

University of Michigan Journal of Law Reform

Volume 19

1986

Environmental Litigation in Historical Perspective

Samuel P. Hays
University of Pittsburgh

Follow this and additional works at: <https://repository.law.umich.edu/mjlr>



Part of the [Legal History Commons](#), and the [Litigation Commons](#)

Recommended Citation

Samuel P. Hays, *Environmental Litigation in Historical Perspective*, 19 U. MICH. J. L. REFORM 969 (1986).
Available at: <https://repository.law.umich.edu/mjlr/vol19/iss4/6>

This Symposium Article is brought to you for free and open access by the University of Michigan Journal of Law Reform at University of Michigan Law School Scholarship Repository. It has been accepted for inclusion in University of Michigan Journal of Law Reform by an authorized editor of University of Michigan Law School Scholarship Repository. For more information, please contact mlaw.repository@umich.edu.

ENVIRONMENTAL LITIGATION IN HISTORICAL PERSPECTIVE†

Samuel P. Hays*

During the past several decades, litigation has played a major role in the attempt by citizens to realize environmental objectives. Its impact has been elaborated extensively in the vast array of writing in law journals as well as in the cases themselves. Most analyses have focused on specialized subjects of either substantive policy or legal procedure. In this brief Essay I attempt a more comprehensive overview involving two background factors—the growth of environmental values since World War II and the response of governmental institutions to the resulting demands placed upon them. Among these institutions were the courts. Their role cannot be understood simply in terms of the evolution of judicial opinion, but more in terms of the response of judges and the legal profession to changing public attitudes, legislative policies, scientific knowledge, and technical capabilities.¹

As environmental action accelerated in the 1960's, many citizens found the courts to be a possible avenue for action. If some felt that the activities of others were subjecting them to environmental harm, they might seek redress through a lawsuit. For centuries courts had been available to any citizen who felt that another was causing harm. Judges had supervised such "impacts" in innumerable instances, sorting out effects of a wide range of daily human activities that were prohibited from those that were accepted. The identity of these prohibited acts changed over the years. Damage to one's person or property was clearly to be restrained. Then damage to one's health came to be an acceptable cause of action. Damage to one's enjoyment of life

† This Essay will appear in substantially the same form in *The Politics of Litigation*, in *BEAUTY, HEALTH AND PERMANENCE: ENVIRONMENTAL POLITICS IN THE UNITED STATES, 1955-1985* (Cambridge University Press, forthcoming).

* Professor of History, University of Pittsburgh. B.A., 1948, Swarthmore College; M.A., 1949, Ph.D., 1953, Harvard University.

1. For a more extensive account of this Essay's topic, see Hays, *Three Decades of Environmental Politics: The Historical Context*, in *THE EVOLUTION OF AMERICAN ENVIRONMENTAL POLITICS* (M. Lacey ed.) (Woodrow Wilson International Center for Scholars, forthcoming).

through a nuisance caused by another became another cause of action. A body of common law had evolved out of these day-to-day claims and counterclaims that served as precedent for citizen demands that the courts provide aid to protect them against environmental harm.²

To these overtures courts responded positively, not all in the same way or with the same choices, but most accepting the notion that in environmental affairs some new infringement of personal liberties and rights was involved and that this could lead to justifiable restraints. New circumstances and new social values led to the infusion of traditional doctrines with new substance.

The first well-publicized case invoking these new social values involved a citizen protest to a proposal by Consolidated Edison, a utility company in New York State that sought to build a pumped-storage facility for generating electric power on the Hudson River. The project would have had a number of adverse effects, including aesthetic degradation in the river valley. The point at issue was one of the most difficult and yet most significant that could have been raised—harm to aesthetic environmental values rather than to person or property. *Scenic Hudson Preservation Conference v. Federal Power Commission*, more popularly known as the *Storm King* case, helped to halt the project for many years and in 1980 led to a negotiated out-of-court settlement in which the proposal was abandoned.³ This case is often considered the beginning point of environmental law.⁴ It had an exhilarating effect on both lawyers and environmentalists as to the possible role of law and the courts in achieving environmental objectives.

2. The common law of nuisance as a source of legal action on behalf of environmental objectives is explored in Bryson & Macbeth, *Public Nuisance, the Restatement (Second) of Torts, and Environmental Law*, 2 *ECOLOGY L.Q.* 241 (1972). For an example of the evolution of nuisance common law into environmental protection statutory law, see Cubbage & Siegel, *The Law Regulating Private Forest Practices*, 83 *J. FORESTRY* 538 (1985).

3. 354 F.2d 608 (2d Cir. 1966), *cert. denied*, 384 U.S. 941 (1966). For a discussion of the *Storm King* case, see A. TALBOT, *POWER ALONG THE HUDSON: THE STORM KING CASE AND THE BIRTH OF ENVIRONMENTALISM* (1972). For a report on the settlement, see *N.Y. Times*, Dec. 20, 1980, at 24L, col. 1. The case can be followed in detail in *Scenic Hudson News*, published from 1971 to 1980 by Scenic Hudson Preservation Conference in New York, N.Y. and from 1980 on by Scenic Hudson, Inc., Poughkeepsie, N.Y.

4. A review of the early history of environmental law is contained in the proceedings of the conference that led to the organization of the Environmental Law Institute (ELI), *LAW AND THE ENVIRONMENT* (1970). The conference, held in Warrenton, Va., Sept. 11-12, 1969, was sponsored jointly by the Conservation Foundation and the Conservation and Research Foundation.

Environmental litigation grew rapidly in the 1960's and 1970's as reflected in the evolution of an environmental specialization within law, new environmental law journals, new case reporting publications, and specialized training in law schools.⁵ From the larger historical view, however, we must not overlook the need to root these changes in the evolving values of the American people, to which the legal system responded and which often revealed themselves in far less dramatic ways. The judicial response to these new values represented the larger and oft-repeated process by which legal institutions found ways of incorporating new substantive issues into methods of dispute resolution.

In the 1970's, litigation came to be an important realm of environmental decisionmaking. Citizens brought lawsuits to protect themselves from environmental harm. Citizen litigation organizations were formed to tackle problems of law involving not only issues of individual protection, but national environmental issues as well. Two of these organizations were the Environmental Defense Fund (EDF) and the Natural Resources Defense Council (NRDC). The Sierra Club established its own Legal Defense Fund and the National Wildlife Federation added lawyers to its staff. Other organizations took legal action by joining with one of these groups, often in combination to pool resources, or by hiring their own attorneys. This litigation received considerable publicity and served to sharpen environmental issues for the public as well as to resolve disputes for the participants.⁶

5. The earliest specialized law journals were ENVTL. L. (1970- , Northwestern School of Law, Lewis and Clark College, Portland, Or.); ECOLOGY L.Q. (1971- , University of California, Berkeley); and ENVTL. AFF. (1971- , Boston College Environmental Law Center). Journals established later were COLUM. J. ENVTL. L. (1974- , Columbia University); HARV. ENVTL. L. REV. (1976- , Harvard University); STAN. ENVTL. L. ANN. (1978- , Stanford University); and PUB. LAND L. REV. (1980- , University of Montana). An older journal in the natural resource field is LAND & WATER L. REV. (1966- , University of Wyoming). The major reporting and review service in environmental law is ELI, ENVTL. L. REP. (1970- , Washington, D.C.). For information about its formation, see CONSERVATION FOUND. LETTER, Sept. 30, 1969. For a useful survey of its work, see ELI, THE FIRST DECADE (1980). The standard case reporting service for federal court decisions is Bureau of Nat'l Affairs, ENVTL. L. REP.—CASES (1970-). A bibliography of environmental law articles is contained each month in ENVTL. L. REP. For the early development of the environmental curriculum in law schools, see Tarlock, *Current Trends in the Development of an Environmental Curriculum*, in LAW AND THE ENVIRONMENT, *supra* note 4, at 297.

6. An early review of environmental litigation is J. MACDONALD & J. CONWAY, ENVIRONMENTAL LITIGATION (1972). A running account of environmental litigation activities is contained in the publications of the various environmental groups. See EDF LETTER (1970-); NRDC NEWSLETTER (1971-). A useful compilation of litigation pursued by one organization is NRDC, INC., DOCKET; SUMMARY OF LITIGATION, ADMINISTRATIVE PROCEEDINGS, AND OTHER MATTERS RELATING TO THE PROTECTION OF THE ENVIRONMENT IN WHICH

Use of the courts for these purposes was facilitated by provisions in environmental statutes providing that citizens could bring suit against administrators who failed to enforce the law. Laws such as the Clean Air Act⁷ and the Clean Water Act⁸ were the first to contain citizen suit provisions, but these provisions came to be typical elements in all the environmental legislation of the 1970's. Authorized citizen suits were usually confined to those cases in which the administrator was required to enforce a nondiscretionary duty under the statutory language of "must" rather than a discretionary duty under the language of "may." A less successful venture was the proposal to enact a general citizen suit law that would provide statutory authorization for citizens generally to bring lawsuits to protect their environmental rights. The Michigan Environmental Protection Act⁹ was a general citizen suit law enacted in Michigan in 1970 under the leadership of Professor Joseph Sax of the University of Michigan Law School.¹⁰ Citizen suit provisions were intended to extend

THE NATURAL RESOURCES DEFENSE COUNCIL, INC. HAS TAKEN AN ACTIVE ROLE (1977). For early Sierra Club litigation, see its NAT'L NEWS REP., Feb. 20, 1970. A brief overview of National Wildlife Federation litigation is *NWF Winning Battles on the Legal Front*, NAT'L WILDLIFE, Apr.-May 1984, at 30. A useful account of the broader media and public role of litigation with respect to a DDT proceeding in Wisconsin pursued by the EDF is in T. DUNLAP, *DDT: SCIENTISTS, CITIZENS, AND PUBLIC POLICY* (1981). For a general statement of the potential role of citizens in environmental litigation, see J. SAX, *DEFENDING THE ENVIRONMENT: A STRATEGY FOR CITIZEN ACTION* (1971). See also Roberts, *The Right to a Decent Environment: Progress Along a Constitutional Avenue*, in *LAW AND THE ENVIRONMENT*, *supra* note 4, at 134; Berlin, Kessler & Roisman, *Law in Action: The Trust Doctrine*, in *LAW AND THE ENVIRONMENT*, *supra* note 4, at 166. These articles outline the use of both the ninth amendment to the Constitution and the trust doctrine as possibilities for environmental action through the courts. For the public trust doctrine, see also *THE PUBLIC TRUST DOCTRINE IN NATURAL RESOURCES LAW AND MANAGEMENT* (H. Dunning ed. 1981).

7. Clean Air Act of 1963, Pub. L. No. 88-206, 77 Stat. 392 (codified as amended at 42 U.S.C. §§ 7401-7642 (1982)).

8. Clean Water Act of 1977, Pub. L. No. 95-217, 91 Stat. 1566 (codified as amended at 33 U.S.C. §§ 1251-1376 (1982)).

9. Environmental Protection Act of 1970, MICH. COMP. LAWS §§ 691.1201-1207 (1979).

10. For accounts of the results of the Michigan statute, see Sax & DiMento, *Environmental Citizen Suits: Three Years' Experience Under the Michigan Environmental Protection Act*, 4 *ECOLOGY L.Q.* 1 (1974); Slone, *The Michigan Environmental Protection Act: Bringing Citizen-Initiated Environmental Suits into the 1980's*, 12 *ECOLOGY L.Q.* 271 (1985).

An unsuccessful attempt was made to enact a federal general citizen suit law. See Comment, *Standing on the Side of the Environment: A Statutory Prescription for Citizen Participation*, 1 *ECOLOGY L.Q.* 561 (1971); see also *Hearings on S. 3575 Before the Subcomm. on Energy, Natural Resources and the Environment of the Senate Comm. on Commerce*, 91st Cong., 2d Sess. (1970).

the possibilities of citizen environmental action beyond what had already taken place.¹¹

The amount of environmental litigation arising from citizen complaints was relatively limited. It had a far greater media impact than would be suggested by the number of lawsuits. In the two years of 1979 and 1980, only nineteen actions were brought under the citizen suit provisions of all the federal environmental laws, and of these, twelve were brought by citizen groups themselves.¹² The Michigan Environmental Protection Act led to only 185 lawsuits in the first thirteen years of its existence, an average of only fourteen each year.¹³ While opponents of environmental litigation often complained about the degree to which such action was "clogging the courts" and argued against further citizen suit legislation on the grounds that it would overburden the legal system, only a small amount of citizen-inspired environmental litigation actually took place. Therefore, although litigation extended the possibilities of environmental action and several cases played a significant role in the evolution of federal policy, the total number of environmental cases litigated was small compared with other types of litigation, such as private contract disputes.¹⁴

The 1969 National Environmental Policy Act (NEPA)¹⁵ gave rise to a great number of environmental lawsuits, and the federal

11. An account of action under the citizen suit provisions of various federal environmental laws between 1978 and 1984 is ELI, *CITIZEN SUITS: AN ANALYSIS OF CITIZEN ENFORCEMENT ACTIONS UNDER EPA-ADMINISTERED STATUTES* (1984). See also Cramton & Boyer, *Citizen Suits in the Environmental Field: Peril or Promise?*, 2 *ECOLOGY L.Q.* 407 (1972); Fadil, *Citizen Suits Against Polluters: Picking Up the Pace*, 9 *HARV. ENVTL. L. REV.* 23 (1985); Licata & Licata, *Citizen Suits—Help or Hindrance in the Enforcement of Environmental Statutes?*, *ENVTL. F.*, Mar. 1985, at 20. Controversy over statutory provisions for citizen suits arose again over potential action under the Superfund renewal in 1985. See Ketcham-Colwill, *Congress Debates Allowing Citizen Suits Under Superfund Law*, *ENVTL. & ENERGY STUDY CONF. FACT SHEET* (Aug. 19, 1985). For a brief biography of a long-time citizen suit lawyer, see *Profile, Citizen Suit Activist Tony Roisman*, *ENVTL. F.*, Dec. 1984, at 19.

12. Sandler, *Citizen Suit Litigation*, *ENVIRONMENT*, Mar. 1981, at 38, 38-39.

13. Slone, *supra* note 10, at 273.

14. For a general view of litigation in American society, see J. LIEBERMAN, *THE LITIGIOUS SOCIETY* (1981). Lieberman cites to the 1980 edition of the *Annual Report of the Director, Administrative Office of the U.S. Courts* regarding the number of different classes of litigation in the federal courts. Of 168,789 civil suits in 1980, the largest category, 49,000, involved private contract disputes. Environmental cases were so small in number that they were not mentioned. J. LIEBERMAN, *supra*, at 5. A review of the federal district court load conducted in 1978 concluded that "the number of environmental suits filed in the district courts is a small fraction of the total caseload." Demkovich, *The Clogged Federal Courts—Who Are the Culprits?*, 10 *NAT'L J.* 222, 226 (1978).

15. Pub. L. No. 91-190, 83 Stat. 852 (1970) (codified as amended at 42 U.S.C. §§ 4321-4370a (1982 & Supp. II 1984)).

courts supervised its implementation. The courts, however, confined their role to its procedural requirements and declined to plunge into the substantive issues. The courts argued that the law required agencies to make an interdisciplinary analysis of all relevant environmental factors, including possible alternative actions that would reduce adverse environmental impacts, and struck down administrative actions that constituted a more superficial response to NEPA. As a result, environmentalists found an opportunity to ensure that environmental values were seriously considered, even if not accepted, in administrative decisions.¹⁶

This court action should be viewed not as a product of NEPA, but as an evolution of a more longstanding court practice of supervising administrative procedure. Agencies should not make decisions on the basis of narrow or limited considerations of interest to one party alone, because to do so would be arbitrary and capricious. Moreover, agencies should make decisions openly and on the record so that anyone who wished to review them—Congress, the President, or the courts, as well as citizens—could understand fully their bases. Court supervision of NEPA grew more out of the elaboration of fair administrative procedures than out of the statute itself.¹⁷

16. For a discussion of NEPA litigation, see F. ANDERSON, *NEPA AND THE COURTS* (1973); R. LIROFF, *A NATIONAL POLICY FOR THE ENVIRONMENT: NEPA AND ITS AFTERMATH* (1976); L. WENNER, *THE ENVIRONMENTAL DECADE IN COURT* (1982).

17. In *Citizens Committee for the Hudson Valley v. Volpe*, 425 F.2d 97 (2d Cir. 1970), the Second Circuit held that citizens could have standing to question the decisions of an administrative agency under the Administrative Procedure Act (APA), 5 U.S.C. §§ 551-559, 701-706 (1982), independent of statutory provisions, and that hence the APA gave the federal courts jurisdiction over agency actions. Decisions under NEPA were closely intertwined with decisions under the APA and it seems plausible to argue that it was the latter that gave considerable, even crucial, force and shape to the former.

On a number of occasions the court outlined its general approach to requiring open procedures. See, e.g., *EDF v. Blum*, 458 F. Supp. 650 (D.D.C. 1978). In *Blum*, the EPA, in developing regulations pertaining to the use of Ferriamicide to control fire ants in Mississippi, did not make an open record. The court complained:

The agency's technical expertise is normally given prevailing weight, because the procedures prescribed by the APA create a sense of confidence in the result by reason of the fact that they ensure interested parties a full opportunity to make submissions and respond to comments already made. Such confidence, however, cannot result if this full opportunity is denied, as where pertinent communications are received in secret by the agency.

Id. at 659. The court expanded its view further:

[E]ven if the detailed contents of . . . *ex parte* contacts were revealed by the agency on judicial review, we would still be deprived of the benefit of an adversarial discussion among the parties. Our cases . . . make clear the critical role of adversarial comment in ensuring proper functioning of agency decisionmaking and effective judicial review. Such comment serves not only to clarify the issues and positions being considered at the agency level, but also to ensure that fac-

Courts appealed to citizen groups partially because their basis for action lay not in numbers of people who demanded this or that, or in mobilization of opinion by means of lobbyists that might require extensive financial resources, but in the facts of argument. It might have been feasible for a legislator to count the letters or personal phone calls or for an administrator to be impressed with the four-foot stack of documents submitted by corporations in rulemaking, and then to bend in the direction of that political weight. Courts, however, relied more on logical argument and its supporting facts. They sought to narrow a point at issue precisely and then to weigh the evidence submitted.

Although some cases could generate large amounts of evidence, often it was the compilation of crucial facts and selected argument about their meaning that made the difference. Hence, one often could have some influence in the courts by keeping fully abreast of new scientific research, bringing friendly experts to the witness stand, and presenting a carefully reasoned analysis. Early in the 1970's, a number of young law school graduates found considerable excitement in such an opportunity. Much of the challenge was to determine precisely how to secure leverage to influence administrative agencies. Especially significant was the attempt to link legal skills with the scientific and economic expertise that was the hallmark of environmental litigation organizations. At times those organizations coaxed scientists out of the laboratory and into administrative and judicial proceedings. At other times they were able to employ scientists of high repute on their own staffs. Citizen environmental legal action placed a premium on mobilizing expertise within the context of legal institutions.¹⁸

tual questions underlying the agency's decision are not raised, by necessity, for the first time on judicial review. And adversarial comment is particularly critical where . . . *ex parte* communications are made by a party interested in securing [favorable agency action].

Id. at 659-60 (alterations in original) (quoting *United States Lines v. Federal Maritime Comm'n*, 584 F.2d 519, 542 (D.C. Cir. 1978)).

18. A case in which environmental litigation, by the NRDC, drew researchers from the laboratory into administrative proceedings involved the Environmental Protection Agency's (EPA) actions in drawing up a criteria document and an ambient standard for lead. See Schoenbrod, *Why Regulation of Lead Has Failed*, in *LOW LEVEL LEAD EXPOSURE: THE CLINICAL IMPLICATIONS OF CURRENT RESEARCH 259-66* (H. Needleman ed. 1980). Schoenbrod, the NRDC attorney in the case, persuaded two lead researchers to draft their own document for consideration by the EPA Science Advisory Board. H. NEEDLEMAN & S. PIOMELLI, *THE EFFECTS OF LOW LEVEL LEAD EXPOSURE* (1978).

In the early 1980's, the EDF appointed to its staff two scientists of considerable standing in their professions, Ellen Silbergeld, a toxicologist, and Michael Oppenheimer, an atmospheric physicist. Both had made significant contributions to scientific research, and Oppenheimer continued to do so as a member of the EDF staff. See, e.g., Oppen-

Litigation, however, was not inexpensive, and the resources available to citizen environmentalists were meager in contrast with those available to industry. The cost of bringing a lawsuit was great enough to make it less than likely that citizen suit provisions or general citizen suit statutes would lead to much legal action. The expense of expert witnesses and lawyers made legal action prohibitive to most citizens, and the ability to undertake it often depended upon citizens' ability to command volunteer or pro bono services from lawyers and technical experts. The cost of even such an elementary item as the transcript of court proceedings was often far too great for a citizen environmental plaintiff.

Although environmentalists were often able to pursue action more successfully in the courts than in either legislation or administration, they could not do so on a massive scale. Selective action was the rule. The relative ability of industry to bring litigation, challenge administrators through lawsuits, and postpone action and neutralize administrative choice, in contrast with the limited capabilities of environmentalists, was striking. Often, in fact, innovations that opened the courts to citizen environmentalists led to their being used more frequently by government agencies and even industry. Litigation demonstrated the political inequality between the contending parties as fully as did legislation and administrative actions.¹⁹

To these demands for decisions with respect to environmental issues, the courts made several responses that reflected their acceptance of changes in American society that environmental objectives represented. One of these concerned the question of standing, which is the right of a person to bring an issue to the court for resolution. Traditionally, the courts had been inclined to accept claims of harm to one's person or property as the major cause for action or complaint. If one could demonstrate the fact or the likelihood of adverse effects or injuries of those kinds,

heimer, Epstein & Yuhnke, *Acid Deposition, Smelter Emissions, and the Linearity Issue in the Western United States*, 229 *SCIENCE* 859 (1985).

The NRDC and EDF reached a high level of credibility in the nation's capital. A study reported in early 1985, in which Washington policymakers rated 41 organizations representing both environmental and industry groups concerned with environmental policy for their "effectiveness, influence [and] credibility," placed the NRDC first and the EDF fourth among the entire 41; the first six in ranking were environmental groups. Ward & Floyd, *Washington Lobbying Groups . . . How They Rate*, *ENVTL. F.*, Apr. 1985, at 9, 12.

19. Of the 19 federal cases reported by Sandler, *supra* note 12, four were brought by industries and three by state and local governments. Most of the litigation under Michigan's Environmental Protection Act of 1970, *MICH. COMP. LAWS* §§ 691.1201-.1207 (1979), was brought by plaintiffs other than environmentalists, among whom local and state government agencies were the largest in number. See Sax & DiMento, *supra* note 10.

then one had grounds for using the courts or, as it was said, had standing. Often, environmentalists' opponents argued that a complaint should be dismissed because the environmentalists lacked standing.²⁰

Environmentalists argued that they had environmental rights, as well as rights to property ownership and freedom from physical harm, which legal action could protect. To them, the most significant decision on this issue was *Sierra Club v. Morton*,²¹ a case in which environmentalists objected to a permit application by Disney Enterprises to construct a large ski resort in the Mineral King Canyon in California. The Supreme Court affirmed that the defense of aesthetic rights on the part of those who used the area for outdoor enjoyment was a legitimate cause of action. After *Morton*, courts accepted standing to defend environmental values, and even aesthetic rights, if those threatened sought redress.²²

The significance of this innovation was not merely legal. It involved acceptance by the Supreme Court of a major fact of life to which the social changes since World War II had given rise. People valued the quality of the environment around them; they engaged in recreational pursuits in such areas. These values became central in people's daily lives and in public institutions' ongoing concerns. These changes led to new views as to what

20. For a review of the evolution of standing, see Jaffe, *Standing to Sue in Conservation Suits*, in *LAW AND THE ENVIRONMENT*, *supra* note 4, at 123. See also Comment, *Conservationists' Standing to Challenge the Actions of Federal Agencies*, 1 *ECOLOGY L.Q.* 305 (1971).

21. 405 U.S. 727 (1972).

22. See Comment, *Mineral King: A Case Study in Forest Service Decision Making*, 2 *ECOLOGY L.Q.* 493 (1972). *Scenic Hudson Preservation Conference v. Federal Power Commission*, 354 F.2d 608 (2d Cir. 1965), *cert. denied*, 384 U.S. 941 (1966), however, came earlier. In it the court reasoned:

In order to insure that the Federal Power Commission will adequately protect the public interest in the aesthetic, conservational, and recreational aspects of power development, those who by their activities and conduct have exhibited a special interest in such areas, must be held to be . . . aggrieved parties . . . We hold that the Federal Power Act gives petitioners a legal right to protect their special interests.

Id. at 616.

Equally significant was a subsequent case that reviewed an interstate highway location decision of the U.S. Bureau of Public Roads and involved no economic loss to conservationists. The judge held that even without a statutory provision for judicial review, administrative provisions calling for environmental consideration were sufficient to show a "congressional intent" that civic and conservation groups be considered "aggrieved." See *Road Review League v. Boyd*, 270 F. Supp. 650 (S.D.N.Y. 1967). Louis L. Jaffe, of Harvard Law School, commented on this case: "The decision thus opens up to judicial review at the instance of representative persons any official action alleged to have ignored or violated statutory standards governing the action." *CONSERVATION FOUND. LETTER*, Sept. 30, 1969, at 4.

constituted harm to the individual, and to the reassessment of the effects of developmental actions that earlier had been taken for granted as necessary consequences of economic growth. Aesthetic harm could now be set alongside harm to one's person, health, and property as values of serious personal and social consequence.²³

This thinking by the Court was relatively easy to maintain because it was closely related to the longstanding notion in nuisance cases that individuals should be free to enjoy daily life without unwarranted intrusion. It was often difficult, however, to determine where to draw the line between the freedom of others to intrude and the freedom of the individual from such intrusion. But the notion of environmental intrusion as a potential adverse effect on individual rights simply elaborated, in light of changing social values, more traditional ways in which the Court had responded to similar kinds of claims.²⁴

The courts also accepted an enlargement in state police power on behalf of environmental objectives. This referred to the authority that had long existed in state constitutions of power to protect the health, safety, and morals of citizens. This general supervisory power could change with time and did, depending upon social change itself. As change produced new problems and new demands upon government, it could be argued that a new exercise of traditional authority was required.

At one time, for example, the courts had argued that states could not regulate wages and hours of work or the conditions of work. But as public views about this changed so did those of the courts, and they accepted such supervisory powers as constitutionally legitimate. In the 1950's and 1960's such authority was extended to civil rights. When storekeepers claimed a right to exclude blacks as customers on the grounds that they had a right to use their property as they wished, the courts argued that there were other rights as well, and that the state could legitimately use its police power to restrain one in order to protect the other. The police power of states had evolved gradually over the years as society and the economy had evolved, and the impact of the actions of one person upon another, as well as the

23. A judicial recognition of the evolution of the importance of aesthetic values in the United States is contained in *Metromedia, Inc. v. City of San Diego*, 453 U.S. 490, 510 (1981) (taking note of the increasing number of states and municipalities regulating billboards to prevent aesthetic harm).

24. See, e.g., Note, *Aesthetic Nuisance: An Emerging Cause of Action*, 45 N.Y.U. L. Rev. 1075 (1970).

impact of institutions upon individuals, had become more complex and intricate.

Environmental issues had implications for the states' police power because citizens often called upon government to advance environmental objectives or to regulate to prevent environmental harm. General laws extended this protection from common law court action to general supervisory action by governmental agencies. Police power to protect health was long established and was the most readily accepted source of governmental authority to address the new environmental concerns; similar power to protect amenities was less readily acknowledged. Yet courts now affirmed the right of a state to protect community aesthetic and amenity values. Laws called for restrictions on the use of land to avoid adverse effects on others. The courts argued that these were also a legitimate use of state authority. States felt that they should go further than the protection of health and property to the protection of values associated with the enjoyment of life.

In the late 1960's, several states amended their constitutions by affirming the "environmental rights" of their citizens. Environmental rights included the right to an enjoyable natural environment as well as to a clean one. Such amendments reflected the widespread affirmation of environmental values as broadly shared social values. But when citizens in Pennsylvania sought to bring lawsuits on the grounds that actions of individuals, corporations, or governmental agencies deprived them of environmental rights, courts often held back. Courts argued that the constitutional right was not self-enforcing and remained a mere general affirmation until turned into a specific statute. Failing to secure judicial recognition of substantive environmental guarantees in another Pennsylvania case, environmentalists sought to persuade the court that the state constitutional provision implied procedural safeguards such as environmental impact analysis. But this effort was rejected as well.²⁵

25. New York and Michigan adopted amendments in the form of statements of policy, but Massachusetts and Pennsylvania affirmed citizen environmental rights. For a discussion of the Pennsylvania amendment, see Broughton, *The Proposed Pennsylvania Declaration of Environmental Rights, Analysis of HB 958*, 41 PENN. B.A.Q. 421 (1970); Loutz, *An Analysis of Pennsylvania's New Environmental Rights Amendment and the Gettysburg Tower Case*, 78 DICK. L. REV. 331 (1973); Pearson & Hutton, *Land Use in Pennsylvania: Any Change Since the Environmental Rights Amendment?*, 14 DUQ. L. REV. 165 (1976).

A federal amendment was proposed as a House Joint Resolution in 1969 by Rep. Ottinger and 10 colleagues. It declared that the "right of the people to clean air, pure water, freedom from excessive and unnecessary noise, and the natural, scenic, historical

Courts' acceptance of the role of environmental values in issues about both standing and police power did not mean, however, that environmental rights would invariably prevail. Despite these affirmations of basic principles, courts retained considerable discretion in drawing the line between one right and another, in balancing, for example, property rights and environmental rights. If two such rights were in contention, the courts might well argue that although a state could, in principle, constitutionally use its power and authority to carry out environmental purposes, in specific cases action might go too far in restraining the rights of others, such as property owners, who might be affected. Hence, litigation often appeared to be a game in which courts drew fine lines between competing claims, veering one way and then another, thereby retaining considerable power of decision in the courts.²⁶

In responding to changing social values, courts often sought to grapple with fundamental aspects of modern society and the problems they generated that environmentalists brought to the fore. Courts often focused on those problems more precisely and effectively than did either legislatures or administrative agencies. Courts had a way of sorting the wheat from the chaff in an issue, focusing on the crucial point of a dispute and pushing to the side those aspects of argument that were derivative and manipulative, so the nub of the controversy could be laid bare. In

and esthetic qualities of their environment shall not be abridged." CONSERVATION REP., Feb. 21, 1969, at 96. NEPA, when first passed by the Senate, contained language that "each person has a fundamental and inalienable right to a healthful environment." CONF. REP. No. 765, 91st Cong., 1st Sess. 2, reprinted in 1969 U.S. CODE CONG. & AD. NEWS 2767, 2768. That language was altered to "each person should enjoy a healthful environment," *id.*, because of fears that it would open the way to a flood of lawsuits by people claiming that their environment was not healthful. Senator Jackson, cosponsor of the Act, said that he would introduce an amendment to the new law proposing a detailed congressional declaration of a statutory bill of environmental rights. Congress, however, did not restore the original language. See CONSERVATION FOUND. LETTER, Apr. 1970, at 3.

26. Much legal analysis in this vein concerned land use regulation and the taking issue, in which environmental considerations led to the practice of courts balancing private property rights with public environmental objectives and, hence, not following the practice of requiring that owners be compensated for the full diminution of value of their property under regulatory restrictions. For innovations of this kind, see Binder, *Taking Versus Reasonable Regulation: A Reappraisal in Light of Regional Planning and Wetlands*, 25 U. FLA. L. REV. 1 (1972). See also Pearson & Hutton, *supra* note 25; Cabbage & Siegel, *supra* note 2. A major relevant court case was *Just v. Marinette County*, 56 Wis. 2d 7, 201 N.W.2d 761 (1972), in which the Wisconsin Supreme Court ruled that the use of private property could be restricted without compensation if it prevented public harm. For a discussion of the case, see Bryden, *A Phantom Doctrine: The Origins and Effects of Just v. Marinette County*, 3 AM. B. FOUND. RESEARCH J. 397 (1978). A summary of this kind of balancing is in *THE USE OF LAND: A CITIZENS' POLICY GUIDE TO URBAN GROWTH* 145 (W. Reilly ed. 1973).

doing so, courts often focused on the crux of broad social controversy as well as on the issues immediately before them.

Three such types of controversies were present in environmental affairs, each one involving issues arising from three major innovations in post-World War II society: new knowledge, new values, and new technologies. Judicial reasoning and argument that lay behind judicial decision on these issues made clear the larger meaning of environmental change.

Environmental issues and the environmentalists who pressed them placed considerable emphasis on the frontiers of scientific knowledge and helped to shape a continuing set of controversies among scientists about the nature of scientific knowledge and proof. Opinion ranged on a scale from those who demanded very high levels of proof of environmental harm before conclusions could be drawn, to those who kept an eye on the frontiers of knowledge and were willing to draw that evidence into their assessments of what the facts meant. They emphasized the need to make reasonable judgments about harm rather than to affirm conclusive knowledge. Amid these controversies, whose view would prevail? In case after case the courts faced this issue of disagreement. Scientists themselves could not generate a consensus of opinion. Hence, their own disagreements were thrown onto political institutions for decision and ultimately onto the courts.²⁷

For the most part, courts did not wish to take part in the substance of these disputes; they did not have sufficient technical

27. Major cases in which the court outlined its approach to the assessment of health effects were *Lead Indus. Ass'n v. EPA*, 647 F.2d 1130 (D.C. Cir.) (lead), *cert. denied*, 449 U.S. 1042 (1980); *EDF v. EPA*, 598 F.2d 62 (D.C. Cir. 1978) (polychlorinated biphenyls); *Ethyl Corp. v. EPA*, 541 F.2d 1 (D.C. Cir.) (en banc), *cert. denied*, 426 U.S. 941 (1976); *Reserve Mining Co. v. EPA*, 514 F.2d 492 (8th Cir. 1975) (effects of asbestos fibers in drinking water); *EDF v. EPA*, 510 F.2d 1292 (D.C. Cir. 1975) (aldrin/dieldrin); *Society of the Plastics Indus. v. OSHA*, 509 F.2d 1301 (2d Cir. 1975) (vinyl chloride); *Industrial Union Dep't, AFL-CIO v. Hodgson*, 499 F.2d 467 (D.C. Cir. 1974) (occupational asbestos exposure); *NRDC v. Train*, 396 F. Supp. 1386 (D.D.C. 1975) (chlorodane and heptachlor).

In *Lead Industries Association*, the lead industry argued that "Congress only authorized the [EPA] Administrator to set primary air quality standards that are aimed at protecting the public against health effects which are known to be *clearly harmful*." 647 F.2d at 1148 (emphasis in original). But Chief Judge J. Skelly Wright, writing for the majority, said that Congress "specifically directed the Administrator to allow an adequate margin of safety in setting primary air quality standards in order to provide some protection against effects that research has not yet uncovered." *Id.* at 1153.

Similarly, in *Ethyl Corp.*, the court noted:

The administrator may . . . draw conclusions from suspected, but not completely substantiated, relationships between facts, from trends among facts, from theoretical projections from imperfect data, from probative preliminary data not yet certifiable as "fact," and the like. We believe that a conclusion so drawn—a risk

training. They were willing, though, to make judgments about whether or not the assessment of evidence by other governmental bodies, such as administrative agencies, reached a reasonable conclusion and hence was an acceptable alternative among possible choices. It was not enough for a plaintiff to argue that there was scientific disagreement on the issue, and that the court should not choose among claimants. This strategy often stopped legislators and administrators in their tracks, but courts dismissed that response. Courts were established to act, to make choices, albeit difficult ones, and not to temporize. And in making this kind of choice they were quite willing to say that a conclusion based on frontier knowledge constituted sound judgment. Although they did reject some cases of such reasoning as not conclusive, they tended to affirm the environmental argument that emerging knowledge could constitute a basis for judgment in contrast with the plea for conclusive knowledge that many brought to proceedings.²⁸

assessment—may, if rational, form the basis for health-related regulations under the “will endanger” language of Section 211 [of the Clean Air Act].

541 F.2d at 28 (footnote omitted), *cited in* NRDC v. EPA, 655 F.2d 318, 329 (D.C. Cir. 1981) (particulate standards for light duty diesel vehicles).

Often at issue was the crucial point as to whether or not the evidence was conclusive, or in legal language, dispositive. The court in *EDF v. EPA*, 598 F.2d at 85 (quoting *Ethyl Corp.*, 541 F.2d at 37-38), argued concerning the assessment of health and biological effects:

Contrary to the apparent suggestion of some of the petitioners, we need not seek a single dispositive study that fully supports the Administrator's determination. Science does not work that way; nor, for that matter, does adjudicatory fact-finding. Rather, the Administrator's decision may be fully supportable if it is based, as it is, on the inconclusive but suggestive results of numerous studies. By its nature, scientific evidence is cumulative: the more supporting, albeit inconclusive, evidence available, the more likely the accuracy of the conclusion.

For an exchange on the implications of scientific disagreement, compare Green, *The Risk-Benefit Calculus in Safety Determinations*, 43 GEO. WASH. L. REV. 791 (1975) with Handler, *A Rebuttal: The Need for a Sufficient Scientific Base for Governmental Regulation*, 43 GEO. WASH. L. REV. 808 (1975). See also Gelpe & Tarlock, *The Uses of Scientific Information in Environmental Decision-Making*, 48 S. CAL. L. REV. 371 (1974); Comment, *Projected Environmental Harm: Judicial Acceptance of a Concept of Uncertain Risk*, 53 J. URB. L. 497 (1976).

28. See, e.g., *EDF v. EPA*, 465 F.2d 528, 537 (D.C. Cir. 1972) (“We cannot accept the proposition . . . that the Administrator's findings . . . [are] insufficient because controverted by respectable scientific authority. It [is] enough at this stage that the administrative record contain respectable scientific authority supporting the Administrator.”); see also *Lead Indus. Ass'n v. EPA*, 647 F.2d 1130 (D.C. Cir.), *cert. denied*, 449 U.S. 1042 (1980): “The Administrator's decision is, of course, precisely the sort of issue that Congress specifically left to his judgment, and where there is evidence in the record which supports these judgments, this court is not at liberty to substitute its judgment for the Administrator's.” *Id.* at 1158. The court concluded:

[D]isagreement among the experts is inevitable when the issues involved are at the “very frontiers of scientific knowledge,” and such disagreement does not pre-

The courts were also willing to give legitimacy to aesthetic values; though only newly recognized in public policy, they should be allowed as much acceptance in the interplay of political objectives and alternatives as developmental ones. Social change had brought these values to the fore. Older institutions, and the scientific and technical personnel associated with them, held back. They had enormous difficulty in recognizing that such values had as much importance and legitimacy as their own, belittled them, and sought to use political strategies to restrain them.

Courts on the whole took a different view. As judges observed the wider social scene, it seemed clear to them that aesthetic values were important to many in modern society; often the fact that they personally shared those values contributed to their decisions. From whatever quarter, however, the significance of these changes in judicial doctrine rested on the ability of judges to identify clearly and precisely vast and far-reaching social changes that other governmental bodies often had difficulty emphasizing with equal sharpness and clarity.²⁹

Finally, courts grappled with new technologies and the relationship of environmental objectives to the pace of technological change. When industrial litigants argued that environmental regulation would be too burdensome, they sought to focus the analysis on individual firms that would be adversely affected and

clude us from finding that the Administrator's decisions are adequately supported by the evidence in the record. It may be that LIA expects this court to conclude that LIA's experts are right, and the experts whose testimony supports the Administrator are wrong. If so, LIA has seriously misconceived our role as a reviewing court. It is not our function to resolve disagreement among the experts or to judge the merits of competing expert views.

Id. at 1160 (footnote omitted).

29. See McClelland, *The Courts and the Conservation of Natural Beauty*, W. WILDLANDS, Spring 1974, at 20; see also Leighty, *Aesthetics as a Legal Basis for Environmental Control*, 10 PUB. LAND & RESOURCES L. DIG. 54 (1973); Michelman, *Toward a Practical Standard for Aesthetic Regulation*, PRAC. LAW., Feb. 1969, at 36.

One of the earliest federal court affirmations of aesthetic values was in *Berman v. Parker*, 348 U.S. 26 (1954). Justice Douglas wrote for the majority:

The concept of the public welfare is broad and inclusive. The values it represents are spiritual as well as physical, aesthetic as well as monetary. It is within the power of the Legislature to determine that the community should be beautiful as well as healthy, spacious as well as clean, well-balanced as well as carefully patrolled.

Id. at 33 (citation omitted). State courts had made similar pronouncements. See, e.g., *State v. Diamond Motors*, 50 Hawaii 33, 429 P.2d 825 (1967). The Hawaii Supreme Court stated, "We accept beauty as a proper community objective, attainable through use of the police power." *Id.* at 36, 429 P.2d at 827. *Metromedia, Inc. v. City of San Diego*, 453 U.S. 490 (1981), contains an extensive legal analysis of the use of police power to protect aesthetic value under California law. *Modjeska Sign Studios v. Berle*, 55 A.D.2d 340, 390 N.Y.S.2d 945, *rev'd*, 43 N.Y.2d 468, 373 N.E.2d 255, 402 N.Y.S.2d 359 (1977), makes an analysis of the same subject from the vantage point of New York law.

possibly forced to go out of business. Courts, however, tended to emphasize the health of the industry as a whole rather than particular firms that might be obsolete. Was the industry capable of moving ahead with new technologies, with greater efficiencies, with greater benefit to society?³⁰

30. The federal courts outlined their affirmation of technology forcing in a series of cases. For those dealing with air pollution from automobiles, see *International Harvester v. Ruckelshaus*, 478 F.2d 615 (D.C. Cir. 1973) (extension of automobile standards); *NRDC v. EPA*, 655 F.2d 318 (D.C. Cir. 1981) (diesel exhaust standards). In the latter case the court argued, "The legislative history of both the 1970 and the 1977 amendments [to the Clean Air Act] demonstrates that Congress intended the agency to project future advances in pollution control capability. It was 'expected to press for the development and application of improved technology rather than be limited by that which exists today.'" *Id.* at 328 (quoting S. REP. No. 1196, 91st Cong., 2d Sess. 24 (1970)). The court continued, "[The] EPA has concluded that it is absolutely necessary to issue standards which motivate the private sector to maximize its efforts in reducing particulate emissions from light-duty vehicles." *Id.* (quoting EPA, REGULATORY ANALYSIS OF THE LIGHT-DUTY DIESEL PARTICULATE REGULATIONS FOR 1982 AND LATER MODEL YEAR LIGHT-DUTY DIESEL VEHICLES 32 (1980)).

Similar problems were dealt with for stationary sources. The major issue was the installation of equipment to remove sulfur dioxide. See, e.g., *Union Elec. Co. v. EPA*, 427 U.S. 246 (1976): "These requirements . . . are expressly designed to force regulated sources to develop pollution control devices that might at the time appear to be economically or technologically infeasible." *Id.* at 257. In *Department of Environmental Resources v. Pennsylvania Power Co.*, 490 Pa. 399, 416 A.2d 995 (1980), the court stated, "This concept . . . recognizes the ingenuity and innovativeness of American industry. If the present 'state of the art' is such that it does not permit compliance, economic incentive (i.e., a desire to stay in operation or avoid fines), provides the stimulus to produce 'private emission control innovation.'" *Id.* at 407, 416 A.2d at 999 (footnote omitted).

The most extensive application of the policy of technology forcing, however, came with the technology-based standards of the Federal Water Pollution Control Act Amendments of 1972, Pub. L. No. 92-500, § 2, 86 Stat. 816 (codified as amended at 33 U.S.C. §§ 1251-1376 (1982 & Supp. II 1984)), because of which the EPA had to choose models of available technology—"technology which is available or normally can be made available," S. REP. No. 414, 92d Cong., 1st Sess. 51 (1971)—which it would require industry to install. "This does not mean that the technology must be in actual routine use somewhere." *Id.* at 51-52. The 1977 standards were to be the "average of the best existing performance," *id.* at 50, and the 1983 standards "the best performer." *Id.* When industry argued that the model was to be the "average of the industry's current performance," *American Paper Inst. v. Train*, 543 F.2d 328, 341 (D.C. Cir. 1976), the court pointed out that the record defined it in terms of the "average of the best existing performance." *Id.* The EPA argued that the law required that the average of the top performers, usually the top 10%, constitute the "exemplary plant" models and the court upheld its choice. See *Hooker Chems. & Plastics Corp. v. Train*, 537 F.2d 639 (2d Cir. 1976); *American Meat Inst. v. EPA*, 526 F.2d 442 (7th Cir. 1975).

The court rejected several efforts to limit the use of such "exemplary" models. The paper industry, for example, argued that the strategy applied only to end-of-pipe treatment and not to in-plant processes, but the court rejected that argument. *American Paper Inst.*, 543 F.2d at 343. It also rejected the argument that the EPA could not include Canadian plants in selecting models. *American Frozen Food Inst. v. Train*, 539 F.2d 107, 132 (D.C. Cir. 1976) ("Technology in the modern world knows few boundaries—the United States-Canadian boundary perhaps least of all.").

Technology forcing also required the application of monitoring by industry. See *Kennecott Copper Corp. v. New Mexico Env'tl. Improvement Bd.*, 94 N.M. 610, 614 P.2d 22

Courts accepted the environmental argument that cost-benefit analysis should not be allowed to entrench older and more obsolete firms by emphasizing the cost of environmental regulation to them, but that the more important question should be the degree to which new and more modern production could move ahead. They agreed that the implication of environmental laws was to require some firms, usually the older and more obsolete ones, to fall by the wayside to be replaced by more modern firms that would enable the entire industry to progress.³¹

In these instances—cases of new knowledge, new values, and new technologies—environmentalists threw their weight on the side of innovation. The environmental movement constituted a major expression of demand for new research in science, acceptance of new social values, and technological change. It was one among several elements in American society moving in those directions. The response of the courts to the issues that arose from these changes was to affirm their legitimacy and hence to give them judicial approval. In this way, courts played a major role in broad social decisionmaking, as well as in resolving more limited disputes among litigants.

As time passed, however, this larger role of the courts began to change from one of affirming new social values to one of granting agencies considerable choice in implementing environmental programs. As the agencies became more careful procedurally, courts began to defer to their technical expertise. Judges did not

(Ct. App. 1980); *Alabama Power Co. v. Costle*, 636 F.2d 323 (D.C. Cir. 1979). With respect to the latter case the court argued:

We discern from the statute a technology-forcing objective. Congress intended that monitoring would impose a certain discipline on the use of modeling techniques . . . [It] projects that the employment of modeling techniques be held to earth by a continual process of confirmation and reassessment, a process that enhances confidence in modeling, as a means for realistic projection of air quality.

Id. at 372.

For a general review of technology forcing, see Bonine, *The Evolution of 'Technology-Forcing' in the Clean Air Act*, ENVTL. REP., July 1975, at 1. Several legal analyses of technology forcing are La Pierre, *Technology-Forcing and Federal Environmental Protection Statutes*, 62 IOWA L. REV. 771 (1977); Comment, *Technology Forcing Under the Clean Air Act: The Electric Utility Dilemma*, 38 U. PITT. L. REV. 505 (1977); and Comment, *Forcing Technology: The Clean Air Act Experience*, 88 YALE L.J. 1713 (1979).

31. The courts distinguished the effect of regulation on individual firms from the effect on the health of an entire industry. See, e.g., *American Textile Mfrs. Inst. v. Donovan*, 452 U.S. 490 (1981) (cotton dust litigation). The Court noted that "although [OSHA found] some marginal employers may shut down rather than comply," the entire industry was not threatened. *Id.* at 530-31 (quoting 43 Fed. Reg. 27,378 (1978)). The Court approved the notion that "the practical question is whether the standard threatens the competitive stability of an industry" and found that "in this case it does not." *Id.* at 530 n.55 (citing *United Steelworkers v. Marshall*, 647 F.2d 1189 (D.C. Cir. 1980)).

wish to tackle complex problems such as the choice of air quality models, substantive judgments as to health and ecological effects, or choices among alternatives to planning. Despite the obvious desire of litigants to wrest such from them, courts warned about the limitations to their jurisdiction: "Although this inquiry into the facts is to be searching and careful, the ultimate standard of review is a narrow one. The court is not empowered to substitute its judgment for that of the agency."³² Agency judgment was to be accepted if it constituted a "reasoned decision," a "rational conclusion based upon facts" rather than the decisions that one party to a dispute preferred. As issues became more technical in the course of policy implementation, judicial deference became more extensive.³³

Environmentalists found it increasingly difficult to penetrate this deference to shape the course of implementation. Agencies sought to interpret their authority narrowly and to limit the intensity of action on behalf of environmental goals. If their decisions were "reasoned" according to judicial opinion, the courts could not serve as an effective counterweight to administrative lethargy on behalf of environmental goals. When administrative choice moved in environmentalists' favor and the courts deferred to it, environmentalists applauded the outcome; but the opposite happened with greater frequency over the course of

32. *EDF v. Corps of Eng'rs of the United States Army*, 470 F.2d 289, 300 (8th Cir. 1972) (quoting *Citizens to Preserve Overton Park, Inc. v. Volpe*, 401 U.S. 402, 416 (1971)), *cert. denied*, 412 U.S. 931 (1973); see also *EDF v. Hoffman*, 421 F. Supp. 1083, 1089 (E.D. Ark. 1976), *aff'd*, 566 F.2d 1060 (8th Cir. 1977).

33. For similar statements of deference, see *Connecticut Fund for the Env't, Inc. v. EPA*, 696 F.2d 169 (2d Cir. 1982) (sulfur content regulation changes); *Lead Indus. Ass'n v. EPA*, 647 F.2d 1130 (D.C. Cir.) (health effects of lead), *cert. denied*, 449 U.S. 1042 (1980); *Mision Indus. v. EPA*, 547 F.2d 123 (1st Cir. 1976) (changes in Puerto Rico air quality implementation plan); *Ethyl Corp. v. EPA*, 541 F.2d 1 (D.C. Cir.), *cert. denied*, 426 U.S. 941 (1976); *Sierra Club v. EPA*, 540 F.2d 1114 (D.C. Cir. 1976) (prevention of significant deterioration regulations).

A contrary view is expressed in R. MELNICK, *REGULATION AND THE COURTS* (1983). Melnick argues that federal courts have recently become more aggressive in their approach to regulatory policy and less deferential to bureaucratic expertise. Melnick fails to place judicial decisions in the context of legislative policy on the one hand and broader social values and the evolution of scientific knowledge on the other. Many of his examples deal with procedural rather than substantive matters. The most one can say is that courts accepted major innovations in social choice as reflected in legislative decisions; to argue that the courts imposed much of their own substantive views on decisionmaking has little supporting evidence. Federal environmental court decisions in *Environment Reporter—Cases* reflect a persistent theme of deference to the technical expertise of the agencies.

For a useful discussion of the role of the courts in relationship to administrative agencies, see Leventhal, *Environmental Decisionmaking and the Role of the Courts*, 122 U. PA. L. REV. 509 (1974).

time and rendered the courts less useful as a check on administrative action. If an agency argued that air quality models were inadequate to determine the effect of sources of automobile pollutants on ambient air to determine "significant deterioration" or the transformation of sulfur dioxide into sulfates, the court declined to question that judgment. If an environmental impact statement was interdisciplinary and comprehensive, a satisfactory "full disclosure" document, no matter what the substantive agency choice among alternatives, it was acceptable.³⁴

In sum, one might compare and contrast law and science in the response of each to changing social values represented by environmental affairs. Science reflects new realities and new circumstances for investigation, understanding, and perception of those frontiers. Law, on the other hand, reflects new values and choices made by individuals and institutions with respect to changing circumstances. The relationship of science to society is often indirect, mediated by those in scientific institutions who make choices about what shall be investigated and how research resources shall be deployed. The relationship of law to society, on the other hand, is more direct; as individuals and institutions feel that they are harmed by some new facet of social change, they come into contention one with another, and bring their complaints to courts.³⁵

The environmental movement served greatly to expand the realm of science, making far greater demands on existing scientific and technical institutions than they were capable of meet-

34. In the early years of NEPA litigation, several writers observed the potential for judicial supervision of substantive issues in the review of environmental impact statements. See F. ANDERSON, *NEPA IN THE COURTS* 258-65 (1973); Note, *Substantive Review Under the National Environmental Policy Act: EDF v. Corps of Engineers*, 3 *ECOLGY L.Q.* 173 (1973). The authors suggested that the courts would be guided by the substantive policy objectives in § 101 of the Act, the accuracy of cost-benefit analysis, and "agency objectivity." Their examples were drawn from litigation condemning Corps of Engineers environmental impact statements on river development projects which, to them, indicated a tendency for the courts to argue that agency decisions could be reviewed on the merits as well as on procedure. See also Yarrington, *Judicial Review of Substantive Agency Decisions: A Second Generation of Cases Under the NEPA*, 19 *S.D.L. REV.* 279 (1974).

Subsequent judicial decisions, however, did not indicate that courts were willing to take up such questions. It is especially noteworthy that NEPA policy implications in § 101 played a minor role in both judicial and administrative decisions. See Caldwell, *NEPA's Unfulfilled Potential*, *ENVTL. F.*, Jan. 1985, at 38. Caldwell, one of the major authors of the Act, wrote, "The substantive provisions of NEPA—its declared goals and principles stated in Sections 101 and 204—have not been regarded by the courts as [amenable] to judicial review and have therefore been discounted as effective law." *Id.* at 38, 40.

35. For a discussion of the relationship between science and law, see Markey, *Science and Law—Toward a Happier Marriage*, 59 *J. PAT. OFF. SOC'Y* 343 (1977).

ing. But it also made demands upon law, which reflected social values and social change more directly and hence was more responsive to environmental entreaties. Scientists tended to think of themselves as relatively independent from social context, as involved with a reality that was apart from people, their setting, and their values. This led to scientists' detachment from the public and their alignment with other scientific, technical, and managerial institutions in their strategies for action and defense.

But courts forced scientists and technicians back into the world of social reality to face their own particular, in contrast with their assumed universal, values and the values of society. Human aspirations and desires for achievement, even those of scientific and technical specialists, as well as of society generally, comprised the basis from which science, law, and government developed during the Environmental Era. Courts sat amidst changing human aspirations. And even though science and technology sought through management to perfect institutions that would be divorced from the changing social reality, they could not do so completely. Not only did courts respond more directly to changing social values, but they had the ability to force other institutions, especially those of science and technology, to do so as well.