

Federal Environmental Policy: A Summary Overview

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ABSTRACT

The National Environmental Policy Act (NEPA), which was signed into law on January 1, 1970, has come to be regarded as the first major piece of federal legislation to call for comprehensive attention to environmental concerns in the United States. During the two decades following enactment of NEPA, Congress adopted and then refined major legislation on nearly every aspect of environmental quality concerns: air pollution, water pollution, drinking water quality, hazardous waste management, wildlife protection, pesticide use, and several related problem areas. Current arguments for environmental regulatory reform are a phase in the continuing evolution of this body of federal environmental policy.

Key Words: environmental policy, environmental regulation, regulatory reform.

Regulatory reform has been considered by the federal government for several years, through successive administrations and several congresses. In 1994, the Republican Party rode to victory in the congressional elections on the promises of its "Contract With America." The need for regulatory reform was one of the 10 basic points set forth in the "Contract." Environmental regulation is one of the fields that would be most affected by these proposed changes.

The economic, political, legal, and environmental implications of reform proposals cannot be understood without considering, first, the key issues motivating calls for environmental regulatory reform. The issues, in turn, must be considered in the context of existing federal environmental policy. This paper provides a summary overview of federal environmental policy as a way to establish the context for discussion of regulatory reform proposals.

The Environmental Movement and NEPA

The National Environmental Policy Act (NEPA), which was signed into law by President Richard Nixon on January 1, 1970, has been referred to as "[m]odern society's first formal declaration recognizing the relationship between the environment and the welfare of human beings" (Bear, p. 3). Congress set out four major purposes of NEPA: first, to declare a national policy that will encourage harmony between humans and their environment; second, to develop systematic methods of preventing or eliminating environmental harm; third, to stimulate an increase in knowledge about the ecological systems of the nation; and fourth, to establish a permanent voice for the environment in the Executive Office of the President (42 U.S.C. Section 4321).

For several decades prior to enactment of NEPA, both federal and state governments had passed laws intended to protect specific aspects of the environment or the management of natural resources (Bear, p. 3). As time passed, however, various academic disciplines produced a literature addressing environmental issues from a broader perspective. Aldo Leopold and other wildlife man-

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agers began to think of their work in the context of larger ecosystems. Rachel Carson and other science writers called attention to far-reaching implications of unregulated pesticide use and other aspects of modern life on the environment. Environmental issues were identified by policy analysts as an important new focus of public policy.

Meanwhile, spectacular and highly publicized environmental disasters brought greater public awareness of environmental problems. For example, the Cuyohoga River in Ohio burst into flames and oil spilled onto the beach at Santa Barbara, California. By the mid-1960s, environmental issues began to receive serious consideration by Congress in the form of many proposals to address environmental policy and protection issues.

A joint House-Senate colloquium on national environmental policy in 1968 produced a *Congressional White Paper on a National Policy for the Environment* (Bear, pp. 3–4). Although the report included language for a national environmental policy, it warned that a declaration of policy alone would not solve the identified problems and that any solution must involve the “need to rationalize and coordinate existing policies, and to provide the means by which they may be reviewed and ranked in reasonable priority” (quoted in Bear, p. 4).

In 1969, the Senate adopted S. 1075, which was designed to provide all federal agencies a legislative mandate and a responsibility to consider the consequences of their actions on the environment. It incorporated a requirement that federal agencies prepare a detailed statement on major federal actions significantly affecting the quality of the human environment, thus spawning the now-famous environmental impact statement (EIS) requirement (Bear, p. 4).

Meanwhile, the House of Representatives passed H.R. 6750, which would create an independent Council on Environmental Quality (CEQ) in the Executive Office of the President (Bear, p. 4). The sponsors of the bill were convinced that the nation would benefit from a permanent, top-level, independent body, unencumbered by the demands and politics of operating programs and individual interests, free to draw independent conclusions, and to formulate a broad policy which would be of nationwide benefit.

Upon passing H.R. 6750, the House requested a conference with the Senate in reference to S.

1075. The conference committee report was considered and agreed to in both the Senate and the House in December 1969. By December 22, 1969, both houses of Congress had passed Public Law 91-190, and NEPA was sent to President Nixon's desk.

The National Environmental Policy Act was signed into law on January 1, 1970. On April 22, 1970, Americans celebrated the first Earth Day. One-hundred thousand people marched in New York City to demonstrate their concern for the planet. Thousands more participated in observance of Earth Day at schools and universities around the country. The demonstrators clearly expected that environmental problems could and should be addressed, and that the federal government should play a major role.

The Environmental Decade-and-a-Half

Earth Day is generally regarded as a watershed, and NEPA the first major piece of federal legislation to call for comprehensive attention to environmental concerns. Over the next 15 years, Congress passed and then refined major legislation on nearly every aspect of the environment: air pollution, water pollution, drinking water quality, hazardous waste management, wildlife protection, pesticide use, and several related problem areas. President Richard M. Nixon created the Environmental Protection Agency (EPA) in 1970 [Reorganization Plan No. 3 of 1970, 35 Fed. Reg. 15,623; 84 Stat. 2086—reprinted following 42 U.S.C. Section 4321 (1988); see, also, Anderson, p. 396]. The EPA, along with the U.S. Fish and Wildlife Service and the U.S. Department of Agriculture (USDA), have become important agencies of federal government in their roles as regulators of health, safety, and the environment. A summary overview of selected major pieces of environmental legislation indicates the broad scope of federal environmental policy.

National Environmental Policy Act (NEPA)

Section 102(2)(c) of NEPA requires that all federal agencies prepare a “detailed statement,” now known as an EIS, for every recommendation or report on proposals for “legislation and other major Federal actions significantly affecting the quality of the human environment” [42 U.S.C. Section

4332(2)(c)]. The statute requires that the detailed EIS include discussion on (a) the environmental impact of the proposed action, (b) any adverse environmental effects that cannot be remedied should the proposal be implemented, (c) alternatives to the proposed action, (d) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and (e) any irreversible and irretrievable commitments of resources involved in the proposed action should it be implemented (Bear, p. 6).

By executive order, President Nixon directed the CEQ to interpret these provisions with the issuance of interim guidelines in the spring of 1970 (Bear, p. 6). Concerned that some agencies were not forthcoming with their analysis, Congress inserted Section 309 into the 1970 Clean Air Act, requiring the Administrator of the newly established EPA to review and comment in writing on all EISs.

NEPA litigation has been a major factor in agency implementation strategies, executive branch policy, and in the Justice Department's litigation. The courts have shown a willingness to enjoin federal projects until the agencies have complied with the procedural requirements of NEPA, although they have not typically granted injunctions against an agency on substantive grounds.

Housed in the Office of Environmental Quality (42 U.S.C. Section 4372) the CEQ's role has varied from one administration to the next. The two most constant roles for the CEQ have been preparation of the annual Environmental Quality Report and its oversight of the NEPA process.

Clean Air Act

The Clean Air Act of 1970 (Public Law 91-604, 84 Stat. 1676) amended earlier legislation to create a vastly stronger federal government role in regulating air quality (42 U.S.C. Sections 7401-7642). The basic scheme of the act since 1970 has centered around the nationwide attainment of federal emission limitations—called National Ambient Air Quality Standards (NAAQS)—for emissions that, in the determination of the EPA, would be likely to endanger public health or welfare. The EPA set NAAQS for suspended particulates, sulfur dioxide, nitrogen dioxide, carbon monoxide, ozone, and lead (Tabb, p. 14).

In addition, the original 1970 legislation (Section 112) required the EPA to set nationally uniform emission standards for hazardous air pollutants (HAPS) at a level that would provide an "ample margin of safety" to protect public health (Tabb, p. 16). After a decade, the EPA had proposed regulatory standards for only four HAPS: asbestos, beryllium, mercury, and vinyl chloride.

The 1970 Clean Air Act and subsequent amendments set national emissions standards for mobile sources of air pollution: cars, trucks, and buses. It focused on stringent tailpipe emission standards for new vehicles and such measures as state inspection and maintenance programs [CAA Section 202(a)(1)]. The EPA has focused its regulatory efforts on phasing out lead as a gasoline additive. The lead phase-out culminated in the 1990 Clean Air Amendments, which prohibit the sale of fuel that contains lead or lead additives after December 31, 1995 [CAA Section 211(n), 42 U.S.C. Section 7545(n)].

While the EPA retains authority for regulating mobile sources of air pollution, states have primary responsibility for implementing those sections of the act dealing with stationary sources. The act requires each state to develop its own State Implementation Plan (SIP), detailing how it would meet EPA standards and guidelines.

Although air quality improved during the 1970s, criticism was directed at the EPA's inconsistent, inflexible, and costly regulations and inadequate guidelines for state action (Kraft). In 1990, Congress further amended the CAA. Unhappy with the EPA's lack of progress in regulating hazardous air pollutants, Congress listed 189 specific toxic chemicals that the EPA is required to regulate as hazardous air pollutants. In an attempt to address the problem of acid rain, the 1990 amendments added Title IV, Acid Deposition Control, which created a market-oriented system of permits to emit sulfur dioxide. Title II of the amendments called for further reductions in automobile tailpipe emissions between 1994 and 1996.

Federal Water Pollution Control Act Amendments of 1972

The first federal legislation dealing with the discharge of materials into the nation's waterways was the Rivers and Harbors Act of 1899, which out-

lawed the discharge of any refuse matter (aside from municipal wastes) into navigable waters without a permit from the United States Army Corps of Engineers (Act of 3 March 1899, ch. 425, 30 Stat. 1121). The Rivers and Harbors Act was intended to protect navigation and was not primarily concerned with pollution.

A Water Pollution Control Act was passed in 1948, and amended in 1956 and 1965. This legislation provided for investigations, research, and grants for municipal treatment plants, but left regulatory enforcement largely to the states.

The Federal Water Pollution Control Act Amendments of 1972 (Public Law 92-500, 18 October 1972, 86 Stat., 816 et seq., codified at 33 U.S.C. Sections 1251-1376) virtually rewrote the Federal Water Pollution Control Act. It asserted that "it is the national goal that the discharge of pollutants into the navigable waters be eliminated by 1985." Specifically, the act:

- (1) directed the EPA to conduct a program of research on, and demonstration of, waste treatment methods;
- (2) authorized a construction grants program for municipal waste treatment facilities, providing for the creation of an areawide waste treatment management planning process which included planning for the control of agricultural, silvicultural, and other nonpoint sources of water pollution; and
- (3) created a framework for setting effluent standards, requiring permits, and enforcing the effluent standards in order to achieve a 1983 goal of fishable/swimmable quality for all surface water.

Effluent standards were the key element in the new regulatory program. Standards of quality would be applied to wastewater at the point of discharge, rather than in the receiving waters. The National Pollutant Discharge Elimination System (NPDES) was established as a "system of permitting to enforce effluent standards." The EPA was authorized to impose even more stringent effluent standards wherever necessary to protect water supplies and related important uses. The act allowed states to administer their own NPDES permitting programs, subject to EPA approval and oversight (Goplerud, p. 10).

Section 404 of the act authorized the Corps of Engineers to regulate discharges of dredged or fill material into the waters of the United States (Carraker, p. 81). Section 404 provided the basis for the Corps' wetlands regulatory program. The Corps and the EPA have identical definitions of the "waters of the United States," and those definitions embrace all interstate waters including interstate wetlands and wetlands adjacent to waters of the United States. The Supreme Court has upheld the Corps' definition, as well as its regulatory authority under Section 404 over wetlands.

Citizen suits were authorized by Section 505 of the act. Citizens can file enforcement suits against sources polluting in violation of state or federal regulations, and suits against the EPA to enforce the performance of nondiscretionary duties. Citizen suit provisions enable citizens to function as "watchdogs" over the performance of the EPA and the Corps.

Section 208 of the act addressed the control of nonpoint sources of water pollution. However, the EPA placed little importance on implementation of these provisions. Amendments in 1977 and again in the 1987 Clean Water Act required the states to set forth measures to control identified nonpoint sources of water pollution, but provided little in the way of inducements to the states to implement nonpoint source programs.

Federal Environmental Pesticide Control Act of 1972

Prior to 1972, the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) focused on product labeling requirements, to ensure that users of pesticides received a product having the qualities indicated on the label. FIFRA was originally administered by the Secretary of Agriculture, but a reorganization in 1970 reassigned this responsibility to the Administrator of the Environmental Protection Agency (Osteen and Szmedra, p. 43).

FIFRA was changed from an efficacy law to an environmental law by the Federal Environmental Pesticide Control Act of 1972 (FEPCA) [Public Law 92-516, 86 Stat. 973, codified at 7 U.S.C. Sections 136-136(y)]. Under the amended FIFRA, a pesticide may not be sold in the United States unless it is registered with the EPA. The Administrator of the EPA must register a pesticide if the labeling

requirements are met and it is determined that the pesticide will not cause “unreasonable adverse effects on the environment.”

In addition to a registration decision, the EPA also applies the “unreasonable adverse effects” criterion to classification, cancellation, and suspension decisions. If a pesticide is to be registered, it must be classified for “general use” or for “restricted use.” The EPA may require that applicators of restricted use pesticides be specially trained and certified.

FIFRA, as amended, authorizes the EPA to cancel a registration, after proper public hearings, if new information on a pesticide demonstrates that it produces “unreasonable adverse effects.” The EPA Administrator may suspend a registration during cancellation hearings, thereby removing the pesticide from the market immediately, if necessary in order to avoid “imminent hazard” of “unreasonable adverse effects.” FIFRA also allows the Administrator to call a hearing to help determine whether available evidence justifies a cancellation notice.

The pesticide manufacturer is responsible for providing data, according to EPA guidelines, on which the pesticide registration decision is based. The registration or product labeling process is complicated because of its involvement with product efficacy requirements. Registration of a pesticide is granted only for specific uses, i.e., certain pests in certain crops. If a manufacturer cannot show efficacy for the labeled application, registration may not be granted.

The amended FIFRA allows the states to administer the program subject to EPA approval and oversight.

Endangered Species Act, 1973

The Endangered Species Act (ESA) (Public Law 93-205, codified at 16 U.S.C. Sections 1531–1543) was designed to protect endangered and threatened species and to consider habitat protection as a part of that effort. Responsibility for implementing the ESA resides primarily with the Fish and Wildlife Service (FWS) of the U.S. Department of the Interior, although application to marine species is the responsibility of the National Marine Fisheries Service (NMFS) of the U.S. Department of Commerce.

Under the ESA, species of plants and animals may be listed as either “endangered” or “threatened,” depending on assessments of the risk of their extinction. A decision to list a species must be followed by designation of the critical habitat for that species. Economic factors may be considered in the designation of critical habitat, but the decision to list a species must be based solely on biological considerations.

The ESA prescribes certain protective measures for listed species. Section 7 requires federal agents and agencies to prepare a biological assessment where any proposed federal project constitutes a “major construction activity,” or if the FWS (or the NMFS) concludes that a listed species exists within the area impacted by a federal project (Parenteau and Baur, pp. 3–6). If a biological assessment indicates that a proposed federal project may affect listed species or critical habitat, a formal consultation is required. The consultation concludes with a biological opinion (rendered by the FWS), assessing the likelihood that the project will jeopardize the survival and recovery of a listed species and whether the project is likely to result in destruction or adverse modification of critical habitat of the listed species.

Section 9 applies to federal agencies and to *all other parties* as well. It prohibits the “taking” of any individual member of a listed species. The definition of “taking” is broad and includes prohibitions against killing any member of the listed species. It also prohibits harming, harassing, or destroying or modifying the critical habitat of the species (Arnold, p. 8). This section also prohibits importing or exporting members of endangered species.

A 1982 amendment to the ESA introduced the concept of an “incidental take” as the basis for an exception to the Section 9 ban on takings (Arnold, p. 14). To qualify for an “incidental take” permit, the taking must be incidental and not the intended purpose of the proposed action, and may not place in jeopardy the existence of the species or its habitat. Nonfederal applicants for an incidental take permit must develop and comply with an approved “habitat conservation plan.”

The ESA provides for state administration of the programs subject to approval by the Secretary of the Interior, and authorizes federal cost sharing to assist states with implementation of the program.

Safe Drinking Water Act, 1974

The Safe Drinking Water Act (SDWA) was designed to assure that public water systems provide the public with water which meets minimum standards for the protection of public health [42 U.S.C. Section 300(f) et seq.]. The act, as amended in 1986, required the EPA to set National Primary Drinking Water Standards for chemical and microbiological contaminants for tap water (Kraft, p. 91). Congress has been highly prescriptive in detailing what contaminants are to be regulated, how they will be treated, and the timetable for action.

States have primary responsibility for enforcing these standards for more than 50,000 public water systems in the United States, most of which serve small communities with fewer than 10,000 people. The act requires these water systems to use the "best available technology" to remove contaminants and to monitor for the presence of a host of chemicals. A major problem for the program results from the fact that states receive less than half the funds needed to comply, and many small water systems cannot afford the cost of new water treatment technologies.

Subsequent amendments to the SDWA have given the EPA direct control over underground injection of wastes and authority to approve wellhead protection programs to protect drinking water. The EPA can administer the regulatory components of SDWA where a state does not develop and carry out an approved program.

Resource Conservation and Recovery Act of 1976

The Resource Conservation and Recovery Act (RCRA) of 1976 (codified at 42 U.S.C. Sections 6901–6991) amended the earlier Solid Waste Disposal Act (Chambers and McCullough, p. 21). It represented a shift in emphasis away from waste disposal and toward resource conservation and recovery. It also reflected a distinction between solid waste and a more specific category of "hazardous" waste.

Under the provisions of the RCRA, as passed in 1976 and amended in 1980 and 1984, the EPA implements regulations and standards for handling, storage, and disposal of hazardous waste and non-hazardous solid waste. It provides financial and technical assistance to states and political subdivi-

sions for solid waste management. In addition, the EPA administers a "cradle-to-grave" system of regulation that monitors and controls the production, storage, transportation, and disposal of wastes considered hazardous, and determines the appropriate technology for disposal of wastes (Kraft, p. 93).

The RCRA also addresses underground storage tanks, requiring that all underground tanks above a specific size be registered by the states (Chambers and McCullough, p. 73). In addition, the EPA enforces leak prevention and detection through tank installation and performance standards.

Comprehensive Environmental Response, Compensation, and Liability Act, 1980

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)—also known as the Superfund Act—was designed to protect public health and the environment from abandoned and uncontrolled hazardous waste sites (Kraft, p. 97). A special revolving fund of \$1.6 billion (the Superfund) was made available to the EPA, which, in turn, was given responsibility for identifying, assessing, and cleaning up those sites. The act put responsibility and financial liability for the cleanup on those who disposed of hazardous wastes at the site. It extended liability to several tiers of potential defenders at once, applying the concept of "joint and several liability." Under this principle, strict liability, and therefore responsibility for underwriting the costs of cleaning up a hazardous waste site, can be assigned to any one of several responsible parties.

In 1986, Congress passed the Superfund Amendments and Reauthorization Act (SARA), authorizing an additional \$8.5 billion for the Superfund and mandating stringent cleanup standards using "best available technologies" (Kraft, p. 97). SARA also established Title III, a "right-to-know" provision, requiring public release of information about chemicals made by, stored in, and released by local businesses. Under CERCLA, states may implement the program subject to EPA approval.

Conservation Title, 1985 Food Security Act

The Conservation Reserve Program (CRP) was instituted by the 1985 Food Security Act (Johnson

et al., p. 109). The CRP is a voluntary land retirement program wherein croplands considered highly erodible or otherwise environmentally sensitive and having an appropriate cropping history may be enrolled. Most contract holders receive annual payments for a 10-year period for planting cropland to a conserving use and maintaining these lands in a conserving use. Farm operators had bid nearly 36.5 million acres of cropland into the CRP by 1995, and received \$1.8 billion in payments annually.

“Swampbuster” provisions of the 1985 Food Security Act eliminated USDA farm program benefits for crops grown on wetland converted after 1985 by tying farm program benefits to compliance with wetland protection measures (Danielson and Leitch, p. 122). Swampbuster was continued by the 1990 Farm Bill with some modifications. The Wetland Reserve Program (WRP), enacted in the 1990 Farm Bill, provides incentives to restore cropland converted from former wetland. Cost sharing and payments for easements go to farmers who return converted wetland to its former wetland state on a permanent or long-term basis.

NEPA After 25 Years: An Appraisal of Federal Environmental Policy

The types and sources of environmental problems are many and complex. So are the policies and programs designed to address them. For this reason, it is difficult to define, let alone measure, “success” of environmental programs. Efforts have been made, primarily by federal agencies, to appraise the trends in environmental quality according to selected indicators. A brief summary of some of these findings gives indications of successes and of problems yet unsolved.

Trends in Environmental Quality

EPA reports show improvements in air quality since the Clean Air Act of 1970 (Kraft, p. 24). For the period 1983 to 1992, total emissions declined by 25%, and highway vehicle emissions declined by 30% (despite a 37% increase in vehicle miles traveled). However, the EPA also found that in 1992, 54 million people lived in counties that failed to meet at least one of the national quality standards for six major pollutants covered by the CAA (although this number was down from 86 million in 1991).

Over \$500 billion has been spent, mostly on “end-of-pipe” controls on municipal and industrial discharges, since adoption of the Water Pollution Control Act Amendments of 1972 (Kraft, pp. 29–31; Knopman and Smith, pp. 34–41). As a result, the percentage of the U.S. population served by wastewater treatment plants rose from 42% in 1970 to 74% in 1985, with an estimated decline in annual releases of organic wastes of about 46%. There have also been clear declines since 1972 in discharge of toxic organic pollutants and toxic metals in some 22 industries (Adler, pp. 4–5, 40). However, the EPA reported in 1994 that roughly 40% of rivers and lakes and one-third of the estuaries assessed were not meeting prescribed ambient water quality standards, and blamed most of the remaining pollution on agricultural nonpoint sources of nutrients, pesticides, and suspended solids.

Enforcement of drinking water regulations has been criticized. The Natural Resources Defense Council reported in 1993 that it found violations by 43% of municipal water systems serving 120 million people (Terry, pp. 42–48, 62–65). The General Accounting Office found that 90% of systems in violation of drinking water standards served small communities, and thus faced particularly difficult fiscal and technical problems in complying with all the standards (Kraft, p. 32; U.S. General Accounting Office).

A new source of data on toxic emissions, known as the Toxics Release Inventory (TRI), is the result of requirements by the 1986 Superfund Amendment and Reauthorization Act that firms submit annual reports detailing their emissions into air, water, and land. Data for 1989 to 1991 show a 24% reduction in emissions of toxics to all media (Hahn, pp. 315–17; Kraft, p. 34). The accuracy of the data has been questioned by environmental groups, however.

Progress in cleaning up hazardous waste sites has been slow. Of 1,275 sites on the Superfund National Priority List (NPL) in 1992, only 40 had been fully cleaned up after an expenditure of more than \$13 billion (Kraft, pp. 35–36; U.S. Congress). The Congressional Budget Office reported in 1994 that the nation could spend about \$230 billion through the year 2070 to clean up a total of 4,500 nonfederal sites it expects to be placed on the NPL (U.S. Congress).

The Endangered Species Act has achieved only

modest success after 20 years. Nearly 700 species have been listed, with designation of critical habitat for each. Many recovery plans have been implemented. Only a few endangered species have recovered. Political opposition to the ESA has been, at times, intense.

Economic Costs and Benefits

According to reports based on EPA estimates, the United States spent about \$140 billion on pollution reduction in 1993, or about 2.4% of the gross national product (GNP) (Hahn, p. 319). In 1972, the U.S. spent just under 1% of the GNP on pollution reduction. One review and synthesis of several studies reported that estimates of annual benefits from reductions in air pollution between 1970 and 1978 exceeded annual expenditures on air pollution control by \$24 billion. Another study estimated net benefits from air pollution control to be about \$13 billion in 1990. However, an estimate of costs and benefits of the 1990 amendments to the Clean Air Act project net costs of \$16 billion annually (Hahn, p. 321; Portney, p. 173).

An analysis of water pollution control benefits and costs estimated annual benefits in 1985 at about \$17.1 billion and costs at about \$38.3 billion (Hahn, p. 321). By these estimates, benefits from water quality legislation fell short of costs by about \$21 billion in 1985.

This abbreviated review of air and water programs suggests mixed results in terms of costs and benefits. As an evaluation of environmental policy, in general, however, these analyses do not include the costs and benefits of major laws covering hazardous waste sites, pesticide regulation, management of toxic substances, drinking water protection, and other programs. In addition, the data are subject to great uncertainties. Further, the specific analyses reported here were global and did not highlight which particular programs and regulations confer significant net benefits and which are, on net, costly. The latter information is important when decision makers seek to shape individual program components.

The Future for Environmental Policy

As environmental policy is debated over the next few years, several critical issues will be addressed.

Many analysts argue that the propensity for Congress to prescribe command-and-control regulations has resulted in much litigation and a body of environmental law that is "stupefyingly complex" (Anderson, p. 411). Still others point out that the composite of environmental programs is, in some ways, incoherent, since each major piece of legislation has tended to focus on one environmental medium, or on one type of environmental hazard, without recognizing interrelationships among environmental problems. Some argue that the easiest environmental gains, and the cheapest ones, have already been achieved, and they stress the importance of subjecting environmental programs to cost/benefit analysis. State and local governments complain bitterly that the federal government has mandated compliance with federal regulations but has not provided adequate funding to help with compliance. Landowner interests argue that designation of critical habitat and jurisdictional wetlands results in restrictions on land use that hurt land values, evoking complaints of "regulatory takings."

The future of environmental policy will be shaped by efforts to respond to these criticisms. The direction of those efforts will depend heavily on the ideological tendencies of the majority in Congress.

References

- Adler, R. W. "Water Resources: Revitalizing the Clean Water Act." *Environment* 35(November 1993):4-5, 40.
- Anderson, J. L. "The Environmental Revolution at Twenty-Five." *Rutgers Law J.* 26,2(Winter 1995): 395-430.
- Arnold, C. A. "Conserving Habitats and Building Habitats: The Emerging Impact of the Endangered Species Act on Land Use Development." *Stanford Environ. Law J.* 10,1(1991):1-43.
- Bear, D. "The National Environmental Policy Act: Its Origins and Evolutions." *Nat. Resour. and Environ.* 10,2(Fall 1995):3-6, 69-73.
- Carriker, R. R. "Wetlands and Environmental Legislation Issues." *J. Agr. and Appl. Econ.* 26,1(July 1994): 80-89.
- Chambers, J. C., and M. S. McCullough. "From the Cradle to the Grave: An Historical Perspective of RCRA." *Nat. Resour. and Environ.* 10,2(Fall 1995): 21-23, 73-74.
- Danielson, L. E., and J. A. Leitch. "Wetlands Policy." In *1995 Farm Bill Policy Options and Consequences*,

- pp. 121–26. Texas Agr. Ext. Ser., Texas A&M University, College Station, 1995.
- Goplerud, C. P., III. “Water Pollution Law: Milestones from the Past and Anticipation of the Future.” *Nat. Resour. and Environ.* 10,2(Fall 1995):7–12.
- Hahn, R. W. “United States Environmental Policy: Past, Present, and Future.” *Nat. Resour.* 4,2(Spring 1994): 305–48.
- Johnson, J. B., C. R. Taylor, R. T. Clark, S. H. Amosson, and H. A. Smith. “The Conservation Reserve Policy” In *1995 Farm Bill Policy Options and Consequences*, pp. 109–14. Texas Agr. Ext. Ser., Texas A&M University, College Station, 1995.
- Knopman, D. S., and R. A. Smith. “Twenty Years of the Clean Water Act.” *Environment* 35(January/February 1993):17–20, 34–41.
- Kraft, M. E. *Environmental Policy and Politics*. New York: Harper Collins College Publishers, 1996.
- Osteen, C. D., and P. I. Szmedra. “Agricultural Pesticide Use Trends and Policy Issues.” *Agr. Econ. Rep. No.* 611, USDA/Economic Research Service, Washington DC, September 1989.
- Parenteau, P. A., and D. C. Baur. “An Overview of Federal Wildlife Law.” *Nat. Resour. and Environ.* 4,4(Spring 1990):3–6.
- Portney, P. “Economics and the Clean Air Act.” *J. Econ. Perspectives* 4(1990):173.
- Tabb, M. “Twenty-Five Years of the Clean Air Act in Perspective.” *Nat. Resour. and Environ.* 10,2(Fall 1995): 13–20.
- Terry, S. “Drinking Water Comes to a Boil.” *New York Times Magazine* (26 September 1993):42–48, 62–65.
- U.S. Congress. *The Total Costs of Cleaning Up Nonfederal Superfund Sites*. Congressional Budget Office, Washington DC, January 1994.
- U.S. General Accounting Office. *Drinking Water: Stronger Efforts Essential for Small Communities to Comply with Standards*. Pub. No. GAO/RCED-94-40. Washington DC: Government Printing Office, March 1994.