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The Evolving Law of Environmental Protection in the United States: 1970-1991

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Introduction

Having recently observed the twentieth anniversary of Earth Day, it seems appropriate to pause for a few moments to reflect upon the accomplishments which the last two decades of environmental activism have brought. Over the course of those years, the environmental movements in both Australia and the United States have enjoyed an astounding series of successes. Many environmentally damaging projects have been abandoned or modified to reflect more sensitive environmental values; new parks and sanctuaries created; wildlife protected; and major efforts made to abate air and water pollution. Much of this progress resulted from the use of law—the enactment of new environmental legislation, and the administrative implementation and judicial enforcement of these new statutory schemes.

Our two countries have thus shared a strong and continuing commitment to environmental quality, as well as an appreciation for the creative role that the law can play in preserving and enhancing the human environment. Environmentalists in both countries have also profited from observing the actions of their counterparts across the Pacific. American environmentalists, for example, were inspired by the spirit of the Australian environmental movement which was demonstrated during its struggle against the Gordon-below-Franklin Dam.[1] Australians, in turn, appear to have been quite favourably impressed by the *National Environmental Policy Act* (NEPA), since the Commonwealth and all six States have acted to establish procedures for environmental assessment.[2]

It is the intention of this article to contribute to the continuation of the dialogue between our two environmental communities by surveying in broad fashion the evolution of environmental law in the United States since 1970. The story of that evolution is rather fascinating at times, revealing a number of remarkable achievements and a fair number of disasters. It is also, however, a difficult story to relate owing to the enormous growth that environmental law has experienced during those years.

The story of American environmental law was not always so complex. During the 1960s, environmental law was scarcely thought of as a legal subject in its own right. If thought of at all, it was most likely considered as a mere amalgamation of a few tort principles, a little property law, and a couple of creaky and certainly toothless Federal pollution control statutes. This rudimentary stage of development clearly came to a close on New Year's Day 1970, when President Richard Nixon signed NEPA into law. Before the end of that year, moreover, the President, by means of a Reorganization Order, had consolidated a number of Federal environmental offices and activities into a new, independent executive branch agency—the United States Environmental Protection Agency (EPA).[3]

The present state of the EPA is, I suppose, a fairly good indicator of the contemporary

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significance and scope of environmental regulation. It may be somewhat surprising, but the EPA is the largest regulatory agency in the Federal Government today. It is responsible for the administration of 11 major environmental statutes—including the *Clean Water Act* and the *Clean Air Act*, each of which ranks among the most complicated statutes ever enacted; the hazardous waste statute, the *Resource Conservation and Recovery Act*, which has given rise to the most convoluted administrative regulations imaginable; and the *Comprehensive Environmental Response, Compensation, and Liability Act*, better known as Superfund, which has created prodigious levels of corporate liability for abandoned hazardous waste sites. To fulfill its regulatory mission, the EPA has an annual budget of $US 5.1 billion, and it employs over 17,000 persons[4] who work in Washington, D.C., 10 regional offices, and 26 research facilities located around the country.[5]

Although the EPA may be the largest and most visible environmental agency, it is not the only Federal agency that is responsible for controlling pollution or conserving natural resources. For instance, agencies such as the Fish and Wildlife Service (Department of the Interior), the National Marine Fisheries Service (Department of Commerce), the Forest Service (Department of Agriculture), and the National Park Service (Department of the Interior) all have specific duties with respect to the conservation of flora, fauna, and natural habitat. In addition, the Army Corps of Engineers (Department of Defense) is largely responsible for the administration of the wetlands protection programme under the *Clean Water Act*; while the Office of Surface Mining (Department of the Interior) implements the *Surface Mining Control and Reclamation Act*. The Department of Justice, moreover, is generally responsible for all environmental litigation involving the United States Government. And finally, there are hundreds of State and local agencies that are involved in significant aspects of environmental regulation, including the administration of many EPA-designed programmes.

All of this regulatory activity has led to a rapid expansion in the demand for environmental practitioners—in government, at law firms, as in-house corporate counsel, and as counsel for numerous environmental organisations. *Time Magazine* recently estimated that some 20,000 American lawyers specialise in environmental matters.[6] Law firms all over the country are rushing out to hire environmental specialists, and quite a few of the firms possess rather substantial contingents. At Philadelphia-based Morgan, Lewis & Bockius, for example, approximately 45 of the firm's 650 lawyers engage in an environmental practice.[7] In some instances, moreover, the pace of growth has been absolutely phenomenal. The number of environmental lawyers at the New Jersey law firm of Pitney, Hardin, Kipp & Szuch has grown from five in the mid-1980s to 30 today, and the firm plans to expand to 60-70 environmental practitioners by 1994.[8]

Environmental law has clearly matured into a major field of legal practice over the last two decades and has emerged as a substantial factor in the life of the United States. Such a dramatic development prompts several questions. How did so much progress occur during such a relatively short span of time—especially when the White House, during much of that period, was not particularly receptive to environmental initiatives? What did this development mean for the law? And, finally, but most importantly, did all of this legal activity really succeed in improving the quality of the environment?

I. The Advent of Modern Environmental Law

During the New Deal of President Franklin Roosevelt and the two decades that followed it, most "reform"-oriented legislation—whether involving civil rights, social welfare, or economic regulation—originated in the executive branch of the Federal Government.[9] That, of course, would be typical in a parliamentary democracy like Australia.[10] It had not, however, been the general case in the United States. During most of American history, Presidents presented only a limited number of legislative proposals to Congress and did little, if anything, to get them enacted. That typical pattern, of course, began to change during the twentieth century with the power of the Presidency growing in fairly dramatic fashion from the 1930s through the 1960s.[11]

American history, however, has witnessed a number of significant shifts in the relative power of the President and Congress. One such realign-

ment took place during the early 1970s when Congress reasserted itself.[12] Despite the fact that I referred to President Richard Nixon twice in my introduction, the executive branch has played a relatively nominal role in the drafting of most modern environmental legislation. The new statutory initiatives have come primarily from Congress—its committees, members, and staff—informed, of course, by public opinion, environmental groups, industry, and the EPA.[13]

This congressional initiative resulted largely from the concurrence of Republican Presidents and Congresses dominated by Democratic majorities.[14] Executive-legislative tensions, of course, had risen during President Johnson's conduct of the War in Vietnam. The struggle between Congress and the President, however, did not reach a fever-pitch until the Nixon years.[15] Congress also found itself better able to draft complex legislation in the 1970s because a recent expansion in the committee system had allowed for increased policy specialisation by both members of Congress and the rapidly growing numbers of congressional staff.[16]

Congress did more, however, than just try to wrest control of the legislative agenda from the President. It also sought to reassert itself vis-à-vis the Federal bureaucracy. The late 1960s and early 1970s found a Democratic Congress that was extremely sceptical about the ability and even the willingness of executive branch agencies to execute their statutory missions. After all, the faith that both the American Progressive Movement and the New Deal had previously exhibited in the value of neutral, scientific administration no longer appeared justified. While most agencies had never been actually "captured" by the regulated community, the perception had spread broadly through American society that ageing agencies were inclined to develop a distorted image of reality, grow ever more passive, and perhaps eventually become a tool of the regulated, to the detriment of the public interest.[17] Furthermore, the public's faith in the value of expertise and the wisdom of experts had been seriously eroded by the darker side of modern technology—the nuclear arms race, DDT, thalidomide, widespread pollution, and the ecological devastation wrought by the exploitation of our natural resources[18]—as well as by the grave mistakes committed by our military and foreign policy establishment in Vietnam.[19] All of these doubts were amplified in the minds of the Democratic majority on Capital Hill because the Federal bureaucracy was now in the hands of a Republican President and his partisan appointees.

These contemporary attitudes toward government and the bureaucracy, together with the reassertion of congressional prerogative and the encouragement of the environmental movement, served to produce a prodigious amount of extremely detailed environmental legislation. This legislation is striking in the degree to which it limits the exercise of administrative discretion by imposing a long series of mandatory duties, regulatory schedules, and deadlines on the EPA—and creating the judicial mechanisms by which citizens could seek to compel the EPA to fulfil these duties and meet its deadlines.

II. The First Years: 1970-1976

A. The National Environmental Policy Act

The first piece of legislation enacted in 1970 was the *National Environmental Policy Act* (NEPA).[20] NEPA contains a grand statement of national environmental policy which is largely implemented through the procedural requirement of an environmental impact statement (EIS). Thus, whenever a proposed Federal action will have a significant effect upon the quality of the human environment, the responsible Federal agency must analyse all feasible alternatives, including the proposed action, and consider the environmental impacts of each.[21] Essentially, it cautions as well as compels the Federal Government to look before it leaps.[22]

NEPA has been thoroughly reviewed before in the pages of this Journal.[23] I, therefore, do not propose to discuss it at length. But I would like to stress three rather interesting points about this statute. First, NEPA was completely developed in Congress—primarily by Senators Henry Jackson and Edward Muskie, with significant help from Professor Lynton Caldwell, a political scientist at Indiana University.[24] Second, and surprisingly enough for a fairly conservative politician, President Richard Nixon hailed its passage.[25] Finally, I should note that NEPA is not an example of the statutory paradigm that I just mentioned. It is not fraught with detail; in fact, its text is brief and its language extremely general, like a classic piece of New Deal legislation.

This vague language, in fact, led many mission-oriented agencies to argue that Congress had given them a large measure of discretion in deciding how to construe the requirements of NEPA. This attitude led rather naturally to crabbed interpretations of the Act and grudging, half-hearted compliance by some agencies. The Federal courts, however, reacted to this charade with commendable vigour and strictly enforced the procedural requirements of the Act in order to ensure that

> "important legislative purposes . . . are not lost or misdirected in the vast hallways of the federal bureaucracy".[26]

In doing so, the Federal courts created an expansive common law of NEPA that compels agencies to rigorously explore environmental issues during the impact statement process.

The NEPA was virtually the last environmental statute of its kind—throughout the next two decades Congress would try to craft the new pollution control statutes in a way which would leave as little as possible to chance (or agency discretion).

B. The Clean Air Act

In February 1970, President Nixon tried to gain some control of the legislative process by sending a 37-point environmental programme to Capital Hill which proposed, among other things, new air pollution legislation. Senator Edward Muskie, an aspirant to the White House, however, had already beaten Nixon to the punch by introducing a comprehensive air pollution control Act in December 1969. Acting swiftly and with near unanimity, Congress passed the new legislation in December 1970. Although both Nixon and Muskie claimed credit for the Bill's provisions,[27] it is clear that the Bill which emerged was primarily authored by Senator Muskie.

The new *Clean Air Act*[28] greatly expanded the Federal presence in the field. It required the newly-created EPA to establish nationally uniform air quality standards for those air pollutants which result from numerous sources.[29] The primary ambient air quality standards were to be designed to protect human health with an "adequate margin of safety"[30] regardless of current economic or technological feasibility.[31] The State Governments were required, in turn, to develop implementation plans governing existing stationary sources which would ensure that these health-based standards were met by 1977 at the latest.[32] This control strategy thus acquired its reputation as a "technology-forcing" scheme since its requirements are designed to force industry to develop whatever pollution control devices are necessary.[33]

Congress, however, did not rely solely upon the setting and implementation of ambient air standards to control air pollution. The 1970 *Clean Air Act* also directed the EPA to promulgate uniform emission limitations for new stationary sources based upon the application of the best achievable technology which has been adequately demonstrated taking into account the cost of the technology.[34] Hazardous air pollutants were also singled out for special, extremely stringent treatment, health-based limits designed to protect public health with "an ample margin of safety".[35]

The *Clean Air Act*, moreover, contained a very innovative enforcement device: the citizen suit. Through this provision, any adversely affected individual was authorised to seek injunctive relief against a source who violates the Act or against the EPA should it fail to perform one of its mandatory duties under the statute.[36] Although citizen suits will be discussed more thoroughly in the context of the *Clean Water Act*, I should add at this point that the concept has proven so popular with Congress that it is now an ingredient in virtually every Federal pollution statute.[37]

C. The Clean Water Act

Although Richard Nixon wanted to share credit for the passage of the *Clean Air Act* in 1970,[38] by October 1972 he seemed to no longer feel as much need to be regarded as an environmentally-sensitive President. For it was in that month, one month before he trounced the Democratic nominee for President, George McGovern, that President Nixon vetoed the new *Clean Water Act* as too expensive and too much of a burden on the American taxpayer.[39] Congress, however, promptly overrode the veto.[40]

The new *Clean Water Act*[41] completely revised the Federal approach to water pollution control. The control strategy of the *Clean Water Act* pivots around a broad prohibition which forbids

"the discharge of any pollutant by any person" from a point source to waters of the United States, unless the discharger complies with several requirements of the Act.[42] This simple sentence expanded the ambit of Federal jurisdiction far beyond the traditional concepts of navigability since Congress indicated that the term "waters of the United States" was to be given the broadest possible definition under the commerce clause of the Constitution.[43] Federal jurisdiction extends, consequently, to all lakes, rivers, streams, and wetlands which have been used, are currently used, or are susceptible to use in interstate commerce or the degradation of which could affect interstate commerce (even including possible adverse affects on tourism).[44]

Among the requirements that apply to regulated discharges are several that require the EPA to promulgate national effluent limitations which apply to every discharger in a particular industry or category. These limitations are typically based upon the application of specific kinds of control technology for particular waste streams: best available technology for many toxics, as well as discharges of non-toxic, non-conventional pollutants; best conventional treatment for conventional pollutants;[45] and best available demonstrated technology for new sources.[46]

To implement and monitor compliance with these limitations, as well as any more stringent limits necessary to meet water quality standards in the receiving water, every discharger must obtain a permit and comply with its terms. These permits are issued through the National Pollutant Discharge Elimination System (NPDES) which serves as a means of transforming most regulatory requirements into specific obligations of the individual discharger.[47] Although some 40 State programmes have been granted authority to issue NPDES permits, they must apply Federal requirements and are subject to an EPA veto should they fail to do so.[48]

Enforcement was greatly simplified as a result of this permit scheme because it imposes precise numerical limits on all point source dischargers. Furthermore, Congress authorised EPA to impose substantial monitoring and reporting requirements on the regulated community.[49] The EPA, accordingly, requires each permittee to file periodically a discharge monitoring report (DMR) that reveals the levels of pollutants in the permittee's effluent.[50] The determination of a violation is thus a rather simple affair in many instances, requiring only a comparison of permit conditions with the permittee's actual performance.

The *Clean Water Act* also created a wide array of sanctions for violations of the Act. In doing so, the Act gave the EPA enormous power to enforce the statute's regulatory scheme through the use of administrative orders, civil suits for injunctive relief and civil penalties, and even criminal sanctions.[51] State agencies, moreover, were recognised as possessing concurrent jurisdiction to enforce State-issued permits. And to supplement as well as induce government enforcement, Congress empowered private citizens not only to obtain injunctive relief against violators (and the EPA for failure to perform non-discretionary acts), but also to seek the imposition of civil penalties.[52]

The *Clean Water Act* also contained three other notable programmes. First, the statute expanded a Federal programme that provided funding for the construction of publicly-owned sewage-treatment plants all over the United States.[53] Under this programme, some $US 45 billion has been provided by the EPA over the last 20 years to help finance projects at approximately 5,000 municipal treatment facilities.[54] In addition, the *Clean Water Act* continued the Federal response programme for oil spills and extended it to include spills of hazardous substances.[55] And finally, the Act contained a provision that regulated the physical modification of wetlands and other waters.

Under this latter programme, the EPA and the United States Army Corps of Engineers are jointly responsible for the issuance and enforcement of permits to discharge dredged or fill material into waters of the United States.[56] Over the course of the last 20 years, the dredge and fill programme has developed, albeit at length, into a significant tool for minimising the conversion of wetland habitat into dry land by timber interests, farmers, and developers, among others. Its broad impact today is due to the fact that wetlands are defined as any area—swamp, marsh, or bog—that is inundated or saturated at a frequency sufficient to support a prevalence of wetland vegetation.[57] The programme thus may help to preserve many of the remaining

wetland areas in the United States—areas that are so valuable as bird and wildlife habitat, as spawning grounds and nurseries for fish and other aquatic life, as natural filtration systems for various pollutants, as recharge zones for underground water supplies, and as storage areas for flood waters.[58]

D. Other Statutory Initiatives

Congress was also busy during the early and mid 1970s with many other pieces of environmental legislation. The 1972 amendments to the *Federal Insecticide, Fungicide, and Rodenticide Act* (FIFRA) added a public health dimension to a statute that had been chiefly concerned with consumer protection.[59] The year 1972 also saw the enactment of the *Marine Protection, Research, and Sanctuaries Act* (MPRSA) which controls various kinds of ocean dumping through the designation of proper dump sites, a permitting programme, and the assessment of penalties for improper disposal.[60] Then, in 1974, Congress passed the *Safe Drinking Water Act* to regulate the purity of public drinking water supplies as well as controlling the deep-well injection of hazardous waste.[61]

On the eve of the national elections in 1976, Congress passed two statutes that were aimed at the prospective regulation of toxic substances and hazardous waste. The *Toxic Substances Control Act* (TSCA) was designed to provide testing data on all new chemicals as well as many existing chemicals so that the EPA could regulate (even ban if necessary) the manufacture, use, or disposal of those chemicals which present an unreasonable risk to human health or the environment.[62] Under the *Resource Conservation and Recovery Act* (RCRA), the EPA was directed to establish a "cradle-to-the-grave" system of regulation for hazardous waste, governing generation, transportation, treatment, storage, and disposal.[63]

Much of this legislation received a fairly cold reception from significant segments of American industry, and neither President Nixon nor President Ford were particularly enthused about all of the details.[64] Nevertheless, a bipartisan coalition in Congress continued to pass strong environmental statutes—most of which were written and produced within Congress—thus enhancing congressional power and prestige in this vital policy area.

III. The Carter Years: 1977-1980

During the 1977 Presidential campaign, Jimmy Carter had committed himself publicly to the creation and maintenance of a strong Federal environmental programme. As President, therefore, Carter tried to fulfil his pledge by appointing a large number of experienced environmental activists to political positions at the EPA.[65] The agency's staff—which had now grown to over 10,000—continued to labour on new regulatory initiatives, while Congress passed mid-course corrections to both the *Clean Air Act* and the *Clean Water Act*. Furthermore, as deadlines for compliance with various air and water pollution requirements expired, the agency's enforcement efforts rose significantly. Near the end of the Carter administration, in December 1980, a lame duck session of Congress passed the *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA)—commonly referred to as Superfund.[66]

CERCLA was designed to give EPA the authority and the funds necessary to clean up abandoned hazardous waste sites such as Love Canal (Niagara Falls, New York) or the Valley of the Drums (Kentucky), and then to seek reimbursement from the responsible parties.[67] The EPA, however, may also order the responsible parties to execute an EPA-designed clean up in order to abate an imminent hazard;[68] if they fail to do so and EPA subsequently cleans the site, the responsible parties may be liable for punitive damages of up to three times the actual cost of clean up.[69]

CERCLA also cast its net of liability very widely. The responsible parties liable for clean-up costs include:

(1) Any person who owns or operates a site where hazardous substances have been released;
(2) Any person who owned or operated a site in the past when hazardous substances were released;
(3) Any person who transported hazardous substances to a site which he/she chose; and
(4) Any person who arranged for the disposal or the transportation for disposal of hazardous substances (commonly known as generator liability).[70]

Liability under the Act, furthermore, is retroactive. The date on which the spill occurred or the disposal took place, consequently, is not a relevant factor.[71] Liability is also strict. Thus a party may be liable without fault, even if its actions were legal at the time of disposal and even though the party exercised due care.[72] Finally, CERCLA liability is joint and several which means that each responsible party may be held liable for the entire cost of clean up.[73] A responsible party, however, may seek contribution from other responsible parties either during or following the original cost recovery action.[74]

IV. The Early Reagan Years: 1981-1983

Trouble was looming on the horizon during 1980, however. Complaints about excessive environmental regulation had become a standard lament among conservatives and many business people, and, by 1980, it had become something of a campaign issue in the presidential election. As a candidate, Ronald Reagan repeatedly attacked the *Clean Air Act* for slowing industrial growth and supported, in general, a relaxation in environmental regulation.[75] So when Ronald Reagan took office as the 40th President in January 1981, it was obvious that an effort would be made to trim the sails of the EPA.

The most direct line of attack for the new administration would be to persuade Congress to dilute the rigorous statutory standards and limitations which had been enacted during the prior decade. Such a legislative strategy offered a prospect for sweeping change and the institutionalisation of a much more conservative approach to environmental management. For several months, therefore, the Reagan administration worked on a major proposal to weaken the *Clean Air Act*. The effort, however, was abandoned soon after a leaked draft of the proposal raised howls of protest on Capital Hill. Congressman Henry Waxman, for example, publicly referred to the administration's proposal as "nothing less than a blueprint for destruction of our clean air laws" which would lead to a "furious and acrimonious battle".[76] In fact, a fundamentally revised Air Act would have been dead on arrival in the Democratic-controlled House of Representatives, and even in the Republican Senate such a radical approach would have experienced great difficulty. In contrast to many parliamentary democracies, there is very little party discipline in the United States Congress,[77] and a fair number of moderate to liberal Republican Senators would have certainly opposed the President on this issue.

The administration also lacked the kind of popular support it needed to successfully press for such a massive legislative revision. A CBS/*New York Times* poll taken in September 1981 revealed, for instance, that 73 per cent of the American people favoured the maintenance of the existing environmental laws.[78] Unable to muster public or political support for its legislative agenda, the Reagan administration resorted to a strategy that was more likely to succeed—in the short term at least—because it was less visible to the public and, in many instances, could be implemented through unilateral administrative action.

This alternate strategy depended upon deep cuts in the EPA's budget,[79] reductions in the agency's staffing levels, immediate suspensions of disliked regulations, crippling reorganisations, the appointment of ideologically loyal but often inexperienced agency officials,[80] and a clear policy, albeit unwritten, to discourage the vigorous enforcement of the environmental statutes. It was a case of "deregulation by the back door" as Judge Mikva so aptly described the phenomenon.[81]

A quick look at EPA enforcement reveals how well this relatively low-profile approach worked, at least initially. Between 1980 and 1983, the EPA enforcement budget was cut 39 per cent[82] while the programme also suffered from the destabilising effects brought about by four administrative reorganisations.[83] Rumours circulated that enforcement personnel were about to be fired,[84] and that "hit lists" of competent, but politically suspect, career employees were being prepared.[85]

Morale plummeted, of course, and the number of enforcement actions undertaken by EPA fell precipitously. *Clean Water Act* enforcement, for instance, declined 73.1 per cent between 1977 and 1982, and this decrease coincided with a fall of 41.5 per cent in the number of compliance inspections conducted by EPA personnel.[86] Thousands of young and dedicated civil servants left the agency[87] as it was becoming all too obvious that the administration was committed to regulatory relief through the device of relaxed

enforcement, a form of "statutory impoundment".[88] By 1983, the EPA had reached its nadir in terms of effectiveness and credibility.

The tide, however, was about to turn. A number of rule-making suspensions were overturned in the courts due to the administration's failure to follow the normal notice and comment requirements of the *Administrative Procedure Act*.[89] Congress was beginning to resist some of the budget cuts sought by the administration.[90] Moreover, the collapse in EPA enforcement had prompted a number of private environmental organisations to embark upon an unprecedented campaign to enforce the *Clean Water Act* by filing dozens of citizen suits against alleged violators.[91] The press, meanwhile, began to publicise the lapse in EPA enforcement, while a few former agency officials and members of Congress complained publicly about the fall.[92]

More destructive of this administrative strategy for regulatory relief, however, was the taint of scandal. During the winter of 1982-1983, congressional oversight hearings on the Superfund programme led to serious charges of impropriety on the part of several Reagan appointees. These charges included possible political manipulation of Superfund clean-up actions, various sweetheart deals, conflicts of interest, perjury, and the unauthorised destruction of EPA documents.[93] The festering scandal led in due course to the resignation of the EPA Administrator, Anne Gorsuch Burford, and to the resignation or firing of 20 of her top aides.[94] As a result of this public relations debacle, the Reagan administration was forced to largely abandon its unilateral, back door approach to deregulation at the EPA.

V. A New Beginning: 1983-1991

To replace Anne Gorsuch Burford, President Reagan nominated William Ruckelshaus, who had previously served as EPA's first Administrator and was highly respected in the environmental community. His appointment immediately restored a "measure of credibility" to the agency.[95] The "second coming" of Ruckelshaus also re-invigorated staff morale. After some goading on his part, agency enforcement efforts returned to an even keel,[96] and a number of regulatory initiatives were pursued. By the time Ruckelshaus returned to the private sector in 1985, the EPA had successfully recaptured much of its reputation as well as its budget.[97]

The agency, however, had been severely damaged by the extreme politicisation it had experienced in the early 1980s. The scars would take years to heal. Congress, for example, was not about to forget that the Reagan administration had tried, in effect, to repeal legislation by failing to enforce it—thus ignoring the primacy of Congress, the fact that Congress sets domestic policy while the President is merely responsible for its execution. As a result of this lingering congressional distrust, the environmental legislation that has been enacted since 1983 has been more stringent and more detailed than ever.

A. Major New Federal Legislation

The 1984 amendments to RCRA, the hazardous waste Act, declared that reliance on land disposal should be eliminated or at least minimised.[98] Accordingly, the EPA was ordered to review hundreds of substances to determine whether they should be banned from land disposal or subjected to treatment prior to disposal. In the event that EPA failed to meet any of the time deadlines for doing this, the statute would automatically prohibit the continued land disposal of the substance at issue[99]—the so-called "hammer" provisions. Although criticised by some, this device was incredibly effective. The entire programme has now been fully implemented. The 1984 amendments also extended RCRA's regulatory coverage to producers of small amounts of hazardous waste[100]—like drycleaners—increased civil and criminal penalties, and gave the EPA the authority to assess administrative penalties.[101]

In 1986, Congress passed three more major pieces of environmental legislation. The amendments to the *Safe Drinking Water Act* increased the number of contaminants that the EPA must regulate from 20 to 83 and set absolute deadlines for the issuance of those regulations.[102] In addition, Congress appears to have mandated Federal enforcement against every violation of drinking water standards, no matter how insignificant, unless a State agency has already commenced appropriate action.[103] CERCLA, otherwise known as Superfund, was also strengthened through various amendments and the infusion of $US 8.5 billion. Perhaps the most

interesting aspect of the CERCLA amendments, however, was the passage of the *Emergency Planning and Community Right-To-Know Act* (EPCRA)—a congressional response to various incidents in which toxic chemicals had been accidentally released into the environment. EPCRA provides for emergency planning, emergency release notification, hazardous chemical inventory reporting, and the annual reporting of all toxic releases—whether regulated or not—to the air, water, and land.[104] Also in 1986, Congress enacted legislation to regulate underground petroleum storage tanks and to clean up those tanks which are leaking.[105]

Despite President Reagan's veto, 1987 saw the addition of new enforcement provisions to the *Clean Water Act*[106] and the authorisation of some additional construction funds for municipal sewage treatment facilities.[107] Congress also strengthened the pesticide statute, FIFRA, in 1987 by directing EPA to review 600 pesticides over a nine-year period to determine whether they meet current standards.[108] And in response to the *Exxon Valdez* disaster in Alaska, Congress passed the *Oil Pollution Act* of 1990. This Act expanded the scope of liability for oil spill removals, required improved tanker design and construction (including the use of double hulls), and added $US 1 billion to the Federal trust fund for cleaning up such spills.[109]

The most recent congressional action came in late 1990 when Congress finally managed to enact major amendments to the *Clean Air Act*. With respect to the precursors of acid rain, the amendments mandate additional controls at specific coal-fired electric generating stations in order to cut sulphur dioxide emissions by 10 million tons per year and nitrogen oxide emissions by 2 million tons per year over the course of the 1990s.[110] Congress also dictated stricter tailpipe emission standards for motor vehicles[111] and tightened control requirements in those urban areas which have been unable to meet national ambient air quality standards.[112] Enforcement sanctions, furthermore, were toughened,[113] and the amendments called for the establishment of a new permit system which will require nearly all stationary sources of significant air pollution to obtain a permit. The permits will set forth detailed requirements governing emission limits as well as monitoring and reporting.[114] Congress, moreover, came to grips at long last with the serious, but stubborn problem of toxic air pollution.

Although the 1970 *Clean Air Act* had instructed the EPA to establish health-based standards for hazardous air pollutants, the EPA managed to promulgate standards for only eight such pollutants over the course of the next 20 years.[115] Two main factors account for the paucity of regulatory action. First, the statute itself demanded a very stringent level of protection: emission limits had to be designed to protect human health with "an ample margin of safety". Second, the agency often had no data which would indicate any safe levels of exposure for numerous carcinogenic air pollutants. In the absence of hard data, therefore, the EPA had to conclude that there was no safe level of exposure (non-threshold carcinogens)—a conclusion which could have far-reaching ramifications for American industry. The agency found itself upon the horns of a very real dilemma. For instance with regard to vinyl chloride, the EPA could require zero emissions, a decision apparently dictated by the statute and the agency's policy on non-threshold carcinogens, but a decision which would close down approximately 60 plastics plants. On the other hand, the EPA could establish a standard—possibly indefensible in court—based upon the best pollution control technology achievable.[116] Faced with such difficult legal, political, and scientific problems, the decision-making process bogged down. Meanwhile, the hazards presented by toxic air pollutants grew worse and worse. EPA data reveals that by 1988 major manufacturing facilities in the United States were responsible for the discharge of at least 2.4 billion pounds of air toxics.

The publication of such figures, together with the continuing regulatory impasse, prompted Congress in 1990 to shift its air toxics strategy from a health-based approach to a technology-based approach. The EPA, therefore, is now ordered to set standards based upon maximum achievable control technology[117] which Congress believes should normally reduce emissions by about 90 per cent. Congress also enacted a list of 189 specific substances that are presumed to require regulation as air toxics.[118] Unless the list is modified, the EPA is directed to determine which industrial categories discharge these air toxics and then set standards according to a strict

schedule. Standards for 40 source categories must be promulgated before the end of 1992, with all standards in place by the end of the decade.[119]

B. Renewed Federal Enforcement Efforts

The success of this elaborate scheme of environmental regulation ultimately depends upon vigorous Federal enforcement. Such an enforcement programme sends a strong message to the regulated community—significant non-compliance will be penalised—and it also encourages State environmental agencies to intensify their enforcement efforts. The current Administrator of the EPA, William Reilly, did not exaggerate, in fact, when he recently wrote that the very "credibility and effectiveness" of the EPA depend upon "strict, sustained enforcement of our environmental laws".[120]

Under Bill Reilly's leadership,[121] the enforcement effort at the EPA has reached record or near-record levels in most categories. In fiscal year (FY) 1989, for instance, the EPA referred 364 civil actions and 60 criminal cases to the United States Department of Justice for prosecution. The agency was also rather energetic in using its administrative enforcement mechanisms, initiating a record 4,136 formal administrative actions.[122] Fiscal year 1989, furthermore, witnessed a very high level of assessed civil and criminal penalties—$US 47.4 million—and saw 76 convictions returned under the Agency's expanded criminal enforcement programme.[123]

Some individual cases represented by those figures reflect significant environmental victories. In a *Clean Water Act* case against the Denver Metropolitan Sewer District, the EPA obtained a $US 1.25 million civil penalty and injunctive relief in the form of facility improvements which will cost the defendant some $US 30 million.[124] A criminal case brought in Florida for the illegal discharge of soil onto wetland property resulted in two convictions committing both defendants to 21 months in prison and requiring each to pay a $US 5,000 fine. The two criminal defendants, moreover, were ordered to complete restoration of the site according to EPA standards within 90 days after being released from prison.[125]

Fiscal year 1989 also saw the EPA obtain two of the largest settlements in the history of the Superfund programme. In the Monterey Park, California case, over 100 companies agreed to pay more than $US 66 million for clean-up activities, and in the Cannons Engineering case in New England, some 59 potentially responsible parties agreed to pay $US 34 million.[126]

Problems continue to exist, however, with environmental enforcement in the United States. Some States have extremely lax enforcement programmes. Too many violators manage to negotiate lower penalties from Federal or State officials, while continuing to operate in non-compliance.[127] And, too many violations manage to avoid either detection or agency response. The public interest sector, however, has continued to try to supplement governmental efforts.

Since 1982, hundreds of citizen suits have been filed against alleged violators—mostly under the *Clean Water Act*[128] due to the ready availability of monitoring data in the form of DMRs. Although no precise information is available on the total number of citizen suits filed during the last few years, I suspect that private activity remains fairly significant. In February 1991, for example, the Alabama Sierra Club and the Alabama Conservancy filed notices of intent to sue 43 corporations alleged to be in violation of the Federal *Clean Water Act*.

VI. Progress in Improving the Quality of the Environment

The various environmental laws and regulatory programmes which the Federal Government has established over the last 20 years have contributed significantly to a better quality of life for most Americans. The air in most of our cities is far cleaner than it was during the 1960s, and many of our lakes and streams have been restored to some semblance of health. Substantial problems remain, however. The job is far from finished.

Pursuant to Superfund, the EPA has executed over 1,300 emergency clean ups, while long-term remedial action has been completed at 52 sites and begun at more than 500 sites.[129] Thousands of other sites, however, await evaluation, clean up, and even discovery.

Using the authority of FIFRA, the EPA has banned or severely restricted the use of some 50 pesticides[130] including DDT, aldrin, dieldrin, chlordane, heptachlor, kepone, mercury, silvex, and mirex.[131] As a result of EPA action, the level of DDT in human tissue has decreased by 79

per cent and the level of dieldrin is down 63 per cent.[132] Hundreds of older formulations, however, await review, and excessive applications of pesticides by farmers and homeowners alike continue to degrade the quality of surface waters as well as the purity of groundwater supplies.

Under TSCA, the uses of polychlorinated biphenyls (PCBs) and chlorofluorocarbons (CFCs) have been severely curtailed, and hundreds of new chemicals have been withdrawn from production because of anticipated governmental action.[133] In 1989, furthermore, the EPA promulgated a final rule that will ban 96 per cent of the current uses of asbestos by the year 1996.[134] TSCA, nevertheless, is notable primarily for its unused potential: most existing chemicals have not yet been reviewed, let alone regulated where necessary.

Due to various regulatory actions taken under the *Clean Air Act*, lead emissions fell 96 per cent between 1970 and 1989.[135] During that same period, several other significant, but less dramatic reductions occurred in emissions of several air pollutants: total suspended particulates decreased 61 per cent, sulphur oxide declined 26 per cent, carbon monoxide dropped 40 per cent, and volatile organic compounds were down 31 per cent.[136] On the other hand, emissions of nitrogen oxides increased 7 per cent during the last two decades, and ozone standards are still unmet in 96 large urban areas.[137] Although major new efforts are beginning to tackle the problems of acid rain, toxic air pollution, and the destruction of the ozone layer, the contribution of carbon dioxide to global warming is a problem that has thus far evaded regulatory attention in the United States.

In contrast to some of the clear successes in improving air quality nation-wide, progress under the *Clean Water Act* is somewhat harder to discern. Without a doubt, water quality in many streams and lakes has improved, sometimes in dramatic fashion. The Cuyahoga River no longer catches on fire, Lake Erie is no longer choked with green algae, and the Hudson River no longer resembles an open sewer flowing to the sea. In the majority of cases, however, the most that can be said is that water quality has not deteriorated since 1972. That, of course, is some cause for celebration in view of our growing population and heightened industrial activity. Nevertheless, many streams and lakes appear to be declining in quality.[138]

Over the last 20 years, regulatory efforts have largely concentrated upon the control of conventional pollutants. Consequently, the discharge of conventional pollutants from industry has declined substantially, while municipal sewage treatment plants have experienced a slower rate of improvement.[139] Toxic water pollutants, however, continue to be responsible for serious water quality problems. Although both industry and municipal treatment plants discharge toxics, a major portion of the problem involves non-point sources of water pollution—agricultural runoff, mining operations, silviculture, urban runoff, and the like. Non-point sources are also responsible today for the lion's share of conventional pollutants.[140] Too little has been done, nevertheless, to check the land-use practices and farming methods that have become the primary causes of water quality degradation in the United States.

However, no matter how stringent the controls may be in a particular media area, like air or water pollution, there will be little or no net environmental improvement if increasing energy consumption and population growth negate our efforts. We, therefore, need a national energy policy in the United States that emphasises conservation and renewable energy supplies—thus lowering emissions of sulphur dioxide and carbon dioxide and reducing our dependence upon nuclear power.[141] We also need a sane population policy which recognises that our country as well as the earth cannot sustain continued rates of growth.[142]

Conclusions

During the last two decades, strong public and congressional support for a cleaner and healthier environment has resulted in the enactment of a host of new, and often innovative, statutory programmes. These new regulatory schemes demonstrate a significant national commitment to better environmental stewardship. In 1990, for instance, $US 115 billion was spent in the United States to protect the nation's water, air, and land resources—an amount that slightly exceeds 2 per cent of gross national product.[143] More, of course, much more remains to be done—perhaps, in fact, the hardest tasks lie ahead. The story, however, could have been much worse.

References

1. See, e.g., "Defenders of the Planet", *Time*, 23 April 1990, at p. 78.
2. See G. M. Bates, *Environmental Law in Australia* (2nd ed., 1987), pp. 67-93.
3. See Reorg. Plan No. 3 of 1970, 5 U.S.C.A. App. at 103 (West Supp. 1991).
4. R. Ettlin, "Facts to Reflect On", EPA Journal, Sept./Oct. 1990, at 29.
5. See Office of Public Affairs, EPA, *Your Guide to the United States Environmental Protection Agency* App. I and II (1987) [hereinafter cited as *Guide to the EPA*].
6. A. Sanders, "Battling Crimes Against Nature; The Exxon Indictment Spotlights a Rapidly Growing Legal Field", *Time*, 12 March 1990, at p. 54.
7. See J. Quarles and W. Lewis, Jr (Morgan, Lewis and Bockius), *The New Clean Air Act: A Guide to the Clean Air Program as Amended in 1990* (1990), p. 101.
8. See "Prosecuting Polluters: Dishing the Dirt", *The Economist*, 9 February 1991, at p. 68.
9. See, generally, J. Aberbach, *Keeping a Watchful Eye: The Politics of Congressional Oversight* (1990), pp. 20-22 (discussing the institutionalisation of presidential leadership during the era of Franklin Roosevelt).
10. See Summers, "Parliament and Responsible Government in Australia", in J. Summers, D. Woodward & A. Parkin, eds, *Government, Politics and Power in Australia* (4th ed., 1990), pp. 7, 12-18.
11. See S. Kelman, *Making Public Policy: A Hopeful View of American Government* (1987), pp. 45, 70-71.
12. See ibid., at p. 45.
13. See M. Shapiro, *Who Guards the Guardians? Judicial Control of Administration* (1988), pp. 80, 93.
14. See E. Rehbinder and R. Stewart, *Environmental Protection Policy* (1985), p. 109.
15. See J. Aberbach, supra, n. 9, at pp. 26-27.
16. See Kelman, supra, n. 11, at pp. 50, 54-55.
17. See, generally, M. Shapiro, supra, n. 13, at pp. 65-67 (examining the development of the capture theory).
18. See, generally, L. Caldwell, *Science and the National Environmental Policy Act: Redirecting Policy through Procedural Reform* (1982), pp. 27-46 (discussing the development of the public perception that modern scientific and technological developments often had, in addition to their obvious benefits, many detrimental side-effects).
19. See R. Rabin, "Federal Regulation in Historical Perspective" (1986) 38 Stanford L. Rev. 1189, 1281.
20. NEPA is currently codified, as amended, at 42 U.S.C., ss 4321-4347.
21. NEPA, s. 102(2)(C), 42 U.S.C., s. 4332(2)(C) (1982).
22. For background on the history and purposes of NEPA, see W. Andreen, "In Pursuit of NEPA's Promise: The Role of Executive Oversight in the Implementation of Environmental Policy" (1989) 64 Indiana L.J. 205. D. Mandelker, *NEPA Law and Litigation* (1984, 1989 Supp.) is a comprehensive treatise dealing with NEPA issues, and an excellent, thought-provoking symposium on NEPA is found in (1990) 20 Envtl L. 447-810.
23. See, e.g., M. Blumm, "The Origin, Evolution and Direction of the United States National Environmental Policy Act" (1988) 5 E.P.L.J. 179; B. Baillie, "Environmental Law and Litigation in the United States—An Australian's Impressions of America's New Legal Frontier" (1988) 5 E.P.L.J. 14 at 25-35; J. Battle, "Environmental Law and Co-operative Federalism in the United States" (1985) 2 E.P.L.J. 302 at 304-306.
24. See Andreen, supra, n. 22, at 212-213.
25. See Remarks on Signing the National Environmental Policy Act of 1969, *1970 Pub. Papers* 1 (1 January 1970).
26. *Calvert Cliffs' Coordinating Comm. Inc. v. AEC*, 449 F.2d 1109 at 1111 (D.C. Cir. 1971).
27. See F. Anderson, D. Mandelker and D. Tarlock, *Environmental Protection* (2nd ed., 1990), p. 160.
28. The *Clean Air Act* is currently codified, as amended, at 42 U.S.C., ss. 7401-7671q. A thorough discussion of the Act may be found in P. Reed, P. Wyckoff, et al., "Air" in 2 *Law of Environmental Protection* 11-1 through 11-243 (S. Novick ed. 1987-91).
29. See *Clean Air Act*, ss 108-109, 42 U.S.C., ss 7408-7409.
30. Ibid., s. 109(b)(1), 42 U.S.C., s. 7409(b)(1).
31. See *Lead Industries Assn v. EPA*, 647 F.2d 1130 at 1148 (D.C. Cir. 1980). EPA has thus far established ambient air quality standards for sulphur dioxide, nitrogen dioxide, ozone, carbon monoxide, lead, and particulate matter. See 40 *Code of Federal Regulations* (C.F.R.), Part 50 (1990).
32. See *Clean Air Act*, s. 110(a), 42 U.S.C., s. 7410(a).
33. See *Union Electric Co. v. EPA*, 427 U.S. 246 at 256-257 (1976).
34. See *Clean Air Act*, s. 111(a), 42 U.S.C., s. 7411(a).
35. Ibid., at s. 112, 42 U.S.C., s. 7412. As described later in the article, this section was extensively revised by Congress in 1990.
36. Ibid., at s. 304, 42 U.S.C., s. 7604.
37. The only exception is the *Federal Insecticide, Fungicide, and Rodenticide Act* (FIFRA), 7 U.S.C., ss 136-136y. While this singular omission may appear curious, it really is not when one considers that, unlike the other pollution statutes, FIFRA originated in the Agriculture Committees in both the Senate and the House of Representatives. The Agriculture Committees, moreover, continue to have jurisdiction over the statute and its oversight.
38. See Remarks on Signing the Clean Air Amendments of 1970, *1970 Pub. Papers* 1166 (31 December 1970).
39. See Veto of the Federal Water Pollution Control Act Amendments of 1972, *1972 Pub. Papers* 990 (17 October 1972).
40. See J. Quarles, *Cleaning Up America* (1976), pp. 160-161.
41. The *Clean Water Act* is codified, as amended, at 33 U.S.C., ss 1251-1387. For more comprehensive treatment of the Act, see T. Schoenbaum and R. Rosenberg, *Environmental Policy Law* (2nd ed., 1991) and W. Andreen, "Beyond Words of Exhortation: The Congressional Prescription for Vigorous Federal Enforcement of the Clean Water Act" (1987) 55 George Washington L. Rev. 202.

42. *Clean Water Act*, s. 301(a), 33 U.S.C., s. 1311(a).
43. Senate Conference Report No. 1236, 92d Cong., 2d Sess. 144 (1972), reprinted in *1972 U.S. Code Cong. & Admin. News* 3776, 3822; see also *United States v. Riverside Bayview Homes Inc.*, 474 U.S. 121 at 133 (1985) (stating that Congress had clearly rejected the limits placed on Federal regulation by earlier legislation and had exercised its commerce clause power to broadly extend the ambit of Federal regulation).
44. See 40 C.F.R., s. 122.2.
45. See *Clean Water Act*, s. 301(b)(2), 33 U.S.C., s. 1311(b)(2).
46. See ibid., s. 306, 33 U.S.C., s. 1316. For publicly-owned sewage treatment plants, the Act envisions the establishment of effluent limits based upon secondary treatment levels (ibid., s. 301(b)(1)(B), 33 U.S.C., s. 1311(b)(1)(B)), e.g., removal of 85 per cent of biological oxygen demand, 40 C.F.R., s. 133.102(a)(3). Industrial polluters who discharge into a publicly-owned sewerage system are subject to pretreatment standards for those pollutants that may interfere with or pass through the publicly-owned plant. See ibid., s. 307(b), 33 U.S.C., s. 1317(b).
47. See *Clean Water Act*, s. 402, 33 U.S.C., s. 1342.
48. See ibid., s. 402(b), (d), 33 U.S.C., s. 1342(b), (d).
49. See ibid., s. 308(a), 33 U.S.C., s. 1318(a).
50. See 40 C.F.R., ss 122.41(j)-(l), 122.44(i), 122.48. EPA, of course, may conduct its own compliance inspections to determine whether violations are occurring. See *Clean Water Act*, s. 308(a)(B), 33 U.S.C., s. 1318(a)(B).
51. See *Clean Water Act*, s. 309, 33 U.S.C., s. 1319.
52. See ibid., s. 505, 33 U.S.C., s. 1365. The Act's legislative history indicates that any civil penalties so obtained are to be deposited as miscellaneous receipts in the U.S. Treasury.
53. See ibid., ss 201-219, 33 U.S.C., ss 1281-1299.
54. See Office of Policy Planning and Evaluation, EPA, *Environmental Progress and Challenges: EPA's Update* (1988), p. 72 [hereinafter cited as *Environmental Progress and Challenges*]; *Guide to the EPA*, supra, n. 5, at p. 3.
55. See *Clean Water Act*, s. 311, 33 U.S.C., s. 1321.
56. See ibid., s. 404, 33 U.S.C., s. 1344.
57. See 40 C.F.R., s. 122.2 (EPA regulations); 33 C.F.R., s. 328.3(b) (Army Corps of Engineers regulations).
58. See J. Kusler, *Our National Wetland Heritage* (1983 Environmental Law Institute) pp. 1-8; Office of Technology Assessment, U.S. Congress, *Wetlands: Their Use and Regulation* (1984), pp. 5-6. For a comprehensive treatment of the legal régime governing wetlands, see W. Want, *Law of Wetlands Regulation* (1989-90).
59. FIFRA is currently codified, as amended, at 7 U.S.C., ss 136-136y. For a thorough review of FIFRA, see C. Lewis, "Pesticides" in 2 *Law of Environmental Protection* 17-1 through 17-52 (S. Novick ed. 1987-91).
60. MPRSA is currently codified, as amended, at 33 U.S.C., ss 1401-1445.
61. The *Safe Drinking Water Act* is currently codified, as amended, at 42 U.S.C., ss 300f-300j-26.
62. TSCA is currently codified, as amended, at 15 U.S.C., ss 2601-2671. For a thorough treatment of TSCA, see D. Stever, 1 *Law of Chemical Regulation and Hazardous Waste* 2-1 through 2-86 (1986-91).
63. RCRA is currently codified, as amended, at 42 U.S.C., ss 6901-6992k. 1 D. Stever, supra, n. 62, at 5-1 through 5-174, contains a thorough review of RCRA.
64. See M. Shapiro, *Who Guards the Guardians? Judicial Control of Administration*, at p. 93. In 1974, in fact, the Nixon White House had attempted to propose broad amendments aimed at weakening the *Clean Air Act*. The proposal was only softened when then EPA Administrator, Russell Train, threatened to resign rather than support the amendments. See J. Quarles, *Cleaning Up America*, at p. 141.
65. See J. Mintz, "Agencies, Congress and Regulatory Enforcement: A Review of EPA's Hazardous Waste Enforcement Effort, 1970-1987" (1988) 18 Envtl L. 683 at 701.
66. CERCLA is currently codified, as amended, at 42 U.S.C., ss 9601-9675. A comprehensive treatment of CERCLA may be found in 2 D. Stever, supra, n. 62, at 6-42 through 6-266.
67. See CERCLA, ss 104(a)-(c), 107(a), 42 U.S.C., ss 9604(a)-(c), 9607(a).
68. See ibid., s. 106(a), 42 U.S.C., s. 9606(a).
69. See ibid., s. 107(c)(3), 42 U.S.C., s. 9607(c)(3). In addition to the punitive damages, the responsible parties may also be liable for the cost of clean up itself. See *United States v. Parsons*, (No. 90-8779, 11th Cir., 22 July 1991).
70. See CERCLA, s. 107(a), 42 U.S.C., s. 9607(a).
71. See *United States v. Shell Oil Co.*, 605 F. Supp. 1064 at 1072-1073 (D. Colo. 1985).
72. See CERCLA, s. 107(a)-(b), 42 U.S.C., s. 9607(a)-(b).
73. See *United States v. Monsanto Co.*, 858 F.2d 160 at 171 (4th Cir. 1988).
74. See CERCLA, s. 113(f), 42 U.S.C., s. 9613(f) (prior to being codified in 1986, the right to contribution among responsible parties was generally recognised by Federal courts).
75. See H. Kenski and M. Kenski, "Congress Against the President: The Struggle Over the Environment" in N. Vig and M. Kraft, eds, *Environmental Policy in the 1980s: Reagan's New Agenda* (1984), p. 97.
76. J. Lash, K. Gillman and D. Sheridan, *A Season of Spoils: The Story of the Reagan Administration's Attack on the Environment* (1984), p. 32. Congressman Waxman, by the way, was the chair of the House sub-committee which had primary jurisdiction over the reauthorisation of the *Clean Air Act*.
77. See S. Kelman, *Making Public Policy: A Hopeful View of American Government*, at pp. 44-45.
78. See M. Goodman and M. Wrightson, *Managing Regulatory Reform: The Reagan Strategy and Its Impact* (1987), p. 122.
79. See, e.g., R. Crandall and P. Portney, "Environmental Policy" in P. Portney ed., *Natural Resources and the Environment: The Reagan Approach* (1984), pp. 47, 66-72.
80. See, e.g., R. Andrews, "Deregulation: The Failure at EPA" in N. Vig and M. Kraft eds, *Environmental Policy in the 1980s: Reagan's New Agenda* (1984), pp. 161, 166.
81. A. Mikva, "Deregulating Through the Back Door: The Hard Way to Fight a Revolution" (1990) 57 U. Chicago L. Rev. 521.

82. M. Goodman and M. Wrightson, supra, n. 78, at pp. 131-132.
83. See J. Mintz, supra, n. 65, at 720-721.
84. See ibid., at 722.
85. See J. Lash, K. Gillman and D. Sheridan, supra, n. 76, at pp. 36-39.
86. See W. Andreen, (1987) 55 George Washington L. Rev. at 204-205.
87. See M. Goodman and M. Wrightson, supra, n. 78, at p. 130.
88. See R. Litan and W. Nordhaus, *Reforming Federal Regulation* (1983), p. 126.
89. See, e.g., *Environmental Defense Fund v. Gorsuch*, 713 F.2d 802 at 817-818 (D.C. Cir. 1983).
90. See H. Kenski and M. Kenski, supra, n. 75, at p. 99.
91. See Environmental Law Institute, *Citizen Suits: An Analysis of Citizen Enforcement Actions under EPA-Administered Statutes* (1984), pp. vi-vii.
92. See W. Andreen, supra, n. 86, at 206-207.
93. See N. Vig, "The President and the Environment: Revolution or Retreat? in N. Vig and M. Kraft, eds, *Environmental Policy in the 1980s: Reagan's New Agenda* (1984), pp. 77, 91; H. Kenski and M. Kenski, supra, n. 75, at p. 101. The *New York Times* concluded that Reagan's EPA Administrator had taken "one of the most efficient and capable agencies of government" and turned it "into an Augean stable, reeking of cynicism, mismanagement and decay". "Mrs Gorsuch Pollutes the E.P.A.", *New York Times*, 16 February 1983, at p. 30.
94. See H. Kenski and M. Kenski, supra, n. 75, at p. 101.
95. R. Harris and S. Milkis, *The Politics of Regulatory Change: A Tale of Two Agencies* (1989), p. 265.
96. See W. Andreen, supra, n. 86, at 207.
97. R. Harris and S. Milkis, supra, n. 95, at p. 266.
98. RCRA, s. 1002(b)(7), 42 U.S.C., s. 6901(b)(7).
99. Ibid., s. 3004(d)-(g), 42 U.S.C., s. 6924(d)-(g).
100. Ibid., s. 3001(d), 42 U.S.C., s. 6921(d).
101. Ibid., s. 3008, 42 U.S.C., s. 6928 (increasing the upper limit on civil penalties, for instance, to $25,000 per day for each violation).
102. *Safe Drinking Water Act*, s. 1412(b), 42 U.S.C., s. 300g-1(b).
103. Ibid., s. 1414(a), 42 U.S.C., s. 300g-3(a).
104. EPCRA is codified at 42 U.S.C., ss 11001-11050. More thorough examination of EPCRA may be found in J. Fogarty, "SARA Title III—The Emergency Planning and Community Right-to-Know Act" in 2 *Law of Environmental Protection* 13-190 through 13-246 (S. Novick ed. 1987-91). The Toxic Release Inventory (TRI), maintained by the EPA as required by EPCRA, is a tremendously valuable, but somewhat alarming, source of data that is readily available to the public.
105. RCRA, ss 9001-9010, 42 U.S.C., ss 6991-6991i.
106. See *Clean Water Act*, s. 309, 33 U.S.C., s. 1319 (increasing, for example, the maximum daily civil penalty per violation from $US 10,000 to $US 25,000 and providing for the assessment of administrative penalties).
107. Ibid., s. 207, 33 U.S.C., s. 1287. The amounts authorised for the construction of publicly-owned treatment facilities, however, had declined from about $US 5 billion in 1980 to $US 2.4 billion in 1987 and $US 1.2 billion in 1990. After 1991, the construction grants programme was replaced by a new Federal programme which will provide some $US 8.4 billion over four years to help the States establish revolving loan programmes.
108. FIFRA, s. 4(a)-(g), 7 U.S.C., s. 136a-1(a)-(g).
109. See *Oil Pollution Act*, Pub. L. No. 101-380, 104 Stat. 484 (1990).
110. See *Clean Air Act*, ss 401-416, 42 U.S.C., ss 7651-7651o.
111. See ibid., s. 202, 42 U.S.C., s. 7521.
112. See ibid., ss 171-192, 42 U.S.C., ss 7501-7514a.
113. See ibid., s. 113, 42 U.S.C., s. 7413. Congress also authorised the assessment of civil penalties in enforcement cases brought against air polluters by private citizens. Such penalties must be deposited in a special fund in the U.S. Treasury for licensing and other services, unless the court orders that those penalties be used in a beneficial mitigation project. Ibid., s. 304, 42 U.S.C., s. 7604.
114. See ibid., ss 501-507, 42 U.S.C., ss 7661-7661f.
115. These pollutants were mercury, beryllium, asbestos, vinyl chloride, benzene, radionuclides, inorganic arsenic, and coke oven emissions. 40 C.F.R., Part 61.
116. See *Natural Resources Defense Council v. EPA*, 824 F.2d 1146 at 1148 (D.C. Cir. 1987); Preamble to Proposed Standard for Vinyl Chloride, 40 *Federal Register* 59,532, 59,534 (24 Dec. 1975).
117. See *Clean Air Act*, s. 112(d), 42 U.S.C., s. 7412(d). The older health-based strategy would still apply, however, to pollutants for which there is a known threshold for safety. Ibid.
118. Ibid., s. 112(b)(1), 42 U.S.C., s. 7412(b)(1).
119. Ibid., s. 112(c), (e), 42 U.S.C., s. 7412(c), (e).
120. Office of Enforcement and Compliance Monitoring, EPA, *Enforcement Accomplishments Report: FY 1989*, p. 1 (Feb. 1990) [hereinafter cited as *Enforcement Accomplishments 1989*].
121. Bill Reilly is the former President of the Conservation Foundation and the World Wildlife Fund.
122. *Enforcement Accomplishments 1989*, supra, n. 120, at pp. 15-17, App.
123. See J. Strock, "EPA's Environmental Enforcement in the 1990s" (1990) 20 Envtl L. Reporter 10,327; Current Developments (1991) 22 Env't Reporter (BNA) 129.
124. *Enforcement Accomplishments 1989*, supra, n. 120, at pp. 6-7.
125. Ibid., at p. 9.
126. Ibid., at pp. 5-6.
127. See Current Developments (1991) 22 Env't Reporter (BNA) 783-784.
128. See, generally, Conservation Foundation, *State of the Environment: A View toward the Nineties* (1987), pp. 37-38 (discussing dramatic increase in citizen suits since 1982).
129. "Progress and Challenges: Looking at EPA Today", *EPA Journal*, Sept./Oct. 1990, at 24 [hereinafter cited "Looking at EPA Today"].
130. See Conservation Foundation, supra, n. 128, at p. 138.
131. See Office of Policy Planning and Evaluation, EPA, *Environmental Progress and Challenges: EPA's Update* (1988), at pp. 117-118.
132. See Council on Environmental Quality, *Fifteenth Annual Report* (1984), p. 604.

133. See *Environmental Progress and Challenges*, supra, n. 131, at pp. 116-117. Since January 1979, the manufacture of PCBs has been prohibited in the United States, and the use of PCBs in any manner other than in a totally enclosed container was banned in January 1978. See TSCA, s. 6(e), 15 U.S.C., s. 2605(e). In 1978, EPA also prohibited the non-essential use of CFCs as an aerosol can propellant. See *Environmental Progress and Challenges*, at p. 123. The 1990 *Clean Air Act* amendments, moreover, call for the phased withdrawal of CFCs and several other ozone-depleting chemicals from production and sale. See *Clean Air Act*, ss 601-618, 42 U.S.C., ss 7671-7671q.

134. See 40 C.F.R., ss 763.160-763.179.

135. Office of Air Quality Planning and Standards, EPA, *National Air Quality and Emissions Trends Report, 1989* (1991), pp. 1-14. That drop was primarily produced by the use of lead-free gasoline in cars equipped with catalytic converters and by the reduced level of lead found in leaded gasoline. Ibid., at pp. 1-13.

136. Ibid., at pp. 1-14.

137. "Looking at EPA Today", supra, n. 129, at 16.

138. See Conservation Foundation, supra, n. 128, at p. 87.

139. Office of Policy, Planning, and Evaluation, EPA, *Environmental Investments: The Cost of a Clean Environment* 5-4 through 5-5 (December 1990) [hereinafter cited as *Environmental Investments*].

140. See Conservation Foundation, supra, n. 128, at pp. 87, 94-95, 104-106.

141. The energy policy of the Bush administration, unfortunately, is tragically near-sighted, calling for a resumption in the development of civilian nuclear power.

142. See, e.g., A. Reitze, Jr, "Environmental Policy—It Is Time for a New Beginning" (1989) 14 Columbia J. of Envtl L. 111.

143. *Environmental Investments*, supra, n. 139, at p. v.