THE INFLUENCE OF INTERNATIONAL ENVIRONMENTAL LAW ON UNITED STATES POLLUTION CONTROL LAW

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INTRODUCTION

United States environmental law has served as the international standard for the emerging regime of international environmental law.[1] The *Grundnorm* of state responsibility for transboundary pollution rests on sovereignty limitation principles developed by the United States Supreme Court in a series of important turn-of-the-century original jurisdiction cases. These progressive era cases recognized the states' right to bring federal common law nuisance and equitable apportionment actions to protect their quasi-sovereign interests in shared resources.[2] These precedents were applied by international tribunals and form the basis for the limitation on national sovereignty articulated in Principle 21 of the 1972 Stockholm Declaration of the United Nations Conference on the Human Environment (Stockholm Declaration).[3] Principle 21 asserts that states have a right to exploit their own resources as well as "the responsibility to ensure 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."[4] The United States' National Environmental Policy Act (NEPA)[5] has been widely adopted in developed and developing countries and the environmental impact statement (EIS) process forms one of the bases for emerging legal norms such as the precautionary principle.[6] The Basel Convention on the Control of

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1. *See generally* PHILIPPE SANDS, PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW I (1995).

2. *See, e.g.*, Georgia v. Tennessee Copper Co., 206 U.S. 230 (1907); Kansas v. Colorado, 206 U.S. 46 (1907); Missouri v. Illinois, 200 U.S. 496 (1906).

3. *See, e.g.*, Trail Smelter (U.S. v. Can.), 3 R.I.A.A. 1905 (1949); Corfu Channel (U.K. v. Alb.), 1949 I.C.J. 4 (Apr. 9); *see also* Stockholm Declaration of the United Nations Conference on the Human Environment, princ. 21, *in Report of the United Nations Conference on the Human Environment*, U.N. Doc. A/CONF.48/14/Rev. 1, U.N. Sales No. E. 73.IIA.14 (1973), *reprinted in* 11 I.L.M. 1416, 1420 (1972) [hereinafter Principle 21, Stockholm Declaration].

4. Principle 21, Stockholm Declaration *supra* note 3, at 1420.

5. *See* National Environmental Policy Act, 42 U.S.C. §§ 4321-4347 (1994).

6. *See infra* Part II.

Transboundary Movements of Hazardous Wastes and Their Disposal[7] is modeled on the manifest system and treatment, storage, and disposal regulations imposed by the Resource Conservation and Recovery Act (RCRA).[8] However, the influence of United States environmental law has been unilateral; it has, as a whole, ignored the relationship between domestic and international environmental law, and most lawyers have paid little attention to the possibility that international law could influence the content of our law.

Historically, this narrow attitude was justified. International environmental law usually asks how higher United States or European standards can be applied to an international community that lacks a binding enforcement mechanism and consists of a continuum of developed and developing countries with radically differing fiscal and institutional capacities to protect environmental quality. We, in the United States, have naturally thought of international environmental law as something that needs to be imposed on Africa, Asia, and Latin America. However, this blind paternalism is increasingly unwarranted. The United States' international environmental policy leadership role is declining; we do not always follow the applicable international standard, and our standards can be challenged as violations of the General Agreement on Tariffs and Trade (GATT)[9] and the North American Free Trade Agreement (NAFTA).[10] This article asks the converse of the usual question about the relationship between United States law and international environmental law: what is the impact of international environmental law on United States domestic environmental law?

At the present time, international environmental law plays a limited role in the enactment and implementation of domestic environmental law, but the former's impact is likely to increase in the future.[11] The question of the impact of international law on domestic law is not an idle question for at least five reasons. First, domestic laws are often enacted to bring

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7. *See* Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, Mar. 1989, 28 I.L.M. 657 (1989).

8. *See* Resource Conservation and Recovery Act, 42 U.S.C. §§ 6921-6939e (1994); *see also* KATHARINA KUMMER, INTERNATIONAL MANAGEMENT OF HAZARDOUS WASTES: THE BASEL CONVENTION AND RELATED LEGAL RULES 56-60, 70 (1995) (discussing the Basel Convention and its impact on the management of hazardous waste subject to transboundary movement).

9. *See* General Agreement on Tariffs and Trade, Oct. 30, 1947, 61 Stat. A3, 55 U.N.T.S. 187 [hereinafter GATT].

10. *See* Can.-Mex.-U.S.: North American Free Trade Agreement, *opened for signature* Dec. 8, 1992, Pub. L. No. 103-182, 107 Stat. 2057, *reprinted in* 32 I.L.M. 289 (1993), *and in* 32 I.L.M. 605 (1993) [hereinafter NAFTA].

11. *See generally* Daniel Bodansky, *The Precautionary Principle in US Environmental Law*, *in* INTERPRETING THE PRECAUTIONARY PRINCIPLE 203 (Tim O'Riordan & James Cameron eds., 1994).

the United States into compliance with international agreements. For example, the Federal Endangered Species Act (ESA)[12] was initially enacted to implement the Convention on Trade in Endangered Species. Second, international law may provide the conceptual foundation for aggressive federal and state environmental initiatives.[13] The constitutional basis of environmental law has never been clearly articulated by the United States Supreme Court and the reach of the domestic commerce power may be less than commonly assumed. The constitutionality of federal pollution control is widely thought to rest on the New Deal reading of the Commerce Clause. However, the Court's decision in *United States v. Lopez* raises some doubts about the reach of federal power to regulate environmental quality.[14] It is possible that the Foreign Commerce Clause

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12. *See* Endangered Species Act, 16 U.S.C. §§ 1531-1544 (1994).

13. *See* M. Casey Jarman & Richard McLaughlin, *Commentary on Professor Tarlock's Paper: The Influence of International Environmental Law on United States Pollution Control Law*, 21 VT. L. REV. 793 (1997).

14. *See* United States v. Lopez, 115 S. Ct. 1624 (1995). The Court invalidated the Gun-Free School Zones Act of 1990, 18 U.S.C. § 922(q)(1)(A), because it did not regulate economic activity that affects interstate commerce. *See id.* at 1633. *Lopez* does not challenge the constitutional basis of pollution that is likely to have interstate or international impacts, but it does raise some doubts about the constitutionality of regulating local activities where the causal link to interstate commerce is more attenuated and Congress has not clearly articulated the link. Prior to *Lopez*, the regulation of local activities under the Commerce Clause was thought to be settled in *Hodel v. Virginia Surface Mining & Reclamation Ass'n*. *See* Hodel v. Virginia Surface Mining & Reclamation Ass'n, 452 U.S. 264, 265 (1981) (stating that the Commerce Clause allows Congress to regulate local land uses pursuant to the Surface Mine Control and Reclamation Act). However, *Lopez*'s narrow test for the reach of Congressional power under the Commerce Clause undermines some of the assumed Commerce Clause justification for biodiversity protection, including endangered species protection and programs with a limited interstate impact such as the Safe Drinking Water Act. For example, biodiversity protection is basically land use control legislation and thus could be characterized as the regulation of noncommercial interstate activities. The potential reach of *Lopez* is illustrated by a widely noted Superfund case in which a federal district court in Alabama held that Superfund can only be applied to sites with interstate wastes. *See* United States v. Olin, 927 F. Supp. 1502 (S.D. Ala. 1996). However, other courts have rejected this opinion. *See* United States v. Wall, 92 F.3d 1444, 1449 n.11 (6th Cir. 1996). Thus, cases such as *Hodel* (which upheld the Surface Mine Control and Reclamation Act because coal moved in interstate commerce and coal mining reduced the utility of land for commercial, industrial, and agricultural activities which could affect interstate commerce) might not apply to the Endangered Species Act, the cornerstone of biodiversity protection, or to some wetlands regulation. *See* John P. Dweyer, *The Commerce Clause and the Limits of Congressional Authority to Regulate the Environment*, 25 ELR News & Analysis 10421, 10428-30 (Aug. 1995). Stephen Gardbaum offers an alternative "procedural" approach to the limits of federal power over local activities affecting interstate commerce which would still allow regulation. *See* Stephen Gardbaum, *Rethinking Constitutional Federalism*, 74 TEX. L. REV. 795 (1996). Professor Gardbaum argues that, read in light of the "hard look" doctrine developed in *Citizens to Preserve Overton Park v. Volpe* and the EC principle of subsidiary, the Necessary and Proper Clause can be interpreted to police congressional exercises of preemption. *See id.* at 800. Professor Gardbaum's approach would allow cooperative biodiversity protection initiatives, backed by the threat of federal preemption, because Congress would likely meet his test that requires Congress to affirmatively determine that national

may be an additional source of federal authority which will allow domestic environmental regulations to be imposed to fulfill international standards.[15] Therefore, it is possible that international environmental law could be a basis to justify the enactment of more stringent environmental regulations which fulfill an international duty.[16] Third, at a minimum, international environmental law provides an additional source of pressure on Congress to ensure that domestic laws fully conform to international standards. For instance, international law could require the United States forestry practices to conform to the mandates of the Biodiversity Convention.[17] However, United States law does not always meet the international

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regulation is required after affording full weight to the states' interest in autonomy. *See id.*

15. *See* U.S. CONST. art. I, § 8, cl. 3. For example, in a recent article Professor Richard L. Revsez argues that although the Dormant Commerce Clause does not constrain the power of the federal government to allocate interstate pollution burdens, "its standards should define a canon of construction for the interpretation of federal statutes designed to constrain interstate externalities." Richard L. Revsez, *Federalism and Interstate Environmental Externalities*, 144 U. PA. L. REV. 2341, 2397 (1996) (footnote omitted). Revsez argues that

> [a] downwind state could enjoin upwind pollution that violated a state ambient standard more stringent than the federal standard only if the net benefits of the standard to the state imposing the restriction (environmental benefits minus costs to in-state economic interests) outweighed the costs imposed on the economic interests of other states.

Id. at 2408. This analysis does not apply to international obligations; no such prudential federalism concerns should control the United States' duties under international law to other states to prevent transboundary pollution.

16. The Australian experience is instructive. The Australian Constitution contains no express powers with respect to environmental regulation and federal powers are more limited compared to the United States. *See* James Crawford, *The Constitution and the Environment*, 13 SYDNEY L. REV. 11, 12 (1991); *see also* Kenneth M. Murchison, *Environmental Law in Australia and the United States: A Comparative Overview*, 22 B.C. ENVTL. AFF. L. REV. 503, 508-20 (1995). The basic federal powers allowed under Australian Constitutional law are taxation and the foreign affairs powers. *See id.* at 508 n.2, 509. *Commonwealth v. Tasmania* upheld the power of the federal government of Australia to prevent a dam in the state of Tasmania in an area designated as a world heritage site. *See* Commonwealth v. Tasmania, 158 C.L.R. 1 (Austl. 1983). In a 4 to 3 decision, the High Court held that the Commonwealth Parliament could implement the World Heritage Convention by preventing the construction of the dam in Tasmania. *See id.* at 54-55, 120, 160, 183, 204, 249, 294-95, 323-24. In his opinion, Justice Mason reasoned that if the executive enters into an international agreement, that is the basis of the power of Parliament to act and the Court will presume reciprocal international benefits from observing the treaty. *See id.* at 120-32. He also concluded that the foreign affairs article imposed protection obligations on Australia. *See id.* at 132-36. Justice Brennan suggested that, if there is no specific treaty obligation, the issue must at least evidence international concern. *See id.* at 220. "If the Convention does not impose an obligation, it would be necessary to consider whether the subject with which it deals is nevertheless a matter of international concern. . . . That inquiry need not be pursued if the Convention imposes an obligation on Australia." *Id.*

17. *See* United Nations Conference on Environment and Development: Rio Convention on Biological Diversity, June 5, 1992, 31 I.L.M. 818 (1992). For example, a Dutch environmental law professor has concluded that the "massive cutting of old-growth forests in the United States' Pacific Northwest . . . would be considered by most people to be non-sustainable . . . ." Andre Nollkaemper, *Protecting Forests through Trade Measures: The Search for Substantive Bench Marks*, 8 GEO. INT'L ENVTL. L. REV. 389, 419 (1996).

standard. In opposing the Biodiversity Convention, the Bush Administration succeeded in watering down the Global Climate Change Convention.[18] Additionally, Congress has not yet amended RCRA to conform to the Basel Convention.[19] Therefore, international law could be used to *compel* the United States to meet the higher international standard or, at a minimum, international environmental law provides an additional source of pressure on Congress to encourage the assurance that domestic laws fully conform to international standards. Fourth, the converse is equally possible: international environmental norms could be used to invalidate United States regulations. International agreements such as NAFTA and the World Trade Organization (WTO)[20] contain environmental standards applicable to the United States that may constrain our ability to enact environmental protection regulations. The Tuna-Dolphin decision is the most spectacular example of such an unresolved problem.[21] Fifth, international law can support innovative, non-domestic compliance mechanisms with international obligations.

This article examines three areas of domestic environmental law and shows the potential influence of international law on them: (1) possible international duties to use the Clean Air Act to reduce sulfur dioxide and carbon dioxide emissions to fulfill a duty to Canada; (2) restrictions on domestic pollution laws imposed by WTO and NAFTA; and (3) the application of NEPA to extraterritorial pollution prevention activities. These examples are far from exhaustive, but they represent the different possible impacts discussed above.

The author's thesis is that there is a need to view international environmental law as a part of domestic environmental law rather than a separate source. Integration is growing but the level still remains too low. Both domestic environmental law and international efforts to promote environmental protection will benefit from the integration of international and domestic environmental law. As the next section illustrates, the case

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18. *See* United Nations Conference on Environment and Development: Framework Convention on Climate Change, May 9, 1992, 31 I.L.M. 849 (1992) [hereinafter Convention on Climate Change].

19. *See* Basel Convention, *supra* note 7.

20. *See* General Agreement on Tariffs and Trade - Multilateral Trade Negotiations (The Uruguay Round): Agreement Establishing the Multilateral [World Trade Organization], GATT Doc./MTN/FA Part II, 1-14, of Dec. 15, 1993, 33 I.L.M. 13.

21. *See infra* text accompanying notes 116-18; *see also* David A. Wirth, *International Trade Agreements: Vehicles for Regulatory Reform?*, U. CHI. LEGAL F. (forthcoming 1997) (manuscript on file with author) (exploring the possibility of using WTO and NAFTA dispute resolution processes to undermine the domestic use of risk-based regulations.); *see generally* David A. Wirth, *The Role of Science in the Uruguay Round and NAFTA Trade Disciplines*, 27 CORNELL INT'L L.J. 819 (1994); David A. Wirth, *The Uneasy Interface Between Domestic and International Law*, 9 AM. U. J. INT'L L. & POL'Y 171 (1989).

for integration is grounded in the long standing principle that international law is part of our domestic law and part of the "supreme law of the land."[22] International law can make at least three contributions to domestic pollution control law. First, the most obvious reason for integrating international and domestic law is that, while many domestic issues are linked to international issues, the international dimension is often ignored in the United States.[23] International law can explain and inform the purpose of domestic laws. Second, many United States laws, in fact, adopt the norms of international environmental law. However, the failure to link domestic environmental law to international issues presents both an overly narrow view of the issues and prevents international law from defining and expanding the content of domestic law in a way that would strengthen the justifications for regulation. Finally, international law may also impose additional pollution prevention duties on the United States beyond those adopted by Congress.

I. THE ROLE OF INTERNATIONAL LAW IN DOMESTIC LAW

International law is part of United States law, but substantial doctrinal and "attitudinal" barriers prevent its full incorporation into domestic law. The starting point to analyze when international law should be applied domestically is Justice Gray's sweeping declaration in *The Paquete Habana* that "[i]nternational law is part of our law."[24] The *Paquete Habana* doctrine allows United States courts to apply custom "in the absence of any treaty or other public act."[25] International custom is superior to state law, but does not trump the Constitution.[26] This well-established doctrine has limited immediate application to domestic environmental law because custom has played a narrow role in international environmental law. Custom is generally a backward-looking doctrine that confirms most international state resource use decisions and bases legal duties on the lowest common denominator standard.[27] In contrast, international environmental law is premised on the need to affirmatively create higher

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22. Missouri v. Holland, 252 U.S. 416, 421 (1920).

23. For an important example of neglected linkage, see Joseph J. Romm & Charles B. Curtis, *Mideast Oil Forever?*, ATLANTIC MONTHLY, Apr. 1996, at 57.

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

25. *Id.* at 708.

26. The United States is not, however, relieved of its international obligation. *See* RESTATEMENT (THIRD) FOREIGN RELATIONS LAW OF THE UNITED STATES § 115(1)(b) (1987).

27. Developing nations also resist customary rules as an infringement of their sovereignty. *See* Note, *Developments in the Law—International Environmental Law*, 104 HARV. L. REV. 1484, 1504-06 (1991).

standards of national responsibility for activities that impose external and internal social costs.[28] Thus, the emerging international legal regime is based primarily on recent international agreements. Custom can play some role in creating new legal doctrines. For example, if the theory of instant custom is accepted, rapidly developing doctrines such as the precautionary principle could become applicable under the *Paquete Habana* principle if they do not conflict with domestic law.[29] It is unlikely that such doctrines would be applicable, however, since United States environmental law is based largely on the principle that the government can act to reduce toxic and related risks in advance of conclusive scientific proof that a substance causes harm.[30] Regrettably, the likelihood that doctrines such as the precautionary principle will be applied is slight if the Court continues to display the level of hostility and disdain toward customary international law that it did in the infamous and incorrect *Alvarez-Machain* decision.[31]

Treaties are a more promising source of domestic duties, but the status of treaties on domestic law is more complex.[32] Article VI, Clause 2 of the United States Constitution accords treaties and statutes equal dignity. Treaties thus become part of the "supreme law of the land."[33] To resolve conflicts between treaties and statutes, statutes enacted after the treaty prevail under the Court's last in time doctrine.[34] More generally, courts have been reluctant to use treaties as a source of domestic law for separation of powers reasons. Domestic judicial interpretation of treaties potentially treads on presidential and congressional powers to engage in foreign relations and, the theory is, construction and application should be avoided on separation of powers grounds. For example, this judicial prudence is reflected in the unique United States distinction between self-

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28. *See* SANDS, *supra* note 1, at 237 (identifying sustainable development and the precautionary principle as the two most important international environmental norms).

29. *See* HARALD HOHMANN, PRECAUTIONARY LEGAL DUTIES AND PRINCIPLES OF MODERN INTERNATIONAL ENVIRONMENTAL LAW: THE PRECAUTIONARY PRINCIPLE: INTERNATIONAL ENVIRONMENTAL LAW BETWEEN EXPLOITATION AND PROTECTION 167-69 (1994).

30. *See* Bodansky, *supra* note 11, at 203-28.

31. *See* United States v. Alvarez-Machain, 504 U.S. 655 (1992). This case held that United States' courts had jurisdiction over a Mexican doctor—who allegedly assisted in the torture and murder of a Drug Enforcement Administration Agent, who was kidnapped in Mexico and brought to the United States—because the abduction did not violate an extradition treaty between the two countries. *See id.* at 659-70. Justice Stevens' scholarly dissenting opinion adequately supports his conclusion, which is widely shared by international scholars, that "the Court's admittedly 'shocking' disdain for customary and conventional international law principles . . . is . . . entirely unsupported by case law and commentary." *Id.* at 685-86 (citation omitted).

32. *See* John H. Jackson, *United States*, *in* THE EFFECT OF TREATIES IN DOMESTIC LAW 141 (Francis G. Jacobs & Shelley Roberts eds., 1987).

33. Missouri v. Holland, 252 U.S. 416, 421 (1920).

34. *See* Reid v. Covert, 354 U.S. 1, 18 (1957).

executing and non-self-executing treaties[35] and in the application of the current presumption against implied private rights of action in treaties.

Modern international law scholars argue that the post state-centered view of international law requires that all treaties be presumed self-executing.[36] The case is strong for the enforcement of human rights, which are based on universal and widely accepted norms of human dignity, but it is much weaker for environmental protection. International environmental norms are much less well-defined and are more culturally limited. International environmental norms seldom create private rights and the fiscal and institutional implications of environmental enforcement often require further United States legislation. This analysis suggests that most treaties are not likely classified as self-executing and, thus, international environmental law will not be applied and enforced directly by United States courts.[37]

II. SULFUR DIOXIDE AND CARBON DIOXIDE REDUCTION

A. The Grudging Acceptance of International Obligations for Transboundary Pollution

The United States is both a transboundary polluter and a victim state. Because the United States shares borders with Canada and Mexico, there is a long history of legal responses to transboundary pollution among the three countries. The United States has a history of initially denying that international law imposes any duty to reduce or eliminate pollution—originating in the United States and reaching Canada or Mexico—and then agreeing to mitigate the pollution. For this reason, international law imposes transboundary air and water quality duties on the United States for the benefit of Canada and Mexico. United States

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35. *Compare* Asakura v. City of Seattle, 265 U.S. 332 (1924), *with* Edwards v. Carter, 580 F.2d 1055 (D.C. Cir. 1978); *see generally* Jordan Paust, *Self-Executing Treaties*, 82 AM. J. INT'L L. 760 (1988).

36. *See* Note, *Judicial Enforcement of International Law Against the Federal and State Governments*, 104 HARV. L. REV. 1269, 1284 (1991).

37. *Cf.* ABRAM CHAYES & ANTONIA HANDLER CHAYES, THE NEW SOVEREIGNTY: COMPLIANCE WITH INTERNATIONAL REGULATORY AGREEMENTS 15 (1995):

> Treaty drafters often recognize at the negotiating stage that there will be a considerable time lag after the treaty is concluded before some or all of the parties can bring themselves into compliance . . . .
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> . . . [I]f the regime is to persist over time, adaptation to changing conditions and underlying circumstances will require a shifting mix of regulatory instruments to which state and individual behavior cannot instantaneously respond.

Id.

laws are sometimes enacted exclusively to recognize international obligations, and in other cases the recognition of international duties is part of a more complex federal allocation of interstate air and water quality.

Canadian-United States agreements to limit transboundary water pollution can be traced to Article IV of the 1909 Boundary Waters Treaty which provides "waters flowing across the boundary shall not be polluted on either side to the injury of health or property on the other."[38]

The evolution of the United States-Mexico Colorado River Treaty also illustrates the recognition of international water quality duties. Under the 1944 Colorado River Treaty, Mexico is guaranteed 1,500,000 acre feet annually of Colorado River water which the United States historically met by delivering salty water.[39] Until the 1970s, the United States argued that the treaty did not entitle Mexico to non-saline water,[40] but in 1973 the United States agreed to limit salinity concentrations.[41] United States law also permits the defensive use of transboundary pollution by states to delay compliance with federal mandates. For example, pollution from either Canada or Mexico may be a sufficient excuse to entitle a state with a nonattainment area located on a border to obtain an extension from the compliance dates for the attainment of National Ambient Air Quality particulate standards under the Federal Clean Air Act.[42]

United States transboundary experience also illustrates that we recognize procedural international law duties in our air and water pollution control legislation. Most commentators agree that host nations have a duty to notify other nations of adverse pollution impacts.[43] This duty is codified in the Clean Air Act in a manner that reflects the role of the states in our

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38. Article IV, Treaty Between the United States and Great Britain Relating to Boundary Waters and Questions Arising Between the United States and Canada, 36 Stat. 2448, 2450 (1910). Canada and the United States have moved to an ecosystem management strategy to preserve and enhance the quality of Great Lakes water. *See generally* NATIONAL ACADEMY OF SCIENCES AND THE ROYAL SOCIETY OF CANADA, THE GREAT LAKES WATER QUALITY AGREEMENT: AN EVOLVING INSTRUMENT FOR ECOSYSTEM MANAGEMENT (1985). The recent focus has been on the elimination of all toxic discharges into the Great Lakes. *See id.*

39. Treaty Between the United States and Mexico Respecting Utilization of the Waters of the Colorado and Tijuanea Rivers and of the Rio Grande, 59 Stat. 1219 (1945).

40. *See* Charles J. Meyers & Richard L. Noble, *The Colorado River: The Treaty with Mexico*, 19 STAN. L. REV. 367, 406-11 (1966-67).

41. *See generally* TAYLOR O. MILLER, GARY D. WEATHERFORD & JOHN E. THORSON, THE SALTY COLORADO (1986).

42. *See* Clean Air Act, 42 U.S.C. § 7513(e); *see also* JOHN-MARK STENSVAAG ET AL., CLEAN AIR ACT LAW AND PRACTICE § 7.4 (1991).

43. *See, e.g.*, Francesco Francioni, *International Co-operation for the Protection of the Environment: The Procedural Dimension*, *in* ENVIRONMENTAL PROTECTION AND INTERNATIONAL LAW 203, 205-09 (W. Lang et al. eds., 1990).

federal system.[44] If the Administrator "has reason to believe that any air pollutant or pollutants emitted in the United States cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare in a foreign country," he must notify the governor of the state in which the pollution originates.[45] The notice is a finding that the State Implementation Plan must be modified "to . . . prevent or eliminate the endangerment."[46] The state must invite the victim nation to appear at the revision public hearings.[47] Thus, international law may impose broader duties on the United States with respect to transboundary pollution; we may have a duty to share all relevant information and to negotiate remediation in good faith.[48] Similar duties exist under the Basel Convention on Hazardous Wastes.[49] The Convention entered into force in 1992,[50] but Congress has not yet amended section 3017 of RCRA to give the EPA the authority to regulate the substantial exports of United States hazardous wastes.[51]

B. Acid Deposition: From Denial to Acceptance of the Precautionary Principle

United States acid deposition policy illustrates the complex interrelationship between international duties and the pursuit of interstate equity by the federal government. Sulfur dioxide emissions from coal-fired power plants and other sources, which burn high sulfur coal, are alleged to cause acid deposition damage to lakes and forests.[52] Geography controls the politics of acid deposition because of wind patterns. Acid deposition occurs when sulfur dioxide is lifted by thermal eddies and

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44. *See* 42 U.S.C. § 7415.

45. *Id.* § 7415(a).

46. *Id.* § 7415(b).

47. *See id.*

48. *See* PHILLIPE SANDS, PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW I (1995).

49. *See* Basel Convention, *supra* note 7, art. 4(2)(c), at 669-70.

50. *See* 57 Fed. Reg. 20602 (1992) (discussing domestic implications of the Convention).

51. *See* 42 U.S.C. §§ 6921-6939e. This failure to implement the Convention is a minor but significant source of United States-China friction because Asia is the main export target for hazardous wastes. The Ministry of Communications of the People's Republic of China issued a circular in late May, 1996 to require that all shipping companies under its jurisdiction determine whether containers that they receive contain waste generated in other countries. The circular was issued after 640 tons of "harmful solid wastes" were exported from the United States to a suburb of Beijing.

52. Sulfur dioxide emissions consisted of the following in 1980: thermal power generation—63.8%; residential commercial and industrial—17.0%; other industrial processes—11.0%, non-ferrous smelters—4.4%; and transportation—3.3%. *See* JUTTA BRUNNEE, ACID RAIN AND OZONE LAYER DEPLETION: INTERNATIONAL LAW AND REGULATION 12 (1988).

transported long distances where it transforms into gaseous sulfuric acid and finally is deposited.[53] Oxides of nitrogen from cars and power plants contribute to the problem.[54] Prevailing North American wind patterns carry sulfur dioxide from the Midwest to the Northeast and into Canada. Thus, acid deposition is both a serious domestic and international problem for the United States. Canada has accused the United States of massive acid deposition from midwestern power plants; the United States produced roughly 25.7 million metric tons to Canada's five million metric tons.[55] The allegation that high sulfur burning power plants cause long-term environmental damage has been the subject of intense scientific and political controversy because the financial stakes are so high and there is the usual high level of scientific uncertainty about the adverse environmental impacts of acid deposition. Ecosystem studies of the effect of acid deposition on watersheds are lacking, and the studies of deposition effects on forests suggest that other stresses such as drought, insects, and temperature extremes are more important than air quality.[56] However, recent long range studies lend considerable support to the argument that acid deposition is a serious and unremedied environmental problem.[57] To complicate matters, there is no one-to-one reduction in sulfur dioxide and sulfuric acid emissions and resulting deposition rates.[58]

United States acid deposition policy is a classic example of the United States' adoption of duties imposed by international law after a long period of initial refusal. Originally, the United States dealt with sulfur dioxide emissions by sending them to Canada. Emitters were able to meet their Clean Air Act obligations by using tall stacks, as were used by Canadian sources. The Reagan Administration chose to deal with the problem through research of acidification neutralization programs. This resulted in

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53. *See* UNITED STATES OFFICE OF TECHNOLOGY ASSESSMENT, ACID RAIN AND TRANSPORTED AIR POLLUTANTS: IMPLICATIONS FOR PUBLIC POLICY 4, 27 (1984).

54. *See id.* at 57; *see also* BRUNNEE, *supra* note 52, at 11-14.

55. *See* SUMMARY REPORT OF THE UNITED STATES NATIONAL ACID PRECIPITATION ASSESSMENT PROGRAM, ACID DEPOSITION: STATE OF SCIENCE AND TECHNOLOGY 26 (1991) [hereinafter National Acid Precipitation Assessment Program]. By 1995, the figures were estimated at 21 million metric tons for the United States and 3.7 for Canada. The trend is downward. In 1996, the EPA announced that utilities had reduced emissions by 39 percent below the Clean Air Act goal of an 8.7 million ton ceiling per year.

56. This argument is evaluated and discounted by James N. Galloway, *Introduction to the Scientific Aspects of Acid Deposition*, *in* INTERNATIONAL LAW AND POLLUTION 259, 261-62 (Daniel Barstow Magraw ed., 1991).

57. For example, scientists are paying much more attention to delayed surface water acidification due to soil sulfate absorption. *See* James N. Galloway, *Anthropogenic Mobilization of Sulfur and Nitrogen: Immediate and Delayed Consequences*, 21 ANN. REV. ENERGY & ENV'T 261, 280-81 (1996).

58. *See generally id.* (evaluating and somewhat discounting this argument).

a decade of denial of legal responsibility on the ground that not enough was known about the adverse environmental impacts of acid deposition[59] to trigger liability under the *Trail Smelter* doctrine.[60] Finally, in 1990, after intense Canadian and domestic pressure from our own victim states, Congress acknowledged a legal responsibility to Canada and adopted a strong acid deposition control program in its amendments to the Clean Air Act. The basic idea of these Clean Air Act Amendments is to roll back sulfur dioxide limits to 10 million tons per year until below 1980 levels and to cap total emissions at 8.95 metric tons per year by 2010.[61] To implement this objective, the 1990 Clean Air Act Amendments create a complex system of emission limitations and tradeable permits backed by an international agreement.[62] Electric utilities are the primary source of sulfur dioxide emissions and the burden of meeting sulfur dioxide reduction targets falls on them. The Act lists the major coal-fired plants and establishes individual emission limitations.[63] Utilities can: (1) emit up to their annual allowance (subject to a reserve deduction); (2) install scrubbers or take other pollution reduction steps and bank the surplus allowances; or (3) sell their surplus allowances to other utilities.[64] In 1996, the EPA reported that the United States exceeded the interim emission reduction targets.

Ultimately, the air pollution control strategy laid out in the Clean Air Act may benefit the United States in negotiations with Mexico to protect itself from transboundary air pollution. Along the Rio Grande border with Mexico, the United States is a pollution victim because it lies upwind of a complex of coal-fired generating plants in northern Mexico. The plants, which meet Mexico's low sulfur dioxide emissions standards, emit 250,000 tons of sulfur dioxide annually and produce an acid haze over Big Bend National Park.[65] However, Mexico disputes the connection between its plants and the haze, discounting it as a low priority aesthetic problem, and

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59. The Geneva Convention on Long-Range Transboundary Air Pollution, Nov. 13, 1979, contained neither emission reduction goals nor a deadline to achieve emission reductions. 18 I.L.M. 1449. The 1985 Helsinki and 1988 Sofia Protocols adopted a goal of thirty percent of the 1980 baseline reduction goal. *See* Johan G. Lammers, *The European Approach to Acid Rain*, *in* INTERNATIONAL LAW AND POLLUTION 265, 271-72 (Daniel Barstow Magraw ed., 1991). Although this was criticized as too weak and too late, Great Britain, Poland, and the United States did not join. *See id.*

60. *See* National Acid Precipitation Assessment Program, *supra* note 55, at 41.

61. *See* 42 U.S.C. §§ 7651-7651e.

62. *See* Convention on Long-Range Transboundary Air Pollution, *supra* note 59.

63. *See* 42 U.S.C. § 7651c(e). Table A provides a summation of these limitations. *See id.*

64. *See* 42 U.S.C. § 7651(b).

65. *See* Sam How Verhovek, *A Diplomatic Haze Pervades Park Air Pollution Dispute*, N.Y. TIMES, June 7, 1996, at A1.

NAFTA does not apply because it is designed only to prevent a country from obtaining an unfair trade advantage by failing to enforce its environmental laws.[66] Thus, to obtain a remedy from Mexico, the United States will have to rely on general international law doctrines.

Acid rain is a clear example of transfrontier pollution. While the immediate question—whether the United States has a duty under international law to control sulfur dioxide emissions to prevent acid deposition—was rendered moot by the 1990 Clean Air Act Amendments, it seems relatively clear that the United States has such a duty and can impose similar duties on other states. The 1990 Clean Air Act Amendments not only reflect the acceptance of this duty, but they may also expand the basis of state liability. If international environmental law imposes any duties on states to avoid pollution, acid deposition would seem to be the best case. States have a duty to prevent their territories from being used for acts which cause pollution that harms other states. This principle was articulated in the 1941 *Trail Smelter Arbitration* between Canada and the United States which found Canada liable for sulfur dioxide emissions that blew across the border into Washington state.[67] The resulting customary rule is the foundation of modern international environmental law:

> [U]nder the principles of international [environmental] law . . . no State has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or the properties or persons therein, when the case is of serious consequence and the injury established by clear and convincing evidence.[68]

Trail Smelter is a major qualification of the principle of exclusive territorial sovereignty which extends to the management of natural resources. However, its application to acid deposition and similar problems is not clear. It has yet to be applied to hold a state liable for

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66. Article five of the North American Free Trade Agreement on Environmental Cooperation, which supplements the North American Free Trade Agreement, requires that "each Party shall effectively enforce its environmental laws." Can.-Mex.-U.S.: North American Agreement on Environmental Cooperation, *opened for signature* Sept. 8, 1993, 107 Stat/2057, *reprinted in* 32 I.L.M. 1480, 1483-84 (1993). Articles six through thirty-six provide a dispute settlement mechanism for allegations of violations and enforcement of a country's international environmental laws. *See id.* at 1484-94.

67. *See* Trail Smelter (U.S. v. Can.), 3 R.I.A.A. 1905, 1938 (1949).

68. *Id.* at 1965. The International Court of Justice adopted a similar formulation in *Corfu Channel*, and all subsequent soft law declarations of international environmental rights and duties reassert that duty. *See* Corfu Channel (U.K. v. Alb.), 1949 I.C.J. 4, 22 (Apr. 9).

causing pollution that injures another state,[69] although the threat of liability is a factor in transfrontier pollution negotiations.[70] The *Trail Smelter* principle assumes that provable transboundary air and water pollution is the model of an international environmental insult. The high standard of proof of injury, coupled with the inherent difficulties of any kind of international environmental adjudication, make the principle oft-cited but seldom applied. In addition, the standard of state liability is unresolved. The choice is usually between strict liability and negligence. However, other commentators have argued that the abuse of rights principle limits state liability to state acts intended to cause harm to another state. Finally, some continue to deny that there is a duty to avoid transfrontier harm.[71]

Arguably, the 1990 Clean Air Act Amendments extend beyond the limited *Trail Smelter* doctrine because Congress' decision to limit sulfur dioxide emissions, made before conclusive scientific evidence linked them to water and land degradation, recognizes a duty to prevent harm in advance of conclusive scientific evidence that an activity is harmful. This final United States response to acid deposition is an example of science's power to influence the politics of international environmental protection and to create new legal precedents that extend beyond the paradigm of the private tort action. Environmentalism derives its primary force from the universal warning messages of elite science. As James Rosenau has written:

> Politicians cannot exercise control over environmental outcomes without recourse to scientific findings. They may claim that the findings are not clear-cut or remain subject to contradictory interpretations, but they are nonetheless dependent on what the practices of science uncover about the laws of nature.
>
> . . . [C]riteria of proof are at the heart of environmental politics, that the outcomes of environmental issues depend as much on the persuasiveness of evidence as on the various criteria of power—superior resources, greater mass support, skill at coalition formation—that sustain or resolve other types of issues.[72]

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69. *See* Note, *Developments in the Law—International Environmental Law*, 104 HARV. L. REV. 1484, 1492-1521 (1991).

70. *See* J.E. CARROLL, ENVIRONMENTAL DIPLOMACY 216-33 (1983).

71. For a review of the debate, see R. Pisillo-Mazzeschi, *Forms of International Responsibility for Environmental Harm*, *in* INTERNATIONAL RESPONSIBILITY FOR ENVIRONMENTAL HARM 15 (Francesco Francioni & T. Scovazzi eds., 1992).

72. James N. Rosenau, *Environmental Challenges in a Global Context*, *in* ENVIRONMENTAL POLITICS IN THE INTERNATIONAL ARENA 257, 258 (Sheldon Kamieniecki ed., 1993).

The larger international law lesson of the sulfur dioxide reduction provisions of the 1990 Amendments is that they support the recognition of the emerging precautionary principle of international environmental law. The principle, which imposes a substantive duty to prevent pollution before it causes injury or a risk of serious injury, is emerging from a series of procedural duties on states and the *Trail Smelter* rule.[73] These duties include the duty to inform, although this was dropped from the Stockholm resolution at the insistence of Brazil. There is also a widespread duty of consultation on international rivers.

The procedural duties, however, do not greatly constrain states because the duty to inform does not include the duty to forego. Progressive states have tried to cure this problem by imposing a duty to prevent pollution. For instance, in 1983, the German government took the position that there was no need to wait until harm had been proven to protect the North Sea from various forms of point and non-point sources of pollution.[74] Thus, states have a duty to reduce risks before a threshold is reached. This has been adopted in principle in the Ozone Layer Protocol,[75] other marine conventions, in United Nations' sustainable development declarations, and in regional hazardous waste treaties.

The duty is based on the substitution of risk for provable harm—that underlies United States and European toxic pollutant regulation—and projects the duty to actively prevent serious risks as a general international obligation between states and *erga omnes*.[76] Precaution is a logical response to a science-based legal regime such as international environmental law; serious risks such as ozone depletion or global warming must be regulated before the confirming evidence can be generated if the problem is in fact to be mitigated. Commentators assert that a precautionary principle approach is emerging out of recent regional and global agreements[77] such as the Ozone Convention and in regional

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73. *See* Gunther Handl, *Environmental Security and Global Change: The Challenge to International Law*, *in* ENVIRONMENTAL PROTECTION AND INTERNATIONAL LAW 59, 75 (1991).

74. *See* Dr. Lothar Gundling, *The Status in International Law of the Principle of Precautionary Action*, INT'L J. ESTUARINE & COASTAL L. 23 (1990).

75. *See generally* United Nations: Montreal Protocol on Substances that Deplete the Ozone Layer, Sept. 16, 1987, 26 I.L.M. 1541 (1987).

76. Harald Hohmann argues that the precautionary principle is a logical product of the trend toward planned environmental management and that it has been so widely adopted in binding and non-binding agreements that it has become an "instant" doctrine of customary international law. *See* HARALD HOHMANN, PRECAUTIONARY LEGAL DUTIES AND PRINCIPLES OF MODERN INTERNATIONAL ENVIRONMENTAL LAW 167-68 (1994).

77. *See* Ellen Hey, *The Precautionary Concept in Environmental Policy and Law: Institutionalizing Caution*, 4 GEO. INT'L ENVTL. L. REV. 303, 305 (1992); *see also* Catherine Tinker, *Responsibility for Biological Diversity Conservation Under International Law*, 28 VAND. J.

hazardous waste treaties. The precautionary principle posits that states have a duty to take "remedial action even in the absence of provable environmental harm, simply upon the evidence of significant risk thereof."[78]

The precautionary principle is still vague and it is not well integrated with the law of state responsibility for transboundary environmental damage. The duty has been characterized as a secondary limitation on a state's obligation not to cause transboundary harm or use more than its fair share of common resources.[79] But, recognition seems to be growing. For example, the precautionary principle has been extended from pollution prevention to biodiversity conservation and is incorporated into the preamble of the Convention on Biological Diversity,[80] although the crucial burden of proof issue is unresolved. This Convention can be characterized as a recognition that a state has a duty to practice sustainable development for internal as well as external reasons. A state has a duty to avoid foreseeable significant risks to other states.[81] In short, the precautionary duties to conserve biodiversity will be less than those to prevent pollution because we know less about the transfrontier and global risks posed by biodiversity loss. But, the principle puts some pressure on nations to choose sustainable development projects which have a substantial biodiversity conservation component. At a minimum, it probably includes a duty to avoid foreseeable, significant risks. Recognition of this duty is consistent with Principle 21 of the Stockholm Declaration.[82] The precautionary principle may be applied easily to sulfur dioxide pollution because: (1) its geographical reach is limited; (2) the degree of scientific uncertainty has been significantly narrowed, resulting in informed judgments about the causal links between the pollution and damage; and (3) the mitigation measures are technically and financially feasible.[83]

TRANSNAT'L L. 777, 797-98 (1995).

78. Handl, *supra* note 73, at 77.

79. *See* Tinker, *supra* note 77, at 797-98.

80. *See* United Nations Conference on Environment and Development: Rio Convention on Biological Diversity, June 5, 1992, 31 I.L.M. 818 (1992).

81. *See id.*

82. *See* Principle 21, Stockholm Declaration, *supra* note 3.

83. This analysis borrows from James E. Hickey, Jr. and Vern R. Walker, *Refining the Precautionary Principle in International Environmental Law*, 3 VA. ENVTL. L.J. 423, 426 (1995).

C. Global Climate Change: The Limits of Precaution and the Justification for Limited Domestic Responses

Global climate change responses illustrate the limits of the precautionary principle and the use of international law to justify limited domestic responses to the problem. Global climate change response is a much more complex problem compared to ozone depletion and sulfur dioxide reduction because the magnitude of the problem is uncertain and the adverse impacts, if they materialize, will be unevenly distributed throughout the world. For example, the noted economist Thomas Schnelling has concluded that for developed countries, "the impact on economic output will be negligible and unlikely to be noticed."[84] However, world-wide, the economic cost of rolling back greenhouse gas emissions are substantial—maybe two percent of developed world GNP forever.[85] The global climate change problem is basically an energy policy problem, and there are no good actors and no simple, obvious technological or product ban solutions. Unlike acid rain, we cannot scrub carbon dioxide out of coal. Unlike chloroflorocarbons (CFCs), there are no readily available and reasonably priced substitutes for oil and coal, especially in China and India.[86] To further complicate matters, the injury time horizon is much longer and we are still frightened of the best alternative energy source: nuclear energy. Evidence that we are coming to the end of the era of cheap energy is not encouraging. For example, President Clinton proposed a BTU tax in his first budget, but the idea was too radical and quickly died in Congress.

To respond effectively to the risks of global climate change, energy consumption and use behaviors must be changed. However, all countries resist this imperative, in part, because the economic costs of a miscalculation could be disastrous. For instance, all countries have followed one of two energy policies, both of which are inconsistent with global climate change mitigation. Poor but energy-rich countries have encouraged production to obtain revenues, and wealthy countries (with some exceptions in Europe) have encouraged cheap energy to meet consumer demand. International monetary agencies encouraged developing countries to play catch-up by increasing energy consumption. In the

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84. Thomas Schnelling, *Some Economics of Global Warming*, 82 AM. ECON. REV. 1, 6 (1992) (citation omitted).

85. *See id.*

86. *See id.* at 11.

United States, we have used both regulation and the free market to achieve this result and managed Japan is no different.[87]

Not surprisingly, the international community has not been able to reach consensus on a non-trivial mitigation strategy. The debate has been about stabilization versus roll-backs. Between 1990 and 1992, the international community negotiated a global warming convention at the Rio de Janeiro Earth Summit, the Convention on Global Climate Change.[88] However, the Convention, which entered into force in March of 1994, is a modest first step to deal with the problem. It established only a world greenhouse gas emission baseline at 1990 emissions and did not mandate roll-back targets or provide incentives, such as the carbon tax urged by some members of the European Community, to stimulate emission roll-backs.[89] The continuing Intergovernmental Negotiating Committee acknowledged the inadequacy of the Convention—in 1995[90] and again in 1996[91]—as well as the need to address the roll-back issue. However, the Committee did not reach an agreement on the policy instruments to accomplish this objective.

Global climate change scenarios counsel the radically new energy policies in the name of future risk reduction. Any *new* energy policy intended to reduce the risks of global climate change means higher energy prices and less overall energy consumption of fuels that cause carbon emissions. Thus, we have to reduce energy use and reduce it substantially. The former Office of Technology Assessment has concluded that to reduce the risk of global climate change to pre-industrial conditions, carbon dioxide emissions—which are 420 parts per million above pre-industrial levels—would have to be reduced fifty percent by the year 2025.[92] To stabilize global climate change, emissions would have to be reduced sixty to eighty percent.[93]

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87. A recent review of Japan's energy policy concluded: "Japan's energy policy has constantly accorded primacy to low energy cost and supply assurance. . . ." Y. Murota & Y. Yano, *Japan's Policy on Energy and the Environment*, 18 ANN. REV. ENERGY & ENV'T 89, 130 (1993).

88. *See* Convention on Climate Change, *supra* note 18.

89. *See Current Reports*, 18 Int'l Env't Rep. (BNA) 357 (May 17, 1995).

90. *See* Sarah Cook, *The Berlin Climate Change Convention 28 March to 7 April 1995: An Assessment of Results*, EUR. L. REV. 242 (1995).

91. *See Current Reports*, 20 Int'l Env't Rep. (BNA) 50 (Jan. 22, 1997). The third conference of the Parties will occur in December, 1997. *See id.* To move the parties toward the adoption of an emission reduction protocol, the current United States strategy would establish a ten year budget cap for each country and an international trading regime for greenhouse gases. *See id.* at 50-51.

92. *See* UNITED STATES OFFICE OF TECHNOLOGY ASSESSMENT, PREPARING FOR AN UNCERTAIN CLIMATE 1 (1993).

93. *See id.* at 2.

The precautionary principle could be invoked to support more aggressive mitigation policies, but the uncertainty surrounding the scientific debate about the rate of temperature increase and the possible adverse effects is too great to convince world leaders to act now. To apply the precautionary principle, the burden of proof must be refined. The crucial question is what level of scientific evidence is necessary to justify a precautionary response. The striking aspect about global warming compared to other common problems such as ozone depletion and even rain forest destruction is that a great deal of scientific evidence has been marshalled to support "doing something." For example, a 1990 National Academy of Sciences report, *One Earth, One Future: Our Changing Global Environment*, reported the growing consensus in the scientific community that we know enough about global climate change to begin slowing the rate of greenhouse gas emissions;[94] this consensus was reaffirmed in 1995.[95] However, large segments of the scientific community, the public, and political leaders in most countries remain unconvinced of the urgency of the problem. As long as there is a high level of uncertainty about the issue, there is no pressure to modify international energy policy. Politicians and policy makers have been able to treat global climate change as a factor "to be considered" or as speculative sport for the policy crowd. In short, global energy policy linked to global warming does not exist.

The United States has used international law to implement the Convention on Global Climate Change through joint implementation and adaptation.[96] The 1992 Convention endorses joint implementation as a north-south wealth and technology transfer mechanism.[97] Under joint implementation, a developed country can meet its reduction obligations by paying another country to reduce its emissions.[98] Basically, the same economic principle is said to drive international trade: comparative

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94. *See* CHERYL SIMON SILVER & RUTH S. DEFRIES, NATIONAL ACADEMY OF SCIENCES, ONE EARTH, ONE FUTURE: OUR CHANGING GLOBAL ENVIRONMENT 9-10 (1990).

95. *See* INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 1996A, *Climate Change 1995—The Science of Climate Change*, *in* CONTRIBUTION OF WORKING GROUP I TO THE SECOND ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 55 (Cambridge Univ. Press 1996). The Intergovernmental Panel on Climate Change concluded in 1995 that "the balance of evidence suggests that there is a discernible human influence on global climate." *Id.* at 5.

96. Adaptation, as distinguished from mitigation, does not try to reduce greenhouse gas emissions but seeks to adapt to the adverse impacts when they occur. For example, water shortages can be addressed by water marketing and some sea level rises could be addressed through land use controls. *See* A. Dan Tarlock, *Now, Think Again About Adaptation*, 9 ARIZ. J. INT'L & COMP. L. 169 (1992).

97. *See* Convention on Climate Change, *supra* note 18, art. 4.2(a).

98. *See id.*

economic advantage. Under this advantage, it is more efficient for less developed nations to reduce their pollution cheaply, than for a more developed nation to do so. This is a potential win-win situation. The cost of pro rata emission reductions falls more heavily on developing rather than developed nations.[99]

Developing countries face increased economic impacts and health risks. For example, developing countries face increased risks to important ecological resources, wetlands, forests, and other wildlife habitats everywhere. Developed countries like the United States, Canada, Japan, and the European nations will be the least affected by global warming because the economic activity most affected is agriculture. The largest potential loser from the Convention is China, which burns a great deal of coal and is rapidly developing its socialist-market economy.[100] Thus, joint implementation allows the countries with the least to fear from global climate change to continue to emit in return for financing abatement projects in less developed countries.[101] For instance, it would be more cost effective to encourage China to increase the efficiency of its coal use and to augment coal consumption with alternative energy sources than to expend an equal amount of resources on similar encouragement of the United States.

III. RESTRICTIONS ON DOMESTIC ENVIRONMENTAL LAWS IMPOSED BY THE WTO AND NAFTA

A. The "Trade Versus Environment" Conflict

United States environmental laws are subject to external review and challenge by the World Trade Organization (WTO)[102] as trade barriers. The WTO administers the General Agreements on Tariffs and Trade (GATT).[103] GATT seeks to promote free trade by prohibiting domestic trade barriers similar to those prevented by the United States Dormant Commerce Clause.[104] NAFTA[105] is a similar regime to promote greater

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99. *See id.*

100. *See* VACLAV SMIL, CHINA'S ENVIRONMENTAL CRISIS: AN INQUIRY INTO THE LIMITS OF NATIONAL DEVELOPMENT 133-35 (1993).

101. *See* Robert N. Stavins, *Policy Instruments to Address Global Climate Change*, U. CHI. LEGAL F. (forthcoming 1997) (manuscript on file with the author); *see also* R. Loske & S. Oberthuer, *Joint Implementation under the Climate Change Convention*, 6 INT'L ENVTL. AFF. 45 (1994).

102. *See* General Agreement on Tariffs and Trade, *supra* note 20, at 1-14.

103. *See* GATT, *supra* note 9.

104. *See generally* DANIEL C. ESTY, GREENING THE GATT: TRADE, ENVIRONMENT AND THE FUTURE (1994).

trade among Canada, Mexico, and the United States. In the past five years, the environmental and trade communities have extensively debated the issue of whether free trade and increasing levels of environmental protection are compatible.[106] From a trade perspective, the fear is that environmental protection will be used to disguise discriminatory trade policies. The problem is not an easy one to resolve since many environmental regimes, such as the Montreal Protocol[107] on the reduction of ozone depleting chemicals, use trade restrictions as the primary enforcement mechanism.

The issue has taken on greater urgency because the WTO Dispute Settlement Board decisions are now unconditionally binding.[108] GATT contains limited environmental exceptions to the general principle that domestic laws which ban imports or exports are GATT-illegal trade barriers,[109] and the trade community is just beginning to address the integration of environmental protection into the GATT regime. Article XX of GATT authorizes measures to protect human, animal, plant life, or health and to conserve exhaustible natural resources.[110] Further, in 1993 GATT was augmented by the Agreement on Sanitary and Phytosanitary Standards.[111] NAFTA contains similar environmental exceptions and is a more environmentally friendly trade regime.[112] States may adopt standards higher than international standards if they are scientifically justifiable.[113]

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105. *See* NAFTA, *supra* note 10.

106. The literature includes Steve Charnovitz, *Exploring the Environmental Exceptions in GATT Article XX*, 25 J. WORLD TRADE 37-55 (Oct. 1991); Jeffrey L. Dunoff, *International Misfits: The GATT, The ICJ & Trade-Environmental Disputes*, 15 MICH. J. INT'L L. 1043 (1994); Jeffrey L. Dunoff, *Reconciling International Trade with Preservation of the Global Commons: Can We Prosper and Protect?*, 49 WASH. & LEE L. REV. 1407 (1992); John Jackson, *World Trade Rules and Environmental Policies: Congruence or Conflict?*, 49 WASH. & LEE L. REV. 1227 (1992); Edith Brown Weiss, *Environmentally Sustainable Competitiveness: A Comment*, 102 YALE L.J. 2123 (1993).

107. *See* United Nations: Montreal Protocol on Substances that Deplete the Ozone Layer, Sept. 6, 1987, art. 4., 26 I.L.M. 1541, 1554 (1987).

108. General Agreement on Tariffs and Trade-Multilateral Trade Negotiations (The Uruguay Round): Final Act Embodying the Results of the Uruguay Round of Trade Negotiations, art. 14., 33 I.L.M. 1, 2 (1993).

109. For a good articulation of the frequently made point that trade experts tend to see environmental regulation as nontariff trade barriers, see Steve Charnovitz, *The Regulation of Environmental Standards by International Trade Agreements*, 16 Int'l Env't Rep. (BNA) 631, 631-33 (Aug. 25, 1993), *reprinted in* INTERNATIONAL ENVIRONMENTAL LAW ANTHOLOGY 443 (Anthony D'Amato & Kirsten Engel eds., 1996).

110. *See supra* note 9, at 1950

111. *See* David A. Wirth, *The Role of Science in the Uruguay Round and NAFTA Trade Disciplines*, 27 CORNELL INT'L L.J. 817, 823 (1994).

112. *See* NAFTA, *supra* note 10, at 377.

113. *See* James A. Baily, *Free Trade and the Environment—Can NAFTA Reconcile the Irreconcilable*, 8 AM. U. J. INT'L L. & POL'Y 839, 850-54 (1993).

Under NAFTA those seeking to invalidate an environmental restriction as an illegal trade barrier bear the burden of proof.[114] In contrast, the WTO regime shifts the burden to the state to justify an environmental regulation once the objector establishes a prima facie case of discrimination.[115]

Two GATT panel decisions illustrate that GATT may: (1) frustrate United States efforts to improve global environmental quality; and, (2) frustrate efforts to improve or maintain domestic environmental quality. The 1991 and 1994 Tuna-Dolphin GATT panel decisions illustrate the first problem. The Tuna-Dolphin panels' decisions concluded that a United States ban on tuna harvested with purse seine nets, enacted to protect dolphins, was not a GATT-authorized conservation measure.[116] However, the United States-Mexico panel concluded that Article XX has no extraterritorial application.[117] These decisions implicate domestic legislation and recent international environmental treaties that prohibit trade in violation of the treaty.[118]

The United States-Venezuelan refined oil products dispute represents, at least at the symbolic level, the converse GATT problem because the WTO forces the United States to lower its environmental standards. Venezuelan gasoline has three times as much olefin, an ozone contributor,

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114. *See* NAFTA *supra* note 10, arts. 723(6) & 914(4), at 382, 391. For a brief discussion of the possible burdens imposed, see Robert F. Housman & Paul M. Orbuch, *Integrating Labor and Environmental Concerns Into the North American Free Trade Agreement: A Look Back and A Look Ahead*, 8 AM. U. J. INT'L L. & POL'Y 719, 744-45 (1993).

115. *See* Agreement on the Application of Sanitary and Phytosanitary Measures, GATT Doc. MTN/FA II-A1A6 (Dec. 15, 1993), para. 10, *in* General Agreement on Tariffs and Trade Multilateral Trade Negotiations (The Uruguay Round): Final Act Embodying the Results of the Uruguay Round of Trade Negotiations, Annex IA (*not reproduced in* I.L.M.). As my colleague Fred Abbott has noted, "the WTO SPS Agreement . . . [creates] a strong presumption in favor of measures consistent with international standards, and requires at least implicitly that measures deviating from those standards be justified by the party adopting them." Frederick M. Abbott, *The NAFTA Environmental Dispute Settlement as a Prototype for Regional Integration Arrangements*, 1994 Y.B. INT'L ENVTL. L. 3, 21 (footnote omitted).

116. *See* General Agreement on Tariffs and Trade: Dispute Settlement Panel; Report on United States Restrictions on Imports of Tuna, No. DS21/R., Aug. 16, 1991, *reprinted in* 30 I.L.M. 1594 (1991) [hereinafter GATT Tuna Dispute Settlement Panel]; *see also* General Agreement on Tariffs and Trade: Dispute Settlement Panel United States Restrictions on Import of Tuna, GATT Doc. DS29/R, May 20, 1994, *reprinted in* 33 I.L.M. 839 (1994) [hereinafter Tuna-Dolphin II].

117. *See* GATT Tuna Dispute Settlement Panel, *supra* note 116, at 1623. Tuna-Dolphin II rejected the argument that GATT imposes a per se ban on the extraterritorial application of domestic environmental laws. However, the scope of this authority is undefined. *See* Daniel A. Farber, *Stretching the Margins: The Geographic Nexus in Environmental Law*, 48 STAN. L. REV. 1247, 1262-64 (1996).

118. *See* K. Beacham, *International Trade and the Environment: Implications of the General Agreement Tariffs and Trade for the Future of Environmental Protection Efforts*, 3 COLO. J. INT'L ENVTL. L. & POL'Y 655, 667 (1992) (suggesting that countries that ratified GATT after CITES may no longer enforce the CITES trade sanctions).

compared to United States petroleum products. Prior to 1994, United States refiners could use their own regulated pollutants as the reduction baseline,[119] but foreign producers were subject to the higher Clean Air Act baseline.[120] In 1994, the EPA proposed an agreement with Venezuela that would have allowed Venezuelan refiners to use the same baseline as domestic producers in return for Venezuela dropping a WTO complaint. The net nitrogen oxide (NOx) emissions increase would be less than one percent. But, after details of the secret negotiations were leaked, Congress added a rider to an appropriations bill to preclude the rule change.[121] Venezuela re-lodged its complaint. In 1996 the United States Gasoline Panel concluded that the baseline rules violated GATT.[122]

B. The Role of International Environmental Law in Resolving the "Trade-Environment" Conflict

Trade law can be enriched by both United States and international environmental law perspectives to remove per se national prohibitions against environmental protection in a manner that still allows legitimate trade discrimination challenges. Unilateral trade bans enforcing a domestic environmental policy are a hard case and a difficult issue. The major limitation of the United States-Mexico panel decision,[123] as well as the 1994 *European Community v. United States* decision,[124] is that they fail to recognize that the purpose of GATT's Article XX is to prevent discrimination among countries. Thus, there is neither a need to imply a geographic restriction on the animals sought to be protected nor to construe the restriction as extra-territorial because the ban was aimed primarily at the United States tuna fleet.

More generally, international environmental law can support stronger trade restrictions where discriminatory intent is lacking. Professor Howard F. Chang, of the University of Southern California, has mounted

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119. The basic difference between domestic and foreign refiners is that domestic refiners could use a baseline based on the quality of gasoline actually sold by the producer. *See* Anna Beth Snoderly, *Clearing the Air: Environmental Regulation, Dispute Resolution, and Domestic Sovereignty Under the World Trade Organization*, 22 N.C. J. INT'L L. & COM. REG. 241, 263-64 (1996). Foreign producers, however, would not be allowed to use individual baselines. *See id.*

120. *See* 42 U.S.C. § 7545(k)(10).

121. *See* Pub.L. No. 103-327, 108 Stat. 2298, 2322 (1994); *see also* Aubry D. Smith, Note, *Executive-Branch Rulemaking and Dispute Settlement in the World Trade Organization: A Proposal to Increase Public Participation*, 94 MICH. L. REV. 1267, 1268 (1996).

122. *See* Snoderly, *supra* note 119, at 246 n.17 (citing The United States Standards for Reformulated and Conventional Gasoline Panel Report, *available in* 1996 WL 738807).

123. *See* GATT Tuna Dispute Settlement, *supra* note 116.

124. *See generally* Tuna-Dolphin II, *supra* note 116.

a sophisticated defense of environmentally motivated trade restrictions.[125] Professor Chang first criticizes the decisions from an economics perspective.[126] The central insight that economics has contributed to environmental protection is the theory of externalities.[127] The theory that market competition among nations will produce an efficient allocation of resources is flawed because nations have little or no incentive to internalize the external costs of trade.[128] Trade experts generally prefer to address externalities through positive incentives such as subsidies to cooperate in implementing environmental protection. Thus, the "carrots only" approach is not an adequate response to environmental degradation because it fails to recognize the pervasive market failures that impede cooperation.[129] For example, each country has an incentive to understate its preference for environmental protection. Therefore, carrots need to be augmented with sticks.[130]

Sticks are needed because under the current carrots only strategy the use of subsidies will produce more domestic pollution.[131] Professor Chang argues that sticks, such as pollution restrictions, will remove incentives to increase the level of pollution and will send a clear signal to countries that they must reduce pollution levels and other environmentally harmful behavior.[132] However, to deal with the argument that environmental regulation will be used by industries to disguise trade barriers, he suggests limiting the use of sticks in several ways.[133] He rejects territorial location because it prevents the protection of global commons.[134] He also excludes any limitation on the calculation of non-use values because these reflect legitimate preferences, although he recognizes the close link between claims of non-use value protection and protectionism.[135]

The law of trade discrimination provides the basis for limitations on the use of sanctions.[136] GATT allows panels to ask whether a domestic trade practice which has a protectionist effect is so irrational as to be

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125. *See* Howard F. Chang, *An Economic Analysis of Trade Measures to Protect the Global Environment*, 83 GEO. L.J. 2131 (1995).

126. *See id.* at 2145-64.

127. *See id.* at 2146.

128. *See id.*

129. *Id.* at 2150-53.

130. *See id.* at 2152.

131. *See id.* at 2155-59.

132. *See id.* at 2157.

133. *See id.* at 2160-64.

134. *See id.* at 2160-61, 2166.

135. *See id.* at 2166-70.

136. *See id.* at 2172.

arbitrary and unjustified.[137] First, a country that seeks to use trade sanctions must apply the same standards to its own producers.[138] Equal treatment, for example, is good evidence that our concern for non-use and global commons values is genuine.[139] Second, the restriction must be for a "genuine" environmental purpose and must be a real trade restriction.[140] These standards are different from the prohibition against direct trade measures articulated in the 1994 GATT United States-Mexico panel decision.[141] Finally, he endorses labelling requirements, process standards, and embargoes because they are effective and promote efficiency by correcting market failures.[142]

Trade sanctions are often attacked as "eco-imperialism," and there is considerable philosophical support for the proposition that one person (or nation) should not impose her preferences on another. However, this logic should not apply to the protection of global commons and the protection of non-use values in other countries because "they exhibit equal concern and respect for all persons."[143] To accommodate trade and environmental protection, Professor Chang proposes a three part test to separate environmental from protectionist trade restrictions and sanctions. A trade restriction is protectionist if:

> (1) the environmental protection in question applies to a stock of a natural resource within the foreign country, in the absence of physical spill-overs; (2) the foreign producers to be regulated compete with a domestic industry subject to similar regulations to protect a stock of the same resource in the importing country; and (3) use value is an important consideration that supports the regulation of the domestic stock, but not the foreign stock.[144]

International environmental law can also reinforce domestic law by providing a strong conceptual foundation for unilateral protection efforts. A recent International Court of Trade decision illustrates this potential.[145] Public Law 101-162 prohibits shrimp imports from countries which do not

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137. *See id.* at 2173.

138. *See id.*

139. *See id.* at 2174.

140. *See id.* at 2174-75.

141. *See id.* at 2175; *see also* Tuna-Dolphin II, *supra* note 116.

142. *See id.* at 2176-81.

143. *Id.* at 2195.

144. *Id.* at 2198.

145. *See generally* Earth Island Institute v. State Department, 42 Env't Rep. Cas. (BNA) 1196 (Ct. Int'l Trade Dec. 29, 1995).

use sea turtle-excluder devices.[146] Earth Island Institute, a public interest organization, sued the Department of State because it limited enforcement of the import prohibition under Public Law 101-162 to the Gulf of Mexico-Caribbean Sea-Western Atlantic Ocean. The Department of State thereby failed to enforce the law against some forty other countries alleged to harvest shrimp in a way that kills sea turtles.[147] The Court of International Trade, which has exclusive jurisdiction, found that the primary reason for the limited enforcement of the law was to prevent the market disruptions which would follow from full enforcement.[148] Nevertheless, it held that the statute was enacted to protect a global commons resource applying to all regions where shrimp harvesting threatens sea turtles.[149]

IV. UNITED STATES' ROLE IN GLOBAL POLLUTION PREVENTION: THE EXTRATERRITORIAL REACH OF NEPA

United States activities such as foreign aid, investment, and research have substantial adverse global environmental impacts, but it has been difficult to mitigate these impacts through unilateral actions by the United States. There are many reasons for this failure, including the lack of environmental management capacity in host countries. However, the United States' reluctance to use the National Environmental Policy Act (NEPA)[150] or similar processes to act unilaterally has contributed to the problem. United States' agencies and the World Bank have historically considered environmental protection a low priority. Preparing environmental impact statements (EISs) or environmental assessments (EAs) for federal actions having substantial adverse environmental impacts in foreign countries offers the modest possibility of reversing this trend. The EIS or EA process would force United States' agencies to consider the extraterritorial impacts of their actions and bring the issues to the attention of host countries.

Although often asserted as such, international law is not a barrier to unilateral NEPA compliance for extraterritorial activities. There have been a small number of suits forcing United States foreign aid and defense agencies to prepare EISs for overseas activities.[151] In addition, although

146. *See* Pub. L. No. 101-162, 103 Stat. 988 (1989).

147. *See supra* note 145, at 1198-99.

148. *See id.* at 1211-12.

149. *See id.* at 1212.

150. *See* 42 U.S.C. §§ 4321-4347 (1994).

151. *See, e.g.*, Sierra Club v. Adams, 578 F.2d 389, 396 (D.C. Cir. 1978).

a 1979 Executive Order purports to preempt the extraterritorial application of NEPA by substituting a Global Commons Environmental Assessment in limited circumstances,[152] courts have refused to give the order a preemptive effect.[153]

The major obstacle in forcing the United States to apply NEPA to its actions with extraterritorial impacts is the use of a domestic doctrine grounded in international law. The presumption against extraterritorial application of domestic statutes excuses NEPA compliance. The Supreme Court has erected a strong presumption against extraterritorial impact[154] and courts have applied the presumption to NEPA.[155]

The presumption against NEPA compliance is not necessary as a matter of the classic law of extraterritorial application of statutes nor as a matter of international environmental law. The preparation of an EIS for a United States activity to be carried out in a foreign country is not technically an extraterritorial application of a statute. The action is a domestic procedural process[156] that is carried out by a federal entity in the United States.[157] Neither classic international law nor United States law prohibit a country from conditioning its assistance to other countries. In fact, the United States has a long history of using foreign assistance to influence host country policies. As the District of Columbia Circuit Court of Appeals put it, "[s]ince NEPA is designed to regulate conduct occurring within the territory of the United States, and imposes no substantive requirements which could be interpreted to govern conduct abroad, the presumption against extraterritoriality does not apply."[158]

Courts continue, however, to treat the extraterritorial application of NEPA as an exception to the presumption that it does not apply. In *Environmental Defense Fund v. Massey*, Judges Mikva, Wald, and Edwards held that NEPA applies to the construction of an incinerator, funded by the National Science Foundation, in Antarctica.[159] The panel

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152. *See* Executive Order No. 12114, 44 Fed. Reg. 1957 (1979).

153. *See* Greenpeace U.S.A. v. Stone, 748 F. Supp. 749, 762 (D. Haw. 1990).

154. *See generally* EEOC v. Arabian Am. Oil Co., 499 U.S. 244 (1991).

155. *See* NEPA Coalition of Japan v. Aspin, 837 F. Supp. 466, 468 (D.D.C. 1993); *see also Greenpeace*, 748 F. Supp. at 762. The Supreme Court applied the presumption to the Endangered Species Act, ironically enacted to implement the Convention on Trade in Endangered Species, through its extra-constitutional standing jurisprudence. *See* Lujan v. Defenders of Wildlife, 504 U.S. 555, 567 (1992).

156. *See* Roberston v. Methow Valley Citizens Council, 490 U.S. 332, 350 (1989).

157. *See* DANIEL R. MANDELKER, NEPA LAW & LITIGATION § 5.16 (1984).

158. Environmental Defense Fund v. Massey, 986 F.2d 528, 533 (D.C. Cir. 1993).

159. *See id.* at 536-37.

unnecessarily relied on the unique status of the continent as the only major land mass that has not been carved into sovereign jurisdictions under the various doctrines that govern territorial claims.[160] NEPA applied because "Antarctica 'is not a foreign country,' but rather a continent that is most frequently analogized to outer space."[161]

The policy behind the presumption against the extraterritorial application of statutes, such as it is, does not apply to NEPA. In *EEOC v. Aramco*, the Court defended its presumption because it protects against the "unintended clashes between our laws and those of other nations which could result in international discord."[162] However, this typical Supreme Court abstraction neither reflects reality nor the emerging principle that all nations can assume trust duties toward global commons. The United States frequently tries to influence the laws of other nations and international organizations. For example, current China-United States disputes over the vigor of China's enforcement of intellectual property protection laws or the refusal to recognize human rights for Chinese citizens is a classic example of our willingness to risk a degree of international discord. Additionally, in the environmental sphere, Congress has mandated extraterritorial compliance and has rejected the policy articulated in *EEOC v. Aramco*. For instance, Congress, at the urging of nongovernmental organizations, has extensively modified the World Bank's lending discretion.[163]

The preparation of an EIS for overseas activities is an easy case because the United States' influence will be exercised by the executive branch. Thus, a court's ruling does not raise the delicate separation of powers issues involved in a challenge to executive authority as suggested by *United States v. Curtis-Wright Export Corp.*[164] At a minimum, there should be a presumption of applicability, unless a clear impairment to the United States' ability to conduct foreign policy can be demonstrated.[165] This is especially true in light of the environmental law's evolution; impact

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160. *See id.* at 533-34.

161. *Id.* at 534. It is a complete misreading of the Antarctic Treaty regime to analogize Antarctica to outer space. The 1959 Antarctic Treaty freezes existing sovereignty claims and the regime is evolving toward an internationally managed global heritage. This is not analogous to outer space where all nations have relinquished the right to make any territorial claims.

162. *Arabian Am. Oil Co.*, 449 U.S. at 248.

163. *See* 103 Stat. 2492, 2524; *see generally* Ian A. Bowles & Cyril F. Kormus, *Environmental Reform at the World Bank: The Role of the United States Congress*, 35 VA. J. INT'L L. 777, 779-808 (1996).

164. *See* United States v. Curtis-Wright Export Corp., 299 U.S. 304, 319-20 (1936).

165. For a useful categorization of the different types of extraterritorial impacts and a suggested balancing test, see generally Comment, *NEPA's Role in Protecting the World Environment*, 131 U. PA. L. REV. 353 (1982).

assessment is a widespread domestic practice and the objection that the unilateral imposition of environmental protection duties is an affront to national sovereignty is weakening in the developing world. Full disclosure may be more effective internationally than it is nationally.

This theory—that requiring an EIS for overseas activities is an easy case—is supported by the growing recognition that shared resources are not limited to classic unowned commons and that all nations are under a duty to conserve fragile resources for future generations.[166] The argument that shared resources are subject to a planetary trust supports the modification of exclusive sovereignty claims within the context of classic theories of sovereignty.[167] This theory also draws support from counter traditions in international law: the Grotian vision of international law as a progressive source of idealism, individualism, and states' rights.[168] Another example is the recognition that non-state actors such as international organizations and non-governmental organizations have legitimate interests in the formulation and application of international law.[169] The argument for shared control, subject to a trust obligation, proceeds in three stages: (1) the extension of the *Trail Smelter* limitations on the use of a state's territory to all forms of environmental degradation; (2) the categorical expansion of common or shared resources to include resources conventionally classified as exclusive; and (3) the creation of new and adaptable norms of conduct applicable to specific state activities which cause internal, as well as external adverse environmental consequences.

The traditional law of state responsibility can be expanded to include internal state duties toward new common property resources, such as rain forests, if they are reclassified from exclusive to shared resources, or resources of common concern to humankind.[170] International law has traditionally recognized that a limited class of common resources outside the exclusive control of any state, such as the high seas, are not subject to

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166. *See generally* EDITH BROWN WEISS, IN FAIRNESS TO FUTURE GENERATIONS: INTERNATIONAL LAW, COMMON PATRIMONY, AND INTERGENERATIONAL EQUITY (1989).

167. *See* Edith Brown Weiss, *The Planetary Trust: Conservation and Intergenerational Equity*, 11 ECOLOGY L.Q. 495, 564 (1984).

168. *See* H. Lauterpract, *The Grotian Tradition in International Law*, *in* INTERNATIONAL LAW: A CONTEMPORARY PERSPECTIVE 10 (Richard Falk et al. eds., 1985).

169. *See* LAKSHMAN D. GURUSWAMY ET AL., INTERNATIONAL ENVIRONMENTAL LAW AND WORLD ORDER 9-43 (1994) (providing a good review of the answers to the question whether international law is found in the environmental context).

170. *See* A. Dan Tarlock, *Exclusive Sovereignty Versus Sustainable Development of a Shared Resource: The Dilemma of Latin American Rain Forest Management*, TEX. INT'L L.J. (forthcoming 1997) (manuscript on file with the author).

exclusive sovereignty claims.[171] Thus, commons have been restricted to areas such as seas and skies where effective national control has been inefficient and costly to police. To prevent future tragedies, environmental commentators have been attracted to the emerging Antarctic Treaty regime and Malta's contribution to the law of the sea. This contribution reformulated the idea of commons as an equitable standard for the restrained exploitation of global interest resources.[172] Malta proposed that the high seas and seabeds be declared the common heritage of mankind; but during the ensuing United Nations debate, common heritage was softened to common concern.[173] Nevertheless, the seed of the idea of terrestrial resources subject to international stewardship regimes was planted.

Common heritage or concern has two implicit restrictions on resource use. First, all members of the international community have an interest in the resource. Thus, any state can assume the trust responsibility, although the ability of the trustee to enforce the obligation may not be possible.[174] Second, it follows that exploitation decisions must be measured against their impacts on other members of the international community. The closest non-marine legal regime to adopt this principle is the Antarctic treaty regime.[175] "Publicists" have argued that the principle can be extended to whales, wildlife,[176] and biodiversity. The European Community has described wild birds as "a case where the management of the common heritage is entrusted to the member states in their respective territories."[177] They can at best be re-characterized as

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171. *See* ORAN R. YOUNG, INTERNATIONAL GOVERNANCE: PROTECTING THE ENVIRONMENT IN A STATELESS SOCIETY 19-26 (distinguishing among four types of international environmental issues: "[1] international commons, [2] shared natural resources, [3] transboundary externalities and [4] linked issues" such as the relationship between national energy policy and global climate response).

172. *See id.* at 35; *see also* INTERNATIONAL ENVIRONMENTAL LAW ANTHOLOGY 31-35 (Anthony D'Amato & Kirsten Engel eds., 1995) (citing Declaration and Treaty Concerning the Reservation Exclusively for Peaceful Purposes of the Seabed and of the Ocean Floor, Underlying the Seas Beyond the Limits of Present National Jurisdiction, and the Use of Their Resources in the Interests of Mankind, UN Doc. A/AC.105/C.2/SR.75 (1967)).

173. *See* Jutta Brunnee & Stephen J. Toope, *Environmental Security and Freshwater Resources: A Case for International Ecosystem Law*, 1994 Y.B. INT'L ENVTL. L. 41, 73 (suggesting that freshwater resources should be characterized as of common concern to humankind, recognizing that the resource is not a true commons).

174. *See* Weiss, *supra* note 167, at 564-76.

175. *See infra* text accompanying notes 187-89.

176. *See* Michael Glennon, *Has International Law Failed the Elephant?*, 84 AM. J. INT'L L. 1, 28 (1990).

177. PHILIPPE SANDS, PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW, 440-42 (1995); *see also* Case C-339/87, EC Comm'n v. Netherlands, 2 C.M.L.R. 360, 386 (1993) (interpreting the 1979 Wild Birds Directive).

shared or partial commons.[178] If shared sovereignty is recognized, it can be the basis for both procedural and substantive limitations on national prerogatives which can provide standards for judging domestic rain forest use and management decisions.

The final stage in the development of an international environmental law regime is creating universal obligations, which would trump sovereign prerogatives, preventing environmental damage. Principle 21 of the Stockholm Declaration is the first step in the effort to broaden the *Trail Smelter* principle.[179] The principle states the exclusive sovereignty doctrine with a potentially significant expansion of the abuse of rights exception.[180] States have a duty to prevent damage to other states or to "areas beyond the limits of national jurisdiction."[181] The quoted phrase seems to adopt the principle that international duties run to individual states and the international community as a whole. This is an extension of previous customary international law which remains locked in the state versus state model. A state's rights have traditionally been limited to its territory or the portion of the oceans under its exclusive control.[182] Thus, standing to enforce obligations is limited to states injured by a breach of an international duty. The concept of an *actio popularis* or private attorney general action has been rejected by the International Court of Justice,[183] although such action has been endorsed in influential dissenting opinions of the International Court of Justice.[184]

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178. *Compare* WEISS, *supra* note 166, at 224 ("Forests must be recognized as having elements of common patrimony."), *with* Roseann Escbach, Comment, *A Global Approach to the Protection of the Environment: Balancing State Sovereignty and Global Interests*, 4 TEMP. INT'L L.J. 271, 305 (1990).

179. *See* Principle 21, Stockholm Declaration, *supra* note 3.

180. *See id.*

181. *Id.*

182. *See* Pacific Fur Seal (U.K. v. U.S.), 1 Moore, International Arbitration History 945 (Aug. 15, 1893), *reprinted in* PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW IIA: DOCUMENTS IN INTERNATIONAL ENVIRONMENTAL LAW, 881-89 (Philippe Sands et al. eds., 1994); *see also* The Mexican Tuna, GATT Document DS21/R, 30 I.L.M. 1594, 1599 (1991). Article XX of GATT allows a state to adopt health and conservation measures, but the Panel Report limited this authority to measures within the jurisdiction of the country because a broader reading would undermine the idea of GATT as a multilateral trade agreement. *See id.* at 1605.

183. *See* South West Africa (Eth. v. S. Afr.; Lib. v. S. Afr.), 1966 I.C.J. 6, 47 (July 18) (preliminary objections).

184. *See* Nuclear Tests (Austl. v. Fr.; N.Z. v. Fr.), 1974 I.C.J. 253, 312, 369-70 (Dec. 20) (dissenting opinion of Judges Onyeama, Dillard, de Arechaga & Waldock); *see also* Jonathan Charney, *Third State Remedies for Environmental Damage to World Common Spaces, in* FRANCESCO FRANCIONI & T. SCOVAZI, INTERNATIONAL RESPONSIBILITY FOR ENVIRONMENTAL HARM 149 (1991); *see generally* Philippe Sands, *The Environment, Community, and International Law*, 30 HARV. INT'L L.J. 393 (1989).

Classic customary international law reflects an overly narrow view of the beneficiaries of international obligations. Thus, an expansion is needed. The nation-state is ultimately an artificial construct with no relationship to the actual physical dimension of many global environmental problems. A nation's duties and any corresponding rights should be coextensive with the physical boundaries of the problem. The conceptual foundations for expanding the concept of duties and rights are already recognized in international law. In *Barcelona Traction*, the Court implicitly recognized the existence of "obligations of a state towards the international community as a whole" distinct from those that arise between individual nation-states.[185] These are obligations *erga omnes*.[186] *Barcelona Traction* suggested, but did not hold, that the duty to compensate after expropriation could be such a duty. The duty of fair compensation is a perfect candidate for international obligation since there is widespread support for such a rule which potentially benefits all nations equally. The same logic has been extended to human rights violations, although applying this model is much more difficult because of the diverse range of problems lumped under the heading of "environment." For example, to apply the concept of obligations, *erga omnes*, to forest management, affirmative management obligations would have to run toward the entire international community.

The emerging theories of peremptory norms or *jus cogens* remain primarily negative prohibitions against the unjustified use of force against nations or peoples. However, the emerging Antarctic Treaty regime is an example of an affirmative management regime premised on the need to conserve the area.[187] In 1991, the treaty parties refused to adopt a mineral exploitation regime and instead designated the Antarctic as "a natural reserve, devoted to peace and science."[188] All future activities must be limited if they present a risk of ecological damage.[189] Yet, biodiversity maintenance and forest management are issues subject to a diverse range of legitimate competing interests such as the duty to compensate the victim

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185. Barcelona Traction Company (Belg. v. Spain), 1970 I.C.J. 3, 32 (Feb. 5).

186. *See id.*

187. *See generally* Sudhir Chopra, *Antarctica as a Commons Regime: A Conceptual Framework for Cooperation and Coexistence*, *in* THE ANTARCTIC LEGAL REGIME 163 (C. Joyner & Sudhir Chopra eds., 1988); Richard Falk, *The Antarctic Treaty System: Are There Viable Alternatives?*, *in* THE ANTARCTIC TREATY SYSTEM IN WORLD POLITICS 399 (A. Jorgensen-Dahl & W. Ostreng eds., 1991).

188. The Madrid Protocol on Environmental Protection to the Antarctic Treaty, Oct. 4, 1991, art. 2., 30 I.L.M. 1461, 1462 (1991).

189. *See* Francesco Francioni, *The Madrid Protocol on the Protection of the Antarctic Environment*, 28 TEX. INT'L L.J. 47, 59-60 (1993).

of expropriation suggested in *Barcelona Traction*.[190] Thus, they are not simple issues easily subject to fair treatment. These issues cannot be solved by adopting a simple non-degradation standard as in the case of Antarctica. Any universal norms formulated will be general standards that require further national implementation, but this should not preclude a state from articulating the issues in an EIS.

CONCLUSION

The principle argument of this article is that international environmental law should play a much greater role in United States environmental law than it presently does. The major possible roles for international environmental law include the following: (1) it can inform the purpose of many domestic laws; (2) it can expand the constitutional basis of domestic environmental law; and (3) it could be a basis to justify the enactment of more stringent environmental regulations to fulfill international duties. United States law does not always meet the international standard. Therefore, international law could be used to compel the United States to meet a higher standard. In some cases, international regimes may be the basis to invalidate United States environmental laws because they are inconsistent with international law.

The integration of international and domestic environmental law will not be easy. The recognition of international environmental law as a legitimate factor in domestic environmental law faces two barriers that will be extremely difficult to overcome. First, the recognition and application of international law must always overcome the positivist paradox. The paradox asserts that international law is not law because there is no sovereign to enforce it. This lack of enforcement has led to the argument that international law plays a limited, often fictional, role in the exercise of state power to advance a state's "interests." Second, assuming that international law exists, international environmental law does not conform to either classic or post World War II models of international law. International environmental law does not contain specific customary rules which are mutually beneficial to most states, nor negative prohibitions against the use of military power, nor universal principles of human dignity. Instead, international environmental law consists of sweeping affirmative aspirational principles—such as environmentally sustainable development—tempered by the recognition that they will be applied differentially by national-states.

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190. Barcelona Traction Company (Belg. v. Spain), 1970 I.C.J. 3 (Feb. 5).

The success, however, of global environmental protection depends on the convergence of national legal systems toward a set of common environmental standards. This convergence is gradually occurring because in many countries international law bolsters environmentalism. The United States' recognition that domestic environmental law is a mix of international and domestic standards will be a powerful and positive model for other states to follow, as well as a benefit to the development of domestic environmental law.