of global environmental law and the role courts are playing in this

* Robert F. Stanton Professor of Law and Director of the Environmental Law Program, University of Maryland Francis King Carey School of Law. This article is based on the 2016 Fall Distinguished Environmental Lecture presented at Florida State University College of Law on Oct. 19, 2016. The author would like to express his appreciation to Kate Woods for her assistance with this article.

development. The article reviews the growth of specialized environmental courts, how the judiciary is responding to climate change, and the efforts to increase the capacity of the global judiciary to handle environmental cases. The article concludes by examining the emergence of widely held principles of environmental law.

II. A HISTORY OF JUDICIAL INVOLVEMENT IN ENVIRONMENTAL LAW

Environmental law has much deeper historical roots than most people realize. For centuries, common law courts struggled to develop principles of environmental law before the advent of national regulatory programs. Once those programs were established, courts continued to play a crucial role in ensuring that they were implemented and interpreted correctly. Some courts around the world have used environmental provisions in national constitutions to break new legal ground in an effort to respond to contemporary environmental problems, such as climate change.

The history of the common law's involvement in environmental issues often is traced to 1610, when a British court ruled for the first time that even a non-trespassory invasion of one's interests in the quiet use and enjoyment of their property could be actionable as a private nuisance.¹ A century later, Lord John Holt used an ancient principal of Roman law known in Latin as *sic utere tuo ut alienum non laedas* in the case of *Tenant v. Goldwin*.² This is the principal that one can use his or her property as one pleases, but cannot do things that would cause significant, foreseeable harm to others. This has now been embraced as a fundamental principle of global environmental law. It is reflected in Principle 21 of the 1972 Stockholm Declaration, a product of the first global environmental summit.³ Principle 21 declares that states have a sovereign right to exploit their own resources, but also have the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other states.⁴ Twenty years later, at the Rio Earth Summit, that principle became Principle 2 of the Rio Declaration.⁵

Courts have not always been environmentally astute, particularly when they did not have the kind of environmental knowledge

1. Aldred's Case (1610) 77 Eng. Rep. 816, 821–22; 9 Co. Rep. 57b, 58a.

2. (1704) 92 Eng. Rep. 222, 223–24; 2 Lord Raymond 1089, 1091–92.

3. U.N. Conference on the Human Environment, *Report of the U.N. Conference on the Human Environment*, Principle 21, U.N. Doc. A/CONF.48/14/Rev.1 (June 5–16, 1972).

4. *Id.*

5. U.N. Conference on Environment and Development, *Rio Declaration on Environment and Development*, Principle 2, U.N. Doc. A/CONF.151/26/Rev.1 (Vol.1), annex 1 (Aug. 12, 1992).

we have today. In 1900, the U.S. Supreme Court declared that filling wetlands was so obviously a good thing that “the police power is never more legitimately exercised than in removing such nuisances.”⁶ The Court did not understand the important ecological functions that wetlands perform, which is why we have laws today to protect them.

Throughout the twentieth century, there were many disputes over interstate air and water pollution that the U.S. Supreme Court heard within its original jurisdiction to hear disputes between states. In one case, the Court actually wrote an air pollution control injunction;⁷ in another case, the Court effectively required the city of New York to build its first garbage incinerator.⁸ In 1933, the Court required the city of Chicago to build its first sewage treatment plant in order to stop massive diversions of water from Lake Michigan that were causing the levels of the Great Lakes to fall.⁹

Beginning in 1970, there was an avalanche of environmental legislation adopted by the U.S. Congress.¹⁰ At this time, protecting the environment was a bipartisan issue with each political party trying to be greener than the other.¹¹ The basic regulatory infrastructure of environmental law that exists today in the U.S. was erected then. These laws require agencies like the U.S. Environmental Protection Agency (EPA) to set up comprehensive national regulatory programs that are implemented and enforced jointly with the states.¹² Significantly, these laws also for the first time authorized citizen suits to compel agencies to implement the laws and enabled citizens to enforce them against violators.¹³

One of the most significant cases in U.S. environmental law was decided in 1976 after EPA for the first time set limits on the amount of lead that could be put in gasoline. The lead industry challenged this regulation, and by a 2-1 decision the court said that the case against lead in gasoline was “speculative and inconclusive,” because EPA could not prove that specific individuals had been harmed by the lead that was in the air in increasing quantities.¹⁴ After the three-judge panel struck down the regulation, the D.C. Circuit took

6. *Leovy v. United States*, 177 U.S. 621, 636 (1900).

7. *Georgia v. Tenn. Copper Co.*, 237 U.S. 478 (1915).

8. *See New Jersey v. City of New York*, 290 U.S. 237, 240 (1933).

9. *Wisconsin v. Illinois*, 281 U.S. 179, 196, 201–02 (1930).

10. ROBERT V. PERCIVAL, CHRISTOPHER H. SCHROEDER, ALAN S. MILLER & JAMES P. LEAPE, *ENVIRONMENTAL REGULATION: LAW, SCIENCE & POLICY* 92 (7th ed. 2013).

11. THEODORE WHITE, *THE MAKING OF THE PRESIDENT* 45 (1973).

12. *See PERCIVAL ET AL.*, *supra* note 10, at 92.

13. *See, e.g.*, *Clean Air Act Amendments of 1970*, 42 U.S.C. § 7604.

14. *See Ethyl Corp. v. EPA* [“Ethyl I”], 7 E.R.C. 1353 (D.C. Cir. Jan. 28, 1975), *reversed on rehearing en banc*, 541 F.2d 1 (D.C. Cir. 1976) (en banc).

the case *en banc*.¹⁵ The nine judges by a vote of 5-4 reversed the panel and upheld the regulation.¹⁶ The court recognized that the regulatory state had replaced the old common law model where A has to prove that B caused it harm. It endorsed precautionary regulation and deference to the expertise of the EPA Administrator.¹⁷ This decision helped spawn the phasing-out of lead additives from gasoline, one of the most successful programs in the history of environmental law. As lead emissions from gasoline declined, average lead levels in children's blood have plummeted.¹⁸ Now virtually every country in the world has emulated the U.S. and phased out leaded gasoline. A study by economists has found that because lead is a potent neurotoxin, the net benefits of removing it from gasoline range from two to three trillion dollars per year.¹⁹ The citizens of the world are now healthier and smarter, because they are not inhaling lead in the atmosphere from leaded gasoline.

In *TVA v. Hill*,²⁰ the U.S. Supreme Court sent a strong signal that the new environmental laws were to be taken seriously when it ruled that construction of a dam that was virtually complete had to be halted to protect the endangered snail darter.²¹ Most observers thought that the Court would find a way to let the project go forward, but instead it ruled that the new Endangered Species Act had to be enforced as written.²² Even though Congress ultimately found a way to circumvent the ruling and complete the dam, the Court's decision lent weight to the new environmental laws.

Judges have played a key role in helping the legal system adapt to change. The U.S. has the oldest written constitution in the world.²³ The U.S. Constitution does not mention the environment, but courts have relied on the power of Congress to regulate interstate commerce to uphold federal laws to protect the environment.²⁴ A few judges have disagreed with this. Judge David Sentelle, dissenting in a case upholding the constitutionality of the Endangered Species Act, noted that the word "ecosystems" is not in the U.S. Constitution and "an ecosystem is an ecosystem,

15. See *Ethyl Corp. v. EPA*, 541 F.2d 1, 54-55 (D.C. Cir. 1976) (*en banc*).

16. *Id.* at 54-55.

17. *Id.* at 36.

18. See Peter L. Tsai & Thomas H. Hatfield, *Global Benefits from the Phaseout of Leaded Fuel*, 74 J. ENVTL. HEALTH 8 (2011).

19. *Id.* at 12.

20. 437 U.S. 153 (1978).

21. *Id.* at 193-94.

22. *Id.* at 195.

23. *Constitution Rankings*, COMPARATIVE CONSTITUTIONS PROJECT, <http://comparativeconstitutionsproject.org/ccp-rankings/> (last visited Apr. 18, 2017).

24. See PERCIVAL ET AL., *supra* note 10, at 132-35.

and commerce is commerce."²⁵ Thus, he would not have allowed Congress to protect endangered species even though the more endangered the species is, the less commercial value it will have.

In previous scholarship, I have argued that a part of this nation's legal system that citizens can take the most pride in is the way in which the U.S. Constitution has evolved and adapted to protect the environment.²⁶ In other countries, the constitution is not that durable. In some Latin American countries, it seems as though whenever a new regime comes in, the party in power amends the constitution to keep itself in power. Some countries have had over thirty constitutions; the U.S. has had just one.²⁷ It is true that virtually every country that has adopted a new constitution or comprehensively amended their constitution in recent years has included some provisions that explicitly address the environment. Ecuador adopted a constitution that gives rights to nature and creates broad standing in environmental cases to defend nature.²⁸ When Syria's dictator Bashar al-Assad had his country's constitution amended to require the state to provide for the families of soldiers killed in the country's civil war he also added a provision that "[p]rotecting the environment shall be the responsibility of the state and society and it shall be the duty of every citizen."²⁹

In a number of important environmental cases, courts have used constitutional provisions to uphold significant environmental decisions. The Australian High Court in 1983 stopped a major dam project on the grounds that it was necessary to preserve a World Heritage site.³⁰ Relying on the government's constitutional authority under the external affairs clause, the court stated that treaty commitments to protect certain sites can be enforced constitutionally by the government.³¹

In India, the courts have created a system of public interest litigation with very broad standing for interested members of the public to bring environmental cases.³² M.C. Mehta has been the top public interest environmental lawyer. He petitioned the Supreme Court of India to take action to protect the Taj Mahal from

25. *Nat'l Ass'n of Home Builders v. Babbitt*, 130 F.3d 1041, 1065 (D.C. Cir. 1997) (Sentelle, dissenting).

26. See Robert V. Percival, "Greening" the Constitution—*Harmonizing Environmental and Constitutional Values*, 32 ENVTL. L. 809 (2002).

27. Tom Ginsburg, *Written Constitutions Around the World*, 15 INSIGHTS ON L. & SOCIETY 3 (2015).

28. See CONSTITUCIÓN POLÍTICA DE LA REPÚBLICA DEL ECUADOR, Oct. 20, 2008, art. 14–15.

29. CONSTITUTION OF THE SYRIAN ARAB REPUBLIC, 2012, art. 27.

30. See *Commonwealth v. Tasmania* (1983) 158 CLR 1 (Austl.).

31. *Id.*

32. See Peggy Rodgers Kalas, *Environmental Justice in India*, 1 ASIA-PAC. J. ON HUM. RTS. & L. 97, 106 (2000).

the ravages of air pollution.³³ Relying on Article 21 of the Indian Constitution that creates a “right to life,” which the court has interpreted to imply a right to a healthy environment, the court ordered that polluters who were harming the Taj Mahal had to cease doing so or relocate.³⁴

In the Philippines, environmental lawyer Tony Oposa brought a case to stop unsustainable logging.³⁵ The court upheld Oposa’s right to bring the case on behalf of future generations,³⁶ adopting an argument made in the scholarship of Georgetown Law Professor Edith Brown Weiss who has written on the notion of a planetary trust for future generations.³⁷ Relying on environmental provisions in the Philippines Constitution, Justice Hilario Davide ruled that the right to a clean environment was fundamental and the court issued orders to stop the deforestation.³⁸

The Supreme Court of Chile surprised everyone by using the Chilean Constitution in 1997 to reject a major project that would have logged old growth forests in the southern part of the country.³⁹ The court’s *Trillium* decision had a profound impact on the development of environmental law in Chile, based in part on a constitutional provision that ensures every Chilean the right to live in an environment free of contamination.⁴⁰

III. JUDICIAL PHILOSOPHIES AND ENVIRONMENTAL LAW

At his confirmation hearings in 1962, U.S. Supreme Court nominee Byron R. White was asked what he viewed the role of a U.S. Supreme Court Justice to be. “[T]o decide cases,” he responded.⁴¹ White’s response reflected the non-ideological nature of the U.S. judiciary at the time. The fact that he quickly was confirmed to the Court by a voice vote of the U.S. Senate after a single, ninety-minute hearing, illustrates the non-partisan nature

33. See *M.C. Mehta v. Kamal Nath* (2000) 6 SCC 213 (India).

34. *Id.* at 216–17.

35. See *Minors Oposa v. Factoran*, 33 I.L.M. 173, 185 (1994) (Philippines).

36. *Id.* at 191.

37. Edith Brown Weiss, *In Fairness to Future Generations*, 8 AM. U. INT’L L. REV. 19 (1992).

38. See *Minors Oposa v. Factoran*, 33 I.L.M. at 196–97.

39. Corte Suprema de Justicia [C.S.J.] [Supreme Court], 19 marzo 1997, “Horvath Kiss, Antonio c. Comisión Nacional del Medio Ambiente,” Rol de la causa: 4658–96, recurso de protección, F. del M. vol. xx No. Sentencia xxx (Chile).

40. *Id.*; Rev. Derecho (Valdivia) v.8 n.1 Valdivia dic. 1997 (Chile).

41. Dennis Hutchinson, *Byron R. White*, AM. NAT’L BIOGRAPHY ONLINE (July 9, 2008), <http://www.anb.org/articles/11/11-62626.html>.

of judicial confirmations at the time.⁴² But after President Ronald Reagan tried to shift the Court sharply to the right, President Reagan's nomination of Robert Bork was defeated in 1987.⁴³ Ever since then, the process of confirming appointments to the U.S. Supreme Court has become increasingly partisan, as illustrated by the unprecedented and shameful refusal by the Republican-controlled U.S. Senate to consider President Barack Obama's March 2016 nomination of Judge Merrick Garland.⁴⁴

Debates over judicial philosophy in the U.S. generally have split between judges who purport to apply the original intent of the drafters of the U.S. Constitution ("originalists") and judges who advocate a "living Constitution" that adjusts to social and economic changes over time. Some judges use these judicial philosophies to lend a veneer of greater legitimacy to decisions whose outcomes align with their own policy preferences.⁴⁵

Justice Antonio Benjamin of the Supreme Constitutional Court of Brazil has contrasted the judicial philosophy of the current U.S. Supreme Court Chief Justice John Roberts (which he dubs *juiz espectador*) with Benjamin's embrace of a more activist role (in his words, *juez protagonista*).⁴⁶ At his confirmation hearings, Chief Justice Roberts naively likened the role of a U.S. Supreme Court Justice to that of a baseball umpire, mechanically applying a clearly defined strike zone to "call balls and strikes."⁴⁷ U.S. Court of Appeals Judge Richard Posner states that this is "a bad analogy" because the judge's "most important role is creative—fitting the law to novel activities, transactions, technologies, and institutions."⁴⁸

Justice Benjamin's approach seems better suited to what Argentine Chief Justice Ricardo Lorenzetti has described as the

42. Peter Weber, *Neil Gorsuch, Trump's Supreme Court Pick, Once Scolded Senate GOP for Blocking Merrick Garland*, THE WEEK (Feb. 1, 2017), <http://theweek.com/speedreads/677310/neil-gorsuch-trumps-supreme-court-pick-once-scolded-senate-gop-blocking-merrick-garland>; LEE EPSTEIN & JEFFREY A. SEGAL, *ADVICE AND CONSENT: THE POLITICS OF JUDICIAL APPOINTMENTS* 103 n. 30 (2005).

43. Linda Greenhouse, *Bork's Nomination is Rejected, 58-42; Reagan "Saddened"*, N.Y. TIMES (Oct. 24, 1987), <http://www.nytimes.com/1987/10/24/politics/24REAG.html>.

44. Amber Phillips, *Obama Just Chose Merrick Garland for the Supreme Court. Republicans Still Won't Confirm Him*, WASH. POST (Mar. 16, 2016), <https://www.washingtonpost.com/news/the-fix/wp/2016/02/13/can-republicans-really-block-obamas-supreme-court-nomination-for-a-year-probably>.

45. RICHARD A. POSNER, *DIVERGENT PATHS: THE ACADEMY AND THE JUDICIARY* 95 (2016); Mark Graber, *Justice Scalia's Orwellian Jurisprudence*, BALKANIZATION (Feb. 16, 2016), https://balkin.blogspot.com/2016_02_01_archive.html.

46. Antonio Benjamin, Justice of the Supreme Constitutional Court of Brazil, Address at the Pace Law School International Symposium on Environmental Courts and Tribunals (Apr. 1, 2011).

47. *Confirmation Hearing on the Nomination of John G. Roberts, Jr. to be Chief Justice of the United States: Hearing Before the Committee on the Judiciary*, 109th Cong. 109–158 (2005) (statement of John Roberts, Chief Justice of United States).

48. POSNER, *supra* note 45, at 163.

transformative nature of environmental law, which challenges traditional doctrines in other areas of law, such as property law, torts, constitutional law, administrative law, and international law.⁴⁹ Chief Justice Lorenzetti has also been one of the first judges to openly acknowledge the special responsibility of the judiciary to intervene when other branches of government are failing to address festering environmental problems.⁵⁰ This is well illustrated by the Argentine Supreme Court's efforts in the *Beatriz Mendoza* case to require the national, provincial, and local governments to conduct a comprehensive cleanup of the Riachuelo River.⁵¹

Former Vermont Environmental Court judge Meredith Wright endorses a more activist judicial philosophy than Chief Justice Roberts. She cites the observation by the late U.S. Court of Appeals judge James B. Craven, Jr., that a judge "is not a bump on a log, nor even a referee at a prizefight. He has not only the right, but he has the duty to participate in the examination of witnesses when necessary to bring out matters that have been insufficiently developed by counsel."⁵²

In his book *Taking Back Eden*, Oliver Houck highlights how environmental lawsuits have served as catalysts for change throughout the world.⁵³ Even when environmental law was either nonexistent or rarely enforced, determined citizens sought to use the legal system to force change and courageous judges responded. As Houck notes, in most of these cases larger forces outside the courtroom (economic, cultural and political) influenced the outcome of environmental disputes, but the judiciary played an important role in facilitating the change.⁵⁴

IV. THE GROWTH OF SPECIALIZED ENVIRONMENTAL COURTS

Many countries are now establishing specialized environmental courts. Rock and Kitty Pring of the University of Denver Law School have put together a comprehensive database of environmental

49. See RICARDO LUIS LORENZETTI, *TEORIA DEL DERECHO AMBIENTAL* (2008).

50. Mario Wainfeld & Irina Hauser, *La Funcion de la Corte es Poner Ruido*, PAGINA12 (Jun. 25, 2006), <https://www.pagina12.com.ar/diario/elpais/1-69025-2006-06-25.html>.

51. See Corte Suprema de Justicia de la Nación [CSJN] [National Supreme Court of Justice], 20/7/2007, "Mendoza, Beatriz Silvia c. Estado Nacional / daños y perjuicios," Fallos (1569-M-XL) (Arg.).

52. *United States v. Ostendorff*, 371 F.2d 729, 732 (4th Cir. 1967).

53. OLIVER A. HOUCK, *TAKING BACK EDEN: EIGHT ENVIRONMENTAL CASES THAT CHANGED THE WORLD* 1-8 (2010).

54. Robert V. Percival, *Environmental Law Goes Global*, 41 ENVTL. L. REP. 10194, 10194-95 (2011) (reviewing OLIVER A. HOUCK, *TAKING BACK EDEN: EIGHT ENVIRONMENTAL CASES THAT CHANGED THE WORLD* (2010)).

courts, first released in 2009 in a book called *Greening Justice*.⁵⁵ They define an environmental court as “[a]ny government, judicial, or administrative body specializing in resolving disputes about environment, natural resources, land use, or related issues.”⁵⁶ In 2016, the Prings released an updated report on environmental courts under the auspices of the United Nations Environment Programme.⁵⁷ The new report describes an “explosion” in the growth of environmental courts since 2000,⁵⁸ finding that there are now more than 1,200 environmental courts and tribunals in 44 countries with 20 additional countries considering their adoption.⁵⁹

In the early 1970s, the U.S. Department of Justice considered whether the U.S. should establish a specialized environmental court in the federal court system, like the U.S. Tax Court or the Federal Circuit that deals with intellectual property issues.⁶⁰ DOJ recommended against it and no such court was created at the federal level.⁶¹ The state of Vermont has an environmental court that handles land use issues, and Hawaii Supreme Court Justice Michael Wilson has been charged with creating a specialized group within the Hawaii Supreme Court that will hear environmental cases.⁶²

What are the advantages of having environmental courts? These courts are supposed to improve the efficiency with which environmental cases are handled, and it is thought that judges, by specializing in environmental law, can develop greater expertise. Some courts mandate that some of the judges be scientists or have technical backgrounds.⁶³ One can question how frequently cases turn on disputed scientific testimony, but it certainly is good to have more scientific expertise. There have been several different models; some have been top down where the Supreme Court of a country or state has established the environmental court within itself, like a specialty group of judges. Others have been bottom up where the trial courts are the environmental courts and their decisions are

55. GEORGE (ROCK) PRING & CATHERINE (KITTY) PRING, *GREENING JUSTICE: CREATING AND IMPROVING ENVIRONMENTAL COURTS AND TRIBUNALS* (2009).

56. *Id.* at 10.

57. GEORGE (ROCK) PRING & CATHERINE (KITTY) PRING, *U.N. ENV'T PROGRAMME, ENVIRONMENTAL COURTS & TRIBUNALS: A GUIDE FOR POLICY MAKERS* (2016).

58. *See id.* at 1–9.

59. *Id.* at IV.

60. Scott C. Whitney, *The Case for Creating a Special Environmental Court System—A Further Comment*, 15 WM. & MARY L. REV. 33 (1973).

61. *Id.* at 33–34.

62. *See* Judge Merideth Wright, *The Vermont Environmental Court*, 3 J. CT. INNOVATION 201 (2010); Justice Michael D. Wilson, *The Hawaii Environmental Court: A New Judicial Tool to Enforce Hawaii's Environmental Laws*, 18 HAW. BAR J. 4 (2015).

63. PRING & PRING, *supra* note 57, at 26.

subject to an appeal.⁶⁴ In Chile, they are independent from the rest of the court system.⁶⁵

India has created the National Green Tribunal, and it seems to have improved environmental enforcement.⁶⁶ India is rapidly developing energy resources and its Green Tribunal has helped to redress illegal coal leasing. Australia's New South Wales has a Land and Environment Court led by Judge Brian Preston, who has been a very active participant in the IUCN Academy of Environmental Law.⁶⁷ One of the most interesting innovations from this court is something called "hot-tubbing," which is a way of resolving conflicts between expert witness testimony.⁶⁸ The court brings each side's experts together with the judge as though they were sitting together in a hot tub, and they talk about what they agree and disagree about in an attempt to narrow their differences.⁶⁹ Some judges in the U.S. are experimenting with similar techniques.⁷⁰

Chile has set up a system of environmental courts.⁷¹ The Chief Judge of the Environmental Court of Santiago is Rafael Asenjo. Creation of Chile's environmental courts reportedly was supported by business interests who were afraid that they would not get a fair shake from the existing Chilean court system.⁷² The court was structured to be truly autonomous, and the appointment and confirmation of its judges is a more difficult process than that of Chilean Supreme Court justices.⁷³ Two of the three judges are lawyers, and the other is required to have a science background.⁷⁴

In China, hundreds environmental courts have been established.⁷⁵ The Supreme People's Court has its own environmental chamber, and several provinces in China have established environmental courts.⁷⁶ One initial problem these courts have faced is

64. *Id.*

65. See PRING & PRING, *supra* note 57, at 20.

66. *Id.* at 8–9, 34.

67. *Id.* at 2, 21.

68. *Id.* at 56.

69. Megan A. Yarnall, *Dueling Scientific Experts: Is Australia's Hot Tub Method a Viable Solution for the American Judiciary?*, 88 OR. L. REV. 311, 323–25 (2009).

70. Concurrent Expert Evidence: Hot Tubbing in America? Experts Jump In, National L. Rev. Aug. 31, 2016, <http://www.natlawreview.com/article/concurrent-expert-evidence-hot-tubbing-america-experts-jump>.

71. See ENVTL. CT. OF SANTIAGO, <http://www.tribunambiental.cl/environmental-court-of-santiago/> (last visited Apr. 18, 2017).

72. PRING & PRING, *supra* note 57, at 28.

73. *Id.*

74. *Id.*

75. See PRING & PRING, *supra* note 55, at 1.

76. Alex L. Wang & Jie Gao, *Environmental Courts and the Development of Environmental Public Interest Litigation in China*, 3 J. CT. INNOVATION 37, 38–39 (2010).

that they do not have very many cases to handle.⁷⁷ The docket in one of the courts shows a preponderance of criminal cases brought against peasants for accidentally setting fires or illegal logging; thus, the cases are crackdowns against the powerless, rather than more ambitious attempts to hold more significant polluters accountable.⁷⁸

In June 2016, I had the extraordinary privilege of participating in a weeklong workshop sponsored by the Supreme People's Court to train Chinese environmental judges at the National Judges College in Beijing. On the grounds of the National Judges College is a "Woods of the Judge" where visiting judges can plant trees. More than 200 environmental judges participated in the training. Earlier that week the Supreme People's Court hosted its own full-day session on global climate change litigation. Even though there has been no climate change litigation in China, the judges are eager to learn about such cases in other countries.

As part of the weeklong training course, Zhou Qiang, Chief Judge of the Supreme People's Court, introduced Xie Zhenhua, who has been China's top negotiator in global climate talks leading up to the Paris Agreement in December 2015. Xie was formerly the head of the China's State Environmental Protection Agency, but for the last decade he has been handling China's international environmental negotiations. For two and a half hours he discussed how China's position on climate change has evolved over time and he told stories about the role China played in the Paris negotiations.

It may seem surprising that China has so many environmental courts, yet it has so few cases of public interest environmental litigation. In 2014, China amended its basic environmental law for the first time since 1989.⁷⁹ The new law specifically endorses public interest litigation on behalf of the environment, while limiting the number of organizations who can bring such cases.⁸⁰ Only a group that has been operating as an environmental non-governmental organization (NGO) for at least five years can bring public interest litigation.⁸¹ This may encourage more public interest litigation by groups who are known quantities, while not opening up the courts generally to public interest cases in other areas of law. The Communist Party really wants to clean up the environment,

77. Guangdong Xu & Michael Faure, *Explaining the Failure of Environmental Law in China*, 29 COLUM. J. ASIAN L. 1, 38–39 (2015).

78. *Id.* at 41–42.

79. Tyler Lui, *China's Revision to the Environmental Protection Law: Challenges to Public Interest Litigation and Solutions for Increasing Public Participation and Transparency*, 6 GEO. WASH. J. ENERGY & ENVTL. L. 60, 60–61 (2015).

80. Bo Zhang et al., *A New Environmental Protection Law, Many Old Problems? Challenges to Environmental Governance in China*, 28 J. ENVTL. L. 325, 329–331 (2016).

81. *Id.*

because pollution can be so bad at times that China's leaders may fear it will contribute to civil unrest.⁸² By creating an extensive system of environmental courts, the Party can show that it is serious about improving the environment while cabining public interest litigation to environmental cases.

V. CLIMATE CHANGE AND THE JUDICIARY

There have been a number of courageous judges around the world who have concluded that governments are not protecting their citizens from the growing harm caused by climate change. Several climate change lawsuits that initially were viewed as unlikely to succeed have produced favorable judicial rulings. In *Massachusetts v. EPA*, decided in 2007, the U.S. Supreme Court issued a decision that has been called the closest thing to "*Brown v. Board of Education* for the environment."⁸³ By a 5-4 vote, with Justice Anthony Kennedy providing the crucial vote for the majority, the Court held that states had standing to challenge EPA's failure to regulate greenhouse gas emissions.⁸⁴ The Court also held that the Bush Administration's rationale for refusing to regulate greenhouse gas emissions was arbitrary and capricious.⁸⁵ As a result of this decision, which also held that EPA already had authority under the existing Clean Air Act to regulate greenhouse gas emissions, the Obama Administration was able to launch a comprehensive program to control them.⁸⁶

Courts in Pakistan and the Netherlands have held that their governments are not doing enough to combat climate change, and they have ordered the creation of new government entities that will regulate greenhouse gases more stringently.⁸⁷ A federal district court in Oregon has refused to dismiss a lawsuit by children claiming that the federal government has violated their due process rights by failing to protect the environment from the ravages of climate change.⁸⁸ While these cases could be reversed on appeal, *Massachusetts v. EPA* is now a solid precedent which has enabled EPA to regulate greenhouse gas emissions.

82. *See id.* at 328.

83. Jonathan Cannon, *The Significance of Massachusetts v. EPA*, 93 VA. L. R. 53, 62 (2007).

84. *See Massachusetts v. EPA*, 549 U.S. 497 (2007).

85. *Id.* at 501, 535.

86. *See* Uma Outka, *The Obama Administration's Clean Air Act Legacy and the UN-FCC*, 48 CASE W. RES. J. INT'L L. 109 (2016).

87. *See* Leghari v. Federation of Pakistan, (2015) W.P. No. 25501 (Lahore High Court) (Pak.); District Court of The Hague 24 Juni 2015, ECLI:NL:RBDHA: 2015:7145 (Urgenda Foundation/Netherlands) (Neth.).

88. *See* Juliana v. United States, No. 6:15-cv-01517-TC (D.Or. Jan. 14, 2016).

At the same time a cautionary note is provided by Justice Ginsburg's opinion for a unanimous Court in *American Electric Power Co. v. Connecticut*.⁸⁹ In this case, the Court rejected a common law nuisance suit against coal fired power plants for contributing to climate change on the grounds that EPA was already using the Clean Air Act to regulate greenhouse gas emissions.⁹⁰ Justice Ginsburg stated that Congress and EPA are much better suited for resolving conflicts over climate change than individual judges issuing ad hoc, case-by-case injunctions.⁹¹ She noted that judges lack the scientific, economic, and technological resources that agencies have.⁹² This reinforces the notion that while the judiciary may well be suited to serve as a catalyst for change when other branches fail to address serious problems, the ultimate solution may have to come from the bureaucracy.

VI. CAPACITY BUILDING FOR THE GLOBAL JUDICIARY

Victims of environmental harm in developing countries often have sought to bring lawsuits against multinational extractive industries in developed countries where the companies are headquartered. These cases frequently are dismissed on *forum non conveniens* grounds, which provides a compelling rationale for why developing countries should enhance their own judicial systems. Several years ago, forty-six state attorneys general coordinated legal actions against the tobacco industry.⁹³ While individual lawsuits against the tobacco industry had failed due to assumption of risk, the states argued that by marketing these deadly products, the tobacco industry had forced the states to bear much greater health expenses.⁹⁴ That argument was so compelling that the tobacco industry in November 1998 settled the cases for \$205 billion.⁹⁵ In subsequent years, other countries where the exact same cigarette products were sold brought lawsuits in the U.S. seeking to recover on the same legal theory; however, the U.S. courts dismissed the lawsuits, claiming that they should not have

89. 564 U.S. 410 (2011).

90. *See id.*

91. *Id.* at 426–27.

92. *Id.* at 428.

93. Richard P. Ieyoub & Theodore Eisenberg, *State Attorney General Actions, the Tobacco Litigation, and the Doctrine of Parens Patriae*, 74 TUL. L. R 1859 (1999).

94. *Id.* at 1875–77 (1999).

95. *See Master Settlement Agreement*, NAT'L ASS'N OF ATTORNEYS GENERAL, http://web.archive.org/web/20080625084126/http://www.naag.org/backpages/naag/tobacco/msa/msa-pdf/1109185724_1032468605_cigmsa.pdf (last modified Mar. 4, 2010).

been brought in the U.S.⁹⁶ While that ended the lawsuits, if these foreign countries had the legal and judicial resources to handle such cases in their home countries, they also should have recovered.⁹⁷

The decades old litigation over Chevron's responsibility to clean up oil spills in Ecuador provides another compelling case for improving judicial capacity in developing countries. In the late 1970s, Texaco was invited by the Ecuadorian government to develop oil resources in the Oriente region of Ecuador. When Texaco pulled out of the country years later, it left behind considerable pollution from the oil extraction. The government of Ecuador reached an agreement requiring Texaco to do some remediation, but severe oil pollution remains decades later.⁹⁸

Claiming harm from the pollution, villagers in Ecuador sued Texaco in U.S. District Court for the Southern District of New York pursuant to the Alien Tort Statute.⁹⁹ After nine years of litigation, the district court agreed with Texaco that the lawsuit should be dismissed on the grounds of *forum non conveniens*.¹⁰⁰ Because Texaco then had very friendly relations with the government of Ecuador, the company maintained that the fairest forum to hear the case was in Ecuador.¹⁰¹ On appeal, the U.S. Court of Appeals affirmed the dismissal of the case, but with the important condition that Texaco agree to accept the jurisdiction of the Ecuadorian courts and to abide by any ultimate judgment.¹⁰²

The case was then re-filed in Ecuador in 2003.¹⁰³ After a change of government in Ecuador and the takeover of Texaco by Chevron, the litigation continued for another decade, with the new government now supporting the plaintiffs. Fearing it would lose the case, Chevron then filed a racketeering induced corrupt organizations (RICO) lawsuit against all the plaintiffs and their lawyers claiming that the litigation was a giant fraud.¹⁰⁴ A few days later, the trial court in Lago Agria, Ecuador, ruled for the plaintiffs and awarded them \$9 billion, most of which was to be used

96. Robert V. Percival, *Liability for Environmental Harm and Emerging Global Environmental Law*, 25 MD. J. INT'L L. 37, 57 (2010).

97. *Id.*

98. For a comprehensive description of this long-running dispute, see PAUL M. BARRETT, *LAW OF THE JUNGLE: THE \$19 BILLION LEGAL BATTLE OVER OIL IN THE RAIN FOREST AND THE LAWYER WHO'D STOP AT NOTHING TO WIN* (2015).

99. Percival, *supra* note 96, at 53.

100. *Id.*

101. *Id.*

102. See *Aguinda v. Texaco, Inc.*, 303 F.3d 470 (2d Cir. 2002).

103. Percival, *supra* note 96, at 58.

104. *Id.* at 60.

to clean up the continuing pollution.¹⁰⁵ *The Wall Street Journal* immediately ran an editorial with this astonishing claim:

There's more at stake here than one company's bottom line. The Ecuador suit is a form of global forum shopping, with U.S. trial lawyers and NGOs trying to hold American companies hostage in the world's least accountable and transparent legal systems. If the plaintiffs prevail, the result could be a global free-for-all against U.S. multinationals in foreign jurisdictions.¹⁰⁶

Of course this editorial completely ignored the fact that the plaintiffs wanted to have the case tried in the U.S., and Chevron was the reason the case had to be re-filed in Ecuador.

The plaintiffs have tried to collect on the Ecuadorian court's judgment in Argentina, Brazil, and Canada.¹⁰⁷ The courts of Argentina and Brazil agreed with Chevron's defense that its local subsidiaries were not liable for debts of the parent corporation; however, litigation continues in Canada.¹⁰⁸ Chevron won its RICO suit in the U.S., which was affirmed by the U.S. Court of Appeals for the Second Circuit.¹⁰⁹ As a result, any money recovered by U.S. lawyers will have to be repaid to Chevron.

Chevron was able to win its RICO lawsuit because of a lack of confidence in the capacity of the Ecuadorian judiciary. One need not take a position on the merits of Chevron's claims of fraud to realize that if the judiciary in developing countries improved its capacity to hear environmental cases, it would increase global confidence in the fairness of their procedures. Ultimately, multinational corporate defendants should want to have lawsuits against them tried in the courts of the U.S.

One of the reasons why U.S. courts are no longer entertaining these cases is because the U.S. Supreme Court has largely neutered the Alien Tort Statute on the novel basis that the presumption of extraterritorial application of domestic law should bar these lawsuits.¹¹⁰ That is novel because the presumption was not created

105. Simon Romero & Clifford Krauss, *Ecuador Judge Orders Chevron to Pay \$9 Billion*, N.Y. TIMES (Feb. 14, 2011), <http://www.nytimes.com/2011/02/15/world/americas/15ecuador.html>.

106. *Shakedown in Ecuador*, WALL ST. J., Feb. 15, 2011, at A. 16.

107. Roger Parloff, *Here's Why Ecuador's \$9.5 Billion Judgment Against Chevron Is Headed to Canada*, FORTUNE (Sept. 11, 2016), <http://fortune.com/2016/09/11/chevron-pollution-amazon-ecuador-canada/>.

108. *Id.*; Jeb Blunt, *Brazil Judge Dismisses Case Against Chevron, Transocean*, REUTERS (Oct. 1, 2013), <http://www.reuters.com/article/us-brazil-chevron-lawsuit-idUSBRE9900PR20131001>.

109. *See Chevron Corp. v. Donziger*, 833 F.3d 74 (2d Cir. 2016).

110. *See Kiobel v. Royal Dutch Shell Petroleum Co.*, 133 S.Ct. 1659 (2013).

until many years after the Alien Tort Statute was enacted by the first U.S. Congress in 1789.

While U.S. courts are closing themselves off from transnational litigation over environmental harm caused abroad, other courts are not. After *Trafigura*, a British trading company, dropped toxic waste on a beach along the Ivory Coast, some people died from exposure to the hazardous chemicals and others were hospitalized.¹¹¹ Lawyers brought a suit in British courts on behalf of those who were harmed.¹¹² During discovery, it was found that the head of the trading company had sent a cable to the ship captain congratulating him on his “novel” method of waste disposal.¹¹³ Once that was publicized, *Trafigura* settled the lawsuit for \$48.7 million.¹¹⁴ Another Dutch court has found Shell partially responsible for some of the oil spills in the Niger Delta.¹¹⁵ These cases illustrate that those who are harmed by activities of corporations in other countries may still have some remedies in the courts of developed countries, though not in the U.S. courts.

The election-year controversy over trade agreements has focused in part on their provisions for investor-state dispute resolution. During the 2016 U.S. presidential campaign, all presidential candidates opposed Congress approving the Trans-Pacific Partnership (TPP). One reason for this opposition is that the agreement allows companies to use investor-state arbitration panels to challenge the application of environmental regulations to their investments. In October 2016, one of the top international arbitrators in the Netherlands stated in a major speech that it is time to realize that the use of arbitration to resolve investor-state disputes has become a “lost battle.”¹¹⁶ This represents a realization that trade agreements should not be used to bypass normal judicial processes, an important lesson as the Transatlantic Trade and Investment Partnership (TTIP) negotiations continue.

Judges throughout the world are interested in improving their capacity for handling complex environmental cases. In April 2016, Brazilian Supreme Court Justice Antonio Benjamin, chair of the IUCN World Commission on Environmental Law, hosted the first

111. *Trafigura Found Guilty of Exporting Toxic Waste*, BBC NEWS (July 23, 2010), <http://www.bbc.com/news/world-africa-10735255>.

112. *Id.*

113. Guy Chazan, *Firm to Pay \$48.7 Million in Ivory Coast Pollution Case*, WALL ST. J., Sept. 21, 2009, A13.

114. *Id.*

115. Ivana Sekularac & Anthony Deutsch, *Dutch Court Says Shell Responsible for Nigeria Spills*, REUTERS (Jan. 30, 2013), <http://uk.reuters.com/article/us-shell-nigeria-law-suit-idUKBRE90S16X20130130>.

116. Caroline Simsom, *Attack on Investment Arbitration May Spill Over, Expert Says*, LAW360 (Oct. 12, 2016), <https://www.law360.com/internationalarbitration/articles/850540/attacks-on-investment-arbitration-may-spill-over-expert-says>.

World Environmental Law Congress in Brazil. The Congress, which brought together judges from all over the world, featured the launching of a new Global Judicial Institute for the Environment.¹¹⁷ The Institute is designed to facilitate information sharing about environmental cases by judges throughout the world.

VII. EMERGING PRINCIPLES OF ENVIRONMENTAL LAW

As the global dialogue among judges increases, widespread agreement is emerging among certain basic principles of environmental law. Not all of these principles command universal respect, but legal scholars are trying to flesh out these principles into more specific guideposts for the future development of global environmental law and policy.¹¹⁸

Principles of environmental law can be derived from many sources. The first United Nations Conference on the Human Environment, held in Stockholm in 1972, spawned global recognition of the importance of environmental problems. It was attended by representatives of 113 countries, 19 intergovernmental agencies, and more than 400 non-governmental organizations. The conference spurred many countries to develop their first environmental laws, and it resulted in issuance of the Stockholm Declaration. Subsequent UN conferences, including the 1992 Rio Earth Summit and its Rio Declaration, also articulated global agreement on important principles of environmental law.

A. Moral Obligation to Future Generations

There is broad acceptance for the notion that the current generation owes a moral obligation to future generations to protect the environment. The preamble and Principles 1 and 2 of the 1972 Stockholm Declaration on the Human Environment refer to mankind's responsibility to future generations, declaring it to be "an imperative goal for mankind" and "a solemn responsibility."¹¹⁹ More recently, this obligation was powerfully articulated in the encyclical *Laudato Si: On Care for Our Common Home*, which Pope Francis issued in 2015.¹²⁰ Surveying the world's principal

117. *Judges Establish the Global Judicial Institute for the Environment*, INTERNATIONAL UNION FOR CONSERVATION OF NATURE (Feb. 25, 2017), <https://www.iucn.org/news/judges-establish-global-judicial-institute-environment>.

118. See Tracy Hester et al., *Restating Environmental Law*, 39 COLUM. J. ENVTL. L. 1 (2015).

119. U.N. Conference on the Human Environment, *supra* note 3.

120. POPE FRANCIS, *LAUDATO SI: ON CARE FOR OUR COMMON HOME* (2015).

religious traditions, Pope Francis finds universal recognition of the importance of environmental stewardship to ensure that future generations will enjoy a planet with a healthy environment.¹²¹

The concept that humans should not exceed the carrying capacity of the planet, reflected in the notion of sustainability, is strongly embraced as a moral imperative. The desire to ensure that present and future generations enjoy the benefits of both a prosperous economy and a healthy environment has become a seemingly universal aspiration that can provide common ground between remarkably diverse interests. The concept of sustainable development has broad public support, but there can be sharp disagreements over specific policies for pursuing it.

B. The Sic Utere and Polluter Pays Principles

A fundamental principle of global environmental law is the notion that no one has the right to cause significant harm to others. As noted above, this principle, derived from ancient Roman law, was embraced by English common law courts three centuries ago, and incorporated into both the Stockholm and Rio declarations.¹²² When the stench from a neighbor's pigsty interfered with William Aldred's enjoyment of his property, an English court in the early 1600s established the principle that even non-trespassory invasions of private property rights could be actionable as private nuisances.¹²³ The notion that a physical invasion of property need not be proven to establish nuisance liability provided the foundation for a common law of environmental protection that could embrace air pollution. In a similar case in 1702, a neighbor's failure to repair a wall separating a privy from the property of another was held to be an actionable nuisance.¹²⁴ Ruling in *Tenant v. Goldwin*, Lord Holt cited the ancient Roman maxim *sic utere tuo ut alienum non laedas*, which he explained meant that "every man must so use his own as not to damnify another."¹²⁵ This principle—that no one has the right to use his or her property in a manner that causes harm to another—has come to be known as the *sic utere* principle.

As noted above, during the early 1900s, before the U.S. had established national regulatory programs to protect the environment, the U.S. Supreme Court applied the federal common law of interstate nuisance to resolve environmental disputes

121. *See id.*

122. *See supra* Section II.

123. Aldred's Case (1610) 77 Eng. Rep. 816, 821–22; 9 Co. Rep. 57b, 58a.

124. *See* *Tenant v. Goldwin*, (1704) 92 Eng. Rep. 222; 2 Lord Raymond 1089.

125. *Id.* at 224.

between states.¹²⁶ Using its original jurisdiction over lawsuits between states, the Court issued an injunction to control interstate air pollution from a copper smelter;¹²⁷ it ordered the city of New York to build a garbage incinerator to enable it to stop dumping its garbage in the ocean;¹²⁸ and it ordered the city of Chicago to build its first sewage treatment plant to enable it to reduce its intake of water from Lake Michigan, which was lowering the level of the Great Lakes.¹²⁹ The Court relied on the principle that states had a right to prevent environmental harm caused by pollution that originated in another state.¹³⁰ This principle ultimately served as an important precedent when an international arbitral panel issued the famous *Trail Smelter* decision to redress pollution from a Canadian smelter that was harming farmers across the border in Washington State.¹³¹

The enormous uncertainties involved in these pollution disputes made the Justices of the U.S. Supreme Court uncomfortable because, as they openly admitted, they lacked the expertise to function in the role of a national environmental agency.¹³² Thus, the Court was eager to abdicate its role as soon as federal environmental legislation was adopted that gave EPA the responsibility for issuing national regulatory standards. As Justice Ginsburg observed in 2011: "The expert agency is surely better equipped to do the job than individual district judges Federal judges lack the scientific, economic and technological resources an agency can utilize" ¹³³

In 1972, the nations of the world meeting at the Stockholm Conference on the Human Environment transformed the *sic utere* principle into a principle of international law.¹³⁴ Principle 21 of the Stockholm Declaration provides, "States have . . . the sovereign right to exploit their own resources . . . and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States."¹³⁵ Twenty years later at the Rio Earth Summit, this principle was reaffirmed as

126. See *supra* Section II.

127. See *Georgia v. Tenn. Copper Co.*, 237 U.S. 474 (1915).

128. See *New Jersey v. City of New York*, 284 U.S. 585 (1931).

129. See *Wisconsin v. Illinois*, 281 U.S. 179 (1930).

130. See *Georgia v. Tenn. Copper Co.*, 206 U.S. 230 (1907).

131. See *Trail Smelter Arbitration (U.S. v. Canada)*, III R.I.A.A 1905, 1964–65 (Apr. 16, 1938 and Mar. 11, 1941).

132. See *New York v. New Jersey*, 256 U.S. 296, 313 (1921) (urging states to negotiate solutions to interstate nuisance disputes rather than relying on "proceedings in any court however constituted").

133. *American Electric Power Co. v. Connecticut*, 564 U.S. 410, 428 (2011).

134. See *supra* Section II.

135. U.N. Conference on the Human Environment, *supra* note 3, at 5.

Principle 2 of the 1992 Rio Declaration: "States have . . . the sovereign right to exploit their own resources pursuant to their own environmental and developmental policies, and the responsibility to insure that activities within their jurisdiction or control do not cause damage to the environment of other states or of areas beyond the limits of national jurisdiction."¹³⁶

The Stockholm Declaration promised to use the *sic utere* principle to develop more specific standards of liability and compensation for trans-boundary environmental harm.¹³⁷ However, this has not happened, as illustrated by the lack of any liability imposed or compensation paid in the aftermath of the Chernobyl nuclear accident in 1986.¹³⁸ Reflecting this failure, the 1992 Rio Declaration restated this commitment while adding that it should be fulfilled "in an expeditious and more determined manner."¹³⁹

Economic theory provides a powerful rationale for developing liability and compensation standards that internalize negative externalities, which neo-classical welfare economics teaches will improve economic efficiency.¹⁴⁰ The "Polluter Pays" principle, embraced in Principle 16 of the Rio Declaration, reflects an effort to hold pollution sources liable for the costs of their pollution.¹⁴¹ The Coase Theorem cautions that sometimes victims of pollution may be in a position to ameliorate the harm more efficiently than pollution sources.¹⁴² As a practical matter, the common law initially served as a kind of zoning function encouraging polluting sources to relocate away from populated areas, but it also performed a technology-forcing role, spawning the development of new pollution control technology.¹⁴³

The common law proved more useful in redressing large, single sources of pollution that caused visible harm than it did in dealing with chronic exposures to multiple pollutants. The adverse health effects of exposure to certain pollution are well known, but often it is difficult, if not impossible, to prove that a

136. U.N. Conference on Environment and Development, *supra* note 5, at Principle 21.

137. See U.N. Conference on the Human Environment, *supra* note 3, at Principle 22 ("State shall cooperate to develop further the international law regarding liability and compensation for the victims of pollution and other environmental damage caused by activities within the jurisdiction or control of such States to areas beyond their jurisdiction.").

138. See Percival, *supra* note 96, at 42.

139. U.N. Conference on the Human Environment, *supra* note 3, at Principle 13 ("States shall also cooperate in an expeditious and more determined manner to develop further international law regarding liability and compensation for adverse effects of environmental damage caused by activities within their jurisdiction or control to areas beyond their jurisdiction").

140. EBAN S. GOODSTEIN, *ECONOMICS AND THE ENVIRONMENT* 33-39 (1995).

141. See U.N. Conference on the Human Environment, *supra* note 3, at Principle 16.

142. See Ronald H. Coase, *The Problem of Social Costs*, 3 J. L. & ECON. 1 (1960).

143. See PERCIVAL, ET AL., *supra* note 10, at 88.

particular source of pollutants probably caused a particular harm. Thus, the U.S. now relies largely on the regulatory system to limit exposure to pollutants. Even then it may be difficult to determine precisely how stringently to regulate exposure to pollutants in the face of extravagant strategic behavior by regulated entities who make exaggerated ex-ante estimates of costs in hopes of forestalling more stringent regulation.

C. *The Precautionary Principle*

Perhaps the most misunderstood principle of environmental law is the Precautionary Principle. While its origins are often traced to German air pollution law in the 1980s,¹⁴⁴ it was articulated most powerfully in Principle 15 of the 1992 Rio Declaration, which states: "Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."¹⁴⁵ Contrary to what some critics have argued,¹⁴⁶ the principle does not proscribe all actions that may pose a risk. In fact, as I have argued, the principle does *not* specify how precautionary regulatory policy should be.¹⁴⁷ Rather, it emphasizes that the existence of uncertainty should not block the taking of reasonable precautionary measures.¹⁴⁸

As noted above, the most significant judicial articulation of the precautionary principle in the U.S. is the *Ethyl Corporation* decision in 1976 that upheld EPA's initial limits on the amount of lead that could be added to gasoline.¹⁴⁹ After a three-judge panel of the U.S. Court of Appeals for the D.C. Circuit invalidated the regulations by a 2-1 vote, the full court by a 5-4 vote reinstated them.¹⁵⁰ The initial judicial panel found the case against leaded gasoline to be a "speculative and inconclusive one at best,"¹⁵¹ but the full court held that the standard of proof to uphold precautionary regulations issued under the Clean Air Act was much less than the standard required to prevail in a common law tort action.¹⁵² This decision reflected a sophisticated judicial appreciation of the shift away from

144. See Robert V. Percival, *Who Is Afraid of the Precautionary Principle?*, 23 PACE ENVTL L. R. 21, 23-24 (2006).

145. U.N. Conference on Environment and Development, *supra* note 5, at Principle 15.

146. See CASS R. SUNSTEIN, LAWS OF FEAR: BEYOND THE PRECAUTIONARY PRINCIPLE (2005).

147. See Percival, *supra* note 144, at 28.

148. *Id.* at 79-81.

149. See *Ethyl Corp. v. EPA*, 541 F.2d 1 (D.C. Cir. 1976) (en banc).

150. See *id.*

151. See *Ethyl Corp. v. EPA* ["Ethyl I"], 7 E.R.C. 1353 (D.C. Cir. Jan. 28, 1975), *reversed on rehearing en banc*, 541 F.2d 1 (D.C. Cir. 1976) (en banc)..

152. See *Ethyl Corp.*, 541 F.2d at 28.

individualized, common law actions to reliance on precautionary regulations issued by expert administrative agencies.¹⁵³ As a result of this decision, EPA was eventually able to develop the evidence that enabled it to ban lead from gasoline entirely, a policy that virtually all the world has now adopted, making it one of the most successful environmental regulations in world history.¹⁵⁴

Despite *Ethyl*, U.S. courts have an inconsistent track record in applying the Precautionary Principle, and fierce battles are regularly waged before reviewing courts over how much evidence must be provided to justify preventive regulations.¹⁵⁵ Four years after the *Ethyl* decision, a plurality of the U.S. Supreme Court directed regulatory agencies to perform risk assessments and to determine that risks were significant enough to warrant regulation, before issuing regulations.¹⁵⁶ Yet the Court twice refused to construe statutes to require the use of cost-benefit analysis unless specified by Congress in the underlying regulatory legislation.¹⁵⁷

In the 1984 *Chevron* decision, the U.S. Supreme Court instructed lower court judges to defer to reasonable agency interpretations of ambiguous statutory terms.¹⁵⁸ Now known as “*Chevron* deference,” this policy, at least in theory, should give environmental agencies more discretion. During a pro-environment administration, this should work in favor of environmental regulation, but it also could empower agencies less sympathetic to the environment to cut back on such regulations. One of the appealing aspects of *in dubio pro natura* (“when in doubt, favor nature”) and the non-regression principle, which have not yet achieved any traction in U.S. courts, is that they could restrict the ability of agencies to reduce environmental protections.¹⁵⁹

153. See ROBERT V. PERCIVAL, *AGAINST ALL ODDS: WHY AMERICA'S CENTURY-OLD QUEST FOR CLEAN AIR MAY USHER IN A NEW ERA OF GLOBAL ENVIRONMENTAL COOPERATION* (2016) (reviewing the history of this judicial trend).

154. Tsai & Hatfield, *supra* note 18, at 8 (estimating that the net benefits from the phasing-out of leaded gasoline range from \$2.05- to \$2.85 trillion/year).

155. See Robert V. Percival, *Risk, Uncertainty and Precaution: Lessons from the History of U.S. Environmental Law*, in *TRADE, HEALTH AND THE ENVIRONMENT: THE EUROPEAN UNION PUT TO THE TEST 25* (Marjolein B.A. van Asselt et al. eds., 2014).

156. See *Indus. Union Dep't AFL-CIO v. Am. Petrol. Inst.*, 448 U.S. 607 (1980).

157. See *Am. Textile Mfr. Inst. v. Donovan*, 452 U.S. 488 (1981) and *Whitman v. Am. Trucking Ass'n*, 531 U.S. 457 (2001).

158. See *Chevron U.S.A., Inc. v. Nat. Res. Def. Council*, 467 U.S. 837 (1984).

159. For background on these two principles, see Michael Prieur, *Non-regression in environmental law*, 52 S.A.P.I.E.N.S 53 (2012), <http://sapiens.revues.org/1405>; Marko Ahteensuu, *In Dubio Pro Natura? A Philosophical Analysis of the Precautionary Principle in Environmental and Health Risk Governance*, 20 U. TURKU REP. DEPT. PHIL. 1 (2008).

*D. Environmental Assessment and
Right-to-Know Requirements*

Environmental impact assessment (EIA) requirements have become the most ubiquitous feature of environmental law throughout the world. The notion that decisionmakers should "look before they leap" when making decisions likely to have significant environmental consequences is now a universally accepted principle enshrined in Principle 17 of the Rio Declaration.¹⁶⁰ However, officials are not the only ones who should be informed about environmental risks. Countries have been expanding information disclosure and right-to-know requirements to enable the public to be informed about the risks they face.

In 1986, the U.S. Congress enacted the Emergency Planning and Community Right-to-Know Act, which requires companies to make annual disclosures to the public about emissions and transfers of hundreds of toxic chemicals.¹⁶¹ The European Union (EU) and many other countries have similar disclosure requirements,¹⁶² and China recently required major polluters to make emissions data available to the public.¹⁶³ Transparency and public participation in decisions related to the environment is endorsed in Principle 10 of the 1992 Rio Declaration, which states that "each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in [decisionmaking] processes."¹⁶⁴

Governments also are moving to require greater pre-market testing of chemicals to improve the information available to regulatory authorities. The EU's Registration, Evaluation and Assessment of Chemicals (REACH) program requires extensive pre-market testing of chemicals.¹⁶⁵ Other countries have modeled their recent chemical control legislation on REACH, and even the U.S. EPA is poised to expand its chemical testing powers as a result of the enactment of the Frank R. Lautenberg Chemical Safety for the 21st Century Act.¹⁶⁶

160. U.N. Conference on Environment and Development, *supra* note 5, at Principle 17.

161. Emergency Planning and Community Right-to-Know Act § 11044, 42 U.S.C. § 11001 (1986).

162. EUROPEAN POLLUTANT RELEASE AND TRANSFER REGISTRY, <http://prtr.ec.europa.eu/#/home> (last visited Apr. 18, 2017).

163. Barbara Finamore, *A Step Forward for Environmental Transparency in China*, NRDC (Mar. 30, 2013), http://switchboard.nrdc.org/blogs/bfinamore/a_step_forward_for_environment.html.

164. U.N. Conference on Environment and Development, *supra* note 5, at Principle 10.

165. *See REACH*, EUROPEAN CHEMS. AGENCY, <https://echa.europa.eu/regulations/reach> (last visited Apr. 18, 2017).

166. Pub. L. 114-182, 130 Stat. 448 (2016).

Taken together, these developments are evolving in the direction of a principle reflected in the state of California's Safe Drinking Water and Toxic Enforcement Act, also known as Proposition 65.¹⁶⁷ This legislation, adopted by voter initiative in 1986, requires companies to warn people before exposing them to significant risks from exposure to carcinogens and reproductive toxins.¹⁶⁸ Although food industry groups in the U.S. fiercely oppose proposals to require labeling of foods containing genetically modified organisms (GMOs),¹⁶⁹ it is difficult to oppose the notion that people should have a right to know when they are exposed to substances that clearly pose risks to life and health. This should be considered an essential principle of environmental law.

E. Environmental Justice and Fairness

The concept that particular individuals or groups should not be disproportionately exposed to environmental risks has been championed by the environmental justice movement in the U.S. The movement arose in response to growing evidence that minorities and the poor were disproportionately exposed to such risks.¹⁷⁰ While the environmental justice movement has had little success in the courts, each federal agency in the U.S. is required by executive order to "make achieving environmental justice part of its mission" and to identify and address disproportionate exposure to risk.¹⁷¹

Despite the executive order, environmental justice still remains an elusive goal, as indicated by the lead in drinking water tragedy that occurred in Flint, Michigan. Flint is a majority black community with more than 40 percent of the population living below the poverty line.¹⁷² To save money, Flint's state-appointed city manager decided in April 2014 to shift the source

167. CAL. HEALTH & SAFETY CODE § 25249.5 (West 2016).

168. *Id.*

169. The state of Vermont has adopted legislation to require labeling of products with GMOs, but voter initiatives to require this in other states have been defeated. Labeling of Food Produced with Genetic Engineering Act (Vermont Act), VT. STAT. ANN. tit. 9 §§ 3041–3047 (West 2014); Suzanne Goldenburg, *Vermont Becomes First US State to Require GM Labelling for Food*, THE GUARDIAN (May 8, 2014), <https://www.theguardian.com/environment/2014/may/08/vermont-first-us-state-gm-labelling-food> (indicating voters in California and Washington State defeated GM labeling initiatives); Dana Times, *Measure 92, GMO-Labeling Initiative, Fails Narrowly: Oregon Election Results 2014*, OREGONLIVE (Nov. 5, 2014) http://www.oregonlive.com/politics/index.ssf/2014/11/measure_92_gmo-labeling_initia.html.

170. See PERCIVAL, ET AL., *supra* note 10, at 15–24.

171. Exec. Order No. 12,898, 59 Fed. Reg. 7629 (Feb. 11, 1994).

172. *Flint Water Crisis Fast Facts*, CNN LIBRARY (Feb. 22, 2017), <http://www.cnn.com/2016/03/04/us/flint-water-crisis-fast-facts/>.

of the city's water supply to the polluted Flint River.¹⁷³ Because Flint River water is highly corrosive, lead from pipes in Flint's water supply system leached into the drinking water, poisoning Flint residents.¹⁷⁴ Shockingly, after test data revealed the lead contamination, state and federal officials failed to inform Flint residents.¹⁷⁵ The Flint tragedy dramatically highlights an environmental justice problem—environmental risks continue to be disproportionately concentrated on poor and minority communities. Principles of fairness demand that environmental law and policy should seek to redress cases of disproportionate exposure to risk.

The principle that environmental law and policy should treat everyone fairly should also embrace those who are the targets of environmental regulation, including property owners. Those who argue that environmental regulation threatens property rights¹⁷⁶ have it backward. For centuries, environmental law has played a vital role in protecting property from particularly egregious invasions by pollutants and other sources of environmental harm.¹⁷⁷ When new regulations are promulgated, fairness demands that regulatory transitions should respect settled, investment-backed expectations. This does not mean that existing sources of pollution should be exempted indefinitely from new regulation; nor does it imply that government should compensate those who invested in dying industries. However, it does suggest that regulators need to be sensitive to the impact of regulation on property rights. In a dynamic market, regulatory changes nearly always will create some winners and losers. To maintain public support for environmental regulation it is vital that these effects be the result of fair processes and policies.

F. Other Emerging Principles of Environmental Law

Two other emerging principles of global environmental law have yet to win universal acceptance: non-regression and *in dubio pro natura*. The non-regression principle states that established environmental standards should not be relaxed.¹⁷⁸ The principle of

173. *Id.*

174. *Id.*

175. *Id.*

176. *See, e.g.,* TIMOTHY SANDEFUR & CHRISTINA SANDEFUR, CORNERSTONE OF LIBERTY: PROPERTY RIGHTS IN 21ST CENTURY AMERICA (2d ed., 2015).

177. *See* Aldred's Case (1610) 77 Eng. Rep. 816; 9 Co. Rep. 57b.

178. *See* Michael Prieur, *Non-Regression in Environmental Law*, 5.2 S.A.P.I.E.N.S 53, 54–55 (2012).

in dubio pro natura provides that in cases of uncertainty judges should resolve doubt by ruling in favor of the environment.¹⁷⁹

VIII. CONCLUSION

The history of global environmental law repeatedly has demonstrated the importance of the judiciary ensuring that “[o]rdinary citizens can, through legal process, make their governments protect the environment when that may be the last thing their governments want to do.”¹⁸⁰ Civil society is using a rich and evolving mix of strategies to hold businesses and governments accountable for environmental harm. At a time when some fossil fuel industries continue to promote junk science and economic fear-mongering to oppose sensible responses to climate change, the world needs more courageous judges who stand up for the environment. As countries expand the use of specialized environmental courts and programs that help judges appreciate the importance of environmental law, such as the Global Judicial Institute for the Environment, the global judiciary is becoming greener at a crucial time for influencing the future of the planet’s environment.

179. Ahteensuu, *supra* note 159, at 1.

180. HOUCK, *supra* note 53, at 176.