

RETURNING TO THE GOALS OF THE CLEAN WATER ACT

Robert W. Adler

Senior Attorney, Natural Resources Defense Council*

Introduction

There is much to be said for keeping one's eyes on the target, and for readjusting our aim when the target has been missed. As Congress considers reauthorization of the Clean Water Act twenty years after its enactment in 1972, it should remember the goals it set two decades ago, to see where we have fallen short of the mark. From a shorter perspective, it should assess whether the revisions it enacted in 1987 have been honored. It will learn that while progress has been made in some areas of water pollution control, mainly at the end of the pipe, neither the broad 1972 aspirations nor the more focused goals of 1987 have been met. Legislative changes are needed to keep the national clean water program on track.

The 1972 Goals and Purposes

The objective and goals of the 1972 Clean Water Act have been the subject of considerable discussion elsewhere, and need be reviewed only briefly. Most broadly, in section 101(a) the Act sought as its principle objective to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." To accomplish this purpose, subsections 101(a)(1) - (3) established subsidiary goals and policies:

(1) the elimination of the discharge of pollutants (zero discharge) by 1985;

(2) the attainment of water quality sufficient to support the "protection and propagation of fish, shellfish and wildlife" and contact recreation — the so-called "fishable and swimmable" goal — wherever attainable by 1983; and

(3) the prohibition of the discharge of "toxic pollutants in toxic amounts."

We have fallen far short of the mark in our ability to attain these goals. In some cases, there are still considerable differences of opinion as to what some of these principles mean.

There is little disagreement that restoring and maintaining physical, chemical and biological integrity should continue to be the major target of water quality programs. Our purpose is not abstract regulatory compliance, but the health of our aquatic ecosystems and the populations (including humans) that rely on these systems. Yet while the Act's 1972 legislative history clarifies that "integrity" refers to protecting all aspects and life cycles of balanced, indigenous aquatic populations, some question whether this means that we can and should return our aquatic ecosystems to their pristine state before any artificial interference. (It is always easier to agree in principle than in specific application.)

To a large extent, however, this policy debate has not even been engaged in the real world. While federal and state water quality programs under the Act have devoted considerable attention and resources to addressing chemical pollutants and chemical measures of water quality, with the exception of efforts to protect wetlands under section 404 very little effort has been devoted to the "physical" and "biological" aspects of integrity. Most water quality standards, for example, measure chemical but not physical or biological indicators of ecosystem health. Only recently have the Environmental Protection Agency (EPA) and states begun to develop biocriteria that measure aquatic ecosystem health against a standard of biological integrity. Yet the means of implementing and enforcing these criteria are as yet uncertain. Even

*The views in this article are those of the author and the Natural Resources Defense Council. However, they derive in part from *A National Agenda for Clean Water*, which has been endorsed by over 125 organizations in the National Clean Water Network.

chemical criteria typically measure only water column chemistry, ignoring the accumulation of pollutants in sediment and biota. Similarly, criteria are lacking to measure both the physical and hydrological, as well as chemical, impacts of polluted runoff from both urban and rural lands. These serious limitations must be considered when interpreting state and federal progress reports under section 305(b) of the Act, which have described increasing compliance with water quality standards, hence implicitly attainment of the goals of the Act.¹

Discharge permits issued under the Act also have focused largely on chemical integrity. Recently, EPA and states have begun to issue permits that require “whole effluent toxicity” (WET) testing, under which the effect of the entire effluent on indicator species is measured using bioassays, rather than focusing exclusively on the impacts of individual chemicals acting alone. While a major step forward, this approach has limitations. For example, it relies on proper indicator species selection, can measure toxicity over only short periods, and cannot fully reproduce instream conditions. Moreover, many permits require WET procedures only as a test, followed by a vague requirement to engage in toxicity reduction, rather than as enforceable permit conditions. And the WET process has resulted in judicial challenges (so far unsuccessful), and legislative proposals to limit the use of WET as enforceable permit limits.

The most significant effort to protect aquatic ecosystem integrity as a whole has been under section 404 of the Act, which requires a permit from the Army Corps of Engineers (COE) in order to discharge dredge and fill material into waters of the United States. While used as the principal regulatory method of protecting wetlands, this program has fallen short of that goal. According to the U.S. Fish and Wildlife Service, for example, while the rate of wetlands loss has slowed due in part to the Clean Water Act and in part to federal farm policy legislation (principally the 1985 Food Security Act), from the mid-70s to the mid-80s the Nation lost an estimated 2.6 million acres of wet-

lands.² Other aquatic systems, however, have not even received this degree of effort. Clean Water Act programs have not addressed issues such as construction on floodplains and on coastal and lakeshore habitat, channelization and other alteration of rivers and riparian habitat, and changes to instream spawning and rearing habitat due to siltation and the hydrological effects of increased runoff flows.

Of the three ancillary goals of the Act, the most controversial has been zero discharge. Ignoring demonstrated success in achieving zero discharge in some industries, some argue that zero discharge is an unrealistic goal, and not an economically efficient approach to environmental regulation. For now, however, this debate seems downright futuristic, as we are not even close to its attainment. Reports pursuant to the Toxics Release Inventory of the Community Right to Know Act (enacted as Title III of the Superfund Amendment and Reauthorization Act) indicate that over 740 million pounds of hazardous pollutants were discharged into U.S. surface waters and sewers.³ Even larger volumes of “conventional” pollutants continue to be discharged every year.

Nor have we come close to achieving the “fishable and swimmable” goal of the Act, despite its 1983 target date. As noted above, the manner in which we measure attainment of this goal is highly incomplete due to serious gaps in water quality standards. But even accepting these measures, EPA’s most recent biennial water quality report to Congress shows that most water bodies have not even been assessed for compliance with the 1983 goal, and of those that have been, a substantial percentage do not support or only partially support designated uses.⁴

The final goal, elimination of the discharge of “toxic pollutants in toxic amounts,” is harder to gauge given the inevitable dispute over what is a “toxic amount.” Disputes rage about the toxicology of chemicals such as dioxin in parts per quadrillion, appropriate risk levels for cancer and other health and environmental effects, exposure path-

ways and consumption levels, etc. But once again, these theoretical disputes must give way to reality, as there is substantial evidence, again reflected in EPA's most recent water quality report to Congress, that a large number of water bodies are adversely affected by toxic pollutants.⁵ 29 states reported toxics in fish at levels in excess of FDA action levels, with 47 states using some form of fishing advisories and bans; 34 states reported sediment contamination by toxic pollutants; and 37 states reported fish kills resulting from chemical pollutants.

In short, we are clearly a long way from achieving even the interim goals of the 1972 Clean Water Act, much less the overriding objective of restoring and maintaining the chemical, physical and biological integrity of the Nation's waters.

The 1987 Water Quality Act

In its 1987 Clean Water Act Reauthorization, known as the Water Quality Act of 1987 (WQA), Congress acknowledged many of these problems. While the full reach of the last reauthorization is beyond the scope of this article, three substantive issues dominated the agenda: (1) the realization that little had been done to address water quality impairment from contaminated runoff (known by the technocracy as "nonpoint source pollution"); (2) the continued discharge of large quantities of toxic pollutants from industrial and municipal sources; and (3) the need to reinvigorate water quality-based permitting requirements, which had languished in favor of the predominantly technology-based approach adopted by EPA and the states under the 1972 law.⁶

To address polluted runoff from agricultural and urban land, Congress added sections 319 and 402(p) to the Act. Section 319 required all states to conduct a detailed assessment of the degree to which their waters are impaired due to polluted runoff, and to develop comprehensive management plans to correct the identified problems. The assessments varied considerably in quality, but generally confirmed that polluted run-

off was the principle cause of a large percentage of the Nation's water quality impairment, yet were subject to far less remedial action than pollution from point sources.

The management plans submitted under section 319 also varied considerably in quality. As a whole, however, they reflect a "business as usual" approach to addressing polluted runoff. Part of the blame rests with Congress: the statute contained no firm criteria for an acceptable management plan, leaving the states with little guidance on what to do and EPA with little basis to reject poor plans; and the Administration failed to request and Congress failed to provide the funding levels promised in the law for state implementation. EPA was also late in issuing guidance for state plans, and in reviewing plans once submitted.

Section 402(p) extended deadlines for issuance of permits for discharges of contaminated stormwater from both industrial and municipal sources. EPA regulations implementing this provision were late, and extended permit deadlines far beyond what was authorized by the statute. More important, EPA's rules narrowed the scope of sources subject to the permitting requirement, and failed to prescribe specific controls necessary to curb these discharges. The adequacy of EPA's rules is currently being reviewed by the U.S. Court of Appeals in San Francisco.⁷

Congress did adopt a more aggressive approach to polluted runoff control, at least with respect to coastal waters, in its reauthorization of the Coastal Zone Management Act in 1990. Rather than leaving the identification of polluted runoff controls exclusively to the states, as it had under section 319, Congress directed the federal government, through EPA and the National Oceanic and Atmospheric Administration (NOAA), to identify a series of best management practices (BMPs) to address various sources of polluted runoff, along with state management measures to ensure effective implementation of these BMPs. Recognizing variability in land uses in different parts of the country, this approach does not require the same

BMPs to be adopted by all coastal states. Rather, states may choose from the menu of approaches suggested by EPA and NOAA, based on the approaches that are most suitable in that state. Failure to adopt and properly implement a program, however, results in partial withdrawal of funding under section 319 and the CZMA.

Regarding toxics and water quality-based controls, Congress responded with a three-pronged “beyond BAT” strategy embodied in section 308 of the 1987 WQA: (1) EPA was directed to complete by 1991 its issuance of industry-wide effluent limitations (i.e., BAT first had to be completed before anyone could go beyond it); (2) states were required to adopt, within three years, water quality standards for toxic pollutants causing or potentially causing water quality impairment; and (3) states were to identify in a series of increasingly comprehensive lists all water bodies impaired by toxic and other pollutants (so-called “toxic hotspots”), and to develop “individual control strategies” to address remaining toxic pollution from point sources discharging to those impaired waters. As interpreted by EPA, individual control strategies translate to new permits incorporating permit limits strict enough to ensure compliance with water quality standards for toxic pollutants.

There have been serious problems with the implementation of all three prongs of this beyond-BAT strategy. By the statutory deadline for completing all of the remaining BAT effluent guidelines, EPA had not issued a single rule, despite the fact that 4 out of 5 direct industrial dischargers were not yet subject to BAT rules.⁸ A Court ruled in April, 1991, in response to a lawsuit brought by NRDC, that EPA was in default of its obligations under the statute.⁹ As of this writing, EPA will be placed on a new schedule for compliance either by Consent Decree or by Court Order. Either way, we are still a long way from subjecting all industrial point sources to nationally-consistent requirements to control discharges of toxic pollutants.

⁸“BAT” is the “best available technology” economically achievable — referring to the technology-based standard for the control of toxic pollutants from industrial dischargers.

Similar delays and problems have arisen with respect to EPA and state implementation of the water quality-based approach to the control of toxic pollutants. Most states delayed their adoption of new water quality standards, and many have not done so at all. In such cases EPA is required to step in and issue standards for the delinquent states, but has been reluctant to do so, pleading concerns about states’ rights. Faced with a threatened lawsuit by NRDC, however, EPA finally issued a proposed rule to fill these gaps, and is expected to finalize this rule shortly. Worse, EPA issued a regulation interpreting the individual control strategy requirement to apply only to the shortest of the lists required by the statute, meaning that only roughly 600 of the almost 18,000 water bodies identified as impaired by toxic pollutants would be subject to individual control strategies. In September, 1990, the U.S. Court of Appeals in San Francisco rejected EPA’s interpretation of the law.¹⁰ However, EPA has not yet revised its regulations to respond to the Court ruling.

Returning to the 1972 Goals

The question from here is how to reset our sights to improve our chances of attaining the sound, basic objective and goals articulated by Congress in 1972. In some cases, this requires an incremental shift in approach; in others, we need only fine tune our strategy to achieve these goals more quickly and effectively; in some cases, Congress needs to instruct EPA and the states more emphatically to do what they were supposed to all along.

Polluted Runoff

Given the overwhelming evidence that polluted runoff is the largest yet least seriously addressed source of water quality impairment, there is little point in revising the Clean Water Act unless this problem is addressed seriously. Congress has tried nonregulatory, planning approaches to polluted runoff for two decades, but these approaches have largely failed. Nor have we developed the same range of on-the-ground and pro-

grammatic tools to address polluted runoff as we have for pollution from point sources. The time has come to adopt a reasonable mix of regulatory and nonregulatory approaches to polluted runoff. This program should include at least the following components:

(1) Current water quality standards do not address many pollutants and effects characteristic of polluted runoff, such as nutrients, eutrophication, chemical and physical effects of sedimentation, most pesticides currently in use, and hydrologic impacts. EPA and the state should be required to adopt water quality criteria and standards addressing these impacts. Sources of polluted runoff that cause violations of these standards should be subject to enforcement action (although proper implementation of approved BMPs should be a defense against such enforcement). And state section 319 plans should not be approved unless they are designed to achieve compliance with these standards within a reasonable period of time.

(2) The flexible but mandatory BMP approach adopted in the 1990 CZMA amendments should be expanded to apply to all states. Penalties for state failure to implement these programs should be expanded to include loss of transportation and other federal funds. Ultimately, where states fail to implement adequate programs, EPA should be required to do so.

(3) Current divisions between point sources and polluted runoff must be redefined. For example, EPA's regulatory exemption for concentrated livestock operations, identified by EPA as one of the largest sources of agricultural pollution, should be refined to cover only extremely small operations. The current statutory permitting exemption for irrigation return flows should be modified as well. While it may not be logical to treat these sources in the same manner as industrial point sources, they should be permitted on a system-wide basis, similar to municipal stormwater programs under section 402(p).

(4) Congress should expressly require EPA

to make municipal and industrial stormwater permits meaningful by defining minimum on-the-ground management practices to prevent contaminated runoff from urban and industrial areas. The related but critical problems of combined sewer overflows, in which discharges of raw sewage and contaminated stormwater can cause serious human health and environmental problems — such as the closure of thousands of acres of shellfish beds and miles of beaches along the East coast, should be tackled as well. These overflows should be subject to an expeditious elimination program.

Industrial Toxics

The failure of existing CWA programs to eliminate toxics in toxic amounts, or to achieve the Act's zero discharge goal for even the most pernicious industrial toxics, has led some commentators to argue that Congress should turn to bans and phase-outs of the most toxic and persistent pollutants.¹¹ In fact, S.1081, introduced last year as the Senate CWA reauthorization bill, directs EPA to ban completely the discharge of prescribed toxic pollutants, including dioxin* and mercury, then orders the agency to identify other equally toxic and persistent toxics for the same procedure. Ultimately, only this straightforward, no-nonsense approach will achieve the Act's zero discharge goal with respect to toxic pollutants.

Until such a bold approach can be implemented fully, however, other short-term strategies are necessary:

(1) Congress should force EPA's hand by identifying specific industries that require effluent guidelines by specific dates; alternatively, Congress can ratify whatever deadlines are ordered or approved by the Court in the case described above;

(2) The current, inefficient process by which states and EPA must be arm-twisted into issuing water quality standards for toxics should be replaced by a system under which EPA's water quality criteria are presumptively applicable na-

* More precisely, the bill bans the release of 2,3,7,8-TCDD.

tionwide, unless states adopt stricter standards. EPA should be required to establish criteria for sediment and biota as well, also nationally applicable unless superceded by stricter state standards. These standards should be implemented through enforceable permit conditions so that toxics that do not remain suspended or dissolved in the water column are properly controlled;

(3) Congress should clarify that all point sources that discharge into impaired waters must be given stricter, water quality-based effluent limits by a date certain;

(4) The current presumption that point sources have a “right” to discharge so long as they meet applicable permit limits should be reversed (as intended by the original Act), such that permit applicants must demonstrate a “need to discharge” following a detailed environmental audit that evaluates every opportunity to prevent pollution through material and process changes and other means. Except where proprietary data such as trade secrets would be divulged, the results of these audits should be public; and

(5) Industries that discharge toxic pollutants into sewers should be subject to the same technology-based controls as direct dischargers (as well as stricter controls where necessary to protect plant workers, receiving waters, and sewage sludge).

Physical and Biological Integrity

The Act must be revised to give at least equal attention to physical and biological, as to chemical, integrity. While EPA and states have had ample authority to protect physical and biological integrity under the Act, with a few exceptions they have not acted aggressively to do so.

Recently, following the lead of states such as Ohio, EPA has issued guidance on how to use biological indicators to measure aquatic ecosystem integrity, rather than simply instream chemical parameters. Correctly, EPA indicates that these

measures should be used so supplement, rather than to replace, numeric water quality standards.¹² However, so far this approach has been used to identify problems with ecosystem integrity, but it is not clear how it will be used to support additional regulatory action. Congress should embrace biocriteria as a supplement to numerical criteria, but require EPA to adopt such criteria in enforceable form, i.e., specify that such criteria should be quantifiable where possible, and that violations of biocriteria must trigger additional controls on the activities responsible for the impairment.

Another important step is to broaden the scope of section 401 of the Act, under which applicants for federal licenses and permits must seek certification from the host state that the project will result in compliance with water quality standards and other requirements. Water quality-related requirements imposed by the state as a condition of certification must be imposed in the permit or license. Unfortunately, however, some courts have restricted application of this provision to chemical water quality standards, impairing the rights of states to keep their eyes on the real target — aquatic ecosystem integrity. Section 401 should be amended to clarify that it applies to polluted runoff, physical habitat impairment, and other effects that are not purely chemical in nature. Moreover, to ensure that this provision is used rather than ignored, state latitude to waive certification should be eliminated.

As noted above, wetlands protection under section 404 is the single example where the CWA has been used effectively to protect aquatic habitat. But while the rate of wetlands loss has slowed, it is still a staggering 300,000 acres per year. This is due largely to the fact that many wetlands-altering activities are not covered by the authority in section 404, which is limited to the discharge of dredge and fill material into wetlands. Activities such as draining are not covered by the Act. Moreover, many activities are exempted altogether or subject to weak or nonexistent protection under general or nationwide permits. The full scope of amendments needed to correct these important defects are ad-

dressed in the article by James Tripp.

Other Gaps and Defects

It is impossible to outline in this brief article the full range of changes needed to achieve the original goals and purposes of the Act. Many other issues should be addressed during the forthcoming reauthorization, including the following:

Ground water - While the original Act made reference to ground water in several places, it did not adopt the same comprehensive approach to ground water protection as to surface water. Even where, ground water was specified, such as the mandate in section 304 to issue ground water quality standards, EPA has failed to take action, hiding behind the facade of “states’ rights.” Ground water is just as much a national resource as surface water, with many important aquifers crossing state boundaries. And in most respects the two resources are hydrologically connected. The CWA should be amended to subject ground water pollution to the same strict regulatory program as surface water.

Water conservation - Water supply is becoming a major problem all around the country — not just in traditionally dry areas. Congress has been reluctant to tackle this issue, however, again citing the historic role of states in regulating water supply. But water quality and water quantity are inextricably linked in many respects, for example, where excess withdrawals from surface waters degrade already stressed systems, or where excess urban water use contributes to combined sewer overflows. While the federal government should not replace 200 years of state water rights law, there are legitimate and essential federal roles, such as the issuance and enforcement of minimum national plumbing efficiency standards, and the requirement that Publicly-Owned Treatment Works (POTWs) adopt least-cost water conservation plans before building or expanding sewer system capacity.

Enforcement and Funding - All of the above steps are critical if we are to see attainment

of the Act’s original goals. None of them will be achieved, however, unless adequate enforcement authority and implementation funds are made available. For example, EPA recently issued a report recommending specific enforcement authority needed to ensure that the law is properly implemented, but this report has been suppressed by the White House.¹³ Many penalties under the Act have been imposed at levels below the savings achieved through noncompliance. And the Supreme Court has narrowed the ability of citizens to go to court to enforce the law when the government fails to do so.

Similarly, funding levels have been inadequate to implement some of the most basic programs of the Act, such as the section 319 program to address polluted runoff. Additional funds are needed both to support the Act’s planning, permitting, and enforcement programs, and to build needed infrastructure such as CSO and stormwater controls, and sewage treatment plants in small, low-income communities.

Conclusion

Clearly, the goals of the 1972 Clean Water Act were ambitious. But no responsible policy makers have suggested that the public deserves clean water and healthy aquatic ecosystems less in 1992 than they did two decades ago. Yet, while impressive progress has been made in some areas, we are still disturbingly far from reaching those goals.

Some argue that the solution is to lower our sights. But problems are never solved by weakening resolve or lowering expectations. None of the above suggestions represent a radical restructuring of the existing law. In some cases, they call expressly for what was suggested implicitly in the original law, or simply direct EPA once again to do what Congress called for all along. In others, they call for fine-tuning of existing programs, or incremental improvement of strategies designed to move us further or more quickly in the direction we headed in twenty years ago. Without these changes, we will never achieve the important goals we set for ourselves in the 1972 law.

Notes

¹For a comprehensive review of the current limitations of water quality standards see *Water Quality Standards for the 21st Century, Proceedings of a Conference* (EPA, May 1991).

²Thomas E. Dahl, et al., *Wetlands Status and Trends in the Conterminous United States, Mid-1970s to Mid-1980s* (FWS 1991).

³EPA, September, 1991. *Toxics in the Community, The 1989 Toxics Release Inventory National Report* (EPA 560/4-91-014).

⁴*National Water Quality Inventory, 1988 Report to Congress* (EPA April 1990). The next biennial report is due in the Spring of 1992. The 1988 Report shows that only 29% of river miles in the country were assessed. Of these, almost 30% did not fully support designated uses. 41% of lake acreage was assessed, of which 26% did not meet designated uses. 76% of estuarine area was assessed, of which 28% did not meet designated uses.

⁵For example, states reported that about one-third of all river miles, lake acres and coastal waters monitored were adversely affected by toxics, along with about one-quarter of all estuarine areas. Great Lakes states reported toxic effects for an incredible 90% of shoreline miles.

⁶This is not to say that EPA and the states' interpretation of the prior law was correct. The 1972 law required the stricter of technology-based and water quality-based controls to apply, but the latter was implemented infrequently. See U.S. General Accounting Office, *Water Pollution: More Action Needed to Improve the Quality of Heavily Polluted Waters* (January 1989).

⁷*NRDC v. EPA*, Nos. 90-70761, 91-70200 (9th Cir.).

⁸EPA, 1988. *Report to Congress: Water Quality Improvement Study*.

⁹*NRDC and Public Citizen v. Reilly*, Civ. No. 89-2980 (RCL) (D.C.D.C.).

¹⁰*NRDC v. EPA*, 915 F.2d 1314 (1990). The Court rejected outright EPA's position that states did not even have to identify all point sources contributing to toxic pollution, and remanded to the agency to review which of these sources were subject to the control strategy requirement.

¹¹Oliver A. Houck, *The Regulation of Toxic Pollutants Under the Clean Water Act*. 21 ELR 10528 (Sept. 1991).

¹²EPA, *Biological Criteria, National Guidance for Surface Waters*, EPA-440/5-90-004 (April, 1990).

¹³EPA, Draft Report to Congress Pursuant to Section 314(b) of the Water Quality Act of 1987. NRDC recently sued EPA to force the release of this report to Congress. *NRDC v. EPA*, Civ. No. 91-5235 (D.N.J.).