The National Agricultural Law Center

University of Arkansas
System Division of Agriculture
NatAgLaw@uark.edu | (479) 575-7646

An Agricultural Law Research Article

Keeping Pigs Out of Parlors: Using Nuisance Law to Affect the Location of Pollution

Part 1

by

Andrew Jackson Heimert

Originally published in ENVIRONMENTAL LAW
27 ENVTL. L. 403 (1997)

www.NationalAgLawCenter.org

KEEPING PIGS OUT OF PARLORS: USING NUISANCE LAW TO AFFECT THE LOCATION OF POLLUTION

BY
ANDREW JACKSON HEIMERT*

This Article recounts the historical origins of nuisance law to establish that nuisance law principally addresses the harms created from pollution and can thereby provide polluters with incentives to locate so as to minimize the harms they create. It compares this type of pollution regulation to the modern antipollution statutes, which the Article argues do not provide similar locational incentives. The Article then explains that nuisance law's advantage in this regard militates for its preservation as a supplemental remedy, rather than for its preemption by statute. The Article discusses these issues as they arise in the context of interstate pollution, resolving that while the Supreme Court justifiably held the antipollution statutes to preempt the previously existing federal common law, the justifications it used do not support a like preemption of state nuisance law. Finally, the Article suggests that, in order to advance the policy rationale for preserving nuisance law, courts should prefer the downstream state's law when it must choose between them in an interstate pollution dispute.

I. INTRODUCTION 404
II. THE USE OF NUISANCE LAW TO COMBAT POLLUTION 406
A. *A Brief History of Nuisance* 406
B. *The Elements and Application of Nuisance Law* 409
1. *Location, Location, Location* 409
2. *A Careful Balancing Act* 410
3. *Legislative Approval of Nuisance* 413
III. STATUTORY POLLUTION REMEDIES: THE CLEAN AIR AND CLEAN WATER ACTS ... 414
A. *Early History of Federal Pollution Laws* 416
B. *Clean Air Act Structure* 417
1. *New Source Performance Standards* 417
2. *Ambient Air Quality Standards* 419
a. *Prevention of Significant Deterioration in Attainment Areas* 421
b. *Reasonable Further Progress in Nonattainment Areas* 424
3. *Tradable Emissions Rights* 425
4. *Enforcement* 426
C. *Clean Water Act Structure* 428
1. *Permits* 429

* Law Clerk to the Hon. Richard S. Arnold, Chief Judge of the United States Court of Appeals for the Eighth Circuit. J.D. 1996, Yale Law School; B.A. 1993 (Public Policy & Economics), Stanford University. The author wishes to thank Peter Schuck for extensive criticism and commentary on earlier drafts of this Article and for patience with my hardheadedness and procrastination. He also appreciates the helpful thoughts and suggestions of Jennifer Claire Bender and Troy A. Paredes.

2. *Technology-Based Limitations* 430
3. *Water Quality Requirements* 432
4. *Enforcement* 433
D. *Concluding Thoughts* 434
IV. STATE PREEMPTION OF COMMON LAW 435
A. *Background* 435
B. *The Justification for the Preservation of Nuisance Law* 436
C. *Legal Standards for Preemption of Common Law* 437
1. *The Judicial Presumption Against Preemption* 437
2. *Challenges to Preemption Under State Constitutions* 440
D. *Policy Justifications For and Against Nuisance Law Preemption* 442
1. *The Case for Preemption of Nuisance Law* 442
2. *The Case for Preservation of Nuisance Law* 445
a. *Optimal Deterrence* 445
(1) *Regulation versus Liability* 445
(2) *Harm-Based versus Benefit-Based Penalties* 448
b. *The Compensation Justification* 450
c. *Democratic Participation and Environmental Justice* 453
E. *Concluding Thoughts* 454
V. INTERSTATE POLLUTION 457
A. *Federal Adjudication of Interstate Pollution Disputes* 457
B. *Statutory Enactments to Address Interstate Pollution* 461
1. *Interstate Air Pollution Remedies* 461
2. *Interstate Water Pollution Remedies* 463
C. *The Post-Pollution Act Withdrawal of Federal Common Law* 464
1. *Water Pollution* 464
2. *Air Pollution* 473
VI. CHOOSING THE COMMON LAW TO APPLY TO INTERSTATE DISPUTES 476
A. *Preemption of Nuisance Law* 476
1. *Statutory Preemption of Federal Common Law* 476
2. *Federal Statutory Preemption of State Common Law* 481
B. *The Choice of Law Question* 485
VII. CONCLUSION 491
APPENDIX 493

I. INTRODUCTION

American pollution laws fail to attack directly the harms created by pollution. Instead, they primarily address emission levels. The Clean Air Act (CAA)[1] and the Clean Water Act (CWA)[2] implement regimes that seek to protect the environment by limiting the volume of pollutants emitted. These laws fail to directly protect people from pollution because they concentrate on apportioning allowable amounts of pollution among various emitters but minimize their concern over locational considerations. They therefore leave environmental protection incomplete.

Justice Sutherland described a nuisance to "be merely a right thing in the wrong place,—like a pig in the parlor instead of the barnyard."[3] So too with pollution, which often is a necessary byproduct of many useful things. If we want to limit exposure to pigs, we would not simply limit their number and allow them to roam freely. We would instead specify

1 42 U.S.C. §§ 7401-7671q (1994).
2 33 U.S.C. §§ 1251-1387 (1994).
3 Village of Euclid v. Ambler Realty Co., 272 U.S. 365, 388 (1926).

numbers *and* locations. Pollution laws concentrate primarily on how many pigs exist and who gets to own them. They fail, however, to consider where the pigs may roam, and how many may congregate in one slop pit.

Nearly all commentators who have addressed the issue assert that pollution laws should not preempt nuisance law. Some find justification for the preservation of nuisance law in language of the pollution statutes,[4] others believe nuisance law advances the democratic legitimacy of pollution protection,[5] and still others contend that the inadequacies of the Acts justify retaining a supplemental remedy, which nuisance law provides.[6] None, however, has justified the use of nuisance law because of the interest it vindicates. None truly considers the problems that a dual scheme of regulation (through statute and common law) presents. Finally, none offers a coherent rationale for choosing which state's nuisance law to applies in an interstate dispute. This Article tries to perform each of these tasks that other commentators have yet to complete.

This Article begins with an explication of nuisance law. Part II describes the balancing of utilities approach originally used to adjudicate nuisances in equity, and later in law. Next, it discusses the important role that location plays in determining whether an activity constitutes a nuisance. It then proceeds to establish the propriety of damages even when the polluting activity has net social utility. Finally, it argues that the legislative approval of an activity does not necessarily protect a polluter from actions in nuisance.

Part III describes the legislative remedy to the collective action problem inherent in deterring pollution through nuisance law. It looks first at the requirements of the CAA, which focus on emission levels from various sources as well as ambient levels of pollution in air quality regions. Part III also describes the CWA, which, like the CAA, places its primary emphasis on the amount of pollution a source discharges.

Part IV begins with a hypothetical that illustrates the rationale for preserving nuisance remedies even when there is a statutory scheme in place: that nuisance law is uniquely capable of creating incentives for choosing location carefully. Part IV then discusses situations in which a court will commonly allow a statute to preempt common law. It also explains the important policy rationales for preservation of nuisance law, grounded mainly in the common law's ability to consider more variables in assessing the value of an activity. The Part also raises the important compensatory capability of nuisance law, a role which the statutes cannot play. It concludes that the statutes do not and should not preempt nuisance law.

---

[4] *See, e.g.*, Steven Gaynor, Comment, *The Dilemma of the Downstream Plaintiff in an Interstate Water Pollution Case*, 37 BUFF. L. REV. 257, 287 (1989).

[5] *See* Robert L. Glicksman, *Federal Preemption and Private Legal Remedies for Pollution*, 134 U. PA. L. REV. 121, 192-93 (1985).

[6] *See, e.g.*, Kenneth M. Murchison, *Interstate Pollution: The Need for Federal Common Law*, 6 VA. J. NAT. RESOURCES L. 1, 33-34 (1986); Debra G. Archer, Note, *Controlling Acid Rain: The Clean Air Act and Federal Common Law Nuisance*, 84 W. VA. L. REV. 1135, 1161 (1982).

Part V expands the scope of the Article's argument to address interstate pollution. It initially traces the history of the federal common law developed by the U.S. Supreme Court to adjudicate interstate nuisance disputes. It then explains the subsequent abrogation of this law, and its replacement by the CWA and CAA. The Part proceeds to describe the Supreme Court's decision to allow only the application of the source state's nuisance law to an interstate pollution dispute. Finally, it compares the analogous approaches taken by the circuits that have addressed this issue under the CAA.

Part VI argues that although federal nuisance law probably was not preempted by Congress, its preservation would create the same type of discrimination inherent in any federal common law when state common law is also available. The Part then argues that Congress did not intend to preempt state common law at all, and that other cases justify its maintenance even in the interstate pollution context. It concludes by suggesting that courts, to the extent they want to advance the purpose of nuisance law as argued by this Article, should apply the downstream state's law in interstate pollution disputes.

This Article's goal is to demonstrate that while statutes make a very important contribution to the pollution reduction, they do not address every problem. Nuisance law still capably fills interstices in the statutes. By awarding damages, nuisance law encourages sources to locate so that their harms are minimized. Because the statutes do not adequately address this aspect of pollution control, use of nuisance law does not force a reconsideration of the balance already struck, but rather leaves a finger on the scale that has historically been there.

II. The Use Of Nuisance Law To Combat Pollution

A. A Brief History of Nuisance

Nuisance actions to abate interferences with an owner's interest in land have existed for over eight hundred years.[7] The pre-Revolutionary body of American nuisance law accepted the oft-repeated maxim, *sic utere tuo ut alienum non laedes* ("one should use his own property in such a manner as not to injure that of another"[8]). This proposition rejects on its face a utilitarian balancing of the actors' conduct.[9] The standard is absolute and admits no exonerating justifications for harmful behavior.

Although the *sic utere tuo* doctrine's existence continued into the nineteenth century, the Industrial Revolution threatened its continued via-

---

[7] *See* Jeff L. Lewin, Boomer *and the American Law of Nuisance: Past, Present, and Future*, 54 Alb. L. Rev. 189, 192-96 (1990) (discussing early development of nuisance law from actions to protect easements in 1187); *see also* Aldred's Case, 77 Eng. Rep. 816 (K.B. 1611) (allowing neighbor to recover damages from owner of stinking hogsty). Professor Lewin, among others, provides the interested reader with a more comprehensive history of nuisance than this section.

[8] Black's Law Dictionary 1380 (6th ed. 1990).

[9] Lewin, *supra* note 7, at 196.

bility.[10] Increasing industrialization forced courts to acknowledge the tension between the absolute *sic utere tuo* doctrine and a landowner's right to put his property to beneficial use.[11] When agriculture dominated, rarely did a use of land affect others: an owner could, with little difficulty, use her property to its full capacity without creating a nuisance.[12] Entrepreneurs who operated industrial facilities, in contrast, were inherently less able to use their property without emitting smoke and other pollutants that infringed upon the property of others. Vast expanses of open land, however, allowed greater geographic separation between uses, forestalling many direct conflicts until late in the nineteenth century.[13] When disputes did arise, granting complete primacy to a land owner to enjoin all interferences with her land directly conflicted with other land owners' rights to beneficial use of their property.[14] The shift to mechanization forced courts to reconsider their conception of property rights in order to resolve the now conflicting claims of right.[15]

The conflict between industrial and residential uses necessitated a judicial choice between a plaintiff-centered and defendant-centered theory of nuisance. The plaintiff-centered view assumed that property holders sacrificed "a portion of their rights when they entered into society so that all could enjoy their property without unreasonable interference."[16] The question that nuisance law answered was whether the polluter was asking the plaintiff to give up more than she had "bargained" for by her participation in this putative social contract. The defendant-centered view relied on more traditional tort doctrines emphasizing reasonableness—in this case, of use.[17] Therefore, courts chose to focus either "on the reasonableness of the harm to the plaintiff or the reasonableness of the conduct of the defendant."[18] Either option required a court to constrain the previous abso-

---

[10] *Id.* at 196-97.

[11] *Id.* at 199.

[12] *But see* Middlesex v. McCue, 21 N.E. 230 (Mass. 1889) (refusing to enjoin cultivation of land that caused neighbor's mill pond to silt up).

[13] Lewin, *supra* note 7, at 197.

[14] *Id.* at 199.

[15] *Id.* at 199-200. *Compare* R.H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1, 2 (1960) ("We are dealing with a harm of reciprocal nature. . . . [S]hould A be allowed to harm B or should B be allowed to harm A?") *with* Richard A. Epstein, *Nuisance Law: Corrective Justice and its Utilitarian Constraints*, 8 J. LEGAL STUD. 49, 58-60 (1979) (rejecting Coase's "causal nihilism" in favor of a corrective justice principal that looks for a physical invasion of preexisting rights).

[16] Lewin, *supra* note 7, at 204.

[17] *Id.* at 203.

[18] *Id.* at 205 (emphasis omitted). Judge (later Justice) Holmes illuminated this tension in *Middlesex Co. v. McCue*, 21 N.E. 230 (Mass. 1889), in which a downhill plaintiff sought to enjoin the uphill defendant from continuing his cultivation practices that caused the plaintiff's mill pond to silt up, and thus become unusable:

> The fact that damage is foreseen, or even intended, has nothing to do with the matter apart from statute. Some damage a man must put up with, however plainly his neighbor foresees it before bringing it to pass. Liability depends upon the nature of the act, and the kind and degree of the harm done, considered in the light of expediency and usage. . . . [The landowner] must endure a certain amount of noise, smells, shaking, percolation, surface drainage, and so forth. If the amount is greater, he may be able to

luteness of right. The resulting principle, however, remained hopelessly circular: a defendant's use is reasonable if it does not unreasonably interfere with the plaintiff's use of her land.[19]

The Restatement of Torts divided nuisances into two categories.[20] In the first category were unintentional invasions of property, which courts adjudicated according to standard rules of negligence.[21] The second category comprised invasions that are "intentional and unreasonable."[22] Courts determined "reasonableness" by comparing the social utility of the actor's conduct with the gravity of the harm the plaintiff suffered.[23] A court measured the gravity of harm by reference to the harm's extent and character, the social value of the activity being harmed, the suitability of that activity to the locality, and the plaintiff's burden of taking precautionary measures to avoid the harm.[24] Similarly, the utility of the actor's conduct was determined by reference to the locale's suitability for the use and the impracticality of preventing the harm.[25] By the early twentieth century, then, nuisance law came to incorporate two important elements: first, a general balancing of the activities' values, and second, and central to this Article's argument, a recognition of the pollution's location through a comparison of prevailing uses in the area.[26]

---

stop it, and to recover compensation. . . . We are of the opinion that a man has a right to cultivate his land in the usual and reasonable way . . . .

Id. at 231 (citations omitted).

19 Lewin, *supra* note 7, at 207; *see also* BLACK'S LAW DICTIONARY 1551 (4th ed. rev. 1968) (*Sic utere tuo* is "'utterly useless as a legal maxim' . . . a mere begging of the question; it assumes the very point in controversy."). The inherent circularity could be closed by throwing the question into the black box of the jury. *See McCue*, 21 N.E. at 231 ("As in other matters of degree, a case which is near the line might be sent to a jury to determine what is reasonable.").

20 RESTATEMENT OF TORTS § 822 (1939). A plaintiff needed to meet three additional conditions. First, she must have a property right, the use or enjoyment of which was being interfered with. *Id.* § 822(a). Second, the invasion must be substantial. *Id.* § 822(b). Third, the actor's conduct must be the legal cause of the nuisance. *Id.* § 822(c).

21 *See id.* § 822(d)(ii) (also using standards of recklessness and ultrahazardous conduct when appropriate).

22 *Id.* § 822(d)(i).

23 *Id.* § 826.

24 *Id.* § 827.

25 *Id.* § 828. The principles applicable to land interests for airborne pollutants apply equally to water pollution that reaches land. *See id.* § 832 ("Non-trespassory invasions of a person's interest in the use and enjoyment of land resulting from another's pollution of surface waters, subterranean waters or waters in watercourses and lakes are governed by [the same rules].").

26 Commentators have subsequently labeled this "judicial zoning." J.H. Beuscher & Jerry W. Morrison, *Judicial Zoning Through Recent Nuisance Cases*, 1955 WIS. L. REV. 440, 443.

B. The Elements and Application of Nuisance Law

1. Location, Location, Location

Location is almost everything in nuisance law. Some activities by their very nature are nuisances, so called nuisances per se.[27] The vast majority of activities are lawful in the abstract, but become nuisances per accidens "by reason of their location, or by the reason of the manner in which they are constructed, maintained, or operated."[28] Needless to say, a polluting factory is almost always going to fall into the latter category: if factories inherently constituted nuisances, then the industrialization that has proceeded for the last 150 years could only have taken place through a severe laxity in the pursuit of nuisance suits. For the great preponderance of cases it is location that determines whether an operation is a nuisance.[29]

Bove v. Donner-Hanna Coke Corp.[30] constitutes the textbook early case illustrating the application of the location principle. Ms. Bove sought to enjoin a coke oven whose discharges deposited large amounts of soot on her house and caused her headaches.[31] The court, in denying her relief, grounded its decision on Bove's having moved into an area particularly conducive to industry by virtue of its proximity to a river and adjacent railroad tracks—this conclusion notwithstanding that at the time of her move the area had been only a hickory grove.[32] The nature of the locale determined what constituted reasonable use. Here, the hickory grove, and more generally many areas, developed into industrially preferred sites.[33]

New York was not alone in adopting the principle that location, although not conclusive, weighs heavily in the nuisance calculus. "[T]he right of a person to pure air may be surrendered in part by his election to live in a location where the atmosphere is impregnated with smoke, soot, and other impurities."[34] The equitable balancing process of nuisance law strongly applies the property adage of "first in time, first in right."[35] The result is "that an operation which would be considered a nuisance in a

---

[27] *See* Morgan v. High Penn Oil Co., 77 S.E.2d 682, 687 (N.C. 1953) ("A nuisance *per se* or at law is an act, occupation, or structure which is a nuisance at all times and under any circumstances, regardless of location or surroundings.")

[28] *Id.*

[29] It is the rare case that hinges solely on the manner of operation, as courts frequently limit that defense. *See* McFarlane v. City of Niagara Falls, 160 N.E. 391, 391 (N.Y. 1928) (Cardozo, J.) ("The primary meaning [of nuisance] does not involve the element of negligence as one of its essential factors. . . . One who . . . [operates a] factory may be liable to his neighbor though he has taken all available precautions.") (citations omitted).

[30] 258 N.Y.S. 229 (App. Div. 1932).

[31] *Id.* at 230.

[32] *Id.* at 233-34.

[33] *See id.* at 232 ("Residents of industrial centers must endure without redress a certain amount of annoyance and discomfiture which is incident to life in such a locality.").

[34] Mahlstadt v. City of Indianola, 100 N.W.2d 189, 194 (Iowa 1959).

[35] *See* Helmkamp v. Clark Ready Mix Co., 214 N.W.2d 126, 129 (Iowa 1974) ("'[P]riority of occupation is a circumstance of considerable weight.'" (quoting Schlotfelt v. Vinton Farmers' Supply Co., 109 N.W.2d 695, 699 (Iowa 1962)).

residential locality might not be so considered when conducted in a proper place."[36]

While preexisting use may frequently provide the basis for determining an area's appropriate activities, uses can change, giving rise to odd results. The academically famous case of *Spur Industries v. Del E. Webb Development Co.*[37] presents a relatively modern version of the importance of location. The facts involved a feed lot located well outside city limits that later found itself surrounded by urban sprawl in the form of a new real estate development. Webb, seeking to increase the value of his properties, sought an injunction prohibiting further operations on the lot as well as damages. The court denied Webb's request for damages based primarily on a theory of "coming to the nuisance." Specifically, where a "residential landowner . . . knowingly comes into a residential neighborhood reserved for industrial or agricultural endeavors" he may claim no entitlement to damages.[38] The court nonetheless enjoined the feed lot's operations, but ordered Webb to pay the costs associated with the lot's closure and relocation.[39] *Spur* further illustrates the principle that location is critical to the determination of a nuisance. It simply reversed the usual preference for homes and instead recognized the private residences to be the nuisance.

2. A Careful Balancing Act

As the balancing-of-utilities approach to nuisance ascended, some courts expressed discomfort that the balancing might preclude a plaintiff from all relief. They questioned whether the greater social utility of a pollution-creating activity should insulate a polluter from paying damages for the harm she causes. The New York Court of Appeals confronted this nettlesome principle, which allowed a more valuable activity to proceed with impunity, in *Boomer v. Atlantic Cement Co.*[40] Boomer, a residential neighbor of Atlantic's cement factory, sued to enjoin its operation, alleging that the dust, smoke, and vibration it created constituted a nuisance. The court reconsidered its long-established precedent that "'[a]lthough the damage to the plaintiff may be slight as compared with the defendant's expense of abating the condition, that is not a good reason for refusing an injunc-

---

[36] *Mahlstadt*, 100 N.W.2d at 194. At least one court had previously rejected this balancing, presuming that residential uses should, in essence, always be favored:

> [W]here a trade or business is carried on in such a manner as to interfere with the reasonable and comfortable enjoyment by another of his property, or which occasions material injury to the property itself, a wrong is done to the neighboring owner, for which an action will lie; and this, too, without regard to the locality where such business is carried on; and this, too, although the business may be a lawful business, and one useful to the public, and although the best and most approved appliances and methods may be used in the conduct and management of the business.

Susquehanna Fertilizer Co. v. Malone, 20 A. 900, 900 (Md. 1890).

[37] 494 P.2d 700 (Ariz. 1972).

[38] *Id.* at 706-07.

[39] *Id.* at 708.

[40] 257 N.E.2d 870 (N.Y. 1970).

tion.'"[41] The court replaced this rule, and instead granted "permanent damages," which constituted the present discounted value of all damages into eternity.[42] Two propositions emerge from *Boomer*: first, an injunction may be inappropriate when the economic value of the harmful activity sought to be enjoined greatly exceeds the one harmed; second, courts can award damages even though the social value of a business exceeds that of the activity it hampers.[43]

The Wisconsin Supreme Court expressed similar discomfort with the balancing approach, finding that a power plant whose discharges of sulfur dioxide damaged local crops could not escape liability simply because its activity was more valuable than the farmers'.[44] The court thought the rela-

---

[41] *Id.* at 872 (quoting Whalen v. Union Bag & Paper Co., 101 N.E. 805, 806 (N.Y. 1913)).

[42] *Id.* at 873-74.

[43] Professor Lewin contends that *Boomer* does not stand for the latter proposition because Atlantic Cement failed to appeal the finding that the plant constituted a nuisance. *See* Lewin, *supra* note 7, at 220 (citing Boomer v. Atlantic Cement Co., 287 N.Y.S.2d 112, 113-14 (Sup. Ct. 1967), *aff'd*, 294 N.Y.S.2d 452, 453 (App. Div. 1968), *rev'd*, 257 N.E.2d 870 (N.Y. 1970). Given, however, that the Court of Appeals clearly recognized that the utility of the plant's activity exceeded its harms, it is difficult to claim that the court did not consider the plant's characterization as a nuisance. If the Court of Appeals failed to account for the possibility the plant was not a nuisance, then its holding is limited to situations in which a trial court concludes that an activity constitutes a nuisance (solely balancing utility and harm), but then finds an injunction to be too harsh a remedy because the value of the activity exceeds the costs it imposes. This result is, however, paradoxical: if an activity constitutes a nuisance only if its social value is exceeded by that of the plaintiff's interfered-with activity, then injunctions can never issue in favor of a less valuable activity. A nuisance, under this more restrictive definition, must be enjoined. The Court of Appeals must surely have assumed that an activity could be a nuisance even though equity did not demand that it be enjoined.

Fleming James, Jr. labeled situations like the one in *Boomer* (which recurred frequently) as one of "incomplete privilege." The essential elements are that the actor's conduct's utility is greater than that of the harmed party's conduct. If the conduct inevitably causes damage and the actor benefits from the conduct, he must "pay for the actual harm caused by [the incomplete privilege's] exercise." RESTATEMENT (SECOND) OF TORTS ch. 40, app. A at 131, 134 (Tentative Draft No. 16, 1970). In such cases injunctive relief is denied on a balancing of the equities, but damages are nonetheless assessed. James further explained that "where an actor's conduct will inevitably cause damage to another he may nevertheless be privileged to pursue it if its social utility is great enough. But where the actor is also the beneficiary of the conduct, the law may render his privilege incomplete; it may make him pay for the actual harm caused by its exercise." *Id.* at 134; *cf. Boomer*, 257 N.E.2d at 876 (Jasen, J., dissenting) ("In permitting the injunction to become inoperative upon the payment of permanent damages, the majority is, in effect, licensing a continuing wrong. It is the same as saying to the cement company, you may continue to do harm to your neighbors, so long as you pay a fee for it. . . . This kind of inverse condemnation may not be invoked by a private person or corporation for private gain or advantage.") (citation omitted).

[44] Jost v. Dairyland Power Coop., 172 N.W.2d 647 (Wis. 1969). Furthermore, it was of no consequence that the plant's operation was not negligent. *Id.* at 650 ("[I]t is irrelevant that defendant was conforming to industry standards of due care if its conduct created a nuisance."); *see also id.* at 652 ("It is the interruption of such enjoyment and the destruction of such comfort that furnishes the ground of action, and it is no satisfaction to the injured party to be informed that it might have been done with more aggravation." (quoting Pennoyer v. Allen, 14 N.W. 609, 613 (1883)).

Wisconsin was not the first state to express its reluctance to deny damages solely on the ground that an activity was less valuable. *See* Smith v. Pittston Co., 127 S.E.2d 79, 84 (Va.

tive "economic or social importance" of the opposing parties provided improper grounds to determine complete victory.[45] It could find "no acceptable rule of jurisprudence that permits those who are engaged in important and desirable enterprises to injure with impunity those who are engaged in enterprises of lesser economic significance."[46] No longer did a balancing of equities alone dictate the result: the winner no longer took all, and the loser might now obtain some compensation.

By awarding damages to activities with lower social value, courts created an incentive for polluters to locate judiciously. Under the prior regime, in which a winner "took all" by avoiding both injunction and damages, a would-be polluter needed only ensure that her activity was socially more valuable than any other in the area. Proving one's use more valuable than those surrounding made a polluter safe from legal consequence. Once courts began requiring the facility with the more "valuable" activity to compensate for the damages it caused, however, polluters began to face incentives to choose locations in which their pollution minimized harm, and thereby minimized potential damages.

1962) ("'It is the annoyance and injury to another that the law regards, and not the business creating the annoyance.' . . . However important may be the successful operation of the business of the defendant . . . that cannot be . . . the reason to confer upon it the right to destroy or to injure the property of another without just compensation." (quoting G.L. Webster Co. v. Steelman, 1 S.E.2d 305, 315 (Va. 1939)). Nor was it the last. *See* Graber v. City of Peoria, 753 P.2d 1209, 1211 (Ariz. Ct. App. 1988) ("What constitutes an unreasonable interference with another person's use and enjoyment of his property is determined by the injury caused by the condition and is not determined by the conduct of the party creating the condition.").

[45] *Jost*, 172 N.W.2d at 653.

[46] *Id.*; *see also* Furrer v. Talent Irrigation Dist., 466 P.2d 605, 613 (Or. 1970) (holding that the defendant, owner of leaking irrigation canals, "cannot escape compensating the plaintiff for the harm simply by showing that the defendant's use had a greater social value than the plaintiff's. . . . A landowner does not have to contribute to others a part of the value of his land without compensation, even if it is for a public purpose.").

The court acknowledged that a refusal to grant an injunction did not present the same problems: the more valuable activity *should* continue, albeit only if it pays the price. *Jost*, 172 N.W.2d at 652. Thus, when one activity must be halted, a utilitarian balancing test may be the appropriate means by which to choose the activity. However, when a court determines that both activities may continue, and the sole remaining issue is that of compensation, an all-or-nothing approach based on social utility is inappropriate. *See* Wheat v. Freeman Coal Mining Corp., 319 N.E.2d 290, 294 (Ill. App. Ct. 1974) ("In [cases seeking injunctions] a stronger showing will be required of plaintiffs with regard to the unreasonableness of defendant's activities and the harm suffered by plaintiffs."); *see also* Harrisonville v. W.S. Dickey Clay Mfg. Co., 289 U.S. 334, 338 (1933) ("Where substantial redress can be afforded by the payment of money and issuance of an injunction would subject the defendant to grossly disproportionate hardship, equitable relief may be denied although the nuisance is indisputable." Therefore, a sewer system could continue to operate upon payment of damages.); Baldwin v. McClendon, 288 So. 2d 761, 767 (Ala. 1974) (allowing payment of $3000 damages in lieu of injunction against operation of hog farm); Northern Ind. Pub. Serv. Co. v. Vesey, 200 N.E. 620, 627-28 (Ind. 1936) (public interest favored keeping polluting plant open but with compensation to greenhouse owner for roses killed); Bartel v. Ridgefield Lumber Co., 229 P. 306, 309 (Wash. 1924) (lumber mill required to pay damages, although equitable considerations militate against injunction given its greater social value); *cf.* Gunther v. E.I. DuPont de Nemours Co., 157 F. Supp. 25, 34 (N.D. W. Va. 1957) (weighing of equities means injunction not a matter of right) (dictum), *aff'd*, 255 F.2d 710 (4th Cir. 1958).

3. Legislative Approval of Nuisance

For some time, when courts adjudged a particular activity to be the most socially valuable in the area, they allowed it to operate free from making damage payments. However, would courts defer to legislative judgments concerning which activities were socially beneficial? In principle the same logic should apply. A court's judgment as to what activities are "best" carries no greater inherent authority than a legislature's assessment. Not surprisingly, some courts developed rules that provided damages for nuisances despite an enterprise having been *publicly* licensed.

In *Louisville & N. Nashville Terminal Co. v. Lellyett*,[47] the plaintiff-appellee contended that a legislatively authorized rail yard created a nuisance. First, the court found that "'the state had not authorized the wrong complained of.'"[48] Although the legislature had licensed the activity in the abstract, it did not grant an unconstrained right of operation. Like the distinction between nuisance per se and nuisance per accidens, a legislature's licensure only eliminated the nuisance per se claim, but left a per accidens theory intact for use by the affected landowner. In *Lellyett* the court described the problem thusly: "'[i]n locating the yards and the various structures thereon so that injury necessarily resulted to adjacent landowners, the defendants acted at their peril. In locating the terminal yards the defendants stood on the footing of an individual, and were entitled to no superior rights of immunity by legislative authority.'"[49] The court's reasoning and result again allowed nuisance suits to provide an incentive for locating away from conflicting activities despite legislative assent for the facility's operation.

The effect of legislative approval frequently arises in zoning cases as well. Here too a "[n]uisance will not be upheld solely on the ground that it has been permitted by municipal ordinance."[50] Yet this seems in large part dependent upon how specifically the legislature contemplated the particulars of the authorized activity. When legislative action places only broad constraints on activities within certain zones, then some otherwise lawful

---

[47] 85 S.W. 881 (Tenn. 1905).

[48] *Id.* at 886 (quoting Ducktown v. Barnes Sulphur, Copper & Iron Co., 60 S.W. 593, 600 (Tenn. 1900)).

[49] *Id.* (quoting *Ducktown*, 60 S.W. at 600). The court also explained:

> When the terms of the statute are not imperative, but permissive, when it is left to the discretion of the persons empowered to determine whether the general powers committed to them shall be put in execution or not, I think the fair inference is that the Legislature [sic] intended that the discretion be exercised in strict conformity with private rights, and did not intend to confer license to commit a nuisance in any place which might be selected for the purpose.

Id. at 886-87.

[50] Rockenbach v. Apostle, 47 N.W.2d 636, 639 (Mich. 1951); *see also* Treisman v. Kamen, 493 A.2d 466, 469 (N.H. 1985) (explaining that in balancing utilities, the fact that a defendant is "violat[ing] an applicable zoning ordinance is relevant, though not conclusive"); Prah v. Maretti, 321 N.W.2d 182, 192 (Wis. 1982) ("Compliance with the [zoning] law[s] 'is not the controlling factor, though it is, of course, entitled to some weight.'").

uses may create nuisances.[51] In contrast, when the license is substantially specific about the use allowed, a court may hesitate to find a nuisance.[52] Therefore, the more the legislative body considered the specific activity, its location, and all other associated concerns, the greater the deference a court is likely to grant a legislative assessment that something does not constitute a nuisance.

As with judicial determinations that an activity's benefits outweigh its costs, a like legislative judgment does not necessarily absolve a polluter of potential liability. Retaining the potential award of damages creates incentives even for activities that have net benefits to locate away from sensitive locations. Simply because an activity creates substantial net benefits does not absolve the polluter from paying the costs associated with the activity.

III. Statutory Pollution Remedies: The Clean Air and Clean Water Acts

Nuisance law suffers from being a "somewhat fortuitous means for resolving modern environmental problems."[53] Its classic drawback derives from transaction costs, which diminish nuisance law's ability to encourage

---

[51] *See* Scallet v. Stock, 253 S.W.2d 143, 146 (Mo. 1952) (The plaintiff sought to enjoin the operation of a mortuary in a residential zone with specific lots for businesses. The court found that "[i]t is the peculiar nature and the location of the business, not the fact that it is a business, that constitutes the private nuisance and ground for equitable relief," which entitled the plaintiff to injunction of many (but not all) activities related to mortuary); *see also* Baltimore & Potomac R.R. Co. v. Fifth Baptist Church, 108 U.S. 317, 334 (1883) (holding that damages were appropriate despite legislative permission and defendant's having taken precautionary measures); New York Continental Jewell Filtration Co. v. Wynkoop, 29 App. D.C. 594, 601 (D.C. Cir. 1907) ("The acts of Congress relied on did not contemplate [the unpleasantness from construction activity], nor authorize this railroad company to permit or sanction such location, without reference to the property and right of the appellee and others."); State v. Moffett, 1 Greene 247, 249-50 (Iowa 1848) (holding nuisance remedy available to enjoin milldam that caused floods of the plaintiff's property despite state law making it a felony to "injure a milldam"). Even compliance with judicial commands may not avoid a finding of nuisance. *See* Washington Suburban Sanitary Comm'n v. Cae-Link Corp., 622 A.2d 745, 754-57 (Md. 1993) (holding that a court-ordered sewage treatment plant was still strictly liable under Maryland law for nuisance damages).

These rules are not, however, uniformly adopted throughout the United States. *See* Louise A. Halper, *Why the Nuisance Knot Can't Undo the Takings Muddle*, 28 Ind. L. Rev. 329, 347-50 (1995) (adducing that South Carolina has traditionally barred nuisance actions against legislatively authorized activities).

[52] *See* Robinson Brick Co. v. Luthi, 169 P.2d 171, 173 (Colo. 1946) (holding that a brick factory licensed to operate as a nonconforming use in a residential zone could not be enjoined because it had legislative approval). In some cases the specific licensing of an activity may create a nuisance by effecting a "regulatory" taking. *See* Richards v. Washington Terminal Co., 233 U.S. 546, 553, 556-57 (1914) (explaining that legislature "may not confer immunity from action for a private nuisance of such a character as to amount in effect to a taking of private property for public use," therefore, allowing recovery for nuisance against exhaust from train tunnel); *cf.* Lucas v. South Carolina Coastal Council, 505 U.S. 1003, 1029 (1992) (holding that when the state places such great restrictions on use of property so as to make it virtually valueless, the state may avoid paying compensation only if the activity was already a nuisance or otherwise disallowed by state property law).

[53] Jesse Dukeminier & James E. Krier, Property 987 (3d ed. 1993).

the efficient level of pollution. The attendant costs of negotiation and litigation lead some people harmed by pollution not to bring suit simply because these costs would exceed the benefits obtained from an injunction or the award of damages.[54] "Free rider" problems create a second substantial obstacle to nuisance law achieving an efficient result. Because the benefits of a successful suit for injunction redound to everyone in the vicinity of the pollution, individuals have an incentive to let someone else bear the cost of bringing suit.[55]

Causation issues create a third set of problems for the efficacy of nuisance law. First, proving which polluter caused the harm, when many contribute to the harm, will often be difficult.[56] Second, proving that the emitted pollution causes a particular damage may not be possible due to the scientific complexities involved.[57] Third, the widespread effects of pollution, typically upon multiple victims, can often make difficult a full assessment of damage.[58]

Finally, judicial competence to resolve environmental disputes through nuisance law may be minimal. First, judges may not have sufficient scientific ability to comprehend and decide properly the complicated scientific issues involved.[59] Second, modern pollution problems may call for far-reaching value judgments that judges either cannot or should not make because the issues extend well beyond the participants in the immediate litigation.[60] Unsurprisingly, nuisance law proved inadequate as the sole mechanism for reducing pollution to optimal levels. This Part turns to legislative attempts to control pollution in light of nuisance law's failures.

---

[54] *See* PETER S. MENELL & RICHARD B. STEWART, ENVIRONMENTAL LAW AND POLICY 60 (1994).

[55] *Id.* at 60-61. A suit for damages (other than a class action) would not have the free-rider problem but still has the transaction costs obstacle.

[56] *Diamond v. General Motors Corp.*, 97 Cal. Rptr. 639 (Cal. Ct. App. 1971), vividly illustrates the problems inherent in assessing the blame in a multiple polluter case. In *Diamond*, a plaintiff brought a class action suit on behalf of all seven million residents of Los Angeles County against 293 industrial sources, one thousand unnamed defendants and several automobile manufacturers. The last were joined under the theory that they negligently produced machines that emit harmful substances. Petroleum manufacturers also were sued for their manufacture and distribution of fuel that cause pollution. The court found it impossible to satisfy the plaintiff's desire to present a nuisance action, explaining that

> [o]nce it is acknowledge [sic] that a superior court cannot, by decree, abolish air pollution, it is appropriate to face some demonstrable realities of the problem which plaintiff is asking the court to solve. . . . The need for controls is not in question. The issue is not "shall we," but "what kind, how much, how soon."

Id. at 645; *see also* James E. Krier, *Environmental Litigation and the Burden of Proof*, *in* LAW AND THE ENVIRONMENT 105, 107-08 (Malcolm F. Baldwin & James K. Page, Jr. eds., 1970) (arguing that the burden of proof falls upon plaintiffs seeking to protect environmental resources, which places them at a disadvantage).

[57] *See* DUKEMINIER & KRIER, *supra* note 53, at 987; *see also* Reserve Mining Co. v. EPA, 514 F.2d 492, 529 & n.71 (8th Cir. 1975) (en banc) (noting uncertain effects of water-borne taconite).

[58] DUKEMINIER & KRIER, *supra* note 53, at 987.

[59] *Id.*

[60] *Id.*

A. Early History of Federal Pollution Laws

Early air and water pollution regulation emphasizes ambient resource quality and reflect nuisance law's concept of restraining all unreasonable interferences with land.[61] Nuisance law proposes that no person should be required to endure pollution above some reasonable level. Therefore, ambient levels should be set at or below whatever constitutes this reasonable level.[62] If ambient levels are constant throughout an area, then no person must endure more than a reasonable level of pollution. However, ambient standards say very little about individual sources of pollution. While they say what cumulatively constitutes unreasonable levels of pollution, they fail to indicate whether a particular source makes unreasonable use of the

---

[61] Early air pollution laws concentrated on adding new enforcement mechanisms to state-created ambient standards, few of which were actually efficacious. *See* Pub. L. No. 88-206, § 5, 77 Stat. 392, 396-99 (1963) (codified as amended at 42 U.S.C. §§ 7401-7671q (1994)) (requiring notice to the discharging state, followed by a conference among all affected states, then six months' notice and opportunity to abate and another conference, before allowing request that the Attorney General commence suit). Later modifications added requirements that states reduce pollution to self-determined ambient levels. *See* Air Quality Act, Pub. L. No. 90-148, §§ 107-08, 81 Stat. 485, 490-92 (1967) (codified as amended at 42 U.S.C. §§ 7401-7671q (1994)). *See generally* Theodore L. Garrett & Sonya D. Winner, *A Clean Air Act Primer*, *in* CLEAN AIR DESKBOOK 3, 7 (1992) (arguing that the absence of federal standards and effective federal enforcement left the Act fairly toothless).

Water pollution controls began much earlier, with the Rivers and Harbors Appropriations Act. ch. 425, 30 Stat. 1121 (1899) (codified as amended at 33 U.S.C. §§ 401-18 (1994)). The statute, often referred to as the "Refuse Act," made it unlawful "to throw, discharge, or deposit, or cause, suffer, or procure to be thrown, discharged, or deposited . . . from the shore . . . any refuse matter of any kind . . . other than that flowing from the streets and sewers . . . in a liquid state, into any navigable water . . . or tributary [thereof] . . . [without a] permit." *Id.* at 1152 (codified at 33 U.S.C. § 407 (1994)). The purpose of the Act was to keep navigable waterways clear for ships, although the United States commenced no enforcement actions until the 1960s. *See* Theodore L. Garrett, *Overview of the Clean Water Act*, *in* THE CLEAN WATER ACT HANDBOOK 1, 5, 7 n.33 (Parthenia B. Evans ed., 1994) [hereinafter CWA HANDBOOK].

Other water pollution laws languished in complicated enforcement procedures for interstate disputes. *See* Federal Water Pollution Control Act, Pub. L. No. 660, ch. 518, § 8(c)-(g), 70 Stat. 498, 504-05 (1956) (codified as amended at 33 U.S.C. § 1253 (1994)) (providing for a conference between the polluting and the affected state, followed by a proposed remedial action, with another hearing if such action is not undertaken, and then Attorney General involvement if no remedial action has been taken within six months after the second hearing). Under the 1956 Act, discharges to a river that was so polluted it could be used for nothing other than pollution was not a violation. *See* John P.C. Fogarty, *A Short History of Federal Water Pollution Control Law*, *in* CLEAN WATER DESKBOOK 5, 8 (2d ed. 1991). The Water Quality Act of 1965 established the basic framework for today's water quality standards by asking states to zone water into different use categories. Water Quality Act of 1965, Pub. L. No. 89-234, 79 Stat. 903 (1965) (codified as amended at 33 U.S.C. §§ 1311-1311a (1994)). Thus, waters would be designated for swimming, navigation, drinking, etc. Some uses required cleaner water than others. Fogarty, *supra*, at 8-9. In essence this eliminated the use of water solely as a pollution trough. For a more expansive history see generally, *id.*

[62] In theory, the reasonable level could vary from area to area, based on development, geography, topology, or simple citizen preferences. We might expect that what constitutes reasonable so far as a representative jury in a nuisance case is concerned would be the reasonable level set forth by those jurors' political representatives as ambient standards.

air or water.[63] Therefore, from a control standpoint, ambient standards fail to impose a standard of reasonable use. The technology requirements imposed upon sources by the amendments to the pollution acts passed during the early 1970s sought to correct this deficiency.

B. Clean Air Act Structure

The Clean Air Act (CAA)[64] operates through two mechanisms. First, the CAA requires sources that emit above a threshold quantity of pollutants to lower their emissions below a rate that is tied to the units of production.[65] This typically requires the use of emissions-reduction technology.[66] The specific requirements vary depending on the age and type of the source as well as the ambient quality of the air in the source's area.[67] This aspect of the CAA reflects nuisance law's emphasis on unreasonable use by specifying the reasonable rate of emissions. Second, the CAA also establishes ambient standards for a variety of pollutants.[68] These ambient standards reflect the branch of nuisance law that focuses on unreasonable interferences with land by specifying the level of pollution anyone need endure.

1. New Source Performance Standards

The CAA divides sources into two categories, stationary and mobile sources. Mobile source regulation applies to all motor vehicles and is not discussed in this Article.[69] The CAA regulates stationary sources through technology mandates and assurances that the source will not impermissibly contribute to the degradation of ambient standards.[70] New source per-

---

[63] Unless a single source contributed more than one hundred percent of the ambient level of pollution, its emissions would not truly be individually unreasonable. However, one might consider its "hoarding" of the quantity of total reasonable emissions to be unreasonable, particularly if other polluters might otherwise produce more useful goods.

[64] 42 U.S.C. §§ 7401-7671q (1994).

[65] *Id.* §§ 7471-7514a.

[66] *Id.* § 7408.

[67] *Id.* §§ 7471-7514a.

[68] *Id.* § 7408.

[69] Mobile sources are regulated by 42 U.S.C. §§ 7521-7590 (1994). *See generally* JAMES E. KRIER & EDMUND URSIN, POLLUTION AND POLICY: A CASE ESSAY ON CALIFORNIA AND FEDERAL EXPERIENCE WITH MOTOR VEHICLE AIR POLLUTION 1940-1975 (1977) (reviewing the problem and regulation of automobile air pollution). Motor vehicle regulation traditionally has occurred through separate legislation. *See* Motor Vehicle Act of 1960, Pub. L. No. 86-493, § 1, 74 Stat. 162 (1960) (codified as amended at 42 U.S.C. §§ 7521-7590 (1994)) (charging the Surgeon General to produce a report on the "amounts and kinds" of automobile exhaust and its effect on human health); Motor Vehicle Air Pollution Control Act, Pub. L. No. 89-272, § 202, 79 Stat. 992 (1965) (codified as amended at 42 U.S.C. §§ 7521-7590 (1994)) (allowing the Secretary of Health, Education and Welfare to prescribe standards for new vehicles and engines). As part of the political bargaining that led to federal regulation of automobiles, states are statutorily preempted from adopting standards different (even if more stringent) than the federal ones after March 30, 1966. 42 U.S.C. § 7543(b)(1) (1994). Only California had adopted more stringent standards by this date. States, however, may adopt the California standards under certain conditions. *Id.* § 7507.

[70] 42 U.S.C. §§ 7470-7514a (1994).

formance standards (NSPS) place emissions limitations on various pollutants from all new stationary sources.[71] These standards reflect the level of emissions that could be attained using "the best system of emissions reduction which . . . has been adequately demonstrated."[72] Emitters generally remain free, however, to choose their means of attaining the specified rate.[73] Each category of stationary source will have its own standard.[74]

NSPS "are based on the . . . philosophy of requiring as much control as can be provided within certain bounds of cost."[75] Uniform NSPS also minimize administrative costs. However, the imposition of the same technology on sources regardless of their location "result[s] in diverse ambient pollution levels because of geographical variations in such factors as meteorological conditions, topography, and the number and size of emissions sources."[76] Therefore, the technology requirements alone cannot achieve the requisite ambient standards.[77]

The uniformity of NSPS distance them from nuisance's concern over effects, and nuisance law's determination that unreasonable use occurs

---

[71] Section 111(a)(3) defines a stationary source as "any building, structure, facility, or installation which emits or may emit any air pollutant." *Id.* § 7411(a)(3). Section 111(a)(2) defines a new source as any stationary source whose construction or modification is commenced after the standards are promulgated. *Id.* § 7411(a)(2). Modifications include only those physical or operational changes that result in an increase in the emissions of an air pollutant. *Id.* § 7411(a)(4).

[72] *Id.* § 7411(a)(1). "Adequately demonstrated" contains a prospective element, allowing EPA to prescribe technology that it predicts will shortly become available. *See* Portland Cement Ass'n v. Ruckelshaus, 486 F.2d 375, 391-92 (D.C. Cir. 1973) (holding that EPA can make reasonable projections based on existing technology).

[73] 42 U.S.C. § 7411(b)(5) (1994) ("[N]othing in this section shall be construed to require any new or modified source to install and operate any particular technological system of continuous emission reduction . . . ."). There is an exception, however, if EPA determines that it would not be feasible to do anything but prescribe a specific technology. *Id.* § 7411(h)(2); *see also* BRUCE A. ACKERMAN & WILLIAM T. HASSLER, CLEAN COAL/DIRTY AIR: OR HOW THE CLEAN AIR ACT BECAME A MULTIBILLION-DOLLAR BAIL-OUT FOR HIGH SULFUR COAL PRODUCERS AND WHAT SHOULD BE DONE ABOUT IT 18-19 (1981) (describing that initial NSPS for electric generation and sulfur dioxide (SO_2) would allow plants to achieve standard through use of scrubbers or low sulfur coal).

[74] 42 U.S.C. § 7411(b)(1) (1994); *see also* 40 C.F.R. § 60 (1996) (listing NSPS for different types of sources). Only those categories of sources EPA believes will "cause[ ] or contribute [ ] significantly to air pollution which may reasonably be anticipated to endanger public health or welfare" are listed. 42 U.S.C. § 7411(b)(1)(A) (1994). "The evident intention . . . [i]s to avoid federal regulation of trivial sources." DAVID P. CURRIE, AIR POLLUTION: FEDERAL LAW AND ANALYSIS § 3.06, at 3-15 (1981); *cf.* THOMAS H. TIETENBERG, EMISSIONS TRADING: AN EXERCISE IN REFORMING ENVIRONMENTAL POLICY 15 (1985) ("Since every home furnace is a pollution source, the number of sources is extremely large.").

An important study traces the development of NSPS for SO_2 from a uniform pounds per MBTU (million British Thermal Units) standard to one that required differential amounts of reduction depending on the sulfur content of the coal used as a political compromise. ACKERMAN & HASSLER, *supra* note 73, at 19.

[75] CURRIE, *supra* note 74, § 3.09, at 3-21; *see also* H.R. REP. No. 95-294, at 106 (1977), *reprinted in* 1977 U.S.C.C.A.N. 1077, 1263 (providing justifications for uniformity of NSPS).

[76] CURRIE, *supra* note 74, § 3.09, at 3-21.

[77] *Id.* Undercontrol in some areas will, conversely, be matched by controls more stringent than necessary in other regions. *Id.*

when someone is unreasonably burdened. Nuisance law gauges what constitutes a reasonable amount of pollution by considering the particularities of a locale. The technology requirements of NSPS do not address this. A plant located in a highly polluted industrial zone must meet the same NSPS requirements as a plant located in a residential area or a forest. Thus, NSPS provide no incentive to locate in one area over another.

2. Ambient Air Quality Standards

The CAA directs the Environmental Protection Agency (EPA) to designate "criteria" pollutants[78] as well as primary and secondary standards for ambient levels of those pollutants.[79] Primary standards establish ambient levels that should protect the public health with "an adequate margin of safety."[80] The stricter secondary standards require ambient levels that "protect the public welfare from any known or anticipated adverse effects associated with the presence of [the] air pollutant."[81] Like NSPS, the national ambient air quality standards (NAAQS) apply uniformly nationwide. In theory, industrial areas in Los Angeles should have the same ambient pollutant levels as Yellowstone National Park. This principle meets with objections similar to those for uniform NSPS—namely that a certain ambi-

[78] 42 U.S.C. § 7408(a) (1994) (stating that EPA shall publish list of pollutants that it judges to endanger public health or welfare and that result from mobile or stationary sources). Section 166 directs EPA to promulgate standards for sulfur dioxide, particulate matter, carbon monoxide, nitrogen dioxide, hydrocarbons, ozone, and lead. *Id.* § 7476. Standards and measurement methods are published for all but hydrocarbons at 40 C.F.R. § 50 (1996). Hydrocarbons have a mechanism of measurement but no standard. *See* 40 C.F.R. § 50 (App. E) (1996). The term "criteria" comes from the statutory requirement that EPA publish information on how human health and welfare is affected by atmospheric effects from a pollutant and the pollutant's interactivity with other pollutants—the "criteria" by which the pollutant causes damage. *Id.* § 7408(a)(2). The CAA also regulates hazardous air pollutants. *Id.* § 7412. This section charges EPA with developing emissions standards for each of the more than two hundred hazardous substances for different categories of sources. *Id.* § 7412(b)(1), (c). Similar to criteria pollutants, new sources must meet strict standards for the emission of hazardous substances, and existing sources must, to a certain degree, cut back on emissions as well (although not to the same extent as new sources). *Id.* § 7412(d).

Hereinafter, when the CAA specifies the EPA Administrator as the person responsible, this Article will refer to her or him as "EPA." *See* 42 U.S.C. § 7602(a) (defining "Administrator" to be the administrator of the EPA); *Id.* § 7601(1) (granting power to Administrator to prescribe regulations and to delegate most powers to officers and employees of EPA).

[79] *Id.* § 7409(a).

[80] *Id.* § 7409(b)(1).

[81] *Id.* § 7409(b)(2). At least one court has read the CAA to require EPA to set both the primary and secondary standards without consideration of cost or technical feasibility. Lead Indus. Ass'n v. EPA, 647 F.2d 1130, 1150 (D.C. Cir. 1980); *see also*, American Petroleum Inst. v. Costle, 665 F.2d 1176, 1185 (D.C. Cir. 1981) ("Further, the agency need not tailor national regulations to fit each region or locale." (citing Natural Resources Defense Council v. EPA, 656 F.2d 768, 785 (D.C. Cir. 1981))); *cf.* Natural Resources Defense Council v. EPA, 902 F.2d 962, 972-73 (D.C. Cir. 1990) (unemployment not cognizable as health effect cost), *vacated in part*, 921 F.2d 326 (D.C. Cir. 1991). One commentator advocates setting the standards without regard to cost, but argues that the implementation should account for excessive costs of achieving the standards. CURRIE, *supra* note 74, § 4.06, at 4-15.

ent level may have much higher costs attached to its attainment and/or smaller benefits in some locations than in others.[82]

Once EPA has established NAAQS, the CAA directs states—which have "primary responsibility for assuring [their own] air quality"[83]—to adopt state implementation plans (SIPs) for meeting NAAQS for each of the pollutants.[84] Each state consists of one or more "air quality control regions,"[85] each of which EPA classifies as "attainment" or "nonattainment" for each of the criteria pollutants.[86] SIPs must employ emissions limitations or other control mechanisms to bring each nonattainment area into attainment of NAAQS.[87] To comply with its SIP, each state must calculate by how much each "criteria" pollutant exceeds NAAQS in each attainment area, and then apportion the necessary reductions across sources in order to bring each region into attainment.[88]

---

[82] *See* James E. Krier, *The Irrational National Air-Quality Standards: Macro- and Micro- Mistakes*, 22 U.C.L.A. L. REV. 323, 327 (1974) ("The standard that minimizes total costs for a region in Iowa is hardly likely to do so for all the regions of California or New York or Colorado as well. To require adherence to the same stringent standard everywhere will in many areas result in the imposition of control costs which are much larger than the pollution costs avoided.").

[83] 42 U.S.C. § 7407(a) (1994).

[84] *Id.* § 7410(a)(1). If EPA rejects a SIP as inadequate, or a state fails to submit one, EPA may promulgate a federal implementation plan (FIP) for the area. *Id.* § 7410(c)(1). A SIP must be revised when NAAQS change or new technology becomes available. *Id.* § 7410(a)(2)(H). If a state is untimely in revising its SIP, EPA may make the revision. *Id.* § 7410(c)(1).

[85] *Id.* § 7407(c). An air quality control region may span multiple states when appropriate. *Id.* § 7407(c).

[86] *Id.* § 7407(d)(1)(A). An area may remain "unclassified" if there is insufficient information about the area's pollution. *Id.* § 7407(d)(1)(A)(iii).

[87] *Id.* § 7410(a)(2)(A). A state is given three years from the approval of its SIP to attain primary NAAQS and must attain secondary NAAQS within a "reasonable" time. *Id.* § 7410(a)(2)(A). A SIP also must contain provisions for the compilation of data on ambient air quality. *Id.* § 7410(a)(2)(B)(i).

[88] Although this may sound easy in theory, practice suggests otherwise. First, the lowest level of emissions technologically achievable may still vastly exceed the reduction necessary to achieve the requisite ambient standards. Additional techniques, such as dispersion from taller smokestacks, may be necessary to meet the requirements. CURRIE, *supra* note 74, § 4.14, at 4-36.

Second, if an area's ambient levels are, for example, twice that allowed by statute, simply halving all emissions may be insufficient. Not all sources may be controlled, and such a "rollback" model may fail to consider topography, location of sources, and stack height. *See id.* § 4.14, at 4-37. Note, however, that use of dispersion techniques (such as intermittent controls) and "stack height . . . exceed[ing] good engineering practice" may not be used in lieu of actual reductions in emissions. 42 U.S.C. § 7423(a)(1), (2) (1994); *see also* NRDC v. EPA, 489 F.2d 390, 406-08 (5th Cir. 1974) (implementation plans should "whenever possible" rely on emission limitations not enhanced dispersion techniques), *rev'd on other grounds*, 421 U.S. 60 (1975); CURRIE, *supra* note 74, § 4.16, at 4-45 to 4-46 (describing conditions of CAA section 123).

Third, the complication of calculating the necessary reductions is substantial. *See* Ohio v. EPA, 784 F.2d 224, 229-31 (6th Cir. 1986) (holding EPA's use of new computer pollution modeling program was arbitrary and capricious absent testing of its predictive reliability); Cleveland Elec. Illuminating Co. v. EPA, 572 F.2d 1150, 1161-64 (6th Cir. 1978) (rejecting Ohio's challenge to EPA's adoption of more sophisticated real time air quality simulation

a. Prevention of Significant Deterioration in Attainment Areas

Because pollution is not uniformly distributed throughout the nation, some areas are already in compliance with NAAQS.[89] The prevention of significant deterioration provisions (PSD)[90] address the extent to which the air quality in these cleaner areas is allowed to deteriorate to NAAQS.[91]

---

model to replace roll-back model); Texas v. EPA, 499 F.2d 289, 297-301 (5th Cir. 1974) (rejecting Texas's reduction model in favor of EPA's straight-line "rollback" model); *see also* California *ex rel.* State of Cal. Air Resources Bd. v. EPA, 774 F.2d 1437, 1441 (9th Cir. 1985) (rejecting California's objections to Nevada's modeling which supposed smaller increase in pollution than California's model); Cincinnati Gas & Elec. Co. v. Costle, 632 F.2d 14, 19 (6th Cir. 1980) (holding that it was not arbitrary and capricious for EPA to choose modeling over monitoring when latter was not proven adequate). Different models of pollution dispersion and atmospheric and topographic effects will lead to different results, both in the amount of reduction necessary and the determination of whose emissions contribute the most pollution to ambient levels.

The allocation of reductions across sources also forces difficult decisions. Equivalent percentage reductions disadvantage sources that already installed pollution reduction equipment. An equal allotment disadvantages large sources, while an allotment based on discharge per unit of output hurts industries with difficult-to-control emissions. CURRIE, *supra* note 74, § 4.14, at 4-37. Alternatively, some sort of market allocation might be used. *See infra* Part III.B.3.

89 Everywhere but Los Angeles was in attainment for at least one pollutant, thereby necessitating some PSD review for all covered sources. *See* R. SHEP MELNICK, REGULATION AND THE COURTS: THE CASE OF THE CLEAN AIR ACT 111 (1983).

90 42 U.S.C. §§ 7470-7474 (1994).

91 The 1970 CAA did not contain the PSD provisions. EPA promulgated regulations that would have allowed deterioration up to the level at which ambient standards would just be met. *See* MELNICK, *supra* note 89, at 72 ("[This] program gave polluters incentives to disperse their pollution over a larger area and to expand or relocate in less developed areas. This meant some areas would become more polluted as others became cleaner."). A district court judge found these regulations to be contrary to the CAA's purpose. Sierra Club v. Ruckelshaus, 344 F. Supp. 253, 256 (D.D.C.), *aff'd mem.*, 41 U.S.L.W. 2255 (D.C. Cir. 1972), *aff'd by an equally divided Court*, 412 U.S. 541 (1973); *see also* NRDC v. EPA, 489 F.2d 390, 408 (5th Cir. 1974) (stating that the 1970 Act suggests non-degradation policy), *rev'd on other grounds sub nom.* Train v. Natural Resources Defense Council, 421 U.S. 60 (1975). *See generally* MELNICK, *supra* note 89, at 71-112 (describing evolution of PSD policy). Congress codified the principle of non-degradation in the 1977 Amendments. Pub. L. No. 95-95 §§ 160-169A, 91 Stat. 685, 731-45 (codified as amended at 42 U.S.C. §§ 7470-7491 (1994)).

The PSD requirements consciously acknowledge that they are part environmental protection, part economic protectionism. *Id.* § 7470(3) ("[T]o insure that economic growth will occur in a manner consistent with the preservation of existing clean air resources[.]"). The purpose of the section was to protect states whose pollution levels exceeded the ambient standards from the loss of industry to states that had air sufficiently clean to absorb additional pollution without violating NAAQS. *See* MELNICK, *supra* note 89, at 81-82. By limiting the additional allowable pollution in states that were already in attainment, Congress reduced incentives for industry to relocate. *Cf.* Richard B. Stewart, *Pyramids of Sacrifice? Problems of Federalism in Mandating State Implementation of National Environmental Policy*, 86 YALE L.J. 1196, 1212 (1977) ("Given the mobility of industry and commerce, any individual state or community may rationally decline unilaterally to adopt high environmental standards that entail substantial costs for industry and obstacles to economic development for fear that the resulting environmental gains will be more than offset by movement of capital to other areas with lower standards."). Of course, reducing incentives for relocation meant that attaining health standards in nonattainment areas became that much more difficult. MELNICK, *supra* note 89, at 79.

The PSD requirement is exactly what its name suggests: each state's "implementation plan shall contain emission limitations and such other measures as may be necessary . . . to *prevent significant deterioration* of air quality in each" area already in attainment.[92] The PSD requirements designate national parks and wilderness areas as Class I and other attainment areas as Class II.[93] A state may reclassify any Class II area to Class III if it follows certain administrative procedures and determines that the redesignation will not cause pollution concentrations to exceed the applicable limits in other areas.[94]

As their primary enforcement mechanism, PSD requirements subject all new "major emitting facilities"[95] to preconstruction approval.[96] To obtain approval, the facility must meet NSPS[97] and show that the emissions will not cause an increase of ambient pollution levels above that allowed by PSD requirements.[98] Additionally, the facility must utilize the best available control technology (BACT) for each pollutant.[99] PSD requirements do not, in the end, actually prevent the deterioration of ambient air quality; rather, they slow the degradation of ambient pollution levels.[100]

Each class of area is subject to different requirements for permissible increases in pollution.[101] Class I areas are allowed minimal amounts of

---

92 42 U.S.C. § 7471 (1994) (emphasis added); *see infra* note 99 (discussing "significant deterioration").

93 42 U.S.C. § 7472 (1994).

94 *See id.* § 7474.

95 A major emitting facility is statutorily defined as a source "which emit[s], or ha[s] the potential to emit" one hundred tons or more of "any air pollutant" and is contained within the statutory list of facility types, or any other source that could emit over 250 tons of the pollutant per year. *Id.* § 7479(1).

96 *See id.* § 7475.

97 *Id.* § 7475(a)(1); *see supra* Part III.B.1.

98 42 U.S.C. § 7475(a)(3) (1994).

99 *Id.* § 7474(a)(4). A facility is subject to BACT for every criteria pollutant if it emits any one of the criteria pollutants in excess of the 100/250 ton limits. EPA's initial interpretation that BACT only applied to each pollutant emitted in excess of the limits was found contrary to statutory language. *See* Alabama Power Co. v. Costle, 636 F.2d 323, 403-05 (D.C. Cir. 1980), *modifying* 606 F.2d 1068 (D.C. Cir. 1979). However, the *Alabama Power* court did grant EPA authority to create a de minimis threshold below which—for administrative convenience—EPA would not require BACT for criteria pollutants. *Id.* at 405; *see* 40 C.F.R. § 51.166(j)(2) (1996) ("A new major stationary source shall apply best available control technology for each pollutant subject to regulation under the Act that it would have the potential to emit in significant amounts."); 40 C.F.R. § 51.166(b)(23)(i) (1996) (setting forth what constitutes "significant" for various pollutants); *see also* CURRIE, *supra* note 74, § 7.08, at 7-24.

BACT requires a plant to use equipment that provides the "maximum degree of reduction for each pollutant" taking into account "energy, environmental, and economic impacts and other costs." 42 U.S.C § 7479(3) (1994). It is theoretically possible that BACT would be less restrictive than NSPS (a nationally uniform standards) because the "permitting authority"—the state—determines what constitutes BACT. *Id.* § 7479(3). However, the additional requirement that the source meet NSPS precludes this. *Id.* § 7475(a)(1).

100 *See* CURRIE, *supra* note 74, § 7.08, at 7-21 ("[T]he technology requirement . . . serves the independent policy of rationing the limited assimilative resource that remains with the increments, helping to maximize the opportunity for additional growth.").

101 *See* 42 U.S.C. § 7473 (1994) (listing maximum increases over baseline concentrations for particulate matter and sulfur dioxide); *Id.* § 7476 (commanding EPA to promulgate regu-

degradation;[102] Class II substantially more;[103] and Class III even more still.[104] Thus, the PSD requirements create a form of "clean air zoning." Important areas must maintain virtually the same air quality, while states may choose to allow other areas to become dirtier. Consequently, a new facility has incentives to locate in a Class III or Class II area because of their greater permissible increases in pollution. The relative abundance of pollutable air makes it cheaper to develop dirtier areas, sparing the relatively pristine ones from increased degradation.[105] Furthermore, because states may select which areas to designate Class III, they can encourage facilities to locate in these areas, rather than Class II areas. The shortcoming of this approach remains the scope of the area because large geographic areas incorporate both residential and industrial users. While an area may be more heavily industrial—with greater amounts of pollution—there is no reason to expect it be exclusively industrial. That being so, there may still be residents in an area that potentially have legitimate nuisance claims.[106]

---

lations to restrain PSD for hydrocarbons, carbon monoxide, photochemical oxidants, nitrogen oxides, and any other pollutants added after the 1977 amendments); *see also* CURRIE, *supra* note 74, § 7.05, at 7-13 to 7-14 (noting that although the CAA could be read to apply to all pollutants, it more reasonably applies only to those for which ambient standards have been promulgated). The "baseline" is defined as the ambient concentration of a particular pollutant at the time the first application for a permit to build a major emitting facility in the area is filed. *See* 42 U.S.C. § 7479(4) (1994).

[102] 42 U.S.C. § 7473(b)(1) (1994) (total annual increase of 5 $\mu g/m^3$ of PM-10; 2 $\mu g/m^3$ of SO_2).

[103] *Id.* § 7473(b)(2) (total annual increase of 19 $\mu g/m^3$ of PM-10; 20 $\mu g/m^3$ of SO_2).

[104] *Id.* § 7473(b)(3) (total annual increase of 37 $\mu g/m^3$ of PM-10; 40 $\mu g/m^3$ of SO_2). In no case may the increase result in levels above NAAQS. *Id.* § 7473(b)(4).

[105] Currie makes the objection that this outcome merely reflects historical happenstance. *See* CURRIE, *supra* note 74, § 7.09, at 7-26 ("The arbitrariness of this approach is apparent; future air quality is to be determined not by weighing the competing costs of pollution and its cures but by the accident of past development. Those areas that happen to be cleanest today may not be those we think it most important to have clean."). If ambient standards are sufficient to protect human health, then some (Class III) areas should be allowed to degrade to the ambient standards, thus alleviating pressure to develop other areas, especially those deserving the greatest protection—such as national parks and other Class I areas. *See id.* § 7.11, at 7-37 ("Better a power plant in a barren desert than next door to Yellowstone Park . . . ."). Therefore, the justification for placing limits even on the degradation of Class III areas must lie in the belief that the ambient standards are less stringent than desirable. *See* H.R. REP. No. 95-294, at 106 (1977), *reprinted in* 1977 U.S.C.C.A.N. 1077, 1184 ("Since 1971 when the national ambient air quality standards were set, new and disturbing information has come to light showing that the public's health is being harmed to some extent, perhaps seriously, even at levels below the national standards. . . . The inadequacies of the standards are substantial . . ."); *see also id.* at 106-33, *reprinted in* 1977 U.S.C.C.A.N at 1185-1211 (discussing reasons for stricter standards).

[106] One might object that a more heavily polluted area is dedicated to industrial uses. Thus, like Ms. Bove, one comes to the nuisance. *See supra* notes 30-33 and accompanying text. This ignores two factors, however. First, current owners may have the value of their property reduced: they absorb the loss rather than new purchasers. Second, any conclusion that polluted areas are "dedicated" assumes uniform uses for each area, which is unlikely, given that the areas generally comprise at least one county. *See* 40 C.F.R. § 52 (1996) (listing SIPs and management areas for states).

b. Reasonable Further Progress in Nonattainment Areas

The CAA requires nonattainment areas[107] to make "reasonable further progress" toward attainment of NAAQS.[108] A state must indicate in its SIP how it intends to bring each nonattainment area into attainment. This plan must include the imposition of reasonably available control technology (RACT) on existing sources,[109] and a permitting system for new or modified sources stricter than that used for attainment areas.[110] The more stringent requirements allow the issuance of a permit to construct a new source only if the source meets two conditions. First, the proposed source must have the lowest achievable emissions rate (LAER).[111] Second, the source must obtain offsetting emissions reductions from other sources so that total emissions do not increase.[112]

The offset provisions require a permit applicant to obtain reductions of the same pollutant from another source in the same nonattainment area to offset their addition of pollutants.[113] The applicant may alternatively acquire offsets from outside the attainment area if that area is of a higher nonattainment classification[114] and the proposed offsetting emissions contribute to violation of NAAQS in the applicant's area.[115] Importantly, the dirtier the area the greater offset ratio a source must meet. For example, in a "marginal" area—those closest to attainment—a new source need only offset at a 1.1 to 1 ratio: for each unit of pollution it will create, it must persuade another source to reduce 1.1 units.[116] In contrast, in "extreme" areas—those most out of compliance—a new source must find offsets of 1.5 to 1.[117]

---

107 Nonattainment status is determined for each criteria pollutant. *See* 42 U.S.C. § 7501(2) (1994).

108 *See id.* § 7501(1).

109 *Id.* § 7502(c)(1). This provision requires "the implementation of all reasonably available control measures." *Id.*

110 *Id.* § 7502(c)(5).

111 *Id.* § 7503(a)(1)(B). LAER constitutes the rate of emissions that is the lesser of "the most stringent emission limitation" for the type of source proposed that is used in any state's SIP or "the most stringent emission limitation which is achieved in practice by such class or category of source." *Id.* § 7501(3).

112 *Id.* § 7503(a)(1)(A). The total change actually should be negative, so as to constitute reasonable further progress. *Id.*

113 *Id.* § 7503(c)(1); *see* TIETENBERG, *supra* note 74, at 9-11 (reviewing the evolution of offset program). Offsets do not necessarily require other sources to close. Alternatively, those sources could reduce emissions by taking control measures not otherwise required by the CAA. *See* 42 U.S.C. § 7503(c)(2) (1994); CURRIE, *supra* note 74, § 6.12, at 6-36.

114 The CAA divides regions into marginal, moderate, serious, severe, and extreme nonattainment areas for nonattainment of volatile organic compounds (VOCs) and oxides of nitrogen (NO_X). 42 U.S.C. § 7503(c)(1) (1994). The worse-off areas have longer to comply. *See id.* § 7511(a)(1). The divisions are moderate and serious for areas not in attainment of NAAQS for carbon monoxide (CO) and particulate matter *Id.* §§ 7512(a)(1), 7513(a).

115 *Id.* § 7503(c)(1).

116 *Id.* § 7511a(a)(4).

117 *Id.* § 7511a(e)(1). By imposing BACT on all existing sources, the area may require only a 1.2 to 1 offset. *Id.* § 7511a(e)(1).

The offset requirements mean that it is cheaper for a source to locate in a relatively cleaner area. Because the ratio is lower, a new source will not need to acquire as many offsets, and the total cost should therefore be lower. Consequently, the incentive is to locate in relatively *cleaner* areas, rather than dirtier ones.[118] Furthermore, because the timetables for attainment allow the worst areas to remain dirty for the longest,[119] those who are most heavily polluted must wait the longest to reap the benefits of the CAA. Like with the PSD requirements, however, if the attainment area includes industrial and residential users, nuisances may still exist.

3. Tradable Emissions Rights

The Clean Air Act Amendments of 1990[120] added a new wrinkle to attainment of ambient sulfur dioxide levels by implementing a national scheme of tradable emissions rights.[121] The Amendments schedule reductions[122] to take place in two phases. In the first phase, over 110 electricity generating plants are allocated allowances of emissions for sulfur dioxide.[123] As of 1995, none of these sources may emit sulfur dioxide in excess of its allocation unless it has obtained additional allowances.[124] The second phase brings more sources into the system and requires further controls.[125] A source may obtain additional allowances by reducing emissions from other generators at the same source,[126] or by transfers across sources, the true "market" system.[127] The Act also directs EPA to develop a similar program for nitrogen oxides.[128]

The transition to a tradable system of allowances exacerbates the CAA's lack of concern over the location of emissions evident within the Act's provisions.[129] An allowance may be traded to any other plant, re-

---

118 This is akin to saying: now that the slop pit is full of pigs, we should start putting them in the parlor (or maybe just the front hall).

119 *See id.* § 7511.

120 Clean Air Act of 1990, Pub. L. No. 101-549, 104 Stat. 2399 (codified as amended at 42 U.S.C. §§ 7401-7671q (1994)).

121 *See id.* The idea of emissions trading developed years earlier through the "bubble" and "offset" concepts. The former allowed a multi-source plant to reduce emissions more from one pipe than another, rather than impose blanket percentage-cutback requirements. Thus a plant could meet its emissions-reduction target in the way it saw fit, in essence, trading emissions within the facility. The offset concept allowed plants to meet their reduction requirements by convincing some other plant to reduce its emissions instead. *See generally* TIETENBERG, *supra* note 74, at 9-11.

122 The CAA sets the goal of reducing sulfur dioxide emissions by 10 million tons from 1980 levels by 2000. 42 U.S.C. § 7651(b) (1994).

123 *See id.* § 7651c(e) (tbl. A).

124 *Id.* § 7651c(a)(1).

125 *See id.* § 7651d.

126 *Id.* § 7651c(b).

127 *Id.* § 7651b(b).

128 *See id.* § 7651f; *see also id.* § 7651b(c) (directing EPA to study the viability of interpollutant allowance trading in nitrogen oxides).

129 Tietenberg explains the permitting system's inadequate consideration of location:

> The Clean Air Act mandates that the ambient standards be met everywhere. By ignoring the location of the discharge point (the source of its simplicity), the emission

gardless of the location of either buyer or seller. The only restriction placed upon trades is that even with purchases of allowances, SIPs and NAAQS must still be complied with.[130] Nevertheless, the potential for "hot spots" increases greatly in a market system.[131]

4. Enforcement

Enforcement of the CAA's provisions occurs through either EPA or citizen suits. If EPA finds that a person is violating a SIP or permit[132] or has failed to comply with NSPS,[133] EPA may direct compliance,[134] assess

---

permit policy forces the control authority to relinquish control over concentrations. Though it can control the total level of emissions . . . .[c]oncentration levels are sensitive to the location, as well as the amounts of emissions.

. . . .

A third strike against an emission permit approach stems from its inability to affect the location of new emissions sources. Since prices for reduction credits do not vary with location in an emissions permit market, the cost of pollution control for any potential emission source does not depend on location within that market. Yet if that area is to meet the ambient standards, source location is frequently crucial. In a nutshell, the emissions permit affords too little protection to the ambient standards over the long run by sending the wrong signals to potential polluters making location decisions.

TIETENBERG, *supra* note 74, at 72-74.

130 42 U.S.C. § 7651b(f) (1994).

131 *See, e.g.*, Deborah M. Mostaghel, *State Reactions to the Trading of Emissions Allowances Under Title IV of the Clean Air Act Amendments of 1990*, 22 B.C. ENVTL. AFF. L. REV. 201, 209 (1995) (stating that "[w]hile the flexible free-market trading scheme will result in lowered emissions nationwide, there is no guarantee that every area of the country will see equal pollution reductions."); *see also* NATIONAL ACID PRECIPITATION ASSESSMENT PROGRAM, 1992 REPORT TO CONGRESS 28 (1993) ("Although standards exist to limit the concentrations of sulfur dioxide and nitrogen dioxide in the atmosphere, and these gases are the main precursors of acidic deposition, *there is not a standard for acidic deposition per se.*" (emphasis added)); Richard Revesz, Note, *Technology-Based Emission and Effluent Standards and the Achievement of Ambient Environmental Objectives*, 91 YALE L. J. 792, 810-11 (1981) (stating that "a single market for pollution rights cannot ensure that ambient standards will be met at each point within the region defined by that market, and is therefore inadequate as a strategy to combat local pollution. Moreover, the trading of rights in a single market can lead to systematic transfers to one or more preferred locations, causing the ambient quality in those locations to deteriorate. The transfer of rights among emission locations can thus lead to a violation of ambient standards, even though the total quantity of pollutants emitted within the market area remains unchanged." (footnote omitted)); Manley W. Roberts, Note, *A Remedy for Victims of Pollution Permit Markets*, 92 YALE L.J. 1022, 1027 (1983) (stating that "[t]he likelihood of such a geographical "hot-spot" increases with the size of the market region; larger regions will contain more potential emission traders and greater disparity between marginal costs. In addition, a larger market region increases the likelihood that the seller and buyer of pollution rights are not in the same immediate vicinity and that the emission reductions by the seller do not cancel out emission increases by the purchaser." (footnote omitted)).

132 42 U.S.C. § 7413(a)(1) (1994).

133 *Id.* § 7413(a)(5).

134 *Id.* § 7413(a)(1)(A).

an administrative penalty,[135] or seek an injunction, civil penalty,[136] or criminal sanctions.[137] Section 120 allows either EPA or states to assess penalties against owners of stationary sources not in compliance with the applicable requirements.[138] The section seeks to deprive an owner of any money saved by his failure to comply.[139] The penalty is the economic value of delaying compliance, including capital costs, less expenditures (if any) made toward compliance.[140] Because this provision sets the charge based on the violator's divergence from prescribed emissions limitations (which are implicitly presumed to be optimal), it resembles an emission charge that levies a fee on all emissions above some level. However, an important difference is that it attacks the abatement costs avoided, not the harm created.[141] Thus, the punished harm is the legal violation, not the harm the extra emissions may have caused the residents.

The CAA vests supplemental enforcement authority in all interested people, allowing anyone to bring a civil action against an alleged violator[142] or EPA for its failure to perform non-discretionary duties.[143] This "citizen suit" provision was originally intended to allow citizens to spur

---

135 *Id.* § 7413(d). Administrative penalties are generally limited to $200,000. *See id.* § 7413(d). Furthermore, the penalties are set on the basis of the number of days in violation. *Id.*

136 *Id.* § 7413(b). The language "has violated or is in violation" suggests that EPA may not seek prospective relief. *But cf.* Weinberger v. Romero-Barclero, 456 U.S. 305, 318-20 (1982) (noting Clean Water Act does not limit "equitable discretion" of courts).

137 42 U.S.C. § 7413(c) (1994). Criminal actions may be brought for "knowing[ ]" violations of specified parts of the Act. *Id.* § 7413(c)(1). The negligent release of hazardous pollutants listed in Section 112(1) is punishable by a fine and a year in prison, *id.* § 7413(c)(4), and if done with knowledge of death or serious bodily injury to another, can result in a sentence of up to 15 years and a fine of $1 million, *id.* § 7413(c)(5)(A). Prosecution for criminal violations of the CAA is rare and constitutes only a small percentage of environmental-crimes prosecution. *See* Mark A. Cohen, *Criminal Penalties*, *in* INNOVATION IN ENVIRONMENTAL POLICY 75, 78 (Tom H. Tietenberg ed., 1992) [hereinafter INNOVATION].

138 42 U.S.C. § 7420(a)(2)(A) (1994).

139 *Id.* § 7420(d)(2).

140 *Id.*

141 *See* CURRIE, *supra* note 74, § 8.07, at 8-12 ("Given the uncertainty of determining the harm done by any given unit of emission, this compromise seems entirely appropriate."). Setting the fine equal to the benefit derived from noncompliance will create optimal deterrence of violations only if enforcement is perfect. If a noncomplier has any chance of not being caught, then the expected value of noncompliance becomes positive. Therefore, "[i]n general the total sanction should be a multiple of the harm where the multiple is equal to the inverse of the likelihood that a violation will result in a monetary sanction. When the probability of detection is very low, the consequent official penalty should be a very high multiple of the actual harm done." Kathleen Segerson & Tom Tietenberg, *Defining Efficient Sanctions*, *in* INNOVATION, *supra* note 137, at 53, 63 (footnote omitted). *But see* A. Mitchell Polinsky & Steven Shavell, *Should Liability be Based on the Harm to the Victim or Gain to the Injurer?*, 10 J.L. ECON. & ORG. 427 (1994) (concluding that damages based on harm are preferable because the error costs of that rule are lower). For a more complete discussion of citizen suits and their effect on optimal deterrence, see generally Wendy Naysnerski & Tom Tietenberg, *Private Enforcement*, *in* INNOVATION, *supra* note 137, at 109.

142 42 U.S.C. § 7604(a)(1), (3) (1994).

143 *Id.* § 7604(a)(2). Prior to commencing suit, the plaintiff must provide notice to EPA, the environmental agency of the state in which the violation occurred, and the alleged violator herself. *Id.* § 7604(b)(1)(A). If within sixty days, EPA or the state commences a civil

EPA into bringing more enforcement actions against violators,[144] but complicated issues about the feasibility of the Act's requirements have led to far fewer suits than originally anticipated.[145] In cases that are brought, a court may award attorney fees and other court costs when appropriate.[146] Any fines imposed, however, go to the United States.[147] The citizen suit section notes that it does not provide the exclusive remedial provisions for pollution and that it does not limit common-law remedies otherwise available.[148]

C. Clean Water Act Structure

Federal water-pollution control has a longer history than air pollution control. Since the Nineteenth Century, the Refuse Act prohibited discharges into navigable waterways without a permit. Although the Act lay dormant for many years, the U.S. Supreme Court interpreted the Act broadly in *United States v. Standard Oil Co.*, thereby enabling the enforcement of the ambient standards established by early versions of the Clean Water Act.[149] A comprehensive revision to the FWPCA in 1972 added to the existing (but ineffective) ambient requirements.[150] It also replaced the Rivers and Harbors Act's permitting scheme with the national pollutant discharge elimination system (NPDES) for issuing permits.[151]

---

action, the citizen-plaintiff may not continue to prosecute. *Id.* § 7604(b)(1)(B). Actions against EPA, however, only require that notice be given to EPA. *Id.* § 7604(b).

144 *See* MELNICK, *supra* note 89, at 57, 223.

145 *Id.* at 223.

146 42 U.S.C. § 7604(d) (1994).

147 *Id.* § 7604(g)(1); *see* Public Interest Research Group of N.J. v Powell Duffryn Terminals, Inc., 913 F.2d 64, 81-82 (3d Cir. 1990) ("Directing that penalties be paid into the treasury ensures that citizens bring suits to protect the public health and welfare, and not for private gain.").

148 42 U.S.C. § 7604(e) (1994) (stating that "[n]othing in this section shall restrict any right which any person (or class of persons) may have under any statute or common law to seek enforcement of any emission standards or limitation or to seek any other relief . . . ."); *see infra* Part VI.A.

149 384 U.S. 224, 229-30 (1966) (holding accidental spill of valuable jet fuel constituted "discharge" of "refuse" within meaning of § 13); *accord* United States v. Republic Steel Corp., 362 U.S. 482 (1960) (holding discharge of sludge making channel impassably shallow constituted violation of § 13); *see also* Exec. Order No. 11,574, 35 Fed. Reg. 19,627 (Dec. 25, 1970) (directing implementation of permit system under § 13). The Order was enjoined prior to its full implementation due to its failure to comply with the environmental-impact requirements for major federal actions under the National Environmental Protection Act, 42 U.S.C. §§ 4321-4370d (1994). *See* Kalur v. Resor, 335 F. Supp. 1, 14-15 (D.D.C. 1971). Moreover, some permits had already been issued. ROBERT W. ADLER ET AL., THE CLEAN WATER ACT: 20 YEARS LATER 8 (1993) ("The U.S. Army Corps of Engineers . . . issued some water pollution control permits . . . , but not in a systematic and certainly not in a universal fashion."); *see also* Fogarty, *supra* note 61, at 9 (same).

150 Federal Water Pollution Control Act Amendments of 1972, Pub. L. No. 92-500, § 2, 86 Stat. 816, 844-46 (codified as amended at 33 U.S.C. §§ 1251-1387 (1994)). The Act has been reauthorized twice: Clean Water Act of 1977, Pub. L. No. 95-217, § 2, 91 Stat. 1566, 1566 (renaming FWPCA to Clean Water Act); Water Quality Act of 1987, Pub. L. No. 100-4, 101 Stat. 7.

151 *See* 33 U.S.C. § 1342(a)(4)-(5) (1994)(converting old permits to NPDES permits and halting further issuance of new permits under Refuse Act).

1. Permits

The CWA's principle mechanism to achieve its goal of eliminating the discharge of pollutants into navigable waters[152] is its requirement that all point sources obtain an NPDES permit from either EPA or an EPA-approved state program.[153] A permit may issue when a source shows that it will meet both the technological requirements of the Act[154] and that the discharge will not cause the degradation of water quality below the prescribed level.[155] The technology requirements, though, play the dominant role in the CWA scheme.[156]

Each NPDES permit generally contains five conditions, of which two are of particular importance.[157] The three elements of lesser consequence are: 1) self-monitoring and self-reporting by sources;[158] 2) certain standard conditions, such as allowing inspectors to enter;[159] and 3) a duty to minimize permit violations that have "a reasonable likelihood of adversely affecting human health or the environment,"[160] including site-specific

---

[152] *Id.* § 1251(a)(1) (setting goal of zero discharge by 1985). The Act also set an interim goal of water quality "which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water" by July 1983. *Id.* § 1251(a)(2).

[153] *Id.* § 1342(a)-(b); *see also id.* § 1311(a) (making unlawful any discharge not in accordance with permitting sections); *Id.* § 1311(e) (applying limitations to point sources); *Id.* § 1362(6) (defining pollutants); *Id.* § 1362(12) (defining "discharge of pollutant" to mean the addition of any pollutant to covered waters); 33 U.S.C. § 1362(14) (defining "point source" to be any discernible, confined and discrete conveyance"); Weinberger v. Romero-Barclero, 456 U.S. 305, 308-09 (1982) (affirming the district court's holding that bombs dropped from military plane during target practice constitute the addition of a pollutant to waters from a point source); National Wildlife Fed'n v. Consumers Power Co., 862 F.2d 580, 585-89 (6th Cir. 1988) (holding that power company's use of water to generate electricity and whose pumps "transform water containing live fish into water containing live and dead fish" does not discharge pollutants by leaving dead fish in water, and, thus, pollutants were not "added to it from the outside world" (quoting National Wildlife Fed'n v. Consumers Power Co., 657 F. Supp. 989, 1008 (W.D. Mich. 1987))); National Wildlife Fed'n v. Gorsuch, 693 F.2d 156, 172-75 (D.C. Cir. 1982) (holding dams whose discharges change water temperature and levels of dissolved oxygen therein do not constitute "addition" of pollutants within meaning of Act); Sierra Club v. Abston Constr. Co., 620 F.2d 41, 45 (5th Cir. 1980) (agreeing that overflow from mining sediment basins constitutes a point source because water was "initially collected and channeled").

[154] 33 U.S.C. § 1342(a) (1994) (stating that the EPA Administrator may "issue a permit for the discharge of any pollutant, or combination of pollutants . . . upon condition that such discharge will meet . . . all applicable requirements. . . .")

[155] *Id.* § 1312 (stating that "[w]henever . . . discharges of pollutants from a point source or group of point sources . . . would interfere with the attainment or maintenance of that water quality in a specific portion of the navigable waters . . . effluent limitations . . . for such point source or sources shall be established which can reasonably be expected to contribute to the attainment or maintenance of such water quality.").

[156] *See* Fogarty, *supra* note 61, at 5-6.

[157] *See* Karen M. Wardzinski et al., *Water Pollution Control Under the National Pollutant Discharge Elimination System, in* CWA HANDBOOK, *supra* note 61, at 14-16.

[158] 40 C.F.R. § 122.41(*l*)(4) (1996).

[159] *Id.* § 122.41(i) (1996).

[160] *Id.* § 122.41(d) (1996).

conditions such as the duration of the permit.[161] The two most important elements are technology-based effluent limitations[162] and water quality-based limitations.[163] It is these two elements upon which this Article will focus in the following sections.

2. Technology-Based Limitations

The CWA places technology-based limitations on the amount of effluent allowed from all point sources. These restrictions apply at two levels. Initially, the CWA required that by 1977 existing point sources no longer discharge "conventional" pollutants,[164] in excess of the amount that it would if it used the "best practicable control technology currently available" (BPT).[165] The amendments passed in 1977[166] raised the standard to require that the amount of effluent be below that which would occur with the use of the "best conventional pollutant control technology" (BCT) by no later than 1989.[167] The Act charges EPA with developing regulations to

---

[161] *Id.* § 122.46 (1996) (setting maximum duration of five years). *See generally* Wardzinski et al., *supra* note 157, at 16 (discussing various permit conditions).

[162] 40 C.F.R. § 122.44(a) (1996).

[163] *Id.* § 122.44(d) (1996).

[164] *See* 33 U.S.C. § 1314(a)(4) (1994) (listing biological oxygen demand (BOD), suspended solids (TSS), fecal coliform, and pH as examples of conventional pollutants).

[165] *Id.* § 1311(b)(1)(A)(i). BPT is set on the basis of average performance by the best sources within each category of source type. What constitutes the group of best performers is a fluid term, sometimes comprising greater or lesser percentages of sources within an industry. *See* Chemical Mfrs. Ass'n v. EPA, 870 F.2d 177, 208 (5th Cir. 1989) (upholding EPA's decision to reduce the pool considered to the 99 that used a more advanced technology, from which it selected the 71 "best" dischargers, or 25% as consonant with taking the "average of the best"); American Meat Inst. v. EPA, 526 F.2d 442, 453, 462 (7th Cir. 1975) (basing BPT on 63% of the regulated industry that was using a cost-justified lagoon treatment technology); Wardzinski et al., *supra* note 157, at 49 n.64. If an entire industry employs inadequate technology, EPA may base its standards on technology from another industry. *See* Tanners' Council of Am. v. Train, 540 F.2d 1188, 1192 (4th Cir. 1976) (basing BPT on meatpacking effluent treatment technology to set treatment standards for tanning industry); *see also* 33 U.S.C. § 1314(b)(1)(B) (1994) (listing factors to be considered in setting BPT). Additionally, EPA must consider the "total cost of application of technology in relation to the effluent reduction benefits to be achieved." *Id.* Under a "limited cost-benefit analysis," EPA is supposed to require additional technology unless its cost is "wholly out of proportion to" the incremental effluent reductions obtained. *See Chemical Mfrs.*, 870 F.2d at 204 (rejecting "knee-of-the-curve" test which would set BPT at the point at which incremental costs begin to escalate rapidly); *Senate Conference Report and Debates on S. 2770* (Oct. 4, 1972), *reprinted in* 1 A LEGISLATIVE HISTORY OF THE WATER POLLUTION CONTROL ACT AMENDMENTS OF 1972, at 161, 170 (1973) [hereinafter CWA HISTORY].

[166] Clean Water Act Amendments of 1977, Pub. L. No. 95-217, 91 Stat. 1566 (codified as amended at 33 U.S.C. §§ 1251-1387 (1994)).

[167] 33 U.S.C. § 1311(b)(2)(E) (1994). BCT, which may not be less stringent than BPT, may be more stringent if it passes two "cost-reasonableness" tests. The tests derive from the statutory command that EPA consider the "reasonableness of the relationship between" effluent reduction and the benefits derived therefrom, as well as a comparison of such costs with those of publicly owned treatment works (POTW). *Id.* § 1314(b)(4)(B). One test to establish BCT compares the costs of a potential technology to those for POTWs. Wardzinski et al., *supra* note 157, at 18-19. The other compares the average cost of removing a pollutant under BPT to the average cost of removing each additional pound removed by BCT instead of BPT. *Id.* If the ratio of the latter cost to the former is less than 1.29 to 1, the incremental

identify what amount of effluent reduction would be possible through the application of BPT and BCT for different classes and categories of point sources.[168] As with the Clean Air Act, the source need not *use* the particular technology. Rather, the source must not discharge or emit any more pollutants than it would if it were to use the required technology.[169]

The CWA also regulates the discharge of toxic and nonconventional pollutants, but more stringently, requiring the application of the "best available technology economically achievable" (BAT).[170] BAT is set in reference to what the best performer in an industrial category can achieve.[171] None of these standards, of course, makes reference to the location at which the effluent will be discharged.

The CWA sets separate limitations for new sources in a category for which EPA has promulgated a new source performance standard (NSPS).[172] An NSPS subjects new sources to effluent limits that reflect the level of reduction achievable through the application of the "best available demonstrated control technology."[173] Each category of source, as well as types and sizes within each category, may face a different limitation.[174] EPA treats a source that has yet to commence discharging, has yet to receive an NSPS permit, and is not a new source as a "new discharger."[175]

---

pounds are considered sufficiently "cheap" to require BCT. *Id. See Chemical Mfrs.*, 870 F.2d at 204-05 (BPT does not impose "knee-of-curve" cost test, but rather only precludes technology whose cost is "wholly out of proportion" to benefits; however, BCT does look at costs additional to those for BPT, but it does not supplant the cost test for BPT); American Paper Inst. v. EPA, 660 F.2d 954, 960-61, 963-64 (4th Cir. 1981) (rejecting initial application of cost test; upholding POTW comparison test); 51 Fed. Reg. 24,974, 24,976 (July 9-10, 1986) (setting forth the methodologyof POTW comparison test and industry cost-effectiveness test); Wardzinski et al., *supra* note 157, at 18-19. In practice, rarely is BCT set to be more stringent than BPT. *Id.* at 19.

168 33 U.S.C. § 1314(b) (1994); *see* 40 C.F.R. §§ 405-71 (1996) (setting forth regulations and standards for various point source categories for BPT, BCT, and BAT).

169 Wardzinski et al., *supra* note 157, at 16.

170 33 U.S.C. § 1311(a)(2)(A) (1994); *see id.* § 1317(a)(1), (2) (specifying toxic pollutants); 40 C.F.R. § 401.15 (1996) (listing toxic pollutants); Wardzinski et al., *supra* note 157, at 49 n.74 (noting nonconventional pollutants are all pollutants neither conventional nor toxic).

171 *See* Kennecott v. EPA, 780 F.2d 445, 448 (4th Cir. 1985) ("In setting BAT, EPA uses not the average plant, but the optimally operating plant, the pilot plant which acts as a beacon to show what is possible."). The performance may be based on actual or model performance, *see e.g.*, American Paper Inst. v. Train, 543 F.2d 328, 351-53 (D.C. Cir. 1976); performance transferable from other comparable industries, *Kennecott*, 780 F.2d at 453-54; or performance in comparable foreign sources, American Frozen Food Inst. v. Train, 539 F.2d 107, 132 (D.C. Cir. 1976). The CWA commands EPA to consider the same factors for BAT as it does for BPT and BCT. 33 U.S.C. § 1314(b)(2)(B) (1994). However, cost plays a minimal role in EPA's decision as to what constitutes BAT, the only requirement being that the technology be economically achievable. *See id.* § 1314(b)(2)(A); American Petroleum Inst. v. EPA, 661 F.2d 340, 355 (5th Cir. Unit A Nov. 1981); Association of Pac. Fisheries v. EPA, 615 F.2d 794, 817 (9th Cir. 1980).

172 33 U.S.C. § 1316(b) (1994). Therefore, a source is considered "new" only if a standard applicable to that source has been promulgated. *Id.* § 1316(a)(2).

173 *Id.* § 1316(a)(1).

174 *Id.* § 1316(b)(2). Section 306(b) provides a minimum list of categories of sources, including for example pulp and paper mills, feedlots, and petroleum refining. *Id.* § 1316(b).

175 40 C.F.R. § 122.2 (1996).

New dischargers are treated, for most purposes, like new sources.[176] The quid pro quo for new sources, in exchange for the stricter requirements, protects them for ten years from more stringent technology-based standards.[177]

The technology requirements of the CWA face the same criticisms as NSPS and other Clean Air Act requirements for technology. The effluent reductions do not vary according to the location of a plant or the ability of the water to absorb the pollution. The technology requirements do not differentiate between a factory locating on a pristine trout stream and a plant wishing to discharge pollution into the ocean. The technology requirements, therefore, will not influence a plant's choice of location.

3. Water-Quality Requirements

A would-be discharger must show that the discharges will not cause a violation of water quality standards to obtain an NPDES permit.[178] Roughly comparable to ambient air quality standards in the CAA, water quality standards aspire to provide for the "protection and propagation of fish, shellfish, and wildlife, and provide[ ] for recreation in and on the water."[179] The CWA recognizes that it is the "primary responsibilit[y] . . . of States to prevent, reduce, and eliminate pollution,"[180] and therefore directs states to establish water quality standards "taking into consideration their use and value for public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, and other purposes."[181] Each state's standards must specify the designated use for each water body and the discharge criteria necessary to obtain that quality.[182] A state may, therefore, indicate different uses for different waters, requiring some to be cleaner than others.

Whenever discharges from a source will cause a body of water to violate the applicable water quality standards, the CWA allows EPA to direct supplemental effluent limitations, "which can reasonably be expected to contribute to the attainment or maintenance of such water quality."[183]

---

176 *See* Karen M. Wardzinski et al., *National Pollutant Discharge Elimination System Permit Application and Issuance Procedures*, *in* CWA HANDBOOK, *supra* note 61, at 58, 82.

177 *See* 33 U.S.C. § 1316(d) (1994).

178 *Id.* § 1341.

179 *Id.* § 1251(a)(2).

180 *Id.* § 1251(b). Furthermore, states are free to adopt more stringent standards than those required by federal law. *See id.* § 1370.

181 *Id.* § 1313(c)(2)(A). Should a state fail to perform this command to EPA's satisfaction, EPA may promulgate regulations for the state. *Id.* § 1313(b).

182 *See* 40 C.F.R. §§ 130.3, 131.6 (1996). Generally these guidelines take the form of numerical limits on assorted pollutants. *See* Wardzinski et al., *supra* note 157, at 28-32.

183 33 U.S.C. § 1312(a) (1994). The water quality standards have developed slowly and are not comprehensive. ADLER ET AL., *supra* note 149, at 120-28. Monitoring has also been sporadic. *Id.* at 129-32; *see also* Fogarty, *supra* note 61, at 9 n.100 (noting "control-at-the-source" has been more effective than ambient standards).

Alternatively, states (or EPA) may calculate the maximum amount of a pollutant a receiving water body can assimilate daily. 33 U.S.C. § 1313(d)(1)(C) (1994). This total maximum daily load (TMDL) may then be apportioned among contributing sources. 40 C.F.R.

This means that a state can influence decision making on location by making it more difficult to discharge pollution in some streams than in others. Although these standards are likely to be set by reference to the current amounts of pollution and not by the extent to which the pollution is already a nuisance, the ambient standards do introduce some incentives to locate on dirtier bodies of water.

4. Enforcement

The CWA provides multiple avenues for enforcement—criminal, civil, and administrative. Criminal sanctions vary with the culpability of the defendant.[184] EPA may also bring administrative enforcement actions for relatively minor violations.[185] However, "EPA has traditionally enforced the CWA primarily by bringing civil actions."[186] Civil actions generally enforce discharges in violation of an NPDES permit, or those made without a permit.[187] EPA may seek compliance[188] or penalties.[189] The statute provides for a maximum fine of $25,000 per day in violation, but the actual penalty is to be determined in light of several considerations.[190] The economic benefit of noncompliance to the violator is "the most significant factor affecting the amount of the civil penalty assessed."[191]

The CWA contains a citizen-suit provision, modeled on the one in the Clean Air Act. "Any citizen may commence a civil action . . . against any person . . . alleged to be in violation of an effluent standard," or against

---

§ 130.2(i), 130.7 (1996); Wardzinski et al., *supra* note 157, at 35. The massive amount of information required and the complicated scientific calculations necessary to calculate TMDL properly have made their use infrequent. *See* Wardzinski et al., *supra* note 157, at 36, 54 n.174 (noting only three hundred state-issued TMDLs in 1989); *id.* (noting only one federal TMDL).

184 33 U.S.C. § 1319(c) (1994). Negligent violations of a permit are punishable by fines between $2500 and $25,000 per day of violation and one year in prison. *Id.* § 1319(c)(1). Knowing permit violations double the potential fines and bring a maximum sentence of three years in prison. *Id.* § 1319(c)(2). A violator who knowingly puts a "person in imminent danger of death or serious bodily injury" risks a fine of up to $250,000 ($1 million for businesses) and 15 years in prison. *Id.* § 1319(c)(3)(A). Repeat offenses double the applicable fines and prison sentences. *Id.* § 1319(c)(1)-(3)(A).

185 There are two classes of violations. Class I carries a maximum fine of $25,000 and a hearing only upon the request of the charged party. *Id.* § 1319(g)(2)(A). Class II penalties require a hearing, and the maximum penalty increases to $125,000. *Id.* § 1319(g)(2)(B).

186 Karen M. McGaffey et al., *Enforcement*, *in* CWA HANDBOOK, *supra* note 61, at 195, 196.

187 *See id.* at 197.

188 33 U.S.C. § 1319(a)(3) (1994) (giving the Administrator authority to require compliance of permittees).

189 *Id.* § 1319(b) (giving the Administrator authority to bring civil actions for noncompliance).

190 *Id.* § 1319(d) (listing other factors that a court should consider in assessing penalties).

191 McGaffey et al., *supra* note 186, at 204. This makes sense because "unless the [violator] is fined an amount at least as great as the economic gain in not complying with the regulations, the statute serves little deterrent value." Atlantic States Legal Found. v. Universal Tool & Stamping Co., 786 F. Supp. 743, 749 (N.D. Ind. 1992); *see supra* note 141 (discussing parallel provision in Clean Air Act).

EPA for a failure to perform a nondiscretionary duty.[192] Remedies available to citizens consist of injunctions and fines.[193] Like the citizen-suit provisions of the CAA, the CWA's citizen-suit provisions create an enforcement role for interested citizens. Further, the citizen-suit provisions are not intended to restrict any other rights "under any statute or common law."[194]

D. Concluding Thoughts

Both the CWA and the CAA make their primary focus technology requirements. Stipulating uniform controls simplifies administration and appears equitable. Because all sources of a particular type must use the same technology, industrial competitors are not disadvantaged relative to one another.[195] The focus on pollution output,[196] however, ignores the varying effects pollution may have depending on the location of its emission. The ambient air and water quality standards attempt to ameliorate this problem.[197] Both Acts create some incentives to locate in dirtier areas, so long as those areas are not too dirty. To a substantial extent, however, the cleanliness of an area will be a result of historical accident, such as a river used primarily to carry away pollution. Furthermore, ambient standards may not provide adequate protection from unreasonable pollution. They may not be sufficiently strict; measurement inadequacies may allow local hot spots. By no means do statutory mechanisms not play an important role. They do, however, suffer from a national perspective that focuses more on total production of pollution than on the specific location of that pollution. The next Part turns to the value that using nuisance law as a

---

[192] 33 U.S.C. § 1365(a) (1994). The citizen, defined as "any interested person," *id.* § 1365(g), may commence the action only if: 1) 60 days pass from the date of notification to EPA, the violator, and the state in which the violation is occurring, and 2) if EPA has not begun to prosecute the violation on its own. *See id.* § 1365(b). "Effluent standard or limitation" is interpreted broadly to include virtually all requirements of the CWA. *Id.* § 1365(f). Unlike EPA, citizens may not bring actions for violations wholly in the past, but rather only for ongoing violations. *See* Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Found., 484 U.S. 49, 56-59 (1987).

[193] 33 U.S.C. § 1365(a) (1994). Fines, however, are paid into the Treasury. *See* Public Interest Research Group of N.J. v. Powell Duffryn Terminals, Inc., 913 F.2d 64, 81-82 (3d Cir. 1990) ("Directing that penalties be paid into the treasury ensures that citizens bring suits to protect the public health and welfare, and not for private gain."). Attorneys' fees and court costs may also be awarded. 33 U.S.C. § 1365(d) (1994).

[194] *Id.* § 1365(e) ("Nothing in this section shall restrict any right which any person (or class of persons) may have under any statute or common law to seek enforcement of any effluent standards or limitation or to seek any other relief . . . ."); *see infra* Part VI.

[195] As discussed in Parts III.B and III.C, *supra*, the statute actually requires that a specific emission rate be met. The practical effect is that everyone adopts the technology that achieves that rate.

[196] Technically, the use of technology controls is an "input" to production. I use the term "output" here, however, in contrast with harms created. In other words, output is production of pollutants; harm is their consumption.

[197] *But cf.* 1 WILLIAM H. RODGERS, JR., ENVIRONMENTAL LAW § 3.10, at 258 (1986) (SIPs "have failed conspicuously to achieve ambient goals . . ."); 2 *id.* § 4.18, at 278-80 (discussing failure of states and EPA to enforce ambient requirements in face of permit-issuing expediency).

supplemental enforcement mechanism provides and addresses the potential objections to such a dual system.

IV. State Preemption of Common Law

A. Background

Both the Clean Air Act (CAA) and the Clean Water Act (CWA) delegate to states the authority to administer the provisions of the Acts once a state has demonstrated adequate means to enforce the federal provisions. The CWA allows any state to submit a proposal to EPA for administering the federal law at the state level, so long as the plan will adequately enforce the effluent and performance standard provisions of the Act.[198] The CAA similarly delegates to states the power to develop state implementation plans (SIPs).[199] Both Acts, therefore, contemplate state primacy in their implementation and administration.

States typically enact laws that establish a state administrative agency to implement and enforce the provisions of the federal environmental laws. States remain free to adopt more stringent standards under both the CWA[200] and CAA.[201] State laws, therefore, may create additional, more extensive regulation.[202] Many states do not fully implement both Acts, thereby complicating compliance procedures.[203] In general, however, state programs mimic the federal pollution laws, differing only in stringency[204] or comprehensiveness.[205] The resulting system of state regulation therefore pays no more heed to location than do the federal statutes.

Federal pollution laws do not preempt state nuisance law.[206] State statutory schemes fall into four categories of preemption of nuisance actions. First, the vast majority of states specifically preserve nuisance remedies in their statutes or their courts have inferred such preservation.[207]

---

198 33 U.S.C. § 1342(b) (1994). EPA enforces the Act in states which do not establish their own adequate program. *Id.* § 1342(a).

199 42 U.S.C. § 7410 (1994).

200 33 U.S.C. § 1370(1)(B) (1994).

201 42 U.S.C. § 7416(2) (1994).

202 *See generally* Deborah H. Jessup, Guide to State Environmental Programs (2d ed. 1990) (describing state regulatory authorities and procedures and noting states with programs that go beyond federal requirements).

203 *See generally id.*

204 *See, e.g., id.* at 73 (Arkansas air quality statute); *id.* at 99-100 (Colorado air quality statute); *id.* at 139 (Florida air quality statute); *id.* at 152-53 (Georgia water quality statute); *id.* at 174 (Idaho water quality statute); *id.* at 267 (Maryland air quality statute); *id.* at 368 (Nevada air quality statute); *id.* at 441 (North Dakota air quality statute); *id.* at 566 (Vermont air quality statute); *id.* at 627 (Wyoming air quality statute).

205 *See, e.g., id.* at 85-86 (California regulates greater numbers of toxics); *id.* at 172 (Idaho air quality statute incorporates offset trading in its state plan); *id.* at 475 (Oregon air quality statute regulates smaller quantities of pollutants).

206 *See* International Paper Co. v. Ouellette, 479 U.S. 481, 497 (1987) ("The Saving clause specifically preserves other state actions . . . ."). The notable exception is for interstate pollution. *See infra* Parts V.C, VI.B.

207 *See* Appendix. The states in this category are all states except Alaska, New Jersey, North Dakota, Oregon, and Rhode Island.

Second, New Jersey's air pollution statute preserves remedies existing for violations of the statute, implicitly suggesting that no nuisance remedy remains to challenge pollution emitted in compliance with a permit.[208] Third, Alaska explicitly preempts nuisance actions when the source of emissions or effluents has obtained a permit from the proper state authority.[209] Finally, the vitality of nuisance law in some states remains unclear because of non-specific statutory enactments and an absence of dispositive judicial decisions.[210]

B. The Justification for the Preservation of Nuisance Law

The following example presents a comparison between a regime that preempts nuisance law and one that does not. The essential point is that the availability of nuisance law forces polluters to consider location more carefully. Assume that State A contains a single air quality region, one which is in attainment of NAAQS. Further assume that State A has a major city, C, which constitutes the major population center. A new factory, which will constitute a major source under the CAA, wishes to locate in the state.

If only statutes apply, and they preempt common law, the factory may locate anywhere in the state without regard to the effects of its pollution. Regardless of whether the area is in attainment or not, the source will need to meet the same standards. The permissible incremental pollution will be the same, as will the offset rate. The technology requirements likewise will be the same regardless of where within the state the factory locates. Therefore, it will likely choose a place where property is cheap (perhaps in a lower-income district). It will also try to locate near its potential employment base in order to attract workers most cheaply. Chances are these factors will lead the company to locate near the city, and consequently to increase pollution near a large number of people.

The CWA will have a somewhat greater effect on river selection. Because a polluter would need to meet different ambient water standards depending upon the location of the facility, the state could influence location by statute. This assumes that the dirtier rivers are not already nuisances and that the state has accurately categorized all its rivers.

Contrast this result to one under a statutory scheme that allows nuisance suits. The would-be factory then must choose its location more carefully because it must consider the actual effects its pollution will have.

---

208 *See* Appendix.

209 *See* Appendix. Alaska specifically states that no nuisance action may be brought if the polluter is in compliance with permits. ALASKA STAT. § 09.45.230(b) (Michie 1996). This statute apparently passed at the behest of a state senator whose district includes a pulp mill "plagued by [nuisance] lawsuits for several years." Jack E. Phelps, *Legislature Boots Alaska Businesses*, ALASKA BUS. MONTHLY, July 1, 1994, at 29. The legislature, apparently fearing a challenge to the law, requires any company invoking the statute's protection to indemnify the state for the cost of defending any inverse condemnation claim. ALASKA STAT. § 09.45.230(f) (Michie 1996).

210 *See* Appendix. The states in this category are North Dakota, Oregon, and Rhode Island.

It might now locate in a traditionally industrial area in order to have a viable coming-to-the-nuisance defense. Alternatively, the factory could locate far out in the countryside, thereby minimizing its potential liabilities because the pollution will harm fewer people. Lower employment costs, however, might lead it to locate in the city and pay the commensurate higher damages. In that case, the decreased employment costs may outweigh the cost of paying damages. The end result in this regime is a factory that emits the same (or lower) amounts of pollution *and* is located so that it minimizes net harm.

C. Legal Standards for Preemption of Common Law

1. The Judicial Presumption Against Preemption

State legislatures enjoy virtually unlimited "police powers" to enact regulatory schema. The breadth of these police powers renders challenges on legislative-authority grounds virtually futile, and consequently rare.[211] Whether the legislature intended the new statutory right to displace common-law rights is less easily determined than the scope of legislative power. Most state courts presume a statute does not replace the common-law mechanisms for vindicating rights in the legislative field, and to overcome this presumption, the legislature must present a clear and manifest intent to preempt common-law remedies.[212] This presumption also leads

---

[211] *See* Nebbia v. New York, 291 U.S. 502 (1934) (upholding New York milk price regulation scheme as reasonably adopted to promote public welfare); *see also* Silver v. Silver, 280 U.S. 117, 122 (1929) ("[T]he Constitution does not forbid the creation of new rights, or the abolition of old ones . . . to attain a permissible legislative objective." Therefore, a state may statutorily exempt an automobile operator from liability for guests in his car.); New York Cent. R.R. Co. v. White, 243 U.S. 188, 198, 200-01, 208 (1917) (upholding workers' compensation laws in face of constitutional challenge because "[n]o person has a vested interest in any rule of law entitling him to insist that it shall remain unchanged for his benefit."); Ives v. South Buffalo Ry. Co., 94 N.E. 431, 436-40 (N.Y. 1911) (striking down New York's "plainly revolutionary" workers' compensation scheme as constitutionally impermissible because to compel an employer to compensate an employee for injuries not the employer's fault is logically equivalent to requiring a rich man to compensate a poor man on grounds that the former has money and compensation prevents the latter from becoming a ward of the state), *overruled by* N.Y. CONST. art. I, § 18.

[212] Ohio River Sand Co. v. Kentucky, 467 S.W.2d 347, 349 (Ky. 1971) ("We have held that the intention to abrogate the common law will not be presumed and that the intention to repeal it by statute must be clearly apparent."); *accord* Carrow Co. v. Lusby, 804 P.2d 747, 750 (Ariz. 1990) ("Statutes are not to be construed as effecting any change in the common law beyond that which is clearly indicated. . . . Therefore, absent a manifestation of legislative intent to repeal a common-law rule, we will construe statutes as consistent with the common law." (citations omitted)); White v. Arkansas, 717 S.W.2d 784, 787 (Ark. 1986) (holding that courts must find plain language in a statute that abrogates common law); Thornber v. City of Fort Walton Beach, 568 So. 2d 914, 918 (Fla. 1990) ("Whether a statutory remedy is exclusive or merely cumulative depends upon the legislative intent as manifested in the language of the statute. The presumption is that no change in the common law is intended unless the statute is explicit and clear in that regard." (citations omitted)); Kapadia v. Preferred Risk Mut. Ins. Co., 418 N.W.2d 848, 851 (Iowa 1988) ("We do not construe a statute so as to take away common-law rights existing at the time of the statute's enactment unless that result is imperatively required."); *In re* S.B.L., 553 A.2d 1078 (Vt. 1988) ("Statute can be construed as changing common law only where that intent is expressed clearly and unam-

courts to resolve uncertainty and potential inconsistencies between the statute and the common law so as to preserve common law.[213] Furthermore, when a statute essentially codifies a pre-existing common-law right, courts usually read the statute to create a supplementary enforcement mechanism rather than an exclusive remedy.[214] Thus, courts are wan to

---

biguously."); *see* Pottock v. Continental Can Co., 210 A.2d 295, 296 (Del. Ch. 1965) (holding that the legislature may not deprive court of its "traditional [equity] jurisdiction . . . unless an equivalent remedy [i]s provided and also unless that remedy was expressly or by necessary implication made exclusive."); *see also* Metropolitan Property & Liab. Ins. Co. v. Insurance Comm'r of Pa., 580 A.2d 300, 302 (Pa. 1990) ("The legislature must affirmatively repeal existing law or specifically preempt accepted common-law for prior law to be disregarded [per Pennsylvania statute].").

[213] *Thornber*, 568 So. 2d at 918 ("Statutory abrogation by implication of an existing common-law remedy, particularly if the remedy is long established, is not favored."); Holtz v. Board of Comm'rs of Elkhart County, 560 N.E.2d 645, 647 (Ind. 1990) ("[A] statute . . . which is in derogation of the common law, must be strictly construed."); Mason v. Schumacher, 439 N.W.2d 61, 67 (Neb. 1989) ("[S]tatutes which effect a change in the common law or take away a common law right should be strictly construed . . . ." (quoting Paulsen v. Courtney, 277 N.W.2d 233, 235 (Neb. 1979) (alterations in original))); Bruce v. Dyer, 524 A.2d 777, 782 (Md. 1987) ("[S]tatutes in derogation of the common law are to be strictly construed."); *accord* Heard v. Neighborhood Newspapers, Inc., 383 S.E.2d 553, 554 (Ga. 1989). *Contra* Fuller v. Odem, 741 P.2d 449, 452 & n.8 (Okla. 1987) ("[S]tatutes in derogation of the common law are to be liberally construed in order to promote their object [per Oklahoma statute]."); Asay v. Watkins, 751 P.2d 1135, 1136 (Utah 1988) (rejecting normal common-law rule of strict construction in favor of liberal construction per Utah statute). An interesting question would be whether statutes mandating a narrow construction of common law are themselves a violation of the common-law rule advancing a liberal construction of the common law.

[214] *See* Rojo v. Kliger, 801 P.2d 373, 381 (Cal. 1990) ("[W]here a statutory remedy is provided for a preexisting common-law right, the newer remedy is generally considered to be cumulative, and the older remedy may be pursued at the plaintiff's election." The court thereby preserved a common-law employment-discrimination cause of action.); Watson v. Brown, 686 P.2d 12, 15 (Haw. 1984) ("A statutory remedy is, as a rule, merely cumulative and does not abolish an existing common-law remedy unless so declared in express terms or by necessary implication." Therefore, self-help remedy remains available to landlord despite new statutory eviction scheme.); *see also* Tucson Gas & Elec. Co. v. Schantz, 428 P.2d 686, 688-89 (Ariz. App. 1967) (preserving the common-law right of inspection of corporate books in addition to new statute specifying certain requirements for such inspections); Virdanco, Inc. v. MTS Int'l, 820 P.2d 352, 355 (Colo. Ct. App. 1991) (stating that although an act may create new remedies, those that also existed at common law do not cease to exist absent clear legislative intent); Campbell v. Criterion Group, 605 N.E.2d 150, 156 (Ind. 1992) (holding that the statutory fee structure for civil appeals does not remove equitable right to proceed *in forma pauperis*); Hodges v. S.C. Toof & Co., 833 S.W.2d 896, 898-99 (Tenn. 1992) (holding that because common-law retaliatory-discharge action was created prior to statutory enactment, the new statute did not provide exclusive cause of action). *But see* National CSS, Inc. v. City of Stamford, 489 A.2d 1034, 1041 (Conn. 1985) ("Where, however, a statutory scheme exists for the recovery of a benefit that is also recoverable at common law, the common-law right may be resorted to only where the statutory provisions are inadequate." Therefore, a tax refund could only be obtained through statutory means.).

In contrast, when the statute creates new rights, it does not create new common-law counterparts. *See* Johnson v. University of Chicago Hosps., 982 F.2d 230, 232 (7th Cir. 1992) (holding that "[u]nder Illinois law, statutory remedies are exclusive only to the extent they are linked to duties unknown at common law."); Dudewicz v. Norris-Schmid, Inc., 503 N.W.2d 645, 649-50 (Mich. 1993) (stating that statutory whistle-blower protection did not include common-law remedy, and, therefore, statutory remedies were exclusive).

eliminate common-law, and consequently, it typically survives the enactment of statutes covering similar areas of law.[215]

When a statute is silent about the preservation of common law, courts may still infer preemption from the pervasiveness of the legislative scheme.[216] Courts attempt to measure the extent to which the retention of common law would interfere with the efficacy of the statute. For example, medical malpractice plaintiffs have challenged statutes that place a cap on the amount of recovery.[217] Retaining the potentially unlimited liability of common law would run directly contrary to the statute's objective of reducing medical liability to preserve the liability-insurance industry. Therefore, the common law cannot provide supplementary enforcement. In contrast, it is less certain that alternative mechanisms for allocating liability, such as a workers' compensation schemes, require preemption. The law might, for example, provide an opt-out provision allowing a plaintiff to resort to common law.[218]

One may define the goal of a pollution statute in one of two ways. First, the statute may seek to lower pollution emission levels so that ambient amounts of pollution decline by using mechanisms that recognize the inadequacy of nuisance law to achieve this result. Alternatively, the legislation may primarily create protection from suits for polluters. By obtaining a permit, polluters acquire an entitlement to emit some preestablished amount of various pollutants. Under this theory, the statute creates certainty where the unpredictability of nuisance law had previously created uncertainty. This echoes the justification for workers' compensation laws. The employer accepts no-fault liability in exchange for a cap on damages. Likewise, in exchange for greater limitations on emissions than perfectly-enforced nuisance law would create, the polluter obtains an entitlement to emit a set amount of pollution with certainty. Congress, however, steered clear of suggesting that permits grant such an

---

215 *See* 1 RODGERS, *supra* note 197, § 2.11, at 97 ("[C]ourts are not inclined to relinquish sweeping powers to correct technological and land use abuses unless legislatures unmistakably dictate the terms of surrender.").

216 *See Rojo*, 801 P.2d at 381 ("The general rule is that statutes do not supplant the common law unless it appears that the legislature intended to cover the entire subject."); *Thornber*, 568 So. 2d at 918 ("Unless a statute unequivocally states that it changes the common law, or is so repugnant to the common law that the two cannot coexist, the statute will not be held to have changed the common law."). *Compare* Detling v. Edelbrock, 671 S.W.2d 265, 271-72 (Mo. 1984) (limited statutory remedies for recovering damages for warranty of habitability violations did not create adequate substitute for common law, making preemption inappropriate), *with* I.E. Assocs. v. Safeco Title Ins. Co., 702 P.2d 596, 598 (Cal. 1985) (stating that when a statute minutely describes conduct, limitations, and application, it suggests a legislative intent to preempt).

217 *See, e.g.*, Butler v. Flint Goodrich Hosp. of Dillard Univ., 607 So. 2d 517 (La. 1992); Trujillo v. City of Albuquerque, 798 P.2d 571 (N.M. 1990); Jelinek v. St. Paul Fire & Cas. Ins. Co., 512 N.W.2d 764 (Wis. 1994).

218 No state provides an opt-out provision for after the injury has occurred. *See* 2A ARTHUR LARSON, THE LAW OF WORKMEN'S COMPENSATION § 65.10, at 12-1 (1976). Some jurisdictions allow an employee or employer to opt out before an injury occurs. *Id.* § 65.11, at 12-118 to 12-121.

entitlement to pollute.[219] There is no provision that evinces a congressional concern over ensuring sources may emit all of the pollution that their permits allow. The first rationale—that statutes intend to supplement the shortcomings of nuisance law—consequently has the more persuasive justification.

Because the interest in protecting polluters' rights to emit all their permits allow is no longer persuasive, there remains no strong countervailing reason for barring nuisance suits. Such suits advance three goals. First, they can provide compensation to people damaged by pollution. Second, they can encourage further reductions in pollution, a goal consistent with the Acts' desire to reduce emissions and effluents.[220] Third, and most important to this Article's thesis, nuisance suits add to the calculus a location element missing from the statutes.

2. Challenges to Preemption Under State Constitutions

A statute that alters rules of liability and supplants the common-law compensatory mechanism may face an equal-protection challenge. For example, several states have passed laws which cap damages recoverable for medical malpractice,[221] ostensibly to preserve the fiscal viability of the state's health care system. Equal-protection challenges to such statutes contend that the cap discriminates between the class of people whose injuries deserve more compensation than the cap allows (and therefore who cannot recover fully) and the class whose relatively minor injuries do not merit damages at a level constrained by the cap.[222] Unsurprisingly, state courts resolve such challenges differently. Most review statutes with great deference to the legislature, virtually always allowing the scheme to stand.[223] Some courts, in contrast, are less deferential to legislation that

---

[219] *See* 42 U.S.C. § 7401 (1994) (not including among purposes of CAA a protection of polluters); *id.* § 7651b(f) ("[A]llowance[s] do[ ] not constitute a property right. Nothing in this subchapter or in any other provision of law shall be construed to limit the authority of the United States to terminate or limit such authorization.").

[220] *See* 33 U.S.C. § 1251(a)(1) (1994) ("[I]t is the national goal that the discharge of pollutants into the navigable waters be eliminated . . . ."); 42 U.S.C. § 7401(b)(1) (1994) (stating Congress' goal was "to protect and enhance the quality of the Nation's air resources . . . .").

[221] *See, e.g.*, LA. REV. STAT. ANN. § 40.1299.42 (West 1992 & Supp. 1996); N.M. STAT. ANN. § 41-5-6 (Michie 1978 & Supp. 1997); WIS. STAT. ANN. § 893.55 (1997).

[222] Arneson v. Olson, 270 N.W.2d 125, 135-36 (N.D. 1978) (holding that the limitation on medical malpractice liability violates state and federal equal protection because it limits recovery for those most seriously injured, and thus fails to provide them a reasonable quid pro quo); Simon v. St. Elizabeth Medical Ctr., 355 N.E.2d 903, 904 (Ohio 1976) (finding that such a cap violates equal protection); Baptist Hosp. of S.E. Tex., Inc. v. Baber, 672 S.W.2d 296, 298 (Tex. Ct. App. 1984) (holding Texas's limitation on medical malpractice awards constituted an equal protection violation of rights of parties more greatly damaged).

[223] Johnson v. St. Vincent Hosp., Inc., 404 N.E.2d 585, 599 (Ind. 1980) (holding that the limitation on recovery is not irrational and is necessary to insurance scheme); Edmonds v. Murphy, 573 A.2d 853, 860-67 (Md. Ct. App. 1990) (rejecting equal protection challenge to cap on non-economic damages because the law implicates neither a fundamental right nor a suspect class and was otherwise reasonable and non-arbitrary), *aff'd*, 601 A.2d 102, 112-13 (Md. 1992) (finding no "right" to non-economic damages because Maryland Constitution specifically allows statutory modification of common law); *see also* Marion v. DeKalb County,

appears to treat people unequally.[224] These decisions evince a stronger concern for those harmed by the statute's operation and perform more extensive interest balancing with a less deferent eye. Even courts that provide a more searching review do not regularly invalidate legislation. Therefore, success on an equal-protection claim of this sort is rare.

The alternative is a due process challenge, which contends that the elimination of a common-law right deprives a person of "property." When a legislature reduces or eliminates a person's ability to recover damages it putatively has taken an asset from her. This person may contend that the state took property from her arbitrarily and thereby violated due process.[225] Courts generally reject this property-rights approach to common-law preemption because the alleged deprivation took away nothing to which the plaintiff had a preexisting rightful claim.[226] In the end, the equal

---

Ga., 821 F. Supp. 685, 689 (N.D. Ga. 1993) (holding preservation of county treasury provides sufficient justification to defeat equal protection claim that bar on recovery for county-caused nuisances cannot be reconciled with the absence of such immunity for towns); Samson v. Greenville Hosp. Sys., 368 S.E.2d 665, 667-69 (S.C. 1988) (holding goal of ensuring supply of blood products provides sufficient justification to absolve blood providers of liability based on implied-warranty theory).

Such deference accords with Supreme Court precedent that allows states vast leeway in decisions concerning economic regulation. *See, e.g.*, Railway Express Agency v. New York, 336 U.S. 106, 109-10 (1949) (refusing to question the soundness or wisdom of New York traffic regulations); Williamson v. Lee Optical of Okla., Inc., 348 U.S. 483, 488-89 (1955) (condemning the use of Due Process Clause to review state regulations for accordance with particular ideals).

224 City of Dover v. Imperial Casualty & Indem. Corp., 575 A.2d 1280, 1286 (N.H. 1990) (holding that limitation of municipal liability to stricter-than-negligence for injuries incurred on streets and sidewalks denies equal protection to parties injured in certain ways by municipality); Carson v. Maurer, 424 A.2d 825, 830-31, 836 (N.H. 1980) (right to recover in tort, although not "fundamental," is sufficiently important to merit more judicial scrutiny than rational basis test provides. Unless state can show that the restriction of private rights is outweighed by the benefit conferred upon the public, there is an equal protection violation. Here the burden on seriously injured plaintiffs is too large to sustain the legislation.); Trujillo v. City of Albuquerque, 798 P.2d 571, 580-81 (N.M. 1990) (holding limitation of municipal liability under state law violated equal protection and was not substantially related to important government interest of reducing municipal outlays as rare large award may not substantially affect these outlays).

225 *Arneson*, 270 N.W.2d at 135 ("[W]hile there need not always be a quid pro quo, any limitation or elimination of a pre-existing right may not be arbitrarily imposed."). *Compare* Brewer v. Ski-Lift Inc., 762 P.2d 226, 230 (Mont. 1988) (rejecting promotion of Montana ski industry as reason to eliminate ski area's duty of care to reduce hazards inherent to sport of skiing), *with* Northcutt v. Sun Valley Co., 787 P.2d 1159, 1165-66 (Idaho 1990) (holding Idaho statute that eliminates duty of ski-area operators to lessen inherent risks of skiing was permissible in light of its goal of advancing ski-operator interests in order to enhance tourism in Idaho).

226 *E.g.*, Fein v. Permanente Medical Group, 695 P.2d 665, 679 (Cal. 1985) ("'[A] plaintiff has no vested property right in a particular measure of damages . . . . So long as the measure is rationally related to a legitimate state interest, policy determinations as to the need for, and the desirability of, the legislative enactment are for the Legislature.'" (emphasis omitted) (quoting American Bank & Trust Co. v. Community Hosp., 683 P.2d 670, 676 (Cal. 1984)), *cert. denied*, 474 U.S. 892 (1985)); Strock v. Pressnell, 527 N.E.2d 1235, 1241 (Ohio 1988) ("'Rights of property cannot be taken away or interfered with without due process of law. But there is no property or vested right in any of the rules of the common law, as guides

protection and due process theories merge because each relies on the arbitrariness of purpose in determining the legislation's validity.[227]

Should a state eliminate nuisance actions against polluters, they would, in effect, deprive a person of all ability to recover damages.[228] The U.S. Supreme Court has left unresolved whether a state may eliminate all recovery or whether it needs to leave some minimum recovery or quid pro quo.[229] The Court's decisions suggest that a state has no federal constitutional obligation to provide a compensatory mechanism in a legislative scheme that it passes as a replacement for common law.[230] Other than the requirement that the legislature expressly preempt common law, the judiciary scarcely places constraints on a state's exercise of its legislative power. To say that the statutory pollution regime replaces nuisance law merely returns to the question of what the enactment intended. Do statutes create a substitute for nuisance actions, or just fill the gaps in enforcement that nuisance law leaves through its collective-action obstacles?

D. Policy Justifications For and Against Nuisance Law Preemption

1. The Case for Preemption of Nuisance Law

Substantial debate exists about whether compliance with regulatory standards presumptively constitutes "reasonable" conduct and thereby allows an actor to escape liability for any injury suffered. Should courts defer to legislative and regulatory standards to define common-law

---

of conduct, and they may be added to or repealed by legislative authority.'" (quoting Leis v. Cleveland Ry. Co., 128 N.E. 73 (Ohio 1920))).

227 *Compare Edmonds*, 573 A.2d at 861-68 (finding the ends not arbitrary, so legislation survives equal protection challenge), *with Arneson*, 270 N.W.2d at 135 (finding no arbitrary deprivation of common-law right).

228 *See* Biddix v. Henredon Furniture Indus., 331 S.E.2d 717, 723 (N.C. App. 1985). Citizen suit penalties go to the government. *See supra* notes 147, 193.

229 *See* Fein v. Permanente Medical Group, 474 U.S. 892, 894-95 (1985) (White, J., dissenting) ("Whether Due Process requires a legislatively enacted compensation scheme to be a *quid pro quo* for the common-law or state-law remedy it replaces, and if so, how adequate it must be, thus appears to be an issue unresolved by this Court, and one which is dividing the appellate and highest courts of several states. The issue is important, and is deserving of this Court's review."), *denying cert. to* 695 P.2d 665 (Cal. 1985).

230 *See* Duke Power Co. v. Carolina Envtl. Study Group, Inc., 433 U.S. 59, 88 & n.32 (1978) ("[I]t is not at all clear that the Due Process Clause in fact requires that a legislatively enacted compensation scheme either duplicate the recovery at common law or provide a reasonable substitute remedy. . . . Our cases have clearly established that '[a] person has no property, no vested interest, in any rule of the common law.' The 'Constitution does not forbid the creation of new rights, or the abolition of old ones recognized by the common law, to attain a permissible legislative object . . . .'" (citations omitted) (second alteration in original)); *see also* Martin H. Redish, *Legislative Responses to the Medical Malpractice Insurance Crisis: Constitutional Implications*, 55 TEX. L. REV. 759, 787 (1977) ("To require a legislature to create a 'reasonable substitute' every time that it abrogates or modifies outmoded common-law actions or defenses forces state policymakers into a legislative straightjacket. Moreover, by immunizing common-law rights from total abrogation, the doctrine effectively raises common-law causes of action to the level of constitutional rights, a status they were never intended to have.").

standards of liability?[231] The principle argument for the preemption position is that legislative and administrative regulations reflect "society's best judgment as to what [the] level ought to be" of a particular activity.[232] The informed judgment of experts—appointed for their greater pertinent knowledge and employed expressly to make such calculations—should supersede that of "twelve lay men and women convened on a single occasion to decide a single dispute with little more guidance than a 'reasonableness' criterion."[233] Confining the determination of appropriate pollution standards to the legislative branch and administrative agencies can also enhance the "legitimacy" of the program.[234] Lastly, barring nuisance actions creates finality: a permit provides an emitter with specific knowledge of her obligation regarding pollution.[235]

---

231 *But see* RESTATEMENT (SECOND) OF TORTS § 288C (1965) ("Compliance with a legislative enactment or an administrative regulation does not prevent a finding of negligence where a reasonable man would take additional precautions."); *see also* The T.J. Hooper, 60 F.2d 737, 740 (2d Cir. 1932) (holding compliance with prevailing custom of industry does not necessarily constitute due care).

232 *See* PETER H. SCHUCK, AGENT ORANGE ON TRIAL 291 (1987); *see also* Steven Shavell, *Liability for Harm Versus Regulation of Safety*, 13 J. LEGAL STUD. 357, 369 (1984) ("[I]n dealing with many health-related and environmental risks, a regulatory agency may have better access to, or a superior ability to evaluate, relevant medical, epidemiological, and ecological knowledge.").

233 SCHUCK, *supra* note 232, at 291; *see also* E. Donald Elliott, *Goal Analysis Versus Institutional Analysis of Toxic Compensation Systems*, 73 GEO. L.J. 1357, 1359 (1985) ("[I]t should be an absolute defense that the defendant complied with applicable regulatory standards. When responsible regulatory officials have struck a balance between safety and other competing considerations, after a full review of the relevant scientific information, a lay jury should not be able to strike a different balance between competing social values in an individual case after the fact." (footnotes omitted)).

At least one commentator strongly disagrees with this argument, primarily because regulatory rulemaking cannot possibly incorporate all pertinent information:

> [M]ost existing regulatory standard-setting criteria are inappropriate for use as a basis for determining whether one person should compensate another in the context of an environmental exposure to a hazardous substance. Such standards require consideration of factors that are often either not relevant to or inconsistent with the concerns related to individual liability. These factors include: . . . an assumption of exposure scenarios that are not appropriate under the circumstances of a specific dispute. Thus, were an administrative compensation scheme to be developed, it would almost certainly have to mirror to a considerable extent the common law by providing specially tailored standards of care and causation criteria, and replication of procedures of the judicial system.

Donald W. Stever, *Remedies for Hazardous or Toxic Substance-Related Personal Injuries: A Discussion of the Usefulness of Regulatory Standards*, 25 HOUS. L. REV. 801, 813 (1988).

234 Glicksman, *supra* note 5, at 192-93. Legitimacy derives from the political accountability of the decision maker, the decision maker being well informed, public participation, and fair decisions that treat similarly situated persons similarly. *Id.* at 132-33. Both the political accountability and public participation rationales are suspect, given that decision makers are ensconced in insulated agencies and public participation will likely be limited to a few key lobbyists, almost certainly not including the citizen likely to be harmed by pollution.

235 *See* Calvin R. Dexter & Teresa J. Schwarzenbart, Note, City of Milwaukee v. Illinois: *The Demise of the Federal Common Law of Water Pollution*, 1982 WIS. L. REV. 627, 666.

Peter Huber contends that courts do not have a sufficiently broad perspective to make adequate comparisons of risk.[236] Pollution exacerbates this problem because the risks are often diffuse and low level.[237] Private enforcement is, therefore, counterproductive because courts may decide against the taking of a risk that appears unfair in the limited context of the litigation, but is actually a "good" risk at a broader level because it replaces a more pernicious risk.[238] Similarly with pollution: while a nuisance claim presented to a court may appear meritorious, a favorable judgment may lead the same pollution to relocate elsewhere, a result that is, on balance, worse for society. If courts only oil the squeaky wheel, they may neglect the quietly-rusting chassis.

Professors Richard Stewart and Cass Sunstein have extensively considered the judicial creation of private rights of action to enforce statutes.[239] They observed that allowing private enforcement can usurp an agency's authority and consequently diminish legislative control over the amount and character of a law's enforcement.[240] They rejected this criticism, however, for the general case. First, they argued that if policies are unambiguous, courts should reach similar results regardless of who prosecutes.[241] Second, they argued that because agency enforcement is usually limited by budget constraints, agencies do not have unfettered discretion.[242] Because nuisance law and the pollution Acts attempt to vindicate interests differently, however, analogizing Stewart and Sunstein's argument to that made within this Article is not perfect. Because the policies underlying nuisance law differ from those underlying current statutory regimes, the same results may not be reached through private enforcement. Thus, enforcement of pollution restrictions through nuisance law could undermine agency authority to the extent polluters understand the restrictions to create a safe harbor for their polluting. If EPA (or the comparable state agency) cannot issue a conclusive permit, then that permit may count for little. Furthermore, if the legislative standards were crafted with an ideal of optimal enforcement, nuisance actions could create super-optimal enforcement, and thereby reduce pollution past the efficient level. Even if the CAA and CWA set the total level of pollution in the nation at the optimal level (albeit a dubious claim), the Acts still do not necessarily *distribute* that pollution optimally. This is where the added benefit of private enforcement enters.

---

236 Peter Huber, *Safety and the Second Best: The Hazards of Public Risk Management in the Courts*, 85 COLUM. L. REV. 277, 330-35 (1985).

237 *Id.* at 330.

238 *Id.*

239 Richard B. Stewart & Cass R. Sunstein, *Public Programs and Private Rights*, 95 HARV. L. REV. 1193 (1982).

240 *Id.* at 1206-07.

241 *Id.* at 1292.

242 *Id.* at 1290.

2. The Case for Preservation of Nuisance Law

Most commentators justify the retention of nuisance law purely for policy reasons. These reasons generally reduce to the incomplete coverage provided by the CAA and CWA. For example, the CWA leaves nonpoint sources unregulated and enforcement is far from perfect, and the CAA is similarly noncomprehensive in its coverage of sources.[243] One commentator argues that because the CWA provides only for injunctive relief, the victim of illegal dumping has little prospective or retrospective recourse.[244] Others argue that the ambient standards inadequately protect health and provide insufficient safety margins.[245] Thus, the argument goes, because the Acts cannot hope completely to control pollution, nuisance actions provide an additional deterrent to undesirable pollution.[246]

Tinkering with certain provisions of the Acts could answer each of these criticisms.[247] The CAA could extend its regulatory reach to smaller sources. The CWA could implement nonpoint-source regulation, thereby reducing the number of unregulated sources of water pollution. Standards could be strengthened to require greater cleanliness for air and water. Illegal discharges could be countered by stricter enforcement or enhanced penalties. Finally, statutory actions (citizen suits) could be simplified through procedural reforms and shifts in burdens of proof. Therefore, none of the commonly proffered justifications satisfactorily explains why nuisance law should be retained to supplement statutory "solutions" to air and water pollution. This section argues that nuisance law provides considerations that the statutes do not and, thereby, acts as a useful supplement to statutory enforcement.

a. Optimal Deterrence

(1) Regulation Versus Liability

Most commentators argue for the use of ex ante regulation to deter pollution rather than the use of ex post nuisance suits. The fundamental argument for public regulation rather than private enforcement is that pollution affects many people and often stems from multiple sources, a combination that leads to high transaction costs and collective-action problems for patrolling pollution. High costs, in turn, preclude private bar-

---

243 *See* Murchison, *supra* note 6, at 33-34.

244 Shell J. Bleiweiss, *Environmental Regulation and the Federal Common Law of Nuisance: A Proposed Standard of Preemption*, 7 HARV. ENVTL. L. REV. 41, 65-66 (1983).

245 *See* Ellen Friedland, Note, *Pollution Share Liability: A New Remedy for Plaintiffs Injured by Air Pollutants*, 9 COLUM. J. ENVTL. L. 297, 300 (1984); *see also* Ronald J. Rychlak, *Common Law Remedies for Environmental Wrongs: The Role of Private Nuisance*, 59 MISS. L.J. 657, 663 (1989) (nuisance actions are much simpler and quicker than statutory actions).

246 Some might be accused of believing that *all* pollution is bad, and that there should, therefore, be a remedy to halt any pollution. That, however, is not a necessary outcome of the retention of common law. Like the CAA and CWA, nuisance law engages in a balancing of interests that should, in theory, only discourage "unreasonable" pollution.

247 Each of the responses, naturally, would entail higher costs of some sort, particularly of the administrative variety.

gaining over rights and responsibilities, and hence also preclude an outcome with the "efficient" level of pollution.[248] Thus, any scheme other than public regulation fails both to regulate pollution effectively and to provide citizens with a reasonable expectation of freedom from excessive pollution.

Steven Shavell, proposes an analytical framework to determine when to prefer statutory and administrative regulation over common law "regulation through deterrence."[249] He concludes that although regulatory schema often provide a necessary first step to optimal regulation, this fact does not necessitate the preemption of common-law remedies.[250] Shavell proposes four considerations when choosing between the control of harms by ex ante laws or deterring them by ex post damage awards.[251] His first variable is the relative amount of knowledge possessed by regulators and private parties.[252] When private parties have superior knowledge about costs, benefits, and probabilities of the risks created, then conduct should be "regulated" through tort liability.[253] When government agencies have better access to relevant information, then they should prescribe conduct.[254] Shavell's second consideration is the acting party's capacity to pay damages: if a tortfeasor likely would be unable to compensate for the damages stemming from her conduct, then ex ante regulatory prohibitions better control such risk taking.[255] Third, when harmed parties are unlikely to sue, then ex ante regulatory deterrence is preferable because the absence of a credible threat to sue means no deterrent exists to a would-be tortfeasor.[256] Finally, Shavell contends whichever approach better minimizes administrative costs holds the advantage.[257]

---

248 *See* Donald Dewees, *Tort Law and the Deterrence of Environmental Pollution*, *in* INNOVATION, *supra* note 137, at 139, 141 (arguing that EPA standards are inadequate to protect the nation's health); Shavell, *supra* note 232, at 363 ("One reason that a defendant can escape tort liability is that the harms he generates are widely dispersed, making it unattractive for any victim individually to initiate legal action."); Stewart, *supra* note 91, at 1200 (noting problem of huge number of polluters). *See generally supra* notes 54-58 and accompanying text (discussing limitations of tort law).

249 Shavell, *supra* note 232, at 358.

250 *Id.* at 365.

251 *Id.* at 358-64.

252 *Id.* at 359.

253 *Id.*

254 *Id.*

255 *Id.* at 360-61. The rationale is that tort law provides deterrence only if the tortfeasor must pay damages. *Id.* If she is insolvent (or would become so upon the assessment of a large damage award) then she will not be deterred from acting because she stands to lose nothing. *Id.* at 361. She is, in other words, "judgment proof."

256 *Id.* at 363. The lack of threat typically derives from widely dispersed harms, for which collective-action problems reduce suits, and long latency periods when the harm is not immediately apparent. *Id.* Furthermore, proof of causation often presents a problem in environmental cases. *Id.* at 370; *see also* Dewees, *supra* note 248, at 151 ("The difficulty of proving causation . . . is a crippling barrier to traditional tort lawsuits for the vast majority of pollution problems experienced in North America. The situations where causation is not an important barrier are likely to involve a large isolated pollution source causing a characteristic form of damage . . . .").

257 Shavell, *supra* note 232, at 363-64.

Applying his theory to environmental regulation, Shavell argues that each of his considerations militates for regulation in preference to liability. Regulatory agencies typically possess "better access to, or a superior ability to evaluate, relevant medical, epidemiological, and ecological knowledge."[258] Second, some companies may be unable to pay for the harms created by their pollution, making regulation the only effective deterrent.[259] Third, the broad dispersal of effects from environmental harms means that injured parties are unlikely to bring suit, and the causal relationship between pollution and harm is often sufficiently attenuated to make a favorable judgment unlikely.[260] Finally, Shavell argues, verifying compliance with administrative rules often carries low administrative costs.[261] This final claim resonates for the technology requirements of the CAA and CWA, the enforcement of which generally requires regulators to ascertain whether the factory has attached the proper equipment and whether it functions properly.[262] Each of Shavell's variables, therefore, points to the use of regulation to control pollution.

Shavell contends, however, that liability and regulation "should not be viewed as mutually exclusive solutions."[263] In general, administrative costs and knowledge disparities favor the use of liability, but inability to pay and insufficient threat of suit favor regulation.[264] This, he argues, explains why some activities are regulated in part (the aspects for which the costs of regulation are lower) and also deterred in part through liability (the elements having a cost advantage in using tort-based deterrence).[265] The combination of the two, therefore, often can exploit the benefits of each system while minimizing the drawbacks inherent in each.

Shavell also addresses the question as to whether—in a mixed system of regulation and liability—compliance with regulatory requirements should insulate a person from liability. He concludes that regulatory compliance should not create a shield to liability because, if it so acted, "then none would do more than to meet the regulatory requirements."[266] This, Shavell argues, is undesirable because "these requirements will be based on less than perfect knowledge of parties' situations, [therefore] there will clearly be some parties who ought to do more than meet the requirements."[267]

---

258 *Id.* at 369.

259 *Id.* Shavell notes this most likely will be the case with toxic or radioactive pollutants, for which liabilities are potentially enormous. *Id.*

260 *Id.* at 370.

261 *Id.*

262 Carol M. Rose, *Rethinking Environmental Controls: Management Strategies for Common Resources*, 1991 DUKE L.J. 1, 28.

263 Shavell, *supra* note 232, at 365.

264 *Id.*

265 *See id.* at 371 (noting that while fire codes may mandate installation of certain safety equipment, high administrative costs means that the codes do not regulate the "highly contextual" situation of storing flammable polish in a closet near a heating pipe).

266 *Id.*

267 *Id.*; *see also* 1 RODGERS, *supra* note 197, § 2.11, at 100 ("[A]dministrative performance standards may be read as a ceiling below which traditional concepts of nuisance apply.");

This explanation provides support for employing a mixed system of regulation and liability to combat environmental problems. The technological requirements of the Acts involve replicable information. No need exists to duplicate research on how best to reduce effluents and clean pollutant discharges.[268] Therefore, centralizing this task in an administrative agency should minimize research costs. In contrast, locational decisions are highly particularized and less easily subject to agency regulation. A government entity enjoys no inherent informational advantage in assessing where best to locate a future source of pollution.[269] Furthermore, government does not inherently enjoy an exclusive ability to identify sources of pollution with ill effects.[270] Following Shavell, then, by retaining nuisance law as a supplement to regulation, we can further enhance pollution control.

Shavell's reasoning suggests that no sensible pollution policy would omit the use of regulatory controls. A regulatory system avoids the problems inherent in a pure tort system because it eliminates both the collective action and insolvency problems that lead to underdeterrence in a tort-based system. However, no compelling reasons militate for disposing with the informational and administrative advantages that a tort-based system provides. More generally, when the marginal administrative costs of a regulatory system begin to escalate rapidly (such as the highly fact-specific scenario adduced by Shavell),[271] then the use of a tort-based system with lower marginal administrative costs may become desirable.[272]

(2) Harm-Based versus Benefit-Based Penalties

The CAA and CWA set penalties on the basis of the costs avoided through noncompliance.[273] The penalties reflect the fundamental problem

---

Murchison, *supra* note 6, at 40 (arguing that a permit should not absolve a polluter because "[n]one of the statutes were designed to grant a statutory right to pollute the environment. Instead, they were attempts to limit all pollution to the levels necessary to provide minimal protection of the ambient environment . . ." (footnotes omitted)); *cf.* 42 U.S.C. § 7651b(f) (1994) (stating that emission allowances under tradable allowance system "do[ ] not constitute a property right."); A. Mitchell Polinsky, *Resolving Nuisance Disputes: The Simple Economics of Injunctive and Damage Remedies*, 32 STAN. L. REV. 1075, 1087 (1980) (arguing that entitlements might not be absolute, thus allowing a polluter to pollute up to a certain level, but be liable for damages or subject to injunction for amounts in excess of that level).

[268] *Cf.* 42 U.S.C. § 7403 (1994) (establishment of national research program into "prevention and control" of air pollution); 33 U.S.C. § 1255 (1994) (authorizing grants into research for water-pollution reduction controls).

[269] The only advantage the government would have in this area is the balancing of distributional concerns. Because only the government has a truly coercive power, only it can dictate where pollution should or should not be allowed.

[270] The citizen-suit provisions recognize that private attorneys general can contribute to enforcement. *See, e.g.*, 33 U.S.C. § 1365 (1994).

[271] *See supra* note 265.

[272] Rose, *supra* note 262, at 8-12 (arguing that different regimes of protecting resources have different administrative costs and costs of overexploitation that make a comparison of both necessary to determine the optimal regime for a given resource).

[273] *See supra* notes 139-41 (Clean Air Act), 188-91 (Clean Water Act) and accompanying text; *see also* Steve Fotis, Comment, *Private Enforcement of the Clean Air Act and the*

of pollution laws that "[n]either the command-and-control nor the emissions permit policy considers the source location in assigning control responsibility."[274] Encouraging sources to locate in certain areas, away from people and away from national parks, optimizes pollution control.[275] The penalty rule under each Act, however, is less likely than a rule based on damages to deter optimally others because it does not include in its calculus a recognition of harm.

Shavell and A. Mitchell Polinsky argue that, under imperfect information, a rule that punishes conduct on the basis of harm created better deters than one based on benefits obtained (or costs avoided) through violation.[276] Legal systems that assess harms and benefits with complete accuracy will deter negligent activities equally well by assessing damages based on harm created or by taxing away all benefits received.[277] A potential tortfeasor will be indifferent between not acting and acting but disgorging all gains—either choice nets her nothing.[278] Because a negligent activity by definition creates harms that exceed benefits,[279] acting but paying damages has negative net value to the actor. Not acting has a net value of zero. Either rule leaves no incentive to act.

The introduction of potential error into a court's estimation of harm or benefit makes the liability-based-on-harm rule superior.[280] Deterring negligent behavior by taxing away a judicially misestimated gain is suboptimal because "even a small error in estimating gain can cause a large

---

Clean Water Act, 35 AM. U. L. REV. 127, 157 (1985) ("By offsetting the possible economic value of non-compliance through fines based on the capital and operating costs that the polluter saved, civil penalties present a non-complying source from gaining a competitive advantage over sources already in compliance."). *See supra* note 91 (describing rationale for PSD).

274 TIETENBERG, *supra* note 74, at 71; *see also* Richard B. Stewart, *Interstate Resource Conflicts: The Role of the Federal Courts*, 6 HARV. ENVTL. L. REV. 241, 261 (1982) ("Legislatures and agencies have strong incentives to adopt uniform measures, which often do not come to grips with [locational] problems. . . . Administrators favor uniformity because it reduces decision-making costs and political controversy."); Revesz, *supra* note 131, at 794-95 (asserting that to set ambient standards efficiently in regard to marginal cost of pollution would require infinite receptor points).

275 Not all air pollutants behave identically. For some pollutants the location of emission is more important than for others. Air pollutants fall into three categories. First are "uniformly mixed assimilative pollutants," which do not accumulate from year to year. The location of the emission of these pollutants within an area does not affect ambient levels in that area. *See* TIETENBERG, *supra* note 74, at 17. One good example of such pollutants is ozone, which has effects throughout an airshed regardless of where it was emitted. *Id.* at 18. Second are "nonuniformly mixed assimilative pollutants." The location of the emissions of this group is "crucial." *Id.* at 22. "Location is important because those concentrations are sensitive not only to the level of emissions, but to the degree of source clustering as well." *Id.* Pollutants in this class include total suspended particulates (TSP), sulfur dioxide (SO_2), and biological oxygen demand (BOD). *Id.* The final group is "uniformly mixed accumulative pollutants," which accumulate globally in the environment. *Id.* at 28.

276 Polinsky & Shavell, *supra* note 141, at 428.

277 *Id.* at 430.

278 *Id.*

279 The classic expression of this concept appears in Judge Learned Hand's liability test. *See* United States v. Carroll Towing Co., 159 F.2d 169, 173 (2d Cir. 1947).

280 Polinsky & Shavell, *supra* note 141, at 431-32.

social loss because such an error can lead an individual to commit a harmful act when his gain is much less than the harm."[281] Polinsky and Shavell conclude that even in the pollution context—where avoidance benefits are much more readily estimated than the diffusely-spread harms—a harm-based rule is preferable.[282]

Shavell's and Polinsky's argument indicates that the statutory penalty provisions provide an inferior deterrence mechanism. Even if enforcement actions against excess pollution are limited to statutory channels, this legal remedy does not provide the best means of deterring pollution because it sets penalties on the basis of costs avoided. Assuming that the enforcement authorities (courts, prosecutors, or citizens) estimate costs with some error,[283] deterrence potentially becomes vastly inadequate.[284] The substitution of harm-based penalty provisions would have the dual effect of providing more ideal deterrence and bringing, by its nature, locational considerations into the federal pollution acts. It still, however, would fail to provide a compensatory provision.

b. The Compensation Justification

Neither the CAA nor CWA provides compensation to a person harmed by pollution. Violators pay penalties, assessed as a result of either a citizen suit or of an EPA enforcement action, to the United States.[285] Similarly, state laws with citizen suit provisions direct penalties into state treasuries or specific environmental funds.[286] This leaves in some doubt the constitutional validity of state laws that preempt state common-law recovery.[287] The absence of compensatory provisions is consistent, however, with a legislative judgment that the statutes have set pollution levels optimally. If it is less costly to suffer the ill effects of pollution than to abate that pollution, then generally no nuisance exists, and hence no one may recover damages.[288] The presumption created by regulatory permitting schemes is

---

281 *Id.* at 432 ("In contrast, a small error in estimating harm can cause only a small social loss because an individual will commit the act only if his gain exceeds the estimate of the harm, which (by hypothesis) is relatively close to the harm."). The authors also demonstrate that even if error in the observation of harm significantly exceeds the error in observing gain, a liability rule based on harm remains superior. *Id.*

282 *Id.* at 434-35.

283 Although companies should have better access to such information than outsiders, they may still be unable to provide completely accurate cost data.

284 The converse problem may also exist: where the damage created (or provable in court) is much less than the costs avoided through noncompliance, a polluter could render the statutory requirements nugatory by failing to comply and then paying a limited amount in damages. One way to avoid this is to charge the greater of costs avoided or damage created. Although this assumes the statutory level of pollution should act as a floor, regardless of the location, such an assumption is not untenable in light of the Acts' purpose to avoid the collective action problems inherent in a pure tort regime.

285 *See supra* notes 132-148, 184-194 and accompanying text.

286 *See, e.g.*, CAL. HEALTH & SAFETY CODE § 42405 (West 1996).

287 *See supra* Part IV.C.2.

288 *See supra* notes 14-26 and accompanying text. The "incomplete privilege" theory, however, proposes that a polluter should pay for pollution even when it is not a nuisance. *See supra* notes 43-46 and accompanying text.

that the emissions allowed are not a nuisance, and therefore, polluters should not compensate for the harms created.

The propriety of compensation within a statutory-standard regime encompasses several considerations. First is the premise that the cost-benefit calculus performed by pollution permitting authorities should bind all citizens. Because the pollution amounts allowed ostensibly maximize nationwide net benefits, the resulting level of pollution is socially optimal and should not be altered through extraneous enforcement mechanisms.[289] Therefore, using nuisance law to deter additional pollution imposes costs greater than the benefits obtained from such deterrence.

While the optimal national amount of pollution may maximize net social benefits, its location (or distribution) may not do so. Some parts of the nation may receive most of the benefits from pollution control, while other parts endure the cost of overly strict limitations.[290] Perhaps such harms must be tolerated as part of a democratic system in order to avoid shutting down the regulatory state. Because every governmental benefit cannot easily be distributed equally, some people must bear an above-average share of the costs. It follows from this argument that if we tolerate the disparate effects of pollution in different locations, then only an injunction against an emitter who exceeds her permissible amount is appropriate.[291] The law sets optimal quantities that must be adhered to regardless of individual circumstances.

Alternatively, one may assume that the pollution levels reached by regulation are socially optimal, but still not wish to impose their costs unevenly on narrower segments of society.[292] Damages shift the gains that accrue to some from the regulation of pollution (over nonregulation) to those damaged by the regulatory regime. If the costs of pollution are fully internalized by polluters, then these costs can be passed through to consumers. This will allocate costs to people according to the harm their ac-

---

289 If the level is suboptimal, the initial approach should be to revise the standard.

290 *See, e.g.*, ACKERMAN & HASSLER, *supra* note 73, at 34 (asserting that Midwestern coal mining industry (and coal miners) would be adversely affected under some agency constructions of Clean Air Act).

291 *See* Frank I. Michelman, *Pollution as a Tort: A Non-Accidental Perspective on Calabresi's Costs*, 80 YALE L.J. 647, 677-78 (1971) (book review) ("Private suits maintainable only against activity which violates collective regulations are nothing but a means for enforcing resource-allocation decisions made entirely outside any private-law framework and entirely without participation by judges or litigants . . . . The necessarily appropriate remedy is a nonnegotiable injunction against further violation of the collective controls. Damages, if awarded on top of such an injunction, serve no cost-internalizing or resource-allocating purpose." (footnote omitted)). Under Michelman's theory, just as a plaintiff may not assert unique circumstances to entitle herself to special relief, a polluter cannot claim that she could produce net benefits over costs by increasing pollution above permissible limits, and therefore, pay only a damage remedy that results in socially better change. Once the optimal level of pollution has been defined, and that quantity apportioned across sources, no additional emissions should be allowed, either by courts or administrators.

292 *See supra* notes 43-46 (discussing incomplete privilege).

tivities cause society.[293] Meanwhile each person who suffers from pollution receives adequate compensation, making her no worse off.[294]

The second compensation question asks when courts should award damages and how large those awards should be.[295] Thus, should compliance with applicable standards be a defense, or at least create a limitation on damages?[296] Conversely, should noncompliance constitute a per se nuisance, or a breach of reasonableness?[297] Allowing the payment of damages evinces a judgment that individuals should not bear the costs of more acute impacts stemming from the socially-determined level of pollution. Therefore, the reasonableness of the polluter's conduct should not be viewed solely in light of compliance with regulatory standards.[298] In other words, paying damages recognizes the imperfection of the regulatory regime. When a plaintiff claims a nuisance, she essentially asserts that the regulatory standards are not reasonable under the circumstances because the standards do not incorporate a sufficient amount of specificity. Dam-

---

[293] Japan compensates people who suffer ill effects of pollution through an administrative benefits system. FREDERICK R. ANDERSON ET AL., ENVIRONMENTAL IMPROVEMENT THROUGH ECONOMIC INCENTIVES 49-50 (1977). Thus a person who can establish a likelihood that their health suffers from pollution is entitled to an award. *Id.* The compensation system does not require proof that a particular polluter caused the harm. *Id.* The revenues to fund the compensation scheme come from emissions charges on polluters. *See id.* Because the charges are set based on concentrations of pollutants within an airshed, the scheme still fails to encourage fully wise locational choices. It should, however, have some effect on companies choosing to locate in a particular area, particularly if the area's charges are high.

[294] The argument that the current system of pollution control, even if tinkered with, could attain optimality assumes that only pollution harms that exceed control costs will be regulated. Alternatively put, regulation supposedly eliminates the cheapest-to-control pollution first. To the contrary, the current regulatory scheme often controls pollution at a cost well in excess of the benefits obtained from its reduction. Similarly, much high-cost pollution that could be controlled at low cost is not. By supplementing the statute with nuisance law, the latter category of pollution should be controlled. Ideally, some other mechanism for redressing the problem with the former category of pollution would also exist. An emissions-trading system, *see supra* Part III.B.3, would be one means by which to reduce the problem of costly controls for low-harm pollution by allowing a person whose product has a high value per unit of pollution to use pollution that formerly had little corresponding social value.

[295] In any nuisance action, establishing proximate causation is difficult when multiple entities pollute. *See* Friedland, *supra* note 245, at 303-04 (1984). However, a form of enterprise liability might be used, which would apportion damages across sources shown reasonably to contribute to the harms incurred at a particular locus. *Id.*; *see also* Michie v. Great Lakes Steel Div., Nat'l Steel Corp., 495 F.2d 213, 218 (6th Cir. 1974) (allowing plaintiff to seek joint and several liability for water pollution from multiple sources under Michigan law).

[296] *See supra* note 219 and accompanying text.

[297] For one expression of this view, see Thomas C. Buchele, Note, *State Common Law Actions and Federal Pollution Control Statutes: Can They Work Together?*, 1986 U. ILL. L. REV. 609, 626. To allow individual sources to assert that their pollution was not unreasonable would likely lead back to pre-statutory days in which each source could disclaim responsibility for contributing to the problem. *Cf.* Crown Simpson Pulp Co. v. Costle, 642 F.2d 323, 327-28 (9th Cir. 1981) (holding that EPA need not grant variance for discharge of pollutants into ocean water that could readily absorb greater amounts of effluents without water quality suffering).

[298] *See* Buchele, *supra* note 297, at 630 ("Under certain circumstances more than compliance with statutory standards may be necessary for a polluter's conduct to be reasonable.").

ages derive not from the failure of a polluter to reduce emissions as much as possible, but rather from the polluter locating so that local residents suffer compensable harm. The relevance of efforts to control the pollution, therefore, is not great.

c. Democratic Participation and Environmental Justice

Preemption of common law advances democratically obtained outcomes, according to its proponents. This argument assumes, however, democratic participation, an assumption that often comes into question.[299] Professor Richard Lazarus contends that environmental laws often pass with support of "unholy alliances" comprised of industrialists and environmentalists.[300] Furthermore, passage of such laws generally involves large amounts of "horse trading" across various interest groups.[301] Because of this, he posits, society needs to consider the distribution of detrimental environmental impacts, particularly those upon minority and disadvantaged communities.[302] Lazarus argues that this entails increased access to decision-making fora for, and the involvement of, minorities.[303] So, he proposes that "the advantages of a less centralized policymaking regime need to be re-examined in light of environmental justice concerns. . . . [T]he highly centralized nature of environmental policymaking may be one of the most significant structural causes of existing distributional inequities."[304]

Common law provides a method of decentralized decision making potentially more accessible to minority groups than legislative action. Because pollution laws omit location from their calculus of optimal pollution levels, they can operate to the detriment of minorities.[305] Nuisance law provides an important counter-majoritarian check for those whose interests are excluded or minimized through political decision making. By forcing polluters to consider location, nuisance law can protect a segment of the population that may otherwise lack a means by which to influence environmental decision making. Just as courts are uniquely situated to protect minority rights in general matters of racial discrimination, they can protect minorities from adverse environmental decisions.

---

299 *See, e.g.*, Lani Guinier, *No Two Seats: The Elusive Quest for Political Equality*, 77 VA. L. REV. 1413, 1415 (1991).

300 *See* Richard J. Lazarus, *Pursuing "Environmental Justice": The Distributional Effects of Environmental Protection*, 87 NW. U. L. REV. 787, 813 (1993).

301 *Id.*

302 *Id.* at 842-43.

303 *Id.* at 850.

304 *Id.* at 852.

305 *See, e.g.*, Vicki Been, *Locally Undesirable Land Uses in Minority Neighborhoods: Disproportionate Siting or Market Dynamics?*, 103 YALE L.J. 1383 (1994) (finding conflicting cause-effect evidence as to whether landfills are disproportionately sited in predominantly black and poor communities).