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Turning the Tide on Water Quality

William F. Pedersen, Jr.*

INTRODUCTION

Once one of the acknowledged pillars of the nation's pollution control effort, the Clean Water Act has faded from public attention. While federal hazardous waste statutes have been amended heavily¹ and the Clean Air Act seems destined for the same treatment if the chronic issue of acid rain can be resolved, for almost ten years neither Congress nor the Environmental Protection Agency (EPA) has scrutinized the Clean Water Act's basic architecture.² The statutory revisions enacted in 1987³ do little more than mirror the inherited structure.

This might be sensible neglect had the nation solved its water pollution problems, but the best of admittedly poor statistics show essentially no change in water quality since the Clean Water Act took its present form.⁴ According to these statistics, the vast sums invested under federal

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4. See CONSERVATION FOUND., STATE OF THE ENVIRONMENT: AN ASSESSMENT AT MID-DECADE 105 (1984) ("Unlike the nation's relatively consistent and widespread improve-
mandate have done little more than prevent matters from worsening. Anecdotal evidence relates the same effect: the Clean Water Act has not led to perceptible improvement in many individual bodies of water, and where environmental deterioration is advancing—as in the Chesapeake Bay—the current statute offers no adequate remedy.

Since 1972, Congress has based the statutory framework not on water quality, but on requiring equal limits on all technically similar sources wherever they may be located. Because water quality varies with

ments in air quality, success in cleaning up surface waters has been mixed"). The U.S. Geological Survey, which operates the only consistent nationwide water quality measurement network, reports that during the period 1974-81 only two of the 35 pollutants measured (calcium and fecal streptococcus bacteria) showed a decreasing trend at up to a quarter of the Survey's measuring stations. By contrast, four pollutants (sulfate, sodium, chloride, and arsenic) showed increasing trends at a quarter or more of the measuring stations. For every pollutant the stations reporting "no change" greatly outnumbered those reporting any trend at all. Computed from U.S. GEOLOGICAL SURVEY, WATER SUPPLY PAPER No. 2250, NATIONAL WATER SUMMARY 1983, HYDROLOGIC EVENTS AND ISSUES 46, Table 4 (1984).

Likewise, an EPA-supported survey of state officials showed that only about 13% of stream miles, 22% of estuary area, and about 2% of lake area had improved in quality during the past 10 years. Although once more the bulk of waters were classified "unchanged," about 10% of lakes had decreased in quality. ENVIRONMENTAL PROTECTION AGENCY, AMERICA'S CLEAN WATER: THE STATES' EVALUATION OF PROGRESS 1972-1982, at 2-5 (1984) [hereinafter AMERICA'S CLEAN WATER]. Similarly, the ability of the nation's waters to support sport fish did not change significantly during that period. ENVIRONMENTAL PROTECTION AGENCY, ENVIRONMENTAL PROGRESS AND CHALLENGES: AN EPA PERSPECTIVE 47 (1984) [hereinafter ENVIRONMENTAL PROGRESS].

This lack of improvement, however, starts from a base containing a relatively large share of clean water. Ninety-six percent of streams and 64% of lakes meet the water quality standards that have been set for them, almost all of which call for water quality sufficient to support fish and wildlife. AMERICA'S CLEAN WATER, supra, at 4-5.

Virtually none of these statistics address toxic pollutants such as heavy metals or pesticides. We have little idea either of the current situation or of developing trends where these materials are concerned. See infra note 10.

5. The Environmental Protection Agency estimates that between 1970 and 1984 the country spent about $200 billion on water pollution control. OFFICE OF POLICY ANALYSIS, EPA, THE COST OF CLEAN AIR AND WATER REPORT TO CONGRESS 1984: EXECUTIVE SUMMARY at Table 3 (1984). The cost of air pollution control was about $250 billion for the same period. Id. at Table 2. Projections for 1981-90 set expenditures for both air and water pollution control at approximately $250 billion each. Id. at Tables 2, 3.

6. Recent EPA publications plainly designed to portray the water pollution control program in a good light cite no more than a handful of examples of actual cleanup. See, e.g., ENVIRONMENTAL PROGRESS, supra note 4. Moreover, Lake Erie, one of the main success stories, was the subject of efforts under a special agreement with Canada. Great Lakes Water Quality Agreement of 1978, Nov. 22, 1978, United States-Canada, 30 U.S.T. 1384, T.I.A.S. No. 9257.

7. A detailed survey of the Chesapeake Bay found that most indigenous plants and animals (except for algae) were in decline, that the decline seemed to correlate with excess pollution by nutrients and toxic metals and chemicals, and that about half the nutrients and an unknown—but significant—portion of the toxic pollutants came into the bay from nonpoint sources not subject to direct regulation under the Clean Water Act. EPA, CHESAPEAKE BAY PROGRAM: FINDINGS AND RECOMMENDATIONS 21-34 (1983). The recommendations for action in the study focused on voluntary steps by the state and federal agencies involved. They rested heavily on an extensive program of nonpoint source control—an area addressed only preliminarily in the Clean Water Act. Id. at 37-48.
location, this broad approach is inefficient, ineffective, and quite predict-ably results in controls that are tighter than they need to be to preserve environmental quality or that are too lenient to make any real difference. In addition, this approach has tempted regulators and environmentalists to define successful water pollution control simply by tallying how many regulated sources have installed how much technology. This undermines efforts to redirect both the thrust of the law and the attention of those who implement it toward the values pollution control should protect and the means available to protect them.

The exact meaning of “clean water” is far from obvious, even on a physical level. The definition becomes far more complex when used to frame a policy—to state what goals a program to produce “clean water” should serve and how it should pursue them. Contrary to popular belief, an ambitious water pollution control program cannot be defended as necessary to preserve the suitability of the nation’s water for industrial use or for human consumption.\(^8\) Instead, as commentators have noted, efforts must be measured by their ability to protect ecological values.\(^9\)

Protecting an ecosystem, however, is far more challenging than legislators will acknowledge: it requires regulation to assure that minimum water standards are met. As of 1984, over half of the pollutants in the nation’s water were generated by nonpoint sources such as irrigation return flows or runoff from fields and streets.\(^10\) Restraining these sources may call for regulation of where and how people may farm, cut trees, or construct roads and buildings. Moreover, even if the pollution input to a


In several studies, industrial costs turn out to be surprisingly insensitive to intake water quality within comparatively wide ranges . . . . The situation is surprisingly similar for municipal water users. Much of what has been said about the need for high quality water supplies as a basis for the preparation of potable water is more the product of emotion than of logic . . . . [A] plant at Dusseldorf, Germany, withdraws water from the Rhine River, which is of far lower quality than the Delaware, the Hudson, or the Missouri, treats it . . . . and produces quite potable drinking water. \(\text{Id. at 125.}\)

\(^9\) E.g., id. at 126 (“The limited evidence from the studies and analysis discussed above leads to the virtually inescapable conclusion that higher quality must be justified primarily on aesthetic and recreational grounds, if it is to be justified at all.”).

\(^10\) Office of Water Program Operations, Water Planning Division, U.S. Environmental Protection Agency, Report to Congress: Nonpoint Source Pollution in the United States 1-14 (1984) (70% of chemical oxygen demand, 66% of phosphorous, 90% of kjeldahl nitrogen, 70% of oil, and 57% of lead in water attributable to nonpoint sources). By way of contrast, the only pollutants listed as more than 60% attributable to point sources were mercury, arsenic, and cadmium. Although some toxic heavy metals are largely attributable to point sources, no statistics are available for toxic organic chemicals.

For sediments, the contribution of nonpoint sources is heaviest of all. L. Gianessi, H. Peskin, P. Crosson & C. Puffer, Draft, Nonpoint Pollution: Are Cropland Controls the Answer? at Table 1 (Oct. 1, 1985) (available from Resources for the Future, Wash. D.C.) (4 million tons per year of sediment runoff from point sources, 2.719 billion tons from nonpoint sources).
lake or stream could be held constant by such methods, its impact would vary with the amount of water available to dilute pollution. Thus, to protect water quality fully, the government either must adjust its demands for varying water levels or must keep water levels constant by limiting offstream uses of water.\textsuperscript{11}

Any control program that squarely faced these complexities automatically would confront difficult policy and political choices.\textsuperscript{12} No practical program could apply all the restraints needed to preserve preindustrial levels of cleanliness and biological diversity in all bodies of water all the time. If there is to be an effective federal water pollution control law, therefore, significant decisions must be made specifying the level of protection to be afforded each body of water and identifying who will make those determinations.

Rather than attempt to address such philosophically and politically sensitive issues, Congress has carefully designed its water pollution statutes to avoid them. In 1965, Congress enacted clean water legislation\textsuperscript{13} based upon water quality but left the necessary regulatory mechanisms incomplete in order to avoid federal control of local water and land use.\textsuperscript{14} This was one reason that the 1965 version of the Act produced disappointing results.\textsuperscript{15} In 1972, Congress reacted with a new approach that largely and deliberately suppressed the whole water quality question.\textsuperscript{16} This revised approach produced not only disappointing results, but also a gradually eroding control effort.

The same avoidance is evident in the 1987 amendments to the statute. Although these amendments again pay lip service to water quality,

\begin{footnotes}
\footnote{11. In the last comprehensive survey of the nation's water budget, the U.S. Water Resources Council concluded after a quantitative survey that

\textit{[t]here is already... encroachment on optimum instream conditions [for wildlife] for most months throughout the West. In much of the arid West, the water supply is already depleted by more than 90 percent in many months. This means a loss of desirable aquatic life and attendant instream values...}. By the year 2000, given the projected offstream use, the instream conditions will worsen significantly in most basins.


The maps illustrating even current stream flow show not just the "existing conflicts in the West" but also "beginnings of problems in the East." \textit{Id.} at 61. In specific areas of major public importance, such as the Everglades, San Francisco Bay, and along the Texas Gulf Coast, withdrawal of water for offstream uses will produce or already has produced significant adverse environmental change. \textit{Id.} pt. 3, at 136-37.


\footnote{14. \textit{Id.} § 5(c)(1)-(6). \textit{See infra} notes 22-27 and accompanying text.

\footnote{15. \textit{See infra} note 53 and accompanying text.


they evidence no willingness to face the fundamental choices needed to protect it. The new amendments emphasize exhortation, ill-advised grants, and tighter limits on certain aspects of the problem, coupled with nearly total failure to address other aspects. Unless Congress redesigns this program, it is clear that the mediocre results of the past will continue.

Congress could correct these flaws by changing the current statute to emphasize actual environmental standards and by requiring actual achievement of them. Although the present law still requires states to set water quality standards and to submit them to EPA for approval, it does not define those standards broadly enough or require adequate steps to attain them. Congress should mandate that all such standards include a satisfactory and enforceable attainment plan requiring EPA approval. EPA would promulgate plans if the states did not provide them.

In addition to forcing the actual attainment of water quality standards, Congress should allow states to choose acceptable quality levels for most of their waters. This discretion should not be unbounded, however. At the very least, Congress should require full protection of water quality in national parks, wilderness areas, and other federal reserves—a step that would conform the Clean Water Act to the pattern already established in clean air and water quantity regulation. Even where Congress did not choose water quality levels, it almost certainly would produce a net gain in environmental protection by granting the states freedom to set their own standards and requiring that they achieve the standards thus chosen. The gains in costs saved and in equity would be far greater. Finally, and perhaps most importantly, forcing the statute to address the real problems of water cleanup would endow the Act with a self-correcting capability that eventually might spur Congress to provide significant further improvements in the water pollution control program.

I

THE DESIGN OF THE CLEAN WATER ACT

A. The 1965 Act: A Tenuous Beginning

1965 marked the start of federal water legislation designed to regulate the nation's water. In that year Congress called upon states to
establish and to submit for federal approval water quality standards for interstate waters.\(^{23}\) If a state did not do so within two years, the federal government could promulgate the missing standards, albeit through a highly cumbersome procedure.\(^{24}\) Even established standards, however, essentially were unenforceable. Although states were to include a plan for attainment\(^{25}\) in their standards, the federal government could not implement that plan effectively were the state to provide it. Moreover, the federal government could not issue a plan if the state failed to act.\(^{26}\)

Even such small steps proved controversial: the House version of the legislation denied the federal government any authority to set water quality standards, on the ground that conferring such authority would give the federal government too much control over local land use.\(^{27}\) The Senate version, which was the final compromise, granted that authority, but only with multiple assurances of its lack of hard and fast meaning.\(^{28}\)

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23. The legal test these standards had to pass was extremely vague. The 1965 Act required that

standards of quality . . . shall be such as to protect the public health or welfare, enhance the quality of water and serve the purposes of this Act . . . [The authorities that establish such standards] shall take into consideration their use and value for public water supplies, propagation of fish and wildlife, recreational purposes and agricultural, industrial, and other legitimate uses.


The "purposes of the Act" were "to enhance the quality and value of our water resources and to establish a national policy for the prevention, control, and abatement of water pollution." Id. § 1(a), 79 Stat. at 903 (amended in 1972).

"Interstate waters" previously had been defined as all waters that flowed from one state into another or formed a boundary between two states. Water Pollution Control Act Amendments of 1956, Pub. L. No. 84-660, § 11(e), 70 Stat. 498, 506 (amended in 1972).


26. See Gaba, supra note 12, at 1178-79.

27. H.R. REP. NO. 215, 89th Cong., 1st Sess. 10, reprinted in 1965 U.S. CODE CONG. & ADMIN. NEWS 3313, 3322. Instead, the House bill would have tied federal water pollution control grants to the establishment of these standards. Id. at 11, reprinted in 1965 U.S. CODE CONG. & ADMIN. NEWS at 3322-23. The House report emphasized the limited scope of even this provision by pointing out that it applied only to "interstate waters." Id. at 9, reprinted in 1965 U.S. CODE CONG. & ADMIN. NEWS at 3321.

28. See S. REP. NO. 10, 89th Cong., 1st Sess. 9-10 (1965) (standards will not be used to "lock in" existing high-quality water uses so as to prevent downgrading for industrial purposes and will not be enforced against sources absent a separate determination that the resulting discharge limits are practicable).
Indeed, the Senate adopted that tenuous alternative only after a floor fight.\textsuperscript{29}

\section*{B. Design of the 1972 Amendments}

\subsection*{1. The Technology-Based Approach: The Change and Its Packaging}

The 1965 statutory architecture produced slow progress at best. By 1972, only half the country’s interstate waters had approved water quality standards, and enforcement was extremely spotty.\textsuperscript{30} That record did not impress any group of politicians in the activist environmental climate of the early 1970’s. When Congress rewrote the Clean Water Act in 1972, it abandoned reliance on water quality as unworkable and switched instead to a set of technology-based requirements specifically constructed for quick and simple implementation.

The core of the new provisions required industrial sources of water pollution to meet two progressively tighter levels of effluent reduction\textsuperscript{31} and imposed somewhat differently worded—but parallel—requirements on public sewage treatment plants,\textsuperscript{32} new factories,\textsuperscript{33} and indirect dischargers (plants that discharged into a municipal treatment works rather than into the water directly).\textsuperscript{34} The statute detailed factors for EPA to consider in setting effluent reduction levels in each case.\textsuperscript{35} Cost, technical feasibility, and “non-water quality environmental impact” all were

\begin{footnotesize}
\footnotesize{29. 111 CONG. REC. 1511-18 (1965) (defeat of amendment to delete from the Senate bill federal authority to set water quality standards). \textit{See also} S. REP. NO. 10, supra note 28, at 11-17 (statement of Sen. Cooper).

30. In late 1972, more than four years after the passage of the deadline in the 1965 Act, only 27 of the 54 jurisdictions covered had fully approved water quality standards. 117 CONG. REC. 38,799 (1971) (statement of Sen. Muskie), \textit{reprinted in 2 LEGISLATIVE HISTORY OF THE WATER POLLUTION CONTROL ACT AMENDMENTS OF 1972, 1256 (1973) [hereinafter LEGISLATIVE HISTORY]. The Senate report on the 1972 amendments stated that under prior law “only one case has reached the courts in more than two decades.” S. REP. NO. 414, 92d Cong., 1st Sess. 5 (1971), \textit{reprinted in 2 LEGISLATIVE HISTORY, supra, at 1423.}


35. \textit{Id.} § 304(b)(1)-(2), 33 U.S.C. § 1314(b)(1)-(2). To determine the first, less-stringent treatment level for industrial sources—best practicable technology—the Administrator had to consider age, process type, engineering impacts, nonwater quality environmental impacts (including energy requirements), and the cost of applying the technology in relation to the effluent reduction benefits to be received from such application. \textit{Id.} § 304(b)(1)(B), 33 U.S.C. § 1314(b)(1)(B). For the second, stricter level—best available technology—the statute once more directed EPA to take into account age, process, engineering, and nonwater quality environmental impacts including energy requirements. The statute required that cost be consid-}
\end{footnotesize}
mentioned. As EPA has found, and as the courts have confirmed emphatically, only the most logically relevant point—impact on water quality—expressly was excluded. 36 The result of this change was a set of rules that applied uniformly to all plants in an industry without regard either to the effect on local water quality or to the relationship between control costs in that industry and in others subject to slightly different regulations.

In adopting this new approach, Congress addressed in detail neither the actual problems with the 1965 law nor the probable consequences of the new course. In particular, the Senate, in which the technology-based approach had originated, did not concede either that there were gaps in the 1965 regulatory mechanism or that federal regulation of a principally local issue such as water quality raised difficult jurisdictional problems. Instead, the Senate relied on diversionary arguments such as the technical difficulty of relating pollution discharge to a given level of water quality. 37

36. The courts have sustained EPA's interpretation that the language of the Clean Water Act prohibits raising "the issue of receiving water capacity ... in setting effluent limitations because Congress had ruled it out." Weyerhaeuser Co. v. Costle, 590 F.2d 1011, 1041-42 (D.C. Cir. 1978); accord, Association of Pac. Fisheries v. EPA, 615 F.2d 794, 805 (9th Cir. 1980); Appalachian Power Co. v. Train, 545 F.2d 1351, 1378 (4th Cir. 1976); Consolidation Coal Co. v. Costle, 604 F.2d 239, 244-45 (4th Cir. 1979) ("Congress has now mandated that even if the application of the best practicable control technology to a specific source of pollution results in no significant improvement in the quality of the receiving water, that technology must still be applied."). rev'd on other grounds sub nom. EPA v. National Crushed Stone Ass'n, 449 U.S. 64 (1980).

Ironically, the effect on the supply of water must be considered in setting these requirements, even though the effect on water quality is ruled out explicitly. American Iron & Steel Inst. v. EPA, 568 F.2d 284, 308 (4th Cir. 1977); Appalachian Power, 545 F.2d at 1370.

37. The Senate report explained that the Senate had adopted a basic change in approach in part because:

[there is] great difficulty associated with establishing reliable and enforceable precise effluent limitations on the basis of a given stream quality. Water quality standards, in addition to their deficiencies in [sanctioning some amount of pollution by] relying on the assimilative capacity of receiving waters, often cannot be translated into effluent limitations defendable in court tests, because of the imprecision of models for water quality and the effects of effluents in most waters ... .

The Committee recommends the change to effluent limits as the best available mechanism to control water pollution. With effluent limits, the Administrator can require the best control technology; he need not search for a precise link between pollution and water quality.

S. REP. NO. 414, 92d Cong., 1st Sess. 8, reprinted in 1972 U.S. CODE CONG. & ADMIN. NEWS 3668, 3675, also reprinted in 2 LEGISLATIVE HISTORY, supra note 30, at 1426. See also 117 CONG. REC. 38,832 (1971), reprinted in 2 LEGISLATIVE HISTORY, supra note 30, at 1322 (statement of Sen. Buckley) ("Of course, the bill itself has abandoned the attempt, as an ultimate goal, of drawing a causal connection between the discharge of pollution and the degradation of our streams. ... I feel that this concept is workable.").

Although it contained many provisions similar to those in the Senate version, the House bill did not announce such a sharp break with the past and took a more favorable view of water quality standards. See H. REP. NO. 911, 92d Cong., 2d Sess. (1972), reprinted in 2 LEGISLA-
At the same time as they downgraded the importance of water quality examination in the statutory architecture, both the Senate version and final bill drew public attention away from that step. Indeed, they declared as national goals that all water pollution discharges should cease by 1985 and that water clean enough for fish, shellfish, and recreation should be achieved by 1983.38

2. The Permit Program

In 1972, Congress divorced the procedures and the substance of water regulation from any direct tie to water quality. Under the 1972 amendments, no “point source” could discharge any “pollutant” into the “waters of the United States” without a permit.39 In turn, the permit would mandate compliance with Clean Water Act requirements.40 Congress applied this permit duty not just to those discharging into waters that were navigable in the traditional sense—i.e., waters fit for waterborne commerce—but to all waters within reach of the commerce power.41 It also defined “pollutant” extremely broadly.42 Despite this

40. A permit may be issued only “upon condition that [the permitted] discharge will meet either all applicable requirements under [six specific statutory sections] or prior to the taking of necessary implementing actions ... such conditions as the Administrator determines are necessary [to implement these sections].” Federal Water Pollution Control Act Amendments of 1972, § 402(a)(1), 33 U.S.C. § 1342(a)(1) (1982).
41. See id. § 502(7), 33 U.S.C. § 1362(7) (defining “navigable waters” as “the waters of the United States”). Initially, waters were deemed navigable if they were actually used or were capable of being used in their ordinary condition to carry interstate commerce. The Daniel Ball, 77 U.S. 557, 563 (1870). This test gradually had been broadened over the years. See, e.g., United States v. Appalachian Power Co., 311 U.S. 377 (1940). In adopting the specific definition of “navigable waters” in the Clean Water Act, however, “Congress evidently intended to repudiate limits that had been placed on federal regulation by earlier water pollution control statutes and to exercise its powers under the Commerce Clause to regulate at least some waters that would not be deemed ‘navigable’ under the classical understanding of that term.” United
otherwise sweeping approach, the "point sources" required to obtain permits were defined to include any discharge through a pipe or ditch but not to include runoff from a general area. Any "nonpoint source" fell outside the statute's regulatory framework and could pollute without regard to its effect on water quality.

C. Water Quality Standards in the 1972 Statute

Had Congress, in 1972, stopped its drafting with the technology-based standards and the permit requirement implementing those standards, it would have severed the regulatory system from its prior tie to water quality. Instead Congress retained, and in some ways strengthened, the water quality provisions of the 1965 Act, yet failed to confront any of the difficult issues behind them. The 1972 amendments extended to all navigable waters—rather than just to interstate waters—the 1965 requirement that water quality standards be established. The amendments also bound the states setting those standards to deadlines and greatly streamlined the procedures for federal action when states de-
faulted. Finally, the statute mandated that all point source permits compel compliance with water quality requirements. The statute did not establish any substantive yardstick by which these more potent water quality standards would be set. It required the initial establishment of water quality standards consistent with “the applicable requirements of this Act as in effect immediately prior to the date of enactment of the Federal Water Pollution Control Act Amendments of 1972.” Although water quality presumably is the most important product of water pollution control, this grandfather clause made the fishable/swimmable and no-discharge goals contained in the 1972 amendments inapplicable to water quality standards. Congress also required that these standards, once set, be examined and revised, if necessary, every three years. The amendments specified that any needed revisions should be sufficient to “protect the public health or welfare, enhance the quality of water and serve the purposes of this Act.” That directive, although scarcely precise, could be read as incorporating the ambitious purposes of the 1972 amendments into the revision process. In the next sentence, however, Congress muddied any such message by requiring that revised standards consider the value of the waters in question “for public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, and other purposes”—the exact standard-setting language used in the 1965 statute, long before the 1972 goals were conceived.

D. Fitting the Pieces Together

This mix of technology-based requirements and water quality standards, both binding only on point sources, combined with the goals of fishable/swimmable water or no discharges of pollutants, created two clear questions of statutory coordination. The first question asked what

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47. Federal Water Pollution Control Act Amendments of 1972, § 402(a)(1), 33 U.S.C. § 1342(a)(1) (1982), provides that permits must enforce compliance with section 301(b)(1)(C) of the Act, which calls for all effluent limitations to be at least as stringent as is “necessary to meet water quality standards,” 33 U.S.C. § 1311(b)(1)(C) (1982).
49. Id. § 303(c)(1), 33 U.S.C. § 1313(c)(1).
51. Id. § 303(c)(2), 33 U.S.C. § 1313(c)(2).
52. Moreover, even these limited water quality provisions came exclusively from the House. Although the Senate accepted them, it also stated that funding for the development of water quality standards should receive a secondary priority in the EPA budget. 118 CONG. REC. 33,696 (1972), reprinted in 2 LEGISLATIVE HISTORY, supra note 30, at 171. EPA has “faithfully followed” this congressional “admonition.” Gaba, supra note 12, at 1185.
should be done if effluent from nonpoint sources not subject to the permit requirement caused a violation of water quality standards. The congressional answer was to call upon states to develop areawide waste treatment plans, over and above what the Clean Water Act otherwise required, for controlling nonpoint sources of pollution.\(^3\) Although Congress required EPA approval of these plans, as in 1965 it denied the federal government authority to promulgate plans if states failed to do so and to enforce plans effectively when states did adopt them.\(^4\) The relation of such plans to the statute's broader goals—fishable/swimmable water and no discharges of pollutants—was not even addressed.

The second question asked how to assure that control efforts, even for point sources, would meet the fishable/swimmable goal as well as the water quality standards. Compared to the nonpoint source question, the statute's answer was equally incomplete but completely contrary. Congress authorized the Administrator of EPA, through a special procedure, to tighten control requirements to meet the fishable/swimmable goal when a state set water quality standards that fell short of that measure.\(^5\) The Administrator, however, had no obligation to do this and any proposed limitation had to be followed by a public hearing.\(^6\) In addition, any tightening would apply only to point sources, once more leaving restrictions on nonpoint sources entirely in the hands of the states.


54. The Clean Water Act allows EPA to withdraw approval of a section 208 plan, id. § 208(a)(4)(D), 33 U.S.C. § 1288(a)(4)(D), but it does not give EPA any authority to establish a plan in the face of state inaction. Similarly, although all point source permits must be consistent with approved plans, id. § 208(e), 33 U.S.C. § 1288(e), the statute contains no language conferring enforcement authority against violations of nonpoint source requirements. Although the 1987 amendments to the Clean Water Act add a new section on nonpoint source control, the management programs under this section do not differ significantly from section 208 plans. See infra note 64 and accompanying text.


Section 302(b)(4) requires EPA, before setting such standards, to hold a hearing on the relationship between the costs and the benefits of a heightened level of water quality. Although the question of how formal such a hearing must be has never been litigated, the process would set effluent limits for individual sources and, therefore, would be very similar to permit proceedings, which the courts have held must meet formal hearing requirements. Sea-coast Anti-Pollution League v. Costle, 572 F.2d 872, 876-77 (1st Cir. 1978). Such a hearing also would allocate a fixed control burden among sources. Accordingly, it would resemble other proceedings for the allocation of a res among claimants, an allocation that the courts have held must be made through adjudicatory procedures. Sangomon Valley Television Corp. v. United States, 269 F.2d 221, 224 (D.C. Cir. 1959).
E. Subsequent Developments

The statutory architecture described above has survived basically intact to the present day.

1. The 1977 Amendments

In 1977, Congress tightened slightly the technology-based requirements for the most worrisome toxic pollutants and loosened those for conventional pollutants of least environmental concern. Although the toxic pollutant measures justifiably were explained as steps toward directing the statute to the most important problems, no change in the statutory architecture attended those measures. Water quality impact continued to be irrelevant to setting the new technology-based requirements for toxics, although its role in setting other technological standards increased slightly. No new limitations on nonpoint sources were authorized, even for toxic discharges. Finally, Congress added no requirements for new water quality standards for toxic pollutants, nor did Congress change the language under which existing standards were to be evaluated.

2. The 1987 Requirements

The 1987 amendments to the statute continue both the stress on technology-based requirements and the lack of focus on water quality. Indeed, the amendments make it more difficult to relax overly strict technology-based standards. First, they tighten the general requirements for modifying a permit on the grounds of overly stringent standards. Second, they provide that, except in extraordinary cases, no permit amendment will be granted to a source seeking to increase its discharge above levels reached in the past.


58. The requirement to regulate a specific list of toxic chemicals under a schedule was added to the 1977 legislation in conference. See H.R. CONF. REP. No. 830, 95th Cong., 1st Sess. 82-85, reprinted in 1977 U.S. CODE CONG. & ADMIN. NEWS 4424, 4457-60, also reprinted in 3 LEGISLATIVE HISTORY, supra note 30, at 266-69. The floor debate on the conference report characterized this provision as the highlight of the bill, containing "the most important and far-reaching amendments." 123 CONG. REC. 3859 (1977) (remarks by Rep. Roberts), reprinted in 3 LEGISLATIVE HISTORY, supra note 30, at 326. See also 123 CONG. REC. 39,171, 39,181 (1977) (remarks by Sen. Muskie), reprinted in 3 LEGISLATIVE HISTORY, supra note 30, at 426, 454-55.

59. See infra note 85.


61. See infra notes 88-90 and accompanying text.
The 1987 amendments do explicitly command EPA and the states to set water quality standards for toxic pollutants.\(^{62}\) They also restate the duty—already clear from existing law—to manage point sources to the extent needed to meet water quality standards.\(^{63}\) The amendments, however, neither change the rules for setting water quality standards nor expand the scope of permit requirements. Their approach to nonpoint source control simply requests voluntary state programs functionally identical to the ones authorized by the 1972 amendments.\(^{64}\) Even in cases where environmental degradation clearly is advancing, as in the Chesapeake Bay, they authorize only a federal grant and study grant.\(^{65}\)

II

THE CLEAN WATER ACT IN PRACTICE

The Clean Water Act's failure to address, in any rigorous or consistent way, water quality or the measures needed to protect it has led to an economically inefficient control scheme with no regulatory link to the problems it purports to remedy. This inadequate regulatory scheme encourages EPA to glide over rather than to probe the full complexity of these problems. Water pollution regulation has evolved very little to meet new challenges; indeed, it has shown some tendency to erode at the margins. This has been apparent for each of the major aspects of the statute: the technology-based standards, the definition of point source, and the water quality standards themselves.

A. The Inefficiency of Technology-Based Standards

Economists long have argued that technology-based controls, of which the Clean Water Act provides a nearly perfect example, waste money in two major ways. First, by imposing the same requirements on similar plants everywhere they run the risk of regulating too little to meet water quality goals in some areas and more than necessary in others. As


\(^{63}\) Id. § 308(a), 1987 U.S. CODE CONG. & ADMIN. NEWS (101 Stat.) 7, 38 (to be codified at 33 U.S.C. § 1314(e)).

\(^{64}\) Section 316 of the 1987 amendments adds a new section 319 to the Act. Section 319, like section 208 of the 1972 Act, calls for elaborate analysis of regional water quality problems, development of an elaborate plan for its submission to and approval by EPA, and grants to help develop it. Water Quality Act of 1987, Pub. L. No. 100-4, § 316, 1987 U.S. CODE CONG. & ADMIN. NEWS (101 Stat.) 7, 52 (to be codified at 33 U.S.C. § 1329). Neither program gives EPA the power to act if the state does not. Indeed, neither allows EPA even the power to enforce directly plans the state has submitted.

\(^{65}\) Id. § 103, 1987 U.S. CODE CONG. & ADMIN. NEWS (101 Stat.) at 10 (to be codified at 33 U.S.C. § 1267) (adding a new section 117 to the Clean Water Act providing for a Chesapeake Bay program); id. § 317, 1987 U.S. CODE CONG. & ADMIN. NEWS (101 Stat.) at 61 (to be codified at 33 U.S.C. § 1330) (adding a new section 320 establishing a national estuary program).
a result, some bodies of water fail to improve in quality or to avoid deterioration. Other requirements are strict beyond any rational link to environmental improvements. The unimpressive overall ratio of benefits to expenditures since 1972 and the remaining cases of unarrested decline in water quality strongly suggest that this model of economically inefficient expenditures fits the Clean Water Act. What case studies there are tend to confirm that impression.

Second, even if one assumes that the effluent load that technology-based standards produce for a body of water is somehow the load that best suits water quality, the industry-by-industry method by which these standards are set assures inefficiency in allocating the costs of reaching that pollution level. Only rarely will the costs of restricting pollutant X in industry A to a specified level—as calculated by rulemaking immersed in the details of determining the proper technology-based controls for that industry—equal the costs of restricting pollutant X to the level specified by similarly parochial rulemaking for industry B. Whenever those costs differ, the efficiency of pollution control for a given body of water will suffer to the extent that the overall reduction target could be met by substituting low-cost reductions at a plant in one industry for high-cost reductions at a plant in another. For example, if the cost of controlling a unit of pollution is ten percent less at plant A than at plant B, and the environmental benefits are the same, society will save resources if it shifts the burden from plant B to plant A until marginal control costs at the two plants are equal. Here, too, case studies have shown the economic inefficiency of the Clean Water Act. The courts have declined to intervene on such a basis, ruling that cross-industry cost comparisons cannot support a challenge to an effluent standard for a particular industry.

67. See supra notes 4-7.
68. A recent survey of the cost differences between least-cost and technology-based approaches to air and water regulation found that of 12 studies of air pollution, seven showed a cost difference of 400%, four showed a differential of 75%, and one showed a cost difference of only 7%. Ackerman & Stewart, Reforming Environmental Law, 37 STAN. L. REV. 1333, 1338 (1985). Similarly, water pollution control studies have shown cost differences ranging from 200% to 12%. These studies, however, are somewhat less suggestive than those of air pollution because they do not deal expressly with the BAT (best applicable technology) regulation used under the Clean Water Act. Id. at 1339.

Critics of technology-based standards also argue that these standards discourage industrial innovation by imposing significantly tighter requirements on new sources than on existing sources. See, e.g., id. at 1335-36.

70. American Petroleum Inst. v. EPA, 540 F.2d 1023, 1036 (10th Cir. 1976) (citing Industrial Union Dep't v. Hodgson, 499 F.2d 467, 480 (D.C. Cir. 1974)) ("Separate standards
The inefficiencies that result when costs differ in this manner could be corrected by allowing sources to trade reduction obligations among themselves. Plant $A$, with high marginal control costs, could pay plant $B$, with low marginal control costs, to reduce plant $B$'s effluents by a certain amount. This would allow plant $A$ to increase its own discharge by the same amount, thus producing the same level of environmental protection at lower cost. Once more, the difference between the two sources' costs for achieving the same reduction would measure the gain in social efficiency.

By requiring that each source install the best available technology, the Clean Water Act discourages any such bubble approach. One can argue that a source that increases its effluents just because another source discharges less quite plainly no longer is meeting its obligation to install the best technology. In part as a result of this argument, efforts at EPA to adopt a bubble approach to the Clean Water Act's technology-based requirements have not progressed far.\textsuperscript{71} In contrast, a statute that emphasized the purity of the receiving waters could accept any pattern of requirements compatible with achieving that result and would be hospitable to trading to produce the least costly mix of pollution controls.\textsuperscript{72}

\textbf{B. The Effect of Technology-Based Standards}

Beyond the economic waste of technology-based standards lies their effect on the progress of our understanding of pollution. In 1972, Congress turned away from water quality standards because the double task of first setting standards and then setting effluent levels based on those standards seemed too shaky a foundation for a successful control effort.\textsuperscript{73}

By making water quality irrelevant to most regulatory decisions, how-

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\textsuperscript{71} See also Kennecott v. EPA, 780 F.2d 445, 456 (4th Cir. 1985) (“[I]nter-industry comparisons are not determinative” of petitions seeking review of EPA rulemaking.).

\textsuperscript{72} To the limited extent that controls under the current Clean Water Act rest on the need to meet water quality standards, a bubble approach probably is permissible still. Environmental groups, however, have argued that allowing any source to increase its discharges, even if fishable/swimmable water will result, is inconsistent with the statutory aim of eliminating all discharges into the water. See Letter from Jay D. Hair, Executive Director, National Wildlife Federation to Lee M. Thomas, Administrator, EPA (Oct. 1985) (commending EPA’s decision to deny six permit modifications).

\textsuperscript{73} See supra note 37 and accompanying text.
ever, Congress guaranteed there would be little serious effort to improve the link between those decisions and water quality.

A regulatory program that makes water quality irrelevant provides no incentives to implementing agencies to ascertain trends in water quality. A lack of water quality statistics—the foundation for assessing any control program—has been the natural result. Although almost all states have established water quality standards, the standards for toxic pollutants—in other words, for the pollutants of most environmental concern—often are set forth in general terms that are of little value in establishing permit limits.

Rather than address such problems, EPA has implemented “uniform” effluent standards since 1972, issuing separate technology-based control requirements for each of 500 different industries. Each guideline has required a major and expensive rulemaking. Most of the effort was spent on exploring, for EPA’s education, details of the costs and achievable reductions for various technologies in the industry under consideration at the time the guideline was being developed. That knowledge had only short-term value; it quickly became outdated with economic changes and the advance of technology. Moreover, the process demanded that EPA develop expertise in an impossibly wide variety of fields, duplicating knowledge already acquired by the industries involved. EPA’s resources would have produced far more permanent social return had they been invested in expanding our understanding of the effects both of discharges on water quality and of water quality on health and welfare.

The same misguided investment of resources took place at a more strictly legal level. Although water quality standards have been the subject of only one appellate decision to date, EPA decisions on technology-based standards have been reviewed over twenty times by the court of appeals and three times by the Supreme Court. Apart from questions of whether the record in each case supported the standards issued, the

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74. See CONSERVATION FOUND., supra note 4, at 105 ("Unfortunately, the federal Environmental Protection Agency . . . maintains no records and makes no estimates of the quantities of pollutants discharged by different types of sources to either ground or surface water.").


76. EPA, STATE WATER QUALITY STANDARDS FOR TOXICS (1984) (most states have only general qualitative water quality criteria for most toxic pollutants). See also Water Quality Act of 1987, Pub. L. No. 100-4, § 308(d), 1987 U.S. CODE CONG. & ADMIN. NEWS (101 Stat.) 7, 39 (to be codified at 33 U.S.C. § 1313(c)) (adding a new subsection requiring states to set “specific numerical criteria” for toxic pollutants).

77. Ackerman & Stewart, supra note 68, at 1363 n.69. This heavy workload led to long delays in issuing the required regulations. Id.

78. See id. at 1336-37, 1342, 1347.

79. Mississippi Comm’n on Natural Resources v. Costle, 625 F.2d 1269 (5th Cir. 1980) (discussed infra at notes 123-24 and accompanying text).
predominant legal issue concerned the degree of binding effect to be given EPA's guidelines in individual permit proceedings.80

Despite extensive litigation over the binding effect of guidelines, only a handful of variances from such guidelines have been requested, much less granted.81 Taking into account the peripheral importance of these variances and their even smaller practical importance, it is difficult to see how so much litigation has made any permanent contribution to clarifying any important rule of water pollution control.

When a statute forces agencies to justify their rules by resolving questions central to the control effort, then rulemaking and litigation can advance the state of knowledge on those questions.82 When, on the other

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80. In the early days of the statute, litigation addressed whether effluent guidelines were binding or, in essence, were only recommendations to permit writers. They were found binding in E. I. DuPont de Nemours v. Train, 430 U.S. 112, 126-36 (1977), after the issue had been aired in nine separate court of appeals proceedings, id. at 122-26. EPA, however, made variances from these guideline limits available to plants claiming they presented fundamentally different regulatory circumstances from those considered in setting the generic rule. EPA v. National Crushed Stone Ass'n, 449 U.S. 64, 66 n.2 (1980) (citing subsections of 40 C.F.R. § 434 (1980), which describes the variance process for certain industries). The question then shifted to whether cost to an individual discharger could be considered in passing on the availability of such variances from the first round of reduction requirements. The Supreme Court found affordability irrelevant in National Crushed Stone Ass'n, 449 U.S. at 69-83, this time after only four court of appeals opinions, id. at 67-69. Finally, the Supreme Court upheld EPA—after only two lower court opinions—in deciding that such variances could be incorporated into regulations for toxic pollutants even under the 1977 statutory amendments restricting EPA's ability to "modify standards." Chemical Mfrs. Ass'n v. NRDC, 470 U.S. 116, 122-34 (1985).


81. In July 1985, 30 applications for "fundamentally different factors" (FDF) variances from effluent guidelines were pending at EPA. Interview with Frank Hall, EPA Water Permits Division. An internal EPA memorandum states that "[t]here have been 58 FDF variance requests for direct dischargers submitted to Headquarters for official action." Memorandum from Martha G. Prothro, Director, Permits Division to Rebecca W. Hamner 2 (Oct. 28, 1985). This number certainly understates the total number of applications, because states and EPA regions can deny such requests before submitting them to headquarters. The very small number of such submissions suggests, however, that total applications also must be small by comparison with the 60,000 point sources for which discharge permits have been issued. EPA Computer Printout (Oct. 15, 1985).

Only four variances from the 1977 "best practicable treatment technology" requirements were granted to direct dischargers; none went to indirect dischargers. Only about a hundred were sought. Chemical Mfrs. Ass'n, 470 U.S. at 124 n.12.

82. For examples of cases that focus on the problems of regulation, either because the statute required that focus or because the courts creatively said that it did, see Industrial Union Dep't v. American Petroleum Inst., 448 U.S. 607 (1980) (agency must base regulation of exposure to carcinogens on a factual estimation of the health risk); Center for Auto Safety v. Peck, 751 F.2d 1336 (D.C. Cir. 1984) (upholding rule after reviewing full-factor cost-benefit analysis); Portland Cement Ass'n v. Ruckelshaus, 486 F.2d 375, 392-401 (D.C. Cir. 1973) (agency must consider comments that assert that projected standards in proposed rules have a large margin of error); International Harvester Co. v. Ruckelshaus, 478 F.2d 615, 633-41
hand, the determining factors are peripheral to any real results, the Clean
Water Act experience demonstrates that the results of litigation also will
be peripheral.

C. Technology-Based Standards and Erosion of the Control System

1. The Standards

The proponents of technology-based standards originally argued
that such standards at least would provide a certain level of environmen-
tal protection. Those benefits have been limited, however, by the essen-
tial inability of a technology-based system to adjust to new
environmental knowledge outside its frame of reference. Indeed, the sys-
tem has shown a slight tendency to erode, rather than to grow, when
faced with such challenges.

Because a technology-based approach makes environmental per-
formance irrelevant, it cannot draw attention to the cases in which
cleanup goals are not being met and in which more effort may be needed.
Costs, by contrast, are at the center of attention in the establishment of
any technology-based standard. The consequence has been a slight and
variable willingness to cut back unduly strict requirements, coupled with
a complete inability to strengthen unduly lenient standards. The first
tendency has shown itself in the technology-based standards themselves,
the second in the definition of point source by which those standards are
implemented.

a. Relief from Excessive Control

When the technology-based approach excessively restricts individ-
ual sources (as measured against water quality targets), it creates both an
argument that the requirements are unnecessarily strict and a constitu-
ency to press that argument. In 1977, Congress responded to such con-
cerns by relaxing technology-based control requirements for certain
conventional pollutants. Beyond that new baseline, it allowed some cit-
ies to avoid most technology-based requirements and some other dis-
chargers to avoid the second stage of these controls if they could show
EPA that lesser measures would meet the fishable/swimmable target.

In 1981, Congress deleted the strictest of the technology-based require-

(D.C. Cir. 1973) (decision on one-year suspension of automobile emission standards requires
balancing of air quality impact, technical developments, and economic consequences).
83. See supra note 37.
amended at 33 U.S.C. § 1314(a)(4) (1982)).
85. See 33 U.S.C. § 1311(g) (1982) (allowing relaxation of technology-based controls for
nonconventional pollutants, provided that new limits still achieve fishable/swimmable water
quality and that they not lead to increased control requirements for any other source); id.
§ 1311(h) (adding to the Clean Water Act section 301(h), which allows similar modifications
of pollutant limits for publicly owned treatment works discharging into marine waters); see
ments for municipal sewage treatment plants,\textsuperscript{86} and in 1983 it added another exemption for two sources that had litigated unsuccessfully to compel EPA to consider water quality impact in setting their permit limits.\textsuperscript{87}

The tendency of the Act to evolve in this direction has been limited by the central position of technological controls in its architecture. Indeed, in the 1987 amendments, Congress slightly tightened the variance provisions referred to above.\textsuperscript{88} Congress also inserted a separate provision to limit the extent to which sources could increase their discharges above previously required levels.\textsuperscript{89} In enacting these two amendments, Congress explicitly emphasized that it was requiring controls that could not be linked to any benefit to water quality.\textsuperscript{90}

\textbf{b. Tolerance for Insufficient Control}

On balance, the effect of the technology-based controls on point sources is to require a significant level of expenditures with no beneficial environmental effect. In addition to requiring wasteful and excessive control, the statute’s design also steers attention away from cases of insufficient regulation—e.g., failure to meet water quality standards. Many causes of such failure fall outside the Act’s regulatory structure; even the standards themselves occupy a secondary position in its framework.

Congress has not tightened the statutory machinery for correcting water quality violations in any meaningful way since 1965. In addition,
the new provisions Congress added in 1972 to supplement water quality standards have proved complete dead letters in practice. Some years ago funding for the provision calling on states to develop water quality attainment plans\(^9\) was withdrawn after a long history of ineffective operation.\(^9\) The authority to tighten limitations on point sources to meet fishable/swimmable quality levels simply has never been used.\(^9\)

Despite this history of ineffectiveness, when Congress revisited the statute in 1987 and wished to underscore its greater concern with water quality, it did nothing but enact functionally identical versions of these two provisions.\(^9\)

2. The Definition of Point Source

The statutory definition of point source determines the scope of the Clean Water Act's control programs. If taken absolutely literally, the definition covers most routes by which water reaches a lake or stream and certainly covers more than the 60,000 point sources now holding permits.\(^9\) Once again, however, the requirement for technology-based standards has operated to restrict regulatory coverage.

In the early 1970's, EPA sought to redefine the term point source to exempt from coverage such nonindustrial dischargers as farm or logging ditches and sewers for stormwater runoff,\(^9\) arguing that inclusion would subject those dischargers to technology-based requirements that could not be set practically or realistically. The D.C. Circuit Court rejected that position. Judge Leventhal's opinion blunted EPA's arguments by finding that the Agency had discretion, despite the statute, to impose only reasonable requirements—which might amount to none at all—on point sources.\(^9\) He identified a basic difference between granting discretion in the treatment of such sources under the statute and allowing their total exclusion from coverage. "An exemption," he noted, "tends to become indefinite; the problem drops out of sight, into a pool of inertia,

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93. Gaba, supra note 12, at 1201.
95. See supra note 43 and accompanying text.
96. 40 C.F.R. § 125.4 (1975).
97. Natural Resources Defense Council v. Costle, 568 F.2d 1369, 1377-81 (D.C. Cir. 1977). The Court suggested, for example, that where numerical discharge limits were infeasible, EPA might prescribe specific work practice requirements to reduce pollution instead, and that EPA might issue general permits—in essence, area-specific rules—to cover aggregations of sources each too small to justify an individual permit. Id. at 1381.
unlikely to be recalled in the absence of a crisis or a strong political protagonist,” whereas continued jurisdiction would encourage at least some continued EPA attention to any problems these sources might pose. Judge Leventhal could have argued more particularly that continuing to classify these dischargers as point sources would require them to meet water quality standards, thereby curing any water quality problems they might pose—hardly an unreasonable result in construing the Clean Water Act. In contrast, to exclude them would mean that water quality problems also would drop into a pool of inertia.

In later years, however, the arguments EPA advanced in this case have been accepted with increasing frequency, sometimes over EPA’s objection, with results that amply bear out Judge Leventhal’s remark. In 1977, Congress exempted irrigation return flows from the definition of point source, justifying this action by asserting that irrigation return flows were not suited to restriction by uniform technology-based standards. In doing so, Congress ignored the fact that, in much of the West, irrigation return flows are the single most significant manmade pollution source.

In 1982, the District of Columbia Circuit Court of Appeals upheld EPA’s exemption of dams from coverage as point sources. The legal arguments were intricate and well balanced against each other, but the

98. Id. at 1382.
99. See supra note 47.
102. For example, salt—“the overwhelming water quality problem of the Colorado River”—decreases the irrigation value of the river’s downstream waters and threatens to violate the terms of a treaty with Mexico on the equitable division of the stream. A. KNEESE & F. BROWN, THE SOUTHWEST UNDER STRESS 46 (1981). Over a third of the salinity comes from irrigation. Gardner & Young, Assessing Salinity-Control Programs on the Colorado River, 80 RESOURCES 10 (1985). Although major federal programs aim at keeping the river’s salinity under control, they do not require control of irrigation return flows. See Environmental Defense Fund v. Costle, 657 F.2d 275, 297 (D.C. Cir. 1981); see also U.S. GEOLOGICAL SURVEY, supra note 4, at 2, 45-46 (discussing contamination of Kesterson National Wildlife Refuge by selenium in agricultural return flows).
104. Dams can affect water quality by discharging cold, oxygen-poor water from deep in their reservoirs or, alternatively, by overenriching discharged water with air as the water flows over the spillway. Id. at 161-64. The petitioners argued that dams, therefore, clearly can cause pollution as that term is defined in the Clean Water Act, id. at 172; that some of the adverse changes in downstream water quality result from addition through the spillway of material that fits the narrower definition of pollutant, id. at 174; and that the ambitious purposes of the Act required a broad reading of the scope of its control requirements, id. at 177. See supra notes 39-47 and accompanying text.

EPA responded by arguing that transferring pollutants from one portion of navigable waters (the reservoir) to another (the stream below) was not a discharge into navigable waters, National Wildlife Fed’n, 693 F.2d at 165; that low dissolved oxygen, cold, and supersaturation
court also plainly gave weight to the congressional exemption for irrigation return flows—which it viewed as casting doubt on the petitioners' arguments that the statutory intent required covering dams—and to EPA's renewed argument against the feasibility of setting technology-based limits for dams. Neither of these arguments would have looked nearly as attractive had the central emphasis of the statute been on preventing damage to water quality, for no one denied that dams could harm water quality.

EPA has persisted in this reasoning by exempting certain storm sewer discharges from regulation as point sources. In promulgating that exemption, the Agency argued in part that such an exemption is justified for sources that "cannot be effectively regulated by NPDES permits." The 1987 amendments create further gaps in the statute's coverage. They add runoff from mining and oil and gas operations to the list of discharges exempted from permit requirements, and they postpone permit requirements for many smaller storm sewers. On their face these exemptions do not apply to discharges that might threaten water quality. The statute, however, effectively puts the burden on EPA to

are not "pollutants" as defined in section 502(6) of the Act, id.; and that several separate provisions of the statute specifically referring to dams indicated that Congress had not intended to regulate dams as point sources, id. at 177.

105. National Wildlife Fed'n, 693 F.2d at 176, 178 n.66 (citing exemption for irrigation return flows). Ironically, in 1977 Judge Leventhal had relied on Congress' rejection of an exemption for irrigation return flows in 1972 to justify his broad approach to defining point sources. Natural Resources Defense Council, Inc. v. Costle, 568 F.2d 1369, 1376 n.17 (D.C. Cir. 1977). The same exemption whose defeat in 1972 had encouraged the courts to uphold a broad definition of point source therefore encouraged the courts to narrow that definition in the wake of the exemption's adoption by Congress.


106. National Wildlife Fed'n, 693 F.2d at 178 ("as any student of the legislative process soon learns, it is one thing for Congress to announce a grand goal, and quite another for it to mandate full implementation of that goal"); id. at 182 ("The [Clean Water Act permit] program . . . requires EPA to issue nationally uniform standards, and thus would not allow the agency to take full account of the interrelationship between dam-caused pollution and other pollution sources.").

107. Id. at 161-64, 182-83.


111. Id. § 405, 1987 U.S. CODE CONG. & ADMIN. NEWS (101 Stat.) at 69 (to be codified at 33 U.S.C. § 1342(p)). EPA has proposed to implement these regulations by putting off the date by which storm sewer dischargers must submit permit applications. 52 Fed. Reg. 39,240 (1987) (to be codified at 40 C.F.R. § 122.21).

112. Section 401(a) does not exempt flows that come in contact with "overburden, raw material, intermediate products, finished product, byproduct or waste products." Water Quality Act of 1987, Pub. L. No. 100-4, § 401(a), 1987 U.S. CODE CONG. & ADMIN. NEWS (101
make that showing, whereas prior to the 1987 amendments the burden rested on the discharger. The 1987 amendments also add an unqualified exemption from permit requirements for agricultural stormwater runoff.

Because so much water pollution nationwide comes from nonpoint sources, no lasting improvement in water quality will be possible without an effective program for their management. Under the present statute, a broad definition of point source is the only practical route to such superintendence. Yet the dynamics of the current Clean Water Act have worked to move Congress, the courts, and EPA away from any such reading.

3. The EPA Water Quality Standards Program

If EPA's efforts under most of the Clean Water Act have failed to address water quality issues suppressed by the statute, EPA's policy on water quality standards seems calculated to deny that those issues exist at all. Congress has never reconsidered its 1965 refusal to deny the federal government power to protect water by zoning local land use. Although in 1972 Congress required EPA to approve, reexamine and, in some cases, supersede state water quality standards, it simultaneously denied the agency both the tools to implement and the consistent guidance to set those standards. EPA has reacted to this muddle with a rule that requires states to set increasingly tighter water quality standards but that also blurs the statutory gaps that make the attainment of such standards doubtful.

The Clean Water Act divides water quality standards into uses and criteria. "Uses" are the functions—such as recreation, irrigation, or provision of wildlife habitat—that the state has assigned a given body of

Stat.) 7, 65 (to be codified at 33 U.S.C. § 1342(l)). The stormwater exemption does not apply if "the Administrator or the State, as the case may be, determines that the stormwater discharge contributes to a violation of water quality standards or is a significant contributor of pollutants to waters of the United States." Id. § 405, 1987 U.S. CODE CONG. & ADMIN. NEWS (101 Stat.) at 69 (to be codified at 33 U.S.C. § 1342(p)).


See supra note 10 and accompanying text.

See supra notes 24-29 and accompanying text.

See supra notes 43-55 and accompanying text.


“Criteria” are the technical judgments as to the specific pollution levels that are compatible with those uses. Only one appellate decision has addressed the extent of EPA’s authority to review a state’s criteria judgments and use designations. In *Mississippi Commission on Natural Resources v. Costle,* the court found that intensive review by EPA of state use designation would amount to federal exercise of the zoning power Congress explicitly denied it. By contrast, EPA’s review of the technical accuracy of state criteria judgments was perfectly proper. The court claimed to be accepting an EPA argument. In fact, however, EPA’s regulatory program is approximately the reverse of the court’s prescription. EPA’s water quality standards rules assert a broad federal power to circumscribe the uses a state may choose for its water. The regulations declare that EPA will not approve state standards that allow water quality in a lake or stream to decline, no matter how compelling an argument might be made concerning local preferences or circumstances. Even if a state simply wants to maintain existing levels of water quality, EPA insists on a showing that improved water quality is unattainable by reasonable control measures.

The legal soundness of these policies is highly debatable. Never-
theless, the real problem with current use designations is that in many cases they are not related to anything. The court that approved intensive EPA review of criteria argued that such review involved no infringement of state autonomy because the review simply ensured that a state's technical choices actually implement its political decisions.\textsuperscript{129} In reality, EPA review of water quality criteria judgments could not provide that quality assurance without assessing the entire state attainment program. To predict whether a given set of uses would be achieved in practice, a reviewing agency would have to assess not only the levels of specific pollutants those uses could tolerate (as is now the practice) but also the quantity of water those uses require and whether the state had a realistic plan—covering both point and nonpoint sources—for achieving those quality and quantity levels.

Nonpoint and water quantity control authorities, however, are absent from the Clean Water Act—though EPA's current rules try to conceal the omission. For example, EPA's regulations for water quality standards require that states protect uses that could be attained by reasonable nonpoint source controls;\textsuperscript{130} the regulations do not mention that the statute does not authorize EPA to require such measures directly.\textsuperscript{131}

proper uses for their waters, see id., and by the repeatedly articulated distrust for federal zoning power whence it originally arose, see \textit{supra} note 27 and accompanying text.

In addition, were EPA correct that section 303—the water quality standards provision—incorporates the goal of fishable/swimmable water, there would have been no need for Congress to include section 302 in the statute. The only function served by section 302 is the authorization of special steps to be taken by the federal government to attain this level of water quality.

Somewhat curiously, although Gaba advances all these arguments—and more—against EPA's authority to require states to set water quality standards at a certain minimum level, Gaba, \textit{supra} note 12, at 1194-1204, he also argues that the statute explicitly endorses a nondegradation position, \textit{id.} at 1188. He never explains why the broad state discretion over water quality standards that he detects would not include the discretion to let the quality of certain bodies of water deteriorate. \textit{See} Commonwealth Edison v. Train, 649 F.2d 481, 489 (7th Cir. 1980) (Pell, J., dissenting) (in a utility's challenge of EPA regulations, which required that an antidegradation policy be integrated into state water quality control plans, the dissent would have struck down the regulations rather than dismissing the suit for a lack of ripeness).

\begin{itemize}
  \item 129. \textit{Mississippi Comm'n on Natural Resources v. Costle}, 625 F.2d 1269, 1276 (5th Cir. 1980).
  \item 130. 40 C.F.R. § 131.10(d), (h)(2) (1987).
  \item 131. Where both point and nonpoint sources threaten water quality standards in a given lake or stream, the point sources clearly must be restricted as much as necessary to meet water quality standards. Point source dischargers thus become a constituency for imposing controls on nonpoint sources to lessen their own control burden. At Colorado's Dillon Reservoir, an artificial lake threatened by eutrophication from nutrient overload, a bubble approach that substitutes nonpoint source controls for point source controls has been instituted. Without the bubble, discharges from the local sewage treatment plants would violate water quality standards and "growth could be halted throughout the county by the absence of new sewer taps," which would be forbidden because they would increase discharges from the sewage plants, aggravating the violation of water quality standards. T. Elmore, J. Jaksch, D. Downing, M. Podar, B. Morrison, B. Zader & S. Sessions, \textit{Trading Between Point and Nonpoint Sources: A Cost Effective Method For Improving Water Quality: The Case of Dillon Reservoir} (1984)
\end{itemize}
Beyond this generic weakness, many individual water quality standards simply do not apply at very low streamflow levels.\textsuperscript{132} They thereby ignore the connection between water quality and water quantity\textsuperscript{133} and between water quantity and the support of wildlife, recreation, and other designated uses. EPA once toyed with rulemaking to require specification of minimum flows as part of water quality standards, but abandoned the notion many years ago.\textsuperscript{134} Even if a water quality standard were to set minimum flow requirements, the Clean Water Act provides no way to enforce them (for example, by barring consumptive withdrawals that would reduce stream flow below minimum limits). Indeed, the statute goes beyond denying EPA the tools to address water quantity and specifically cautions the agency against interfering with such matters.\textsuperscript{135}

III

SOME PROPOSALS FOR REFORM

A. Quality Control of State Decisions

Any reform of the current Clean Water Act must begin with water quality and must reverse the current EPA approach to uses and criteria. At present, EPA examines a state’s policy choices extensively when it reviews uses, although it lacks any real power to compel attainment even of original policy choices.\textsuperscript{136} A system that would allow states to deter-

\textsuperscript{132} In establishing water quality standards, states may designate a critical low stream flow below which numerical water quality criteria do not apply. EPA, \textit{WATER QUALITY STANDARDS HANDBOOK} 2-10 (1983). "[C]ommon practice is to use as this 'design event' a stream's 7Q10 flow, i.e., the lowest 7-day average flow to be expected every 10 years." Office of Policy Planning and Evaluation, EPA, Water Innovations Project: Summary Report 11 (June 5, 1984) (preliminary discussion draft) [hereinafter Water Innovations Project].

\textsuperscript{133} See supra note 11.

\textsuperscript{134} In considering a revised approach to water quality standards, the agency stated:

Some water resource management practices (such as stream diversion for agricultural purposes) not only affect water quantity in a stream segment but also affect the water quality in the same segment . . . .

EPA may therefore develop a policy to urge states to prohibit alteration or restriction of natural flows that would interfere with fishable, swimmable water quality. EPA does not at this time intend, however, for its policy to result in Federal promulgation of specific streamflow and quantity requirements in the event a State fails to take appropriate action.

\textsuperscript{135} See \textit{Clean Water Act} § 101(g), 33 U.S.C. § 1251(g) (1982). Nevertheless, as with nonpoint sources, the statute allows some secondary connection to matters formally outside its scope. Some permit limits are set only to protect water quality. Some states vary those limits with the season of the year to take advantage of the varying capacity of streams to break down pollution, which in turn depends greatly on seasonally varying flow levels. Water Innovations Project, \textit{supra} note 132, at 6-7, 15, 22. The same logic has been used in at least one case to tie effluent limits for an industrial plant directly to the amount of water released from a dam upstream. \textit{Id.} at 22.

\textsuperscript{136} See Gaba, \textit{supra} note 12, at 1194-1200.
mine uses freely and then would hold them to the choices they had made would be more logical and more consistent with the congressional intent to allow states substantial freedom in this area.

To accomplish this reversal, states should be required to submit plans for achieving water quality standards. Within the plans, states would be free to allocate the burden of control in any manner consistent with such attainment, thereby freeing the way for a bubble approach to water pollution control. The plans would have to set out for EPA review adequate and enforceable measures—including restrictions on nonpoint sources and water quantity as needed—to reach and to preserve the specified water quality levels. The plans would be similar to those currently required by other Clean Water Act provisions for attaining water quality standards. Making those plans a part of the water quality standards, rather than a separate effort, would help correct the isolation and lack of realism that have crippled similar efforts in the past.

A much more potent cure, one that past experience suggests is necessary for effective results, would be to grant EPA the power to promulgate measures to cure any deficiencies in a state attainment plan. In return, EPA should surrender its current ambition to review without statutory mandate uses the plans aim to protect.

Although this new approach would require that states implement their own choices, in principle it would be less invasive of state prerogatives than is current policy. A state that found any EPA-promulgated measures too stringent would be free to change the use classifications on which they were based, a freedom current EPA policy denies. This approach also would be less intrusive than the very similar planning system required by the Clean Air Act. That statute calls on states to adopt all measures needed to meet federal air quality requirements and denies them any power to adjust those federal goals themselves. Although full of mechanical problems, the Clean Air Act has proven acceptable with regard to its impact on state autonomy.

B. How Much Cleanup?

The amendments just suggested would direct regulatory attention to

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138. See, e.g., Gaba, supra note 92, at 12-44.
139. See id.
141. See Clean Air Act § 110(a), 42 U.S.C. § 7410(a) (1982) (requiring implementation plans to attain national ambient air quality standards); id. § 161, 42 U.S.C. § 7471 (requiring implementation plans to “prevent significant deterioration” of air quality in clean air areas); id. § 169(b), 42 U.S.C. § 7491(b) (requiring implementation plans to protect visibility in specified areas).
142. See id. § 110(i), 42 U.S.C. § 7410(i).
the central issue of water quality. As they would not require any specific level of water quality protection, they probably would not raise any justified fear of federal zoning. In practice, however, they would provide a high degree of water quality protection. Most present water quality standards call for attaining fishable/swimmable purity levels and most waters subject to those standards already meet them.143 Because preserving high-quality waters would be easy in most cases, most states probably would elect to do so. This new approach would lead to the continuation of most current water quality standards and would yield more effective measures for actually meeting these standards.

As part of a reform package, Congress also might wish to assure minimum levels of cleanup. Indeed, where national parks and other federal reserves are concerned, requiring baseline water quality levels would render water pollution requirements consistent with the law in other areas. Beyond that, Congress could act within the basic framework suggested here to require certain substantive protection levels; such limited measures could be framed to have a restricted impact on state autonomy.

1. Protecting Environmental Reserves

National parks,144 wilderness areas,145 and wildlife refuges146 are owned and operated by the federal government precisely for their environmental value. Similarly, Congress has acted to give limited protection against development of certain “wild and scenic” rivers.147 No troubling

143. AMERICA'S CLEAN WATER, supra note 4, at 4-5.
144. See National Park Service Organic Act § 1, 16 U.S.C. § 1 (1982) (fundamental purpose of national parks, monuments, and reservations is "to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations").
145. The National Wilderness Preservation System is “composed of federally owned areas designated by Congress as ‘wilderness areas,’ ” which are to be “administered . . . in such manner as will leave them unimpaired . . . as wilderness.” Wilderness Act § 2(a), 16 U.S.C. § 1131(a) (1982). A wilderness is “an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain.” Id. § 2(c), 16 U.S.C. § 1131(c).
147. Wild and Scenic Rivers Act, Pub. L. No. 90-542, 82 Stat. 906 (1968) (codified as amended at 16 U.S.C. §§ 1271-1287 (1982 & Supp. IV 1986)). The Act’s purposes are to preserve “certain selected rivers of the Nation . . . in free-flowing condition,” to “protect the water quality of such rivers,” and to preserve their other environmental values “for the benefit and enjoyment of present and future generations.” 16 U.S.C. § 1271 (1982). No dams on such a river may receive a federal license, id. § 1278 (1982 & Supp. IV 1986), and public lands within the designated area are withdrawn from settlement, id. § 1279. By so designating a river, the federal government removes from availability for private appropriation and use a sufficient quantity of water to preserve the value for which the river was set aside. See id. § 1284(c) (1982).
issues would be raised by using federal power to protect water quality fully in these areas.

The Clean Air Act and the doctrine of federal reserved water rights already provide analogous protection. The Clean Air Act, in addition to requiring that air quality standards be met, requires plans to prevent any significant deterioration of the air in federally protected areas. In a somewhat different vein, the Supreme Court repeatedly has held that when Congress withdraws land from the public domain for a specific purpose (e.g., national parks and forests), by implication it simultaneously reserves from private appropriation enough water to accomplish the purposes of that land reservation. That right to water dates from the establishment of the reservation and has priority over later claims. In many western areas, these rights were established over fifty years ago and involve large amounts of water, the exact extent of which only now is being specified. Despite the intrusive nature of the claim, the existence and propriety of these reserved rights have been accepted without effective opposition.

In contrast, the present Clean Water Act does not mention protection of special areas. A single sentence in the regulations governing water quality standards directs states to protect existing water quality in such reserves, among other areas. The legislative basis for that provision is debatable, however, as the statute makes no reference to protecting such areas. Additionally, the statute fails to give EPA or any other agency authority over consumptive withdrawals of water and over

148. 42 U.S.C. § 7471 (1982). The Clean Air Act accords the highest degree of such protection to Class I areas, which it defines as all international parks, all wilderness areas and national memorial parks over 5,000 acres, and all national parks in existence in 1977 exceeding 6,000 acres. Id. § 7472(a).

149. See, e.g., Cappaert v. United States, 426 U.S. 128 (1976) (in creating Devil’s Hole National Monument, Congress reserved enough water to preserve the underground pools in which an endangered species of fish lives); see also United States v. New Mexico, 438 U.S. 696 (1978) (creation of national forest reserves enough water to support the primary purposes of the forest but does not reserve water for “secondary purposes”—include supporting wildlife or recreation—authorized by subsequent statute). Cf. Winters v. United States, 207 U.S. 564 (1908) (reservation of water rights to be implied from agreement reserving land for Fort Belknap Indian Reservation).


151. United States v. Denver, 656 P.2d 1, 31 (Colo. 1982). “The tremendous uncertainty that [unquantified reserved rights] will inject into the existing state appropriation scheme makes any further delay [in quantifying them] unjustifiable. Holders of . . . water rights cannot plan or develop sizeable water projects until they are certain of the extent of the federal government’s claims.” Id. at 30. See also New Mexico, 438 U.S. at 705 (“federal reserved water rights will frequently require a gallon-for-gallon reduction in the amount of water available for water-needy state and private appropriators”).

152. “Where high quality waters constitute an outstanding National resource, such as waters of National and State parks and wildlife refuges and waters of exceptional recreational and ecological significance, that water quality shall be maintained and protected.” 40 C.F.R. § 130.12(a)(3) (1987).
nonpoint sources, even though in practice such authority might be needed to protect water quality in special natural areas.

Indeed, the Clean Water Act probably has weakened the federal government's ability to protect water quality in federal reserves. Were there no other law on point, it would be easy to argue that the same reservation of land that sets aside a certain quantity of water must also require a certain quality of water because for the purposes of a federal park or wilderness, clean water is as necessary as abundant water. This amounts to an argument that the same federal common law that protects water quantity in federal land reservations should protect water quality as well. The United States Supreme Court has held, however, that the Clean Water Act, by its very length and detail, preempts the development of such common law rules regarding water quality.

Where protection of water quality in parks and wildlife refuges is concerned, the Clean Water Act has left the nation in worse condition than it would have been had the legislation not been passed. Without the Clean Water Act, federal common law rules giving such areas a strict right to a given level of water quality could have arisen. The presence of the statute has barred the development of such rules, yet the statute itself does not mention, much less address, the special problems of those areas.

2. **Minimum Standards**

The provisions suggested above for special federal areas would do more than provide these areas with the protection their status as nature preserves requires. These baseline water quality requirements also would serve as a model for states that wished to establish similar programs on their own.

Congress could go further to assure some minimum level of aggregate water quality. For example, it could require states to classify and to protect some minimum percentage of their waters as fish-

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153. The Justice Department considers reserved rights to rest on the statutes that established the federal reserves. Office of Legal Counsel, U.S. Dep't of Justice, Federal "Non-Reserved" Water Rights (June 16, 1982). In effect, reserved rights are rules of federal common law and, like other such rules, rest on a somewhat attenuated theory of legislative intent. That intent is inferred from Congress' general purpose in reserving particular areas or in authorizing their reservation by the executive. Id. at 64, 70-79.


155. Congress not only could, but should take additional steps to establish a floor for water quality in one type of case. Quite apart from any general case for national standards, there is a special argument for federal action to prevent the pollution of one state by another. When the states entered the Union, they gave up the right of self-help against transboundary pollution, a right they otherwise would have enjoyed under international law. Such self-help was replaced by the remedy of relief through litigation in the Supreme Court. Georgia v. Tennessee Copper Co., 206 U.S. 230, 237 (1907) (Holmes, J.). The Supreme Court repeatedly has exercised its jurisdiction to hear water pollution cases of this nature. E.g., New York v. New Jersey, 256 U.S. 196 (1921). Even in Milwaukee, the Court recognized the legitimacy of a state's claim for federal protection against pollution from its neighbors, 451 U.S. at 309, and held only that the
able/swimmable, or it could restrict the abandonment of water quality levels already achieved. Such a restriction could be framed either as a bar on the lowering of standards—similar to the prohibition in present EPA rules governing water quality standards—or as a procedure requiring that applicants for federal approval of relaxed standards meet a prescribed burden of proof. Framed either way, the restriction would fit neatly into expanded EPA authority to oversee state water quality standards. It also would avoid extreme forms of interference with local autonomy that might attend direct federal selection for special protection of a limited group of bodies of water not already within the federal domain.

C. Encouraging Long-Term Reform

The reforms suggested above merit implementation to establish a rational approach to water quality and to protect parks and other reserves. Moreover, this new regulatory framework would encourage additional reforms.

1. River Basin Authorities: A Model Approach

For twenty years academics have pressed for designating river basins, which are physical hydrological units, as the proper jurisdictions for planning and administering water pollution control programs. For each basin a central authority would be empowered to set water quality standards and to establish plans for attaining those standards. That body would act with full awareness of the reciprocal impacts that cleanup efforts (or their absence) in one area might have on water quality in another area. Because of its jurisdiction over all pollution sources in the basin, the authority could plan to clean up the river in the most efficient way.¹⁵⁶ Such an authority also could integrate water quantity management, already subject to basin-wide regulation in most western states, with water quality concerns.¹⁵⁷

State and local governments and their agencies have been unwilling to cede effective power to regional authorities.¹⁵⁸ No amendment to any federal statute can be expected to cure that reluctance. Because it fails to focus on water quality at all, however, the current Clean Water Act does not raise the question of which jurisdictional structure best protects water quality.¹⁵⁹ Were the Act amended to direct attention to water

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¹⁵⁷. MEYERS & TARLOCK, WATER RESOURCE MANAGEMENT 167-80 (1980).

¹⁵⁸. See generally B. ACKERMAN, supra note 156, at 200-07.

¹⁵⁹. The closest it comes is the mandate in the new nonpoint source control provision of
quality, the new emphasis could push institutional development in the right direction. A state that wanted to adopt stringent, politically popular water quality standards would be required to produce and to defend a plan to achieve and to protect them. Simple geography, in turn, would encourage the design of such plans on a watershed basis, thus facilitating the creation of river basin authorities.

2. Phasing Out Technology-Based Standards

A comprehensive system of water quality protection would make technology-based controls unnecessary. Technology-based measures would serve no purpose if, without them, the level of water quality chosen by the political process could be protected fully. Unfortunately, after fifteen years at the center of the federal effort, technology-based controls will not be discarded quickly in favor of a new approach as yet untested in practice. The current statute's failure to give serious consideration to water quality has encouraged the retention of these technology-based requirements except in the clearest cases of superfluity.

As the current law cannot give rise to a believable system for protecting water quality, it cannot generate any convincing replacements for technology-based standards. A new statute that focuses more directly on water quality might lead to programs that achieve results more effectively and more economically than the present system. Should these hopes be realized in practice, the arguments for retaining technology-based standards would be weakened significantly.

CONCLUSION

The enduring significance of environmental values, combined with the wrenching political choices that their effective protection requires, creates for legislators the temptation to engage in political posturing. The history of the Clean Water Act provides a clear example. The nature of the water pollution problem requires two major concessions from any program that aims to protect water quality effectively. First, the program must acknowledge that preindustrial water quality simply cannot be attained in some areas without limitations that are inconceivable on a practical level. Second, in light of that basic truth, the program must generate the specific levels of protection to be given to each body of water that it covers. If high levels of protection for any waters are to be realized, the program also must require strict management of point and

nonpoint sources of water pollution, of consumptive withdrawals of water, and of waterfront development.

Rather than face the admitted difficulties of such a program, for the last fifteen years Congress has placed its hopes in a statute that offers the unrealistic promise of clean water everywhere but does not acknowledge the difficult measures actually needed to attain it. Congress has opted for a full spectrum of controls on manufacturing facilities—always an easy regulatory target—without regard to whether the controls are excessively or insufficiently stringent. In addition, Congress has neglected to address nonpoint sources of pollution, which present a far more substantial regulatory challenge and which now are responsible for about half of our water pollution problem nationwide. EPA has collaborated fully in Congress' suppression of the basic problem, most notably by its failure to administer the water quality standards provisions of the Act in light of both congressional intent and the current impossibility of actually attaining those standards.

The failure of the current system to provide more than partial, coarsely cut, and far too costly cleanup is apparent. When the Clean Water Act is amended next, Congress should structure the legislation around the central issue of water quality. By requiring that states protect the water quality values they have chosen, Congress automatically would strip away much of the inadequacy that pervades the current regulatory scheme. A more effective level of environmental protection should result and, as the new system proved itself in practice, it would be possible to discard the needlessly expensive and excessive control built into the present statute.