The U.S. Environmental Protection Agency

A Historical Perspective on Its Role in Environmental Protection

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AQA Air Quality Act

AQCR Air Quality Control Region

AWF African Wildlife Foundation

BLM Bureau of Land Management

BOB Bureau of the Budget

CAA Clean Air Act

CAFE Corporate Average Fuel Economy

CEQ Council on Environmental Quality

CERCLA Comprehensive Environmental Response, Compensation and Liability Act

CPSC Consumer Product Safety Commission

CRE Center for Regulatory Effectiveness

CSE Citizens for a Sound Economy

CWA Clean Water Act

CWPS Council on Wage and Price Stability

DOE U.S. Department of Energy

DOJ U.S. Department of Justice

DOT U.S. Department of Transportation

EDF Environmental Defense Fund

EIS Environmental Impact Statement

EOP Executive Office of the President

EPA U.S. Environmental Protection Agency

EPCRA Emergency Planning and Community Right-to-Know Act

FDA Food and Drug Administration

FEA Federal Energy Agency

Fed. Reg. Federal Register

FEO Federal Energy Office

FFDCA Federal Food, Drug, and Cosmetic Act

FIFRA Federal Insecticides, Fungicides, and Rodenticides Act

FOIA Freedom of Information Act

FQPA Food Quality Protection Act

FWPCA Federal Water Pollution Control Act

GAO Government Accountability Office

GDP Gross Domestic Product

GNP Gross National Product

HEW U.S. Department of Health, Education and Welfare

HSWA Hazardous and Solid Waste Amendments

HUD U.S. Department of Housing and Urban Development

HWETF Hazardous Waste Enforcement Task Force

IEA International Energy Agency

LCV League of Conservation Voters

LEV Low Emission Vehicle

MTBE Methyl Tertiary-Butyl Ether

NAAQS National Ambient Air Quality Standard

NASA National Aeronautics and Space Administration

NEJAC National Environmental Justice Advisory Council

NEPA National Environmental Policy Act

NIMBY No-In-My-Backyard

NPDES National Pollutant Discharge Elimination System

NRC National Research Council

NRDC Natural Resources Defense Council

NWF National Wildlife Federation

OECD Organization for Economic Cooperation and Development

OEO Office of Economic Opportunity

OIG Office of Inspector General

OIRA Office of Information and Regulatory Affairs

OMB U.S. Office of Management and Budget

OMTR Open Market Trading Rule

OPEC Organization of Producing and Exporting Countries

ORD EPA Office of Research and Development

OSHA Occupational Safety and Health Administration

OTA Congressional Office of Technology Assessment

PACs Political Action Committees

PPP Polluter Pays Principle

RACT Reasonably Available Control Technology

RARG Regulatory Analysis Review Groups

RCRA Resource Conservation and Recovery Act

RIA Regulatory Impact Analysis

SARA Superfund Amendments and Reauthorization Act

SDWA Safe Drinking Water Act

SEA Selective Enforcement Auditing

SERCs State Emergency Response Commissions

SIP State Implementation Plan

SPR Strategic Petroleum Reserve

SREA Superfund Recycling Equity Act

TRI Toxic Release Inventory

TSCA Toxic Substances Control Act

VA Department of Veterans Affairs

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Introduction

Since the middle of the 20th century, there has been a growing trend towards environmental protection in America. This can be seen not only in society, but also in federal government environmental programs. This study will focus mainly on how the U.S. federal government manages environmental protection. Before viewing the study in detail, it is necessary to look at history, understand how and why Americans became aware of the importance of protecting the environment, and what makes them continue to do this.

1.1. Environmental Protection: Preconditions, Push-Factor and Value Change

In American history, affluence and good education were the preconditions of expanding environmental protection. This remains so today, poor people generally engage in acquiring material wealth and making money rather than protecting the environment. Affluent people with poor education may not realize the importance of protecting the environment, and thus not do it. The United States in the 1960s became mature for expanding environmental protection. Americans had become more affluent and better-educated following two decades of steady economic growth since the end of World War II. The percentage of adults with some college education rose from 13.4 to 25.2 percent between 1950 and 1974 (McFarland 6).

At the same time, due to worsening environmental surroundings in urban areas of major cities, more and more Americans were moving to the suburbs. The expanding suburbanization became another main cause for pollution, because human activities like occupying more free land, cutting more plants, killing more animals for human use, and

consuming more water, coal, gas and oil continually damaged the environment. White collar workers left crowed cities for suburban clean air, gardens, and green grass, but the increasing problems of suburban life like smog, traffic jams and sprawl somehow shattered their dreams (Landy, Roberts, and Thomas 22). Therefore, the demand for clean air and water became essential for each American during the 1960s.

Push-Factor: Rachel Carson's *Silent Spring*

The increasing use of synthetic chemical insecticides after the Second World War had become the subject of a continuing controversy. In 1959, differences of opinion reached their first climax with two cases. One was ornithologist Robert Cushman Murphy v. the U.S. Department of Agriculture's gypsy moth control spraying of Long Island, N.Y. The other was the common-front opposition of the nation's private conservation organizations against the same agency's fire ant eradication program in the Southeast (Brown 76-78). Although these differences of opinion made the government agencies more cautious, governmental policy remained unchanged. On March 31st 1960, Michigan Congressman, Leonard G. Wolf, introduced a Chemical Pesticides Coordination Act in the 86th congress. This act was, however, countered by the administration with the Interagency Pesticide Review Board. Still nothing was changed (Clement 247). Fortunately, the government founded a Federal Pesticide Control Review Board with the secretaries of Agriculture, Defense, Interior, Health Education and Welfare to make a better governmental decision in 1961.

Rachel Carson's book *Silent Spring*, which was published in installments in the June 1962 New Yorker magazine,[1] drew public attention to the negative effects of chemical pollution. The pesticide DDT was particularly vilified for its presence in the environment and effect on raptors. Rachel Carson was supported by many scientists, politicians, policy makers, garden clubs, and the media through praising her science and her questioning of the "irresponsibility

[1] Appeared serialized in three parts in the June 16th, June 23rd, and June 30th 1962 issues.

of an industrialized, technological society toward the natural world" (Carson xii). Meanwhile, pesticide manufacturers still made efforts to educate the public about the benefits and importance of pesticides. The Manufacturing Chemists Association mailed monthly stories to the media, detailing the positive aspects of agricultural chemicals (Graham 333). However, pesticide pollution continued to be implicated in several massive fish kills in the Midwest in the 1960s, including one involving the death of over one million fish in the Mississippi River in 1964 (Hoffman, *From Heresy* 52). These incidents further proved Carson's statement and helped make *Silent Spring* popular. At a press conference on August 29th 1962, a journalist asked President Kennedy: "There appears to be growing concern among scientists as to the possibility of dangerous long-range side effects from the widespread use of DDT and other pesticides. Have you considered asking the Department of Agriculture or the Public Health Service to take a closer look at this?" Kennedy responded: "Yes, and I know they already are. I think particularly, of course, since Miss Carson's book, but they are examining the matter" (McLaughlin). President Kennedy appointed his scientific advisor, Dr. Jerome B. Wiesner, to study the pesticide issue and to produce a report containing recommendations for the use and regulation of pesticides in the United States. On May 15th 1963, the President's Science Advisory Committee report, *The Use of Pesticides*, was issued, calling for the reduced use of toxic chemicals (Ibid.).

Silent Spring awakened American health consciousness with scientific arguments against the use of common pesticides, such as DDT, whose presence and ecological magnification in the food chain caused severe damage to such birds of prey as eagles, ospreys, and pelicans (Graff 11). It also educated Americans about the danger of indiscriminate pesticide use, asked for them to be informed, and encouraged them to take action. Both Presidents Kennedy and Johnson made the environment an issue in their speeches and legislative programs. President Johnson spoke forcefully in his 1964 and 1965 messages to Congress about safeguarding wilderness and repairing damaged environments. *Silent Spring* also had strong

impact on the following American generations. Former Vice-President, Al Gore, in his introduction to the 1992 edition of Carson's book said: "For me personally, *Silent Spring* had a profound impact...Indeed, Rachel Carson was one of the reasons that I became so conscious of the environment and so involved in environmental issues...Carson has had as much or more effect on me than any, and perhaps more than all of them together" (McLaughlin).

Encouraged by Rachel Carson's *Silent Spring*, more and more affluent and well-educated Americans urged the public to focus on the theme of "public health" and the natural world rather than on "bread and butter" (McFarland 24). They also encouraged the public to become more aware of the harmful effects of industrial development on the quality of the environment. More and more Americans began to be concerned about their exposure to toxic chemicals, as well as wilderness protection. Stimulated by this, the public campaigned for environmental legislation and called for strong government intervention to reduce levels of air and water pollution. The biggest protest was the first Earth Day in 1970. These public protests resulted in a series of environmental statutes and increasingly stringent regulations to prevent and reduce pollution, and to emphasize greater industry accountability for the environment in the 1970s.

Value Change

During the 1960s, environment and equity became of particular concern to Americans with the environmental and Civil Rights movements. These concerns expanded to cover more subtle threats to public health. The American way of life, characterized by freedom, liberty and the acquisition of material goods, was improved by health and better living conditions like clean water and fresh air. Thus, environmental protection in the 1970s was pushed to focus on improving public health. As the United States shifted from the "Empire of Production" to the "Empire of Consumption," mass consumption became the subject of pollution by the 1980s. Meanwhile, public health concerns gradually began to cover not only

air and water quality, but also diet, food additives, and organic foods. Health meant more than the absence of illness, and it began to include physical well-being, which was connected with environmental well-being (Paehlke, "Environmental" 81). These public health concerns were developed in the 1990s which characterized the shift in the economy from materially-intensive to knowledge-intensive, and began to focus on ecosystems and sustainability, pursuing a radically reduced dependence on non-renewable resources and minimization of all human impact on natural ecosystems. At this time, due to the strengthened environmental regulations and the increasing environmental awareness of the public, industries began to take environmental protection as a way to build image, make product brands, attract customers, and thus enlarge market share.

From *Silent Spring* to today's organic products and cooperative actions against global warming, there has not only been a shift in the American social model, away from excess consumption towards a more sustainable ecological pattern (Freedland 20), but also a change in American environmental values, from ecology to environmentalism. Environmental values extend beyond conservation, ecology and health, and now include social responsibility and a new lifestyle. These values spread deep into the hearts of Americans. As the result, more and more Americans are taking initiative to protect the environment through changing their lifestyles, for example, moving away from excess consumption of water and electricity, and demanding environmentally-benign and energy-efficient products (Kraft, *Environmental Policy and Politics* 235). Today, safety from harm caused by toxic substances, the provision of fishable and swimmable rivers and cleaner air are viewed by many Americans as entitlements (Vig and Kraft 58).

1.2. Development of Federal Environmental Protection from the Nixon to the Clinton Administration

The U.S. federal government protects the environment through both Congress-enacted

environmental laws and administrative institutions that implement these laws. Before 1970, the responsibility for protecting the environment was scattered over different departments and different administrative bureaus.

In the 1960s, environmental protection began to win government support. In 1963, Congress passed the Clean Air Act to reduce smog and air pollution, followed by the Water Quality Act in 1965. Environmental problems and increasing public environmental awareness urged the government to make the 1970s a decade of pollution control. It began with the birth of the Environmental Protection Agency (EPA) in December 1970. This new, central, federal administrative regulatory agency was given the responsibility of implementing environmental laws, making detailed regulations, and organizing existing environmental programs that were previously housed within various federal departments or offices. The federal environmental protection organized by the EPA emphasized preventing and reducing pollution in the 1970s, cleaning up pollutants while preventing and reducing in the 1980s, and reducing pollution from the source since the end of 1980s. In this evolution, the target group shifted from concentrating on public health in the 1970s and 1980s to the whole environment, including non-human species since the end of the1980s.

In the "environmental decade," a number of environmental statutes focusing mainly on protecting public health were enacted by Congress. Alone during the Nixon-Ford Administration and the Carter Administration, acts such as the Clean Air Act (CAA), the Clean Water Act (CWA), the Toxic Substances Control Act (TSCA) and the Resource Conservation and Recovery Act (RCRA) were passed. President Nixon and his EPA Administrator Ruckelshaus set strict environmental regulations and standards, and rigorously implemented environmental laws, thereby establishing the EPA's credibility. However, the oil crisis in 1973 discouraged President Nixon from protecting the environment, and led to the EPA's budget being cut by Congress. This caused the reversal of some restrictions on

refineries and oil pollution. In 1977, the democratic government returned the topic of environmental protection to the U.S. political agenda. Environmental statutes were expanded and the EPA budget was increased. During the 1980s, environmental accidents became the subject of public concern. For instance, in 1984, at a plant in Bhopal, India, methyl isocyanate was accidentally released, killing over 3,000 people and injuring another 300,000 (Hoffman, "Institutional" 363). The accidents at Love Canal, Times Beach, and elsewhere further provided the media with a seemingly endless supply of stories. These accidents kept environmental issues at the forefront of public consciousness and motivated a new wave of federal regulations with the aim of cleaning up and enhancing industry's accountability to the public for the environmental impact of their operations. As the result, during the Reagan Administration, Congress enacted environmental laws such as the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (Superfund), the Hazardous and Solid Waste Amendments of 1984, the Safe Drinking Water Act Amendments of 1986 and the Superfund Amendments and Reauthorization Act in 1986. However, the Reagan Administration was pressure from the Cold War, and therefore tried to reduce federal expenses and stimulate economic growth at the expense of the environment. Together with his EPA Administrator, Anne Burford, President Reagan cut the EPA budget, diminishing the agency's credibility. Despite of the environmental deregulation from Administrator Burford, environmental protection continued with the help of Administrators William Ruckelshaus and Lee Thomas. In the late 1980s, a hole in the Earth's ozone layer was discovered, and ozone depletion was taken seriously for the first time. Meanwhile, problems like smog, congestion and sprawl intensified as part of the cost of rapid economic growth. Congress enacted, and President Bush signed, legislation to phase out ozone-destroying chlorofluorocarbons. Later, the CAA Amendment of 1990 was also passed. Thus, relationships not only between the environment and humans, but between the environment and plants and animals were emphasized by the EPA (Landy, Roberts, and Thomas 5).

However, the environmental protection led by the EPA became increasingly constrained by the Council on Competitiveness headed by Vice-President Quayle. The Clinton Administration realized "the environment and the economy go hand in hand" (Collin 275), and promoted protecting the environment while fostering economic growth through accelerating environmental industries like the clean industry. It concentrated on a "win-win" solution that created substantial cost savings and pollution reduction (Ehrenfeld 228), and thus enhanced cooperation with business groups and made them more responsible for the environment by building partnerships and making stakeholders while enforcing environmental regulations. The Clinton Administration further stimulated market incentives while implementing environmental laws. In the development of federal environmental protection, the cost-versus-health conflict had been continually challenging different administrations, as environmental protection entailed considerable expense. It is estimated that U.S. spending on pollution control and abatement increased almost fourfold from $30 billion (in 1990 dollars), or 0.9 percent of Gross Domestic Product (GDP) in 1972, to $115 billion, or 1.9 percent of the GDP in the end of 1990 (Kraft, *Environmental Policy and Politics* 133).

1.3. Description of this Study

This study illustrates the role played by the U.S. Environmental Protection Agency (EPA) in federal environmental protection. It traces the EPA's thirty years of institutional history, beginning with the founding of the agency in 1970 and ending at the turn of the century.

1.3.1. Why does this Study focus on the U.S. Environmental Protection Agency?

Firstly, it is necessary to take a close look at environmental controversy in the U.S. The U.S. is the world's biggest polluter (or at least the biggest emitter of carbon dioxide in the world (Bremner)), despite the fact that it has one of the most influential environmental agencies in the world.

Secondly, environmental problems potentially affect all Americans. Americans with different concerns are involved in protecting the environment, because numerous issues fall into the environmental category. For instance, hunters and animal protection advocates favor wildlife habitat protection; urban residents are particularly affected by air pollution; rural dwellers by strip mines and well contamination caused by toxic wastes; and citizens with little interest in nature and wildlife may be sensitive to the public health threat posed by toxic wastes or drinking water contamination (Mitchell, "Public" 57). The implementation of environmental laws and regulations from the EPA also affects a broad range of interests from nearly every sector of the U.S. economy, thousands of organized groups and millions of individual citizens (Davies, "Environmental" 157).

Thirdly, EPA history is accompanied by different environmental problems and the experience of solving them from former governmental administrations. The ideas, wisdom and experiences on managing environmental protection did not come suddenly without reason, but changed, grew and coalesced around the EPA history. As Peter Burke wrote, "the culture history of nations is an example of what might be called 'the culture history of ideas'" (132). The history of the EPA is the accumulation of ideas and wisdom on managing environmental protection, which is linked to factors like economic concerns, energy conservation, and social development. Many important ideas from the EPA on governmental environment management have been developed and employed in different countries, for instance, the Command-and-Control strategy and the speed limit. Studying the EPA helps people to better understand environmental problems. It can also inspire more people to develop new ideas to improve environmental protection.

1.3.2. Why does this Study focus on the Era from 1970 to 2000?

The era from 1970 to 2000 covers the period from the Nixon to the Clinton Administration. During this era, the EPA had two extreme roles and one balanced role in

protecting the environment. These typical roles were formed by different factors dependent on the concrete situation and time period.

Because environmental laws can be interpreted in a strict or lax way, and environmental regulations and standards can be implemented strongly or weakly, the writing and implementing of these environmental regulations and standards are flexible. This means that the achievement of federal environmental protection depends on what the EPA has been doing. However, the EPA's roles in protecting the environment depend, amongst other factors, on the political climate of the President and Congress. Congress establishes the EPA's authority and framework by writing the environmental laws. Various committees and subcommittees from Congress also influence environmental regulations through interpreting the environmental statutes. In addition, as part of the executive branch of government, the EPA is responsible to the President. As administrations change, different presidents bring different philosophies, environmental understanding and programs to environmental protection. The executive branch in 50 States and some 80,000 local units can also determine the result of regulations in carrying out environmental duties. Therefore, the EPA's role in protecting the environment is largely influenced by changes of Congress and administrations. Since members of Congress are independent of the White House, sometimes the White House and Congress come into direct conflict in their overseeing of the EPA. Thus, the EPA has to face this controversy.

Congress

Since the Vietnam War, the Republican Party has been known for national security, while the Democrat Party has been long trusted by Americans concerning the environment, the economy, education and healthcare (S. Power 66). Trends in environmental statutes tend to be linked to the party in power in Congress. Examples of this include the "environmental decade," characterized by a series of environmental statutes, under Democratic control in

both the House and the Senate. The biggest environmental success was achieved by the single Democratic government from 1977 to 1980, and the CAA Amendment in 1990 was also accomplished under a Democratic Congress (see table 1).

President

As can be seen from the achievement of federal environmental protection made by the EPA from the Nixon to the Clinton Administration, the President dominated the EPA's role in protecting the environment. The President directs the EPA on how to implement environmental laws. He can also use his veto authority to block bills in Congress. For instance, when the Republican Party gained control of Congress in 1995, President Clinton often vetoed bills containing legislative riders that would have weakened environmental protection (U.S. Cong. CRS, *Environmental* 1). The President's dominance was also reflected in the EPA budget. The EPA budget clearly shows that President Nixon lost interest in protecting the environment in 1973, and also bears witness to President Carter's pro-environment position between 1977 and 1980, President Reagan's anti-environment position (see figure 1) and the single Democratic government in 1993.

Additionally, the EPA's role in protecting the environment is further formed by the agency itself, interest groups and courts. Because the EPA's roles influence how the agency looks today, and will have strong impact on the EPA in the future, it is worth looking at why and how the EPA changed its roles in protecting the environment from 1970 to 2000.

1.3.3. Subject, Method and Procedures

Many indirect, historical, and political studies on the EPA have been carried out. They mostly focus on environmental policy and politics. Mazimanian and Kraft divide modern environmental policy since the 1960s into three epochs. The first epoch was the 1960s and 1970s, which were characterized by the Command-and-Control government regulation of single-issue environmental problems, for instance air or water pollution. The second one was

Table 1

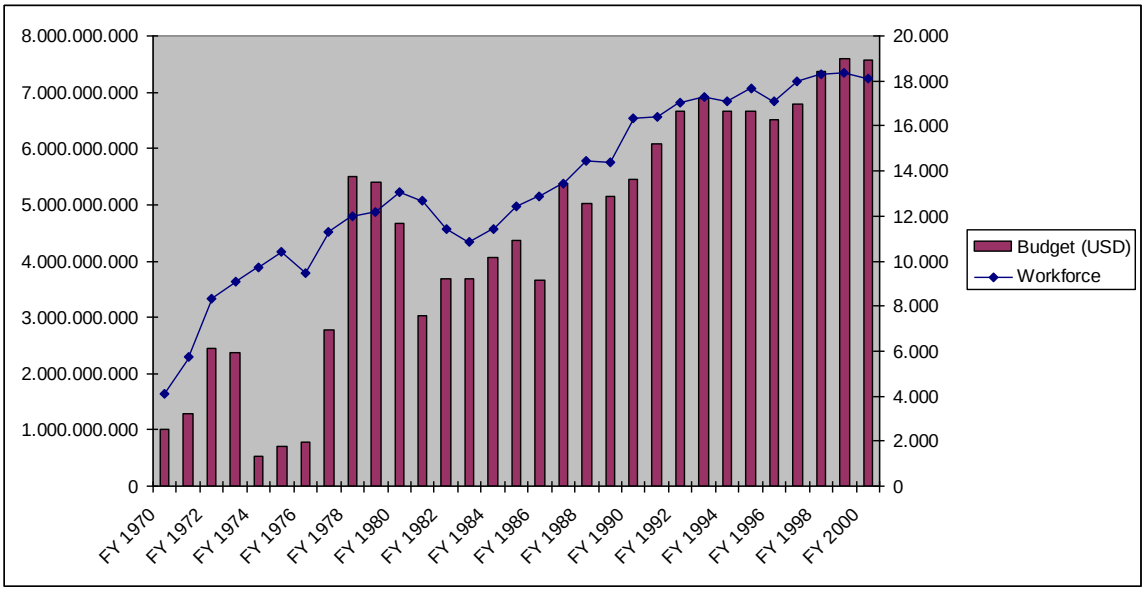
Patterns of Party Control of Congress and the Presidency, 1972-2000

Year	Congress	President	Senate (100)	House (435)	Party Control
1999	106th	D	R – 55	R – 223	Split
1997	105th	D	R – 55	R – 228	Split
1995	104th	D	R – 52	R - 230	Split
1993	103rd	D	D – 57	D – 258	Single
1991	102nd	R	D – 56	D – 267	Split
1989	101st	R	D – 55	D – 260	Split
1987	100th	R	D – 55	D – 258	Split
1985	99th	R	R – 53	D – 253	Split
1983	98th	R	R – 54	D – 269	Split
1981	97th	R	R – 53	D – 242	Split
1979	96th	D	D – 58	D – 277	Single
1977	95th	D	D – 61	D – 292	Single
1975	94th	R	D – 60	D -291	Split
1973	93rd	R	D – 56	D – 242	Split
1971	92nd	R	D – 54	D – 255	Split

Sources: U.S. Senate, House

Yellow years mark Presidential inauguration.

Figure 1. The EPA's Budget and Workforce, 1970-2003



Fiscal Year	FY 1970	FY 1971	FY 1972	FY 1973	FY 1974	FY 1975	FY 1976	FY 1977	FY 1978	FY 1979
Budget (USD)	1.003.984.000	1.288.784.000	2.447.565.000	2.377.226.000	518.348.000	698.835.000	771.695.000	2.763.745.000	5.498.635.000	5.402.561.000
Workforce	4.084	5.744	8.358	9.077	9.743	10.438	9.481	11.315	11.986	12.160
Fiscal Year	FY 1980	FY 1981	FY 1982	FY 1983	FY 1984	FY 1985	FY 1986	FY 1987	FY 1988	FY 1989
Budget (USD)	4.669.415.000	3.030.669.000	3.676.013.000	3.688.688.000	4.067.000.000	4.353.655.000	3.663.841.000	5.364.092.000	5.027.442.000	5.155.125.000
Workforce	13078	12667	11402	10832	11420	12410	12892	13442	14442	14370
Fiscal Year	FY 1990	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999
Budget (USD)	5.461.808.000	6.094.287.000	6.668.853.000	6.892.424.000	6.658.927.000	6.658.227.000	6.522.953.000	6.799.393.000	7.360.946.000	7.590.352.000
Workforce	16318	16415	17010	17280	17106	17663	17081	17951	18283	18375
Fiscal Year	FY 2000									
Budget (USD)	7.562.800.000									
Workforce	18100									

Source: Colin, Robert W. *The Environmental Protection Agency: Clean up America's Act*. Westport: Greenwood, 2006. 3. Print.

the 1980s, which were characterized by the balancing of environmental and social economic priorities through market-based and collaborative approaches. And the third one, from 1990 onward marks the transition to sustainable community approaches that take a comprehensive, multi-resource approach to environmental problems and involve collaboration between different actors and sectors (Mazimanian and Kraft 10-13). Under these three epochs, Mazimanian and Kraft sum up the characteristics of different policy objectives, such as implementation philosophy, points of intervention, policy approaches and "tools", information and data management needs, predominant political or institutional context, key events and public actions. Mazimanian and Kraft analyze environmental policy clearly and completely, but mainly focus on the changes between decades. Fiorino also carries out complex research on environmental politics. He overviews theories underpinning environmental policy making and defines and characterizes environmental problems. He argues that environmental policy is government's inability or unwillingness to deal with heavy dependency on fossil fuels and its inefficiency, for instance, on energy use and large cars. He also argues that Congress, the OMB and the executive branch, other federal agencies, non-governmental forces and citizens, especially the EPA, have an effect on environmental policy. The EPA is an agency implementing federal environmental politics. Its variance is contained in the changes in the three epochs defined by Mazimanian and Kraft and accompanied by a shift in environmental policies. Authors like Mazimanian, Vig, and Kraft define U.S. environmental decades since the 1960s, and show "the underlying trend, institutional shortcomings, and policy dilemmas that all policy actors face in attempting to resolve environmental controversies" (Vig and Kraft vii). The other authors supplement or add new issues and ideas in this framework. But they all focus on environmental policy and politics, not mainly on the EPA.

Certain direct historical, political or institutional studies on the EPA have also been carried out. They take three different forms: a combination of history and policy studies; pure

institutional studies; and functional research and program evaluations. Landy, Roberts, and Thomas examine the EPA's origin and development, its five accomplishments: the establishment and subsequent revising of the ozone standard; the Resource Conservation; Recovery Act regulations; the passing of Superfund; and the effect the Reagan Administration had on the EPA. He mainly focuses on the EPA development until the Reagan Administration. He argues, firstly, that the EPA "senior officials of executive branch agencies are responsible for more than the programs they administer" (Landy, Roberts, and Thomas 3); secondly, that environmental laws written by Congress define the EPA's duty framework as either too vague or too specific and have largely been unsuccessful; and thirdly, that the EPA relies on pluralistic bargaining among industry, environmentalists and regulators to shape policy for regulating the steel industry, rather than finding ways to assess, or create, through public airing of the issues, public consensus (Williams 112-113). Collin carries out institutional research on the EPA, which separately describes the EPA's organization, programs, controversies, key events, notable people, and impact on society. EPA functional research and program evaluations are mostly conducted by the GAO and the NRC under Congress order by organizations sponsored by interest groups. The studies combining historical and political factors partly reveal the strategy and idea development of the EPA, and bring to light many characteristics of accomplishments made by the agency. They do not, however, form a complete systematic view. Pure institutional studies comprehensively show EPA institutional functions and their development, but bring limited strategy and idea analyses in protecting the environment, and thus can merely be considered information sources. Functional research and program evaluations mostly depend on party interest, and criticize the EPA or propose rational suggestions (normally neutral and not specifying preference for a specific interest) to the EPA. Since the EPA is the end product of balancing science, law, economics, politics, and social needs, these rational suggestions merely bring more trouble to the EPA, and in fact, do not really help the agency.

Few systematic EPA studies have been done on the agency's role in protecting the environment, which combine a detailed analysis of historical, political, and institutional factors, especially the agency's roles under different administrations and under different administrators. This study analyses the variance of the EPA in five administrations and under the tenure of seven EPA administrators between 1970 and 2000 through observing the EPA's institutional design, political involvement and historical development, and defines three typical EPA roles in protecting the environment and two transition periods. This study also emphasizes different aspects of the EPA, such as its founding concepts and dominant philosophies, its disciplines and principles, legal framework, developing strategies, economic incentives, reforms and even the conflicts within the agency. The purpose of this study is to offer a detailed view of the EPA's roles, its organizational approaches, strategies and tactics and how they have evolved with federal intervention in environmental regulations that unfold from the Nixon to the Clinton Administration. It also aims to explore the ideas and wisdom present within these EPA roles, thus raising consciousness of environmental protection, and encouraging people to bring more ideas and incentives to this arena.

Based on the Research Methods for Public Administrators[2], this study adheres to the principle of knowing the changes and finding out the reasons, and makes use of data analysis, case studies and systematic, objective, qualitative and quantitative analysis, and comparison and contrast methodology in a simple and transparent manner. It takes many materials from the official websites of the EPA, Congress and its Government Accountability Office (GAO), the Office of Management and Budget (OMB) and the Organization for Economic Co-operation and Development (OECD) and the national archives DocumentsOnline. The official EPA website offers a timetable of environmental laws as well as the record of regulatory actions and environmental programs. However, it does not contain comments on EPA history and only shows the achievements of federal environmental regulations.

[2] See O'Sullivan, Rassel and Berner.

Researches from the GAO on the EPA are based on the position of Congress. They are normally to criticize the EPA, when controlled by its counterparty, for overstating program success while acknowledging the achievement made by the agency. This study also makes use of many valuable historical memoranda and works from former administrators William Ruckelshaus and Russell Train, from John C. Whitaker, the former Deputy Assistant to the President for Domestic Affairs (1969-1972) and who also served under the Secretary of the Interior (1973-1975); and from Jim Tozzi, who was the former deputy director of the Office of Information and Regulatory Affairs at the Office of Management and Budget (1981-1983). These memoranda and works explore the EPA's essence, show its internal development and offer this study clues regarding the agency's development and evidence of its environmental decision making.

This study argues that the EPA's role in protecting the federal environment from the Nixon to the Clinton Administration was the end product of balancing science, law, economics, politics, and social needs. The thesis is defended in three steps. Firstly, this study explains the EPA context, and how political factors could influence its role in protecting the environment. Secondly, this study defines three typical roles and two transitions of the EPA from the Nixon to the Clinton Administration and discovers why and how the EPA's roles and both transitions came into being. Thirdly, a short case study is offered to further prove the roles the played by the EPA. It revolves around the following major questions:

1. What is the EPA, and what are its founding concepts and dominant philosophies, the disciplines and principles, the legal frameworks and responsibilities?

2. Who is responsible for EPA decisions and how can EPA decisions be influenced?

3. What were the changing roles of the EPA on federal environmental protection from 1970 to 2000?

4. What were the approaches and interventions from Congress and administrations to federal

environmental protection?

5. What were regulatory reforms and why and how had regulatory reforms been developing and influencing the EPA?

6. What were the strategies and tactics used by the EPA used to prevent and reduce pollution, and how had these strategies and tactics been developing?

7. What were the economic incentives used by the EPA, and why and how did the EPA employ them?

8. What were the conflicts the EPA faced and how had the EPA been dealing with them?

Chapter two answers the first two questions by introducing the EPA's developing goals, responsibilities, principles, founding philosophy and structure change, and explains the ways in which these key political factors influence EPA environmental decisions. It lays a foundation for chapter three and enables chapter three to be easily understood.

Chapter three answers the remaining forementioned questions. It reviews the EPA's development, analyzes the variance of the agency's roles in its thirty-year history and how different factors have been influencing the EPA's role in detail. It also defines the EPA's three typical roles and two transitions in between. These roles were: a single minded advocate with little regard to cost (from 1970 to the end of 1973) under the Nixon Administration; a deregulator (from 1980 to 1983) under the Reagan Administration and a rational advocate (from 1994 to 2000) under the Clinton Administration. One of these two transitions transition was during the Carter Administration; the other was during the Bush Sr. Administration. From 1970 to 2000, the EPA's roles in some periods could not be defined. This was either because it is undergoing change or because of conflicts in the EPA's political climate which led to a lack of consensus among Congress, the President, and EPA administrators on environmental decision-making. Besides analyzing the EPA's roles, this chapter presents the factors supporting and forming these roles, for instance, strong

regulatory reforms causing the EPA to be a deregulator; and economic incentives like emission trading and taxes, enabling the EPA to be a rational advocate. This chapter also shows how the EPA's roles are being formed by the conflicts it faces, such as cost-versus-health.

Chapter four is a short case study on automobile pollution, which puts the EPA's automobile pollution control in a single, consistent line. Finally, Chapter five draws a conclusion on the EPA's strategies and economic incentives and presents the remaining problems facing the agency. It further analyses the relation between the EPA and science to strengthen the argument that the agency is primarily a regulatory and enforcement agency, and that it is the end product of balancing science, law, economic, politics and social needs.

2

The EPA Context:

Origins, Principles and Legacies

2.1. The Context of the EPA's Organization

When the EPA was formed forty years ago, the United States had just awakened to the seriousness of its environmental pollution problems. Because the use of throw-away packaging, including cans, bottles, plastics, and paper products increased greatly in the U.S. after World War II, thousands of new synthetic organic chemicals, a deluge of raw sewage, industrial and feedlot wastes were discharged into rivers and lakes without regard for the cumulative effect (Wisman). As early as 1963 the Fish and Wildlife Service concluded that, "Also, marine fishes from different oceans of the world have been found to contain DDT" (U.S. DOI 1). Therefore, many waterways became unfit for drinking, swimming and sailing. In addition, severe air pollution was being caused by smokestack emissions. The land was also being polluted by the indiscriminate dumping of municipal and industrial wastes and by the use of very toxic chemicals (Ibid.). Due to Rachel Carson's *Silent Spring*, people from different social strata were expressing their anxieties about and understanding of environmental problems. Most notably over 14,000 scientists, lawyers, managers, and other employees across the country fought for "environmental protection" and tried to reach solutions (Lewis). It was time to take action to correct this imbalance and to prevent future occurrences (Wisman). In 1969, Congress passed the National Environmental Policy Act (NEPA). Senator Gaylord Nelson (D-Wis) called it "the most important piece of

environmental legislation in our history" (Lewis). NEPA stated Congressional intent to "declare a national policy which will encourage productive and enjoyable harmony between man and his environment; promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man and enrich our understanding of the ecological systems and natural resources important to the Nation" (Ibid.), and to "assure for all Americans safe, healthful, productive, aesthetically and culturally pleasing surroundings" ("Environmental"). NEPA urged President Nixon to set up the Council on Environmental Quality (CEQ) in May 1969, which was led by Russell Train with the mandate to assist the President by preparing an annual Environmental Quality Report for Congress, gather data, and advise on policy. In December 1969, President Nixon appointed a White House committee to consider whether it would be necessary to have a separate environmental agency. After signing NEPA on New Year's Day 1970, President Nixon said that he had "become further convinced that the 1970s absolutely must be the years when America pays its debt to the past by reclaiming the purity of its air, its waters, and our living environment. It is literally now or never" (Ibid.). On July 9th, President Nixon submitted to Congress Reorganization Plan No. 3 of 1970 to establish an Environmental Protection Agency in order to "promote the better execution of the laws, the more effective management of the executive branch and of its agencies and functions and the expeditious administration of the public business;" and to "increase the efficiency of the operations of the Government to the fullest extent practicable" (Stillman 58). By December 1970, Reorganization Plan No. 3 had been approved by Congress, and the Environment Protection Agency (EPA) was founded on December 2nd 1970. It was charged with protecting public health and safeguarding the natural environment regarding air, water, and land. The creation of the EPA was part of the response to growing public concern and a grass-roots movement to stop the deterioration of water, air, and land conditions (Wisman). Since it merged key anti-pollution programs that had belonged to three federal departments, three bureaus, three

administrations, two councils, one commission, one service, and many diverse offices, and took health and regulatory responsibilities across the federal government, the EPA was "not a single organism with a single will but a series of different organisms with different wills" (Marcus, *Promise* 201). William D. Ruckelshaus was appointed the first Administrator.

2.1.1. The EPA's Goals, Responsibilities and Functions

The EPA was established as an autonomous body with the power to implement environmental laws and regulate air, water and land conditions. Other objectives were to provide information to all Americans, to enhance environmental awareness, to build a clean and healthy environment for all Americans, and to promote environmental protection within private, industrial, and governmental sectors (Ruckelshaus, "First"). Unlike environmental agencies in many other countries, the EPA was not responsible for many issues with environmental effects, such as natural resources, energy, transportation and agriculture (Kurian 206). The EPA was mandated to protect public health through controlling and preventing pollution and, as stated by the National Environmental Policy Act, "to assure for all Americans safe, healthful, productive, aesthetically and culturally pleasing surroundings" (U.S. Cong. HR 199). This purpose was to ensure that all Americans and the environment in which they live were safe from health hazards through organizing environmental programs dealing with clean air, clean and safe water, and safe food, preventing pollution and reducing risks in the environment. Later, the EPA's environmental goal was extended to "protecting and enhancing the American environment today and for future generations to the fullest extent possible under the laws enacted by Congress" (Weiland, Caldwell, and O'Leary 103). In 1992, it was written in the U.S. national report to UNCED that "We must manage the Earth's natural resources in ways that protect the potential for growth and opportunity for present and future generations" (Butts 113). Based on this, the EPA developed ten concrete goals: clean air; clean and safe water; safe food; preventing pollution and reducing risk in

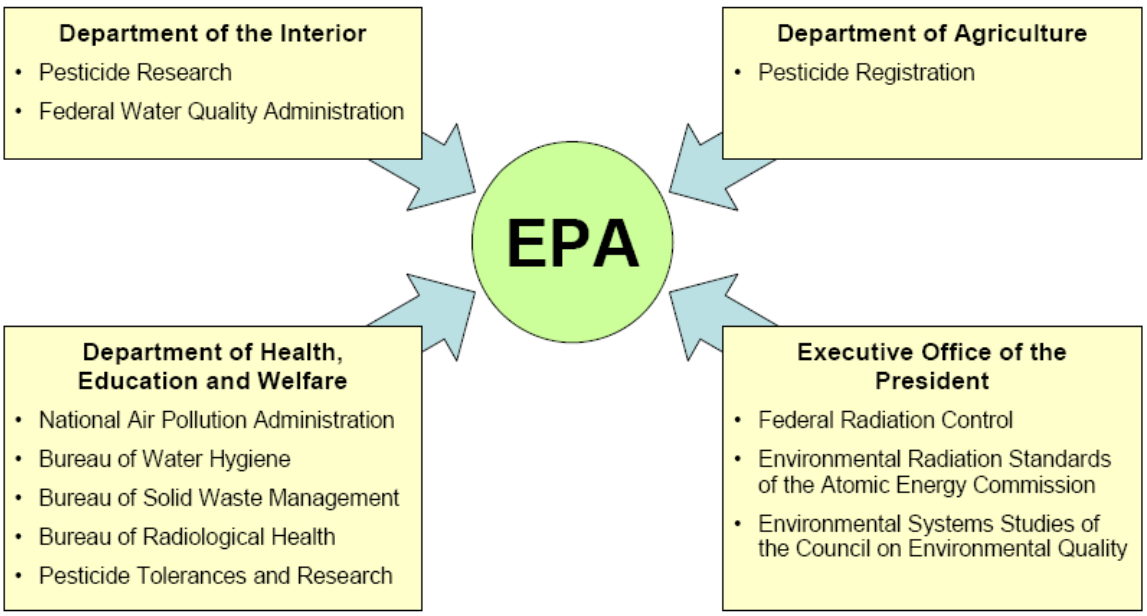
communities, homes, workplaces, and ecosystems; better waste management, restoration of contaminated waste sites, and emergency response; reduction of global and cross-border environmental risks; quality environmental information; sound science, improved understanding of environmental risk, and greater innovation to address environmental problems; a credible deterrent to pollution and greater compliance with the law; and effective management ("EPA's Goals").

The EPA was created through the reorganization. It merged fifteen function units from different departments and organizations: air quality with the National Air Pollution Control Administration and the Air Quality Advisory Board; solid waste with the Bureau of Solid Waste Management; radiological Health with the Bureau of Radiological Health; drinking water with the Bureau of Water Hygiene; pesticide tolerance functions under the Federal Food, Drug and Cosmetic Act (FFDCA); personnel from the Department of Health, Education, and Welfare; water quality with the Federal Water Quality Administration and the Water Pollution Control Advisory Board; pesticide research from the Interior Department; radiation protection standards from the Atomic Energy Commission and the Federal Radiation Council; pesticide regulation and registration from the Department of Agriculture; and ecological research from the Council on Environmental Quality ("Duties"). President Nixon also set principal roles and functions for the EPA. Firstly, to establish and enforce environmental protection standards; secondly, to conduct environmental research and to provide assistance to others combating environmental pollution; and thirdly, to assist the CEQ in developing and recommending to the President new policies for environmental protection (Lewis).

2.1.2. Organizational Structure

The EPA's efficiency partly relied on its organizational structure, which concentrated on how to meld the various bureaus that the EPA had inherited from different departments into a

Figure 2. Functions Transferred to the EPA from other Agencies



Source: United States. Dept. of Health and Human Services. Office of Inspector General. *Studies Addressing EPA's Organizational Structure* (Report No. 2006-P-00029). Washington: GPO, 2006. 2. Print.

coherent organization (Landy, Roberts, and Thomas 35). The EPA's organizational structure in 1970 came out as a combination of function and media programs (see figure 3). It contained five commissioners with a media program orientation focusing on five major environmental programs: water quality, air pollution, solid waste, pesticides, and radiation, and three assistant administrators organized along functional lines focusing on planning and management, standards and enforcement, and research and monitoring. The Administrator had an Office of the Administrator working for him, which contained four principal directors (Director of Public Affairs, Director of Legislative Liaison, Director of Equal Opportunity, and Director of International Affairs). These four directors reported to the Administrator and were also responsible to the Administrator ("EPA Order"). Together with the Administrator and three assistant administrators, a Deputy Administrator and a General Counsel were formally responsible for setting the policy direction of the agency, and were publicly accountable for the EPA's decisions. The Deputy Administrator assisted the Administrator in the discharge of his duties and responsibilities and served as Acting Administrator in the absence of the Administrator (Ibid.).

Since the beginning of 1971, the EPA had been improving its effectiveness through changing its structure. Douglas Costle (EPA Administrator under President Carter) proposed the structure with a three-stage approach in 1970. Firstly, each of the program areas would be left (inherited from other administrative bodies) intact; secondly, new functional divisions would be added; and thirdly, the program offices would be abolished and merged into the new function units (Marcus, Promise 103-104). In April 1971, Administrator Ruckelshaus developed a revised organizational chart that corresponded closely to Costle's proposals. The EPA was divided into four levels: Administrator and Deputy Administrator, four offices, five assistant administrators and ten regional offices. Its four offices and three of its five assistant administrators (Assistant Administrator for Planning, and Management, Assistant Administrator Enforcement and General Counsel, and Assistant Administrator Research and

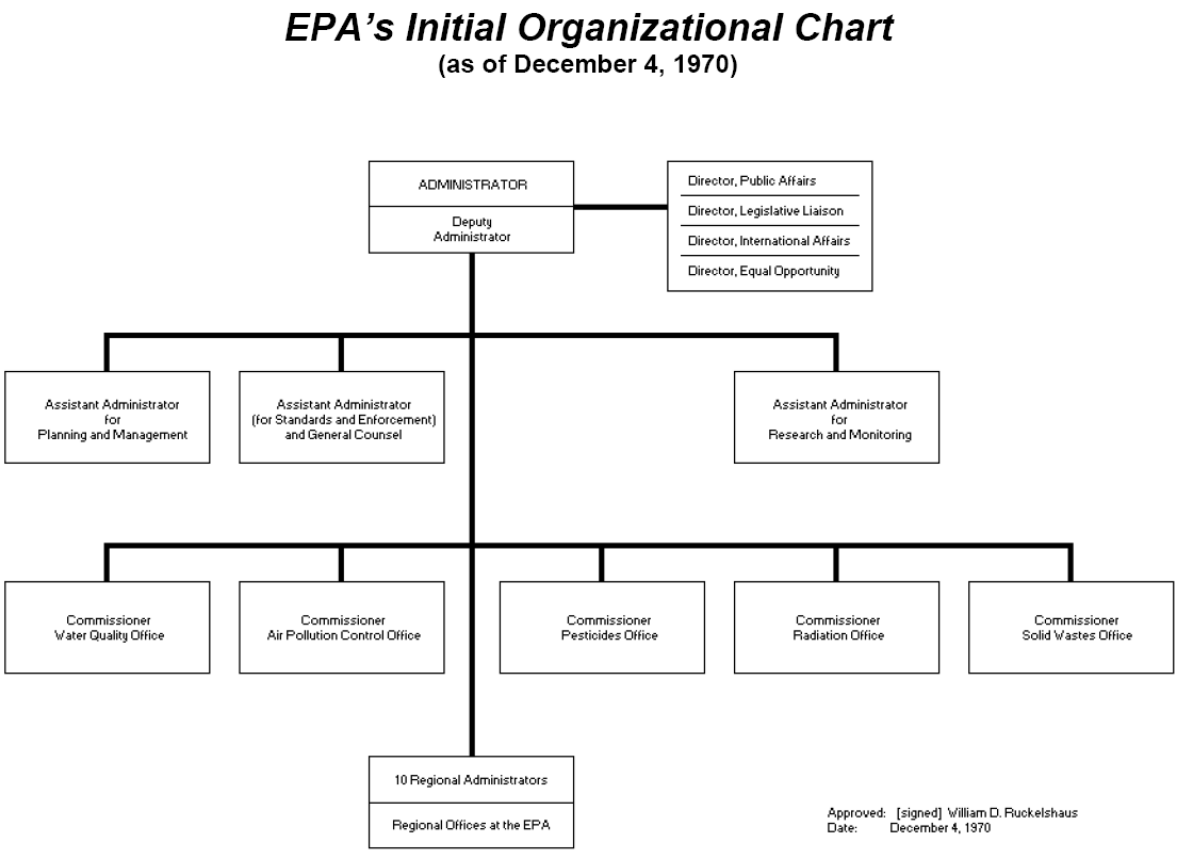
Monitoring) were organized along functional lines, while the other two (Assistant Administrator for Media Programs, and Assistant Administrator for Categorical Programs) remained a media program orientation (Landy, Roberts, and Thomas 35) (see figure 4). Administrator Ruckelshaus kept the inherited programs from other organizations to maintain continuity (Marcus, "EPA's" 7), and he tried to foster a "systems approach to pollution problems by grouping both air and water programs" under a single Assistant Administrator for Media Programs (Lewis). A separate Assistant Administrator for Categorical Programs was to monitor three "categories" of man-made pollutants: pesticides, radiation, and solid waste (Ibid.). New functional offices like the Office of Audit and the Office of Planning and Evaluation were created to improve efficiency and effectiveness through better controlling of media programs. The new structure also enriched the EPA with better handling, planning and management, establishing standards, enforcement of environmental statutes and regulations, providing legal counsel, and conducting research and monitoring for pollutants (Krech, McNeill, and Merchant 467). The EPA's organizational chart in 1970 and 1971 only went through stages one and two of Costle's plan. The EPA's current organizational chart (see figure 5) realized all three stages of Costle's plan.

Moreover, the EPA's ten regional administrators head ten regional offices covering the entire nation. The boundaries and headquarter locations of these regional offices are decided by the Administrator. They are responsible to the Administrator within the boundaries of the region for the execution of the regional programs of the EPA. Each of these ten offices is responsible for working with State and local officials and private organizations in its region to insure maximum participation in environmental programs and to implement and enforce the EPA's regulations ("First Administrator").

These ten regional offices were (see figure 6):

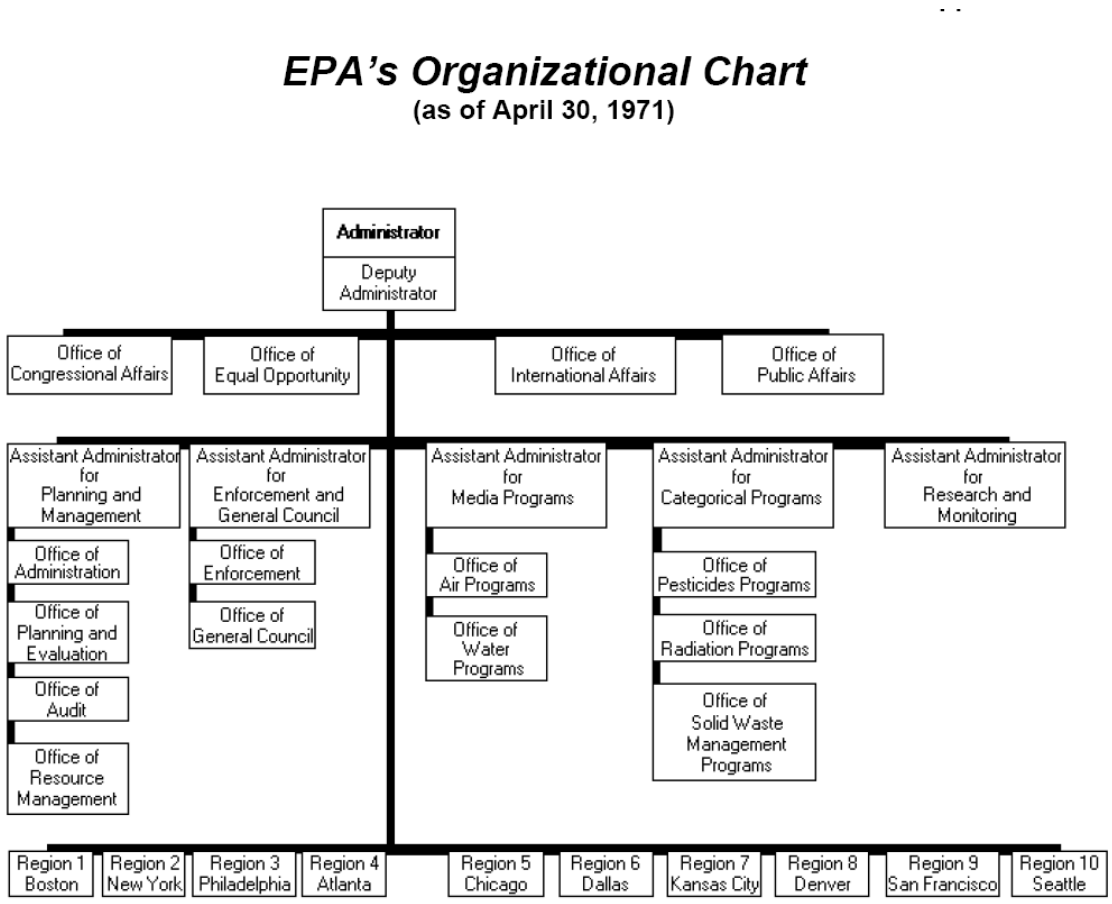
- Region 1: Boston – serving Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and 10 Tribal Nations

Figure 3. The EPA's Organizational Structure in 1970



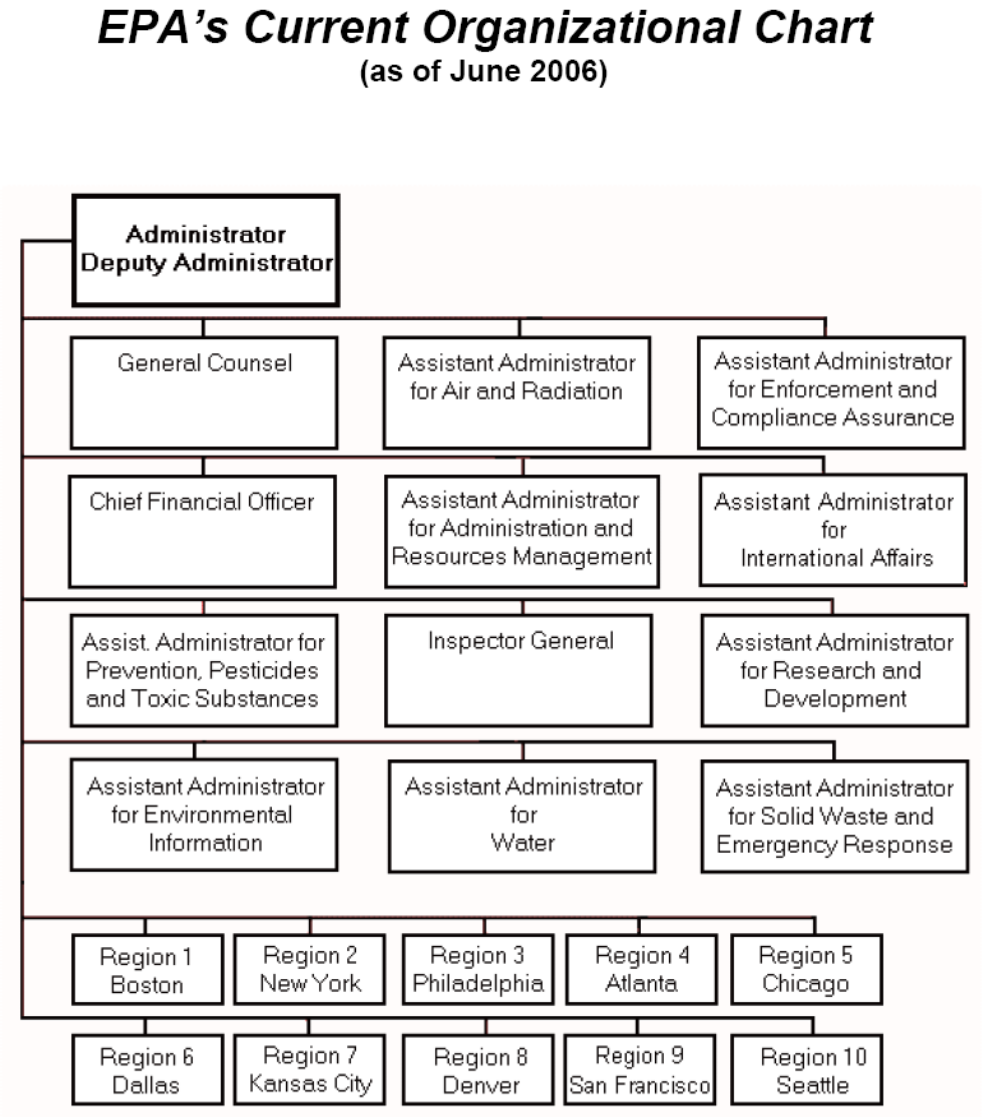
Source: United States. Dept. of Health and Human Services. Office of Inspector General. *Studies Addressing EPA's Organizational Structure* (Report No. 2006-P-00029). Washington: GPO, 2006. 33. Print.

Figure 4. The EPA's Organizational Chart in 1971



Source: United States. Dept. of Health and Human Services. Office of Inspector General. *Studies Addressing EPA's Organizational Structure* (Report No. 2006-P-00029). Washington: GPO, 2006. 34. Print.

Figure 5. The EPA's Current Organizational Chart

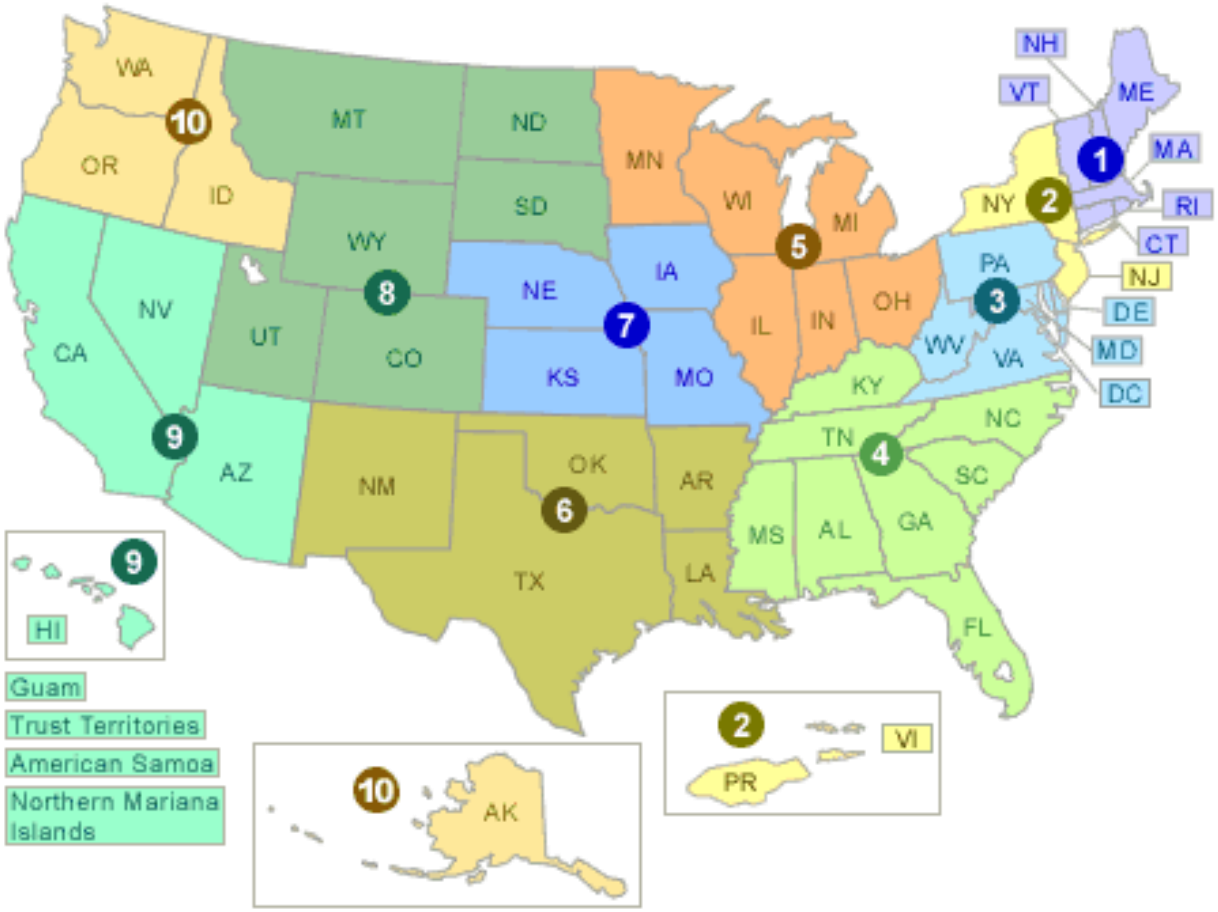


Source: United States. Dept. of Health and Human Services. Office of Inspector General. *Studies Addressing EPA's Organizational Structure* (Report No. 2006-P-00029). Washington: GPO, 2006. 35. Print.

- - Region 2: New York – serving New Jersey, New York, Puerto Rico, US Virgin Islands and 7 Tribal Nations
- - Region 3:Philadelphia – serving Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, and West Virginia
- - Region 4: Atlanta – serving Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and 6 Tribes
- - Region 5: Chicago – Serving Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin and 35 Tribes
- - Region 6: Dallas – serving Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes
- - Region 7: Kansas City – serving Iowa, Kansas, Missouri, Nebraska and 9 Tribal Nations
- - Region 8: Denver – serving Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations
- - Region 9: San Francisco – serving Arizona, California, Hawaii, Nevada, the Pacific Islands, and over 140 Tribal Nations
- - Region 10: Seattle – serving Alaska, Idaho, Oregon, Washington and Native Tribes ("Regional Offices")

Like other cabinet-level secretaries, the Administrator of the EPA is appointed by the President and confirmed in the position by the U.S. Senate. He carries full responsibility for the activities of the agency under supervision and direction. Like the Administrator, all of the regional officials are appointed by the President and confirmed by the Senate. They are always replaced following the election of a new President. A limited number of staff positions are allowed to be filled from outside the civil service, while the rest of the EPA staff are career officials. As the organization is part of federal civil service, career staff is protected from changes in political administrations and may spend their entire career with the EPA

Figure 6. Geographic Areas Serviced by the EPA's Ten Regional Offices



Source: "Regional Offices." *EPA.gov*. EPA. Web. 25 June 2008.

(Kurian 205).

The EPA's current organizational structure has an Office of the Administrator, four media offices, eight functional offices (see table 2), and ten regional offices. The responsibilities of the EPA's ten regional offices also now specifically focus on inspecting and monitoring certain industrial and other facilities that are regulated under federal environmental statutes, taking enforcement actions against those who have violated environmental statutes and regulations, helping industries comply with environmental regulations, and overseeing enforcement activities that the EPA had delegated to States (U.S. Cong. GAO, *Human Capital* 6).

Table 2

Media and Functional Offices

Media Offices	Functional Offices
Air and Radiation	Administration and Resource Management
Prevention, Pesticides, and Toxic Substances	Chief Financial Officer
Solid Waste and Emergency Response	Enforcement and Compliance Assurance
Water	Environmental Information
	General Counsel
	Inspector General
	International Affairs
	Research and Development

Source: United States. Dept. of Health and Human Services. Office of Inspector General. *Studies Addressing EPA's Organizational Structure* (Report No. 2006-P-00029). Washington: GPO, 2006. 4. Print.

2.1.3. Environmental Regulation Process

The process of environmental regulation ranges from issuing detailed and specific environmental regulations and standards based on available technologies, to inspecting environmental monitoring to ensure compliance, and penalising sources of pollution which have lead to the non-enforcement of environmental standards (Kurian 207). The EPA is a key player in this procedure. When the Agency proposes a new regulation, an advance notice may be published in the *Federal Register* to show intent. After assembling the necessary

scientific, economic, and other data, the EPA writes a draft of the regulation and publishes another notice in the *Federal Register* to invite public comment on the draft. The EPA then submits the draft to the White House Office of Management and Budget (OMB) for review and clearance (Kraft, *Environmental Policy and Politics: Toward* 111). The OMB reviews it, sends proposed regulations out to the affected agencies, receives their comments, develops an administration position (Tozzi), and transmits this to the EPA (Ibid.). With the OMB's suggestion, public comments, data, studies, and other material submitted to the agency by interested parties in consideration, the EPA sets the final regulation and publishes it and its responses to the major issues raised during the public participation stage in the *Federal register* (Ibid.).

The State governments are mostly responsible for monitoring regulated parties and enforcing environmental regulations and standards from the EPA. The EPA supervises the monitoring and enforcement from the State government and sometimes directly gets involved. "The EPA and the States rely heavily on self-monitoring by industry and other regulated parties, who then report their results to regulatory authorities," and they inspect industrial facilities to assure the fulfillment of environmental monitoring (Kraft, *Environmental Policy and Politics* 136). The enforcement is based on self-compliance and negotiation. The EPA encourages compliance through informal means, using meetings, telephone conversations, letters and other exchanges (Ibid.). Only when such efforts fail, does the EPA take formal enforcement actions (Ibid.). These actions can comprise Notices of Violation, Administrative Orders, or the formal listing of companies as ineligible for federal contracts, grants, and loans (Kraft, *Environmental Policy and Politics* 137). Should these measures fail to assure compliance, civil and criminal prosecution can be initiated, assisted by the Department of Justice (DOJ)'s Environment and Natural Resources Division. However, most cases are settled out of court most cases are settled out of court (Ibid.).

2.2. Political Involvement in the EPA's Decision-making and Development

Besides Congress and the President, the EPA's environmental regulations are further affected by courts and even by interest groups. The federal courts also review the EPA's decisions on a regular basis, and they have the authority to reverse or remand decisions when they are inconsistent with the authorizing law or are not adequately grounded in the available evidence (Kurian 204). Individuals or groups are entitled by law to take part in environmental decision making, for instance, through litigation. In addition, environmental regulation by its nature inevitably pits the advocates of economic growth against the defenders of environmental preservation. It also pits those who believe the market should operate free of restraint against those who want government intervention to protect the interests of society as a whole, within the administration, Congress, courts and interest groups (Kurian 206). The EPA lies at the center of such conflicts, and is essentially the result of balancing power or consensus making. This causes environmental protection led by the EPA to be inconsistent.

2.2.1. The President, his Administration, and the EPA

The President leads the Executive Branch of the federal government as the Chief Executive of the United States. His responsibility is to "take care that the laws be faithfully executed" (Henkin 50), and to fulfill the power to appoint various executive branches. In order to influence national politics, and to achieve a more efficient domestic government, reorganization of the federal government has been of vital concern to several presidents. Through reorganization, President Eisenhower formed the Department of Health, Education, and Welfare (HED); President Kennedy gave the chairman of the Civil Service Commission the lead role in establishing government-wide personnel policies; President Johnson built the Department of Transportation (DOT), the Department of Housing and Urban Development (HUD), and the Office of Economic Opportunity (OEO); and President Nixon reorganized

the Bureau of the Budget (BOB) into the Office of Management and Budget (OMB) in 1970 (Waterman 46), and created the Environmental Protection Agency (EPA) through reorganizing environmental duties from different organizations (Whitaker 43).

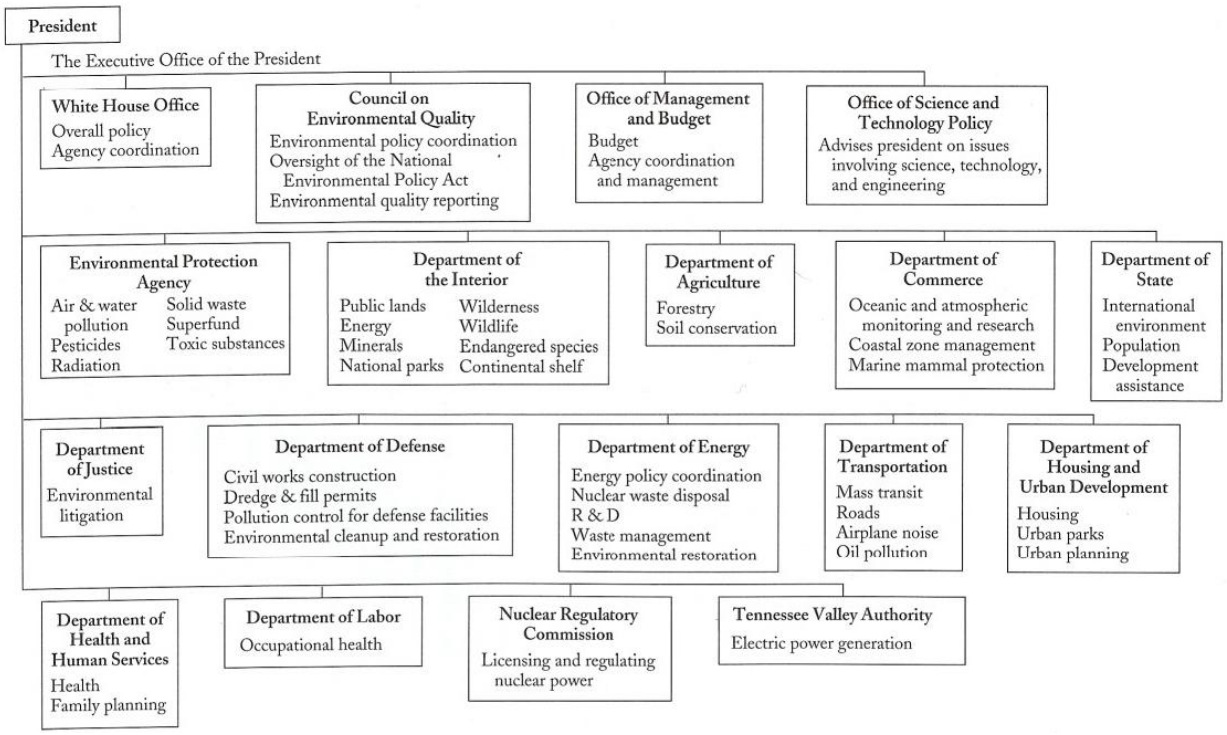
The President plays a dominant role in environmental protection. He regulates the EPA by appointing the EPA Administrator. The President's understanding of environmental protection determines this appointment. Normally, he supports individuals who agree with his policy positions and share his political philosophy, or have the same interests as he does, and even someone who is loyal to him (Waterman 23). The EPA Administrator can help the President enlarge public support through better environmental protection and helping the President to set environmental laws. Since the nature of the U.S. government is that of "rule by the people," Americans view the U.S. presidency as a popular office capable of making the government responsive to democratic needs. Because environmental quality concerns all Americans, the public expects to have strong environmental leadership from the White House and the President normally shows a special interest in environmental issues to strengthen his public support. Therefore, the President sometimes appoints leaders from environmental organizations as EPA officials.

The President can influence the EPA and environmental protection in different ways. He can set a new environmental agenda through writing executive orders, bringing different issues to public attention, defining the terms of public debate and rallying public opinion and constituency support with major speeches, press conferences, and media events. For instance, President Clinton put environmental justice on his environmental agenda by writing an executive order. The President can also conduct a Presidential Legislative Initiative, or vetoes by supporting legislation in Congress and brokering compromises or he can formulate regulations through devoting presidential staff and other resources to particular issues, mobilizing expertise inside and outside of the government, and consulting widely with interest groups and members of Congress in designing and proposing legislation. Finally, the

President can use his powers to oversee and control the bureaucracy of the regulatory process in various ways to influence the implementation of environmental laws (Vig 104). For instance, the President can control what the EPA wants to do through budgetary approval from the Office of Management and Budget (OMB) and regulatory reforms. Regulatory reforms also direct the OMB to review the proposal of environmental regulations from the EPA and set methods like Cost-Benefit-Analysis to evaluate regulations. The President relies on Congress to approve his nomination of federal officers, to enact legislation and to provide funding to carry out all activities of the federal government. The President can generally remove EPA officials at his discretion, while Congress could curtail and constrain the President's authority over the EPA officers by statute. The influence of the President can be strengthened when the President's party has a majority in both the Senate and the House.

Additionally, environmental issues in the EPA interact with other agencies or departments in the federal government, such as the Executive Branch Agencies with Environmental Responsibilities (figure 7). Cooperation and sharing responsibilities lie between the EPA and other federal agencies. The EPA and other agencies share regulatory or research roles and therefore cooperate in dealing with lots of problems. For instance, The Environmental Protection Agency, the Food and Drug Administration (FDA), the Occupational Safety and Health Administration (OSHA), and the Consumer Product Safety Commission (CPSC) all regulate chemicals or products that pose risks through a variety of exposures. In reacting to evidence of dioxin risks from paper products and manufacturing, the EPA and the FDA have shared responsibilities. The FDA investigates consumer risks from paper products, and the EPA regulates discharges from the pulp and paper industry. Agencies also work jointly to respond to emerging issues. An example is global warming. Since concerns over the effects of greenhouse gases grew rapidly in the late 1980s and early 1990s, several agencies within the U.S. government had to work closely together to increase research on global warming, to explore policies for stabilizing emissions, to anticipate the effects of global

Figure 7. Executive Branch Agencies with Environmental Responsibilities



Sources: United States. Council on Environmental Quality, *Environmental Quality: Sixteenth Annual Report of the Council on Environmental Quality*. Washington, D.C.: GPO, 1987. Print.

warming, to evaluate strategies for adapting to them, and to join in international research (Nitze 11). Agencies like the Department of Agriculture or the Department of the Interior also manage programs that affect environmental quality. The Bureau of Land Management (BLM) of the Interior Department manages one-third of the nation's land, on which it oversees such activities as mining, cattle grazing, and water resource management (Fiorino, *Making* 78). Finally, such agencies as the Department of Defense or the Department of Energy (DOE) both deal with problems concerning the EPA's regulatory authority, for instance, hazardous waste clean-ups at nuclear weapons sites (Fiorino, *Making* 77).

2.2.2. Congress and the EPA

As we know, Congress consists of the Senate and the House of Representatives, each of which has a collection of specialized committees and subcommittees. These committees and subcommittees share authority over the EPA programs. Some of them have jurisdiction based on a specific subject area and others have the authority of overseeing and investigating, therefore providing invaluable informational services to Congress (Fiorino, *Making* 63). As shown in table 3, in the Senate, the Committee on the Environment and Public Works is the key committee involved in environmental issues, having authority for all programs except pesticides, while other committees oversee specific issues. In the House, no single committee's jurisdiction is as broad as that of Environment and Public Works in the Senate. Five House committees principally oversee the EPA programs. They are the House Energy and Commerce Committee with Subcommittees on Health and the Environment and in Transportation and Hazardous Materials, the House Merchant Marine and Fisheries Committee with Subcommittees on Environment and Natural Resources, the House Public Works and Transportation Committee with a Subcommittee on Water Resources and Environment, the House Agriculture Committee, and the Committee on Science, Space, and Technology. In addition, in both the House and the Senate, the Subcommittee on Veterans'

Affairs (VA), Housing and Urban Development (HUD) and Independent Agencies from Appropriations has budgetary authority over the EPA, and its environmental programs (Fiorino, *Making* 65). Sometimes duties overlap between these committees. For instance, three committees share authority over groundwater in the House and the Appropriations committees in both the House and the Senate have budgetary authority over the EPA and environmental programs. The agriculture committees in both the House and the Senate oversee the pesticides policy. They tend to be more heavily oriented toward farmer and grower interests than the environmental effects of pesticide use. Besides the major overseeing committees, many others also have an impact on specific issues. For example, the Senate Governmental Affairs and House Governmental Operations committees have broad jurisdiction over all issues, including the environment (Ibid.).

Congress has the constitutional responsibility both to pass and to oversee the implementation and enforcement of environmental laws and regulations from the EPA. Through the setting up of nine major federal environmental statutes and four additional ones, Congress created for the EPA the legal framework to protect the environment, set federal environmental goals and defined both what should be done and under what kind of conditions. Congress also oversees the EPA as it implements and enforces environmental laws and regulations mainly through budget setting, hearings, reports to Congress, letters from members of Congress asking for information or answers to questions, the appropriations process, Senate confirmation of presidential appointees and audits by the General Accounting Office (GAO) (Fiorino, *Making* 63). Each year, Congress approves budgets submitted by the administration in January or February, including the EPA's budget. It uses the General Accounting Office to study issues and offer recommendations and takes hearings as an oversight tool, through which EPA officials often have to testify before congressional committees. Congress even writes letters to answer routine requests from constituents, to chastise the agency for decisions it has made (or failed to make), and to stress

Table 3

Principal Congressional Oversight Committee and Subcommittees (1993)

Committee/Subcommittee	*Jurisdiction/Issues*
	Senate
Environment and Public Works	
Subcommittees:	
Superfund, Recycling, Solid Waste Management	RCRA, CERCLA, federal facilities
Toxic Substances, Research and Development	TSCA, NEPA, research
Clean Water, Fisheries, and Wildlife	CWA, SDWA, ocean dumping
Clean Air and Nuclear Regulation	CAA, indoor air, nuclear
Agriculture, Nutrition, and Forestry	
Subcommittee on Agricultural Research, Conservation, Forestry, and General Legislation	FIFRA, pesticides, forestry
Energy and Natural Resources	
Subcommittee on Water and Power	Groundwater, irrigation
Appropriations	
Subcommittee on VA, HUD, and Independent Agencies	EPA budget
	House
Energy and Commerce	
Subcommittees:	
Health and the Environment	CAA, environment, SDWA, FFDCA
Transportation and Hazardous Materials	RCRA, TSCA, CERCLA
Merchant Marine and Fisheries	
Subcommittee on Environment and Natural Resources	Coastal, marine, endangered species, NEPA
Public Works and Transportation	
Subcommittee on Water Resources and Environment	Water pollution control, CWA
Agriculture	
Subcommittees:	FIFRA, pesticides
Department Operations and Nutrition	
Environment, Credit, and Rural Development	
Science, Space, and Technology	
Subcommittee on Technology, Environment, and Aviation	Environmental research, biotechnology
Appropriations	
Subcommittee on VA, HUD, and Independent Agencies	EPA budget

Sources: Fiorino, Daniel J. *Making Environmental Policy*. Los Angeles: U of California P, 1995. 66. Print.

its members' preferences on pending issues (Florino, *Making* 67). For example, about 200 different issues were testified by EPA officials from 1984 to 1986 and about half of them dealt with specific issues such as asbestos and acid rain (Wegman 19-24). Furthermore, Congress members can even use their positions to set agendas for or draw attention to their own issues. They can point to a tendency by Congress to dramatize problems, call for solutions from the EPA, impose strict (usually unachievable) requirements for action on the EPA, and even criticize the EPA for failing to eliminate the problem (Fiorino, *Making* 69).

2.2.3. Courts

The American judicial system is supported by administrative law and judicial review. Administrative law is generally concentrated on the control of the Government. Wade and Forsyth have indicated that:

> The primary purpose of administrative law […] is to keep the powers of government within their legal bounds, so as to protect the citizen against their abuse. The powerful engines of authority must be prevented from running amok (5).

Judicial review provides legal controls on administrative actions. It is a legal procedure, allowing individuals or groups to challenge in court the way that Ministers, government departments and agencies like the EPA delegate legislation and make decisions. Because administrative decision-making bodies are often controlled by larger governmental units, their decisions can be reviewed by a court of general jurisdiction under some principle of judicial review based upon due process in the United States. Since 1971, administrative agencies and reviewing courts have collaborated in the area of environmental decision-making (Mahood 142). Thus, litigation is a vehicle to fight for self-interests, and can influence environmental decisions from the EPA through a series of lawsuits before courts (Ibid.). Courts have become permanent players in the EPA decision-making (O'Leary,

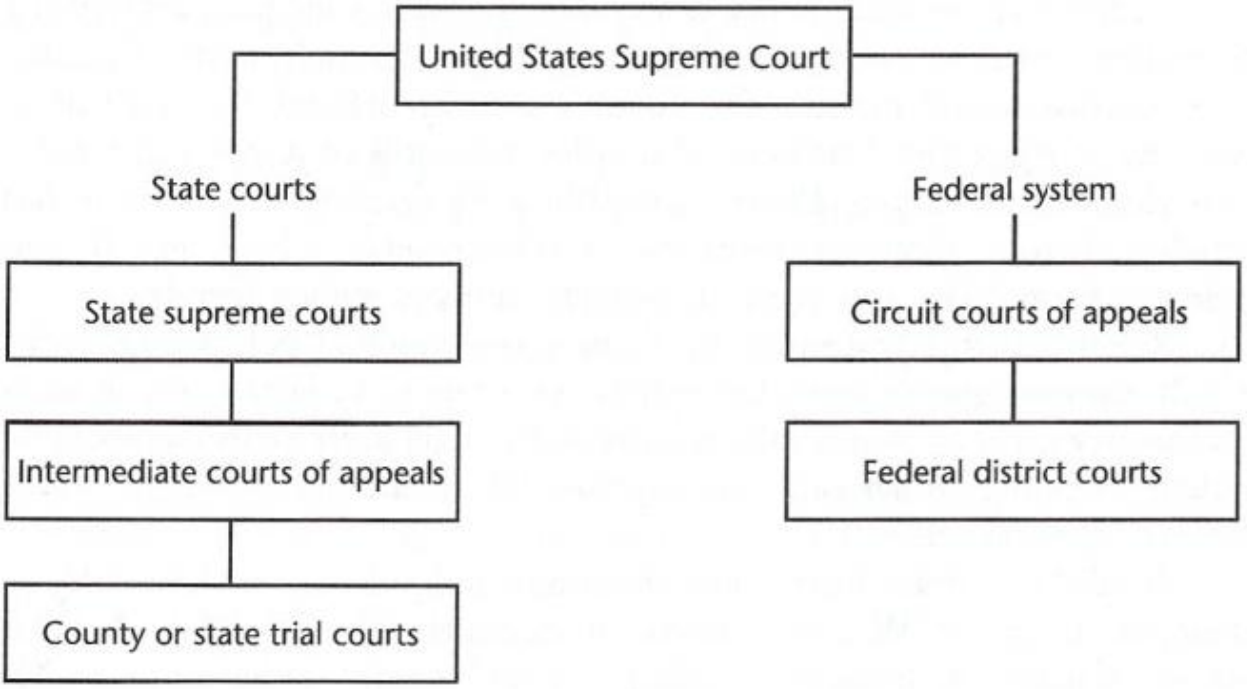
"Environmental" 170), especially for groups lacking access to the legislative or the executive branch. The judicial precedent is set when a case is decided. Therefore, courts become both the last device for solving conflicts, and a preferred forum for many interest groups and citizens. As a preferred forum, courts also receive congressional support. The Freedom of Information Act (FOIA), signed by President Johnson in 1966, allowed for the full or partial disclosure of previously unreleased information and documents controlled by the United States Government to the public, thus bestowing upon Americans the right of knowing environmental facts (Ulbert 101). The Emergency Planning and Community Right-to-Know Act (EPCRA) in 1986 further required that federal, State and local governments, Tribes, and industry should provide the public and local communities with information about potential toxic and hazardous chemicals present in their communities. Both Acts have helped to increase the public's knowledge and access to information on the use and release of chemicals into the environment at individual facilities. Thus, individuals or interest groups from regulated companies, trade associations, non-profit environmental organizations or citizen's groups are enabled to participate in making environmental decisions through applying the rights to appeal environmental cases to courts (Kurian 204). Many of the major environmental statutes like the CWA also give citizens, businesses, and interest groups the right to sue federal, State, or local public agencies and polluters. In addition, some interest groups believe that informal modes of environmental decision-making weaken their organization's position and stature and diminish the importance of environmental issues (O'Leary, "Environmental" 154). Courts are recognized as being the deciding body. By dealing with environmental conflicts, courts can order a small fine for polluters or probation and overturn certain environmental standards. It is estimated that 80 percent of major EPA regulations have been contested in court over the past several decades (Kraft, *Environmental Policy and Politics* 135).

There are three levels of federal courts: the Supreme Court at the top, followed by a dual

court of State courts and Federal system (see figure 8). When legal disputes go to court, most are resolved in State courts. They usually start in trial courts, and then can appeal to an intermediate court and further appeal to the State Supreme Court if a party involved is not satisfied with the outcome at the intermediate level (O'Leary, "Environmental" 154). Because many environmental cases concern interpretations of federal statutes or the Constitution or violations of standards and administrative rules, they usually begin in the federal district courts and can appeal to Circuit courts of appeal. However, some statutes provide for the appeal of decisions of federal regulatory agencies directly to the federal courts of appeal, instead of through district courts (Vig and Kraft 155). An unsatisfactory outcome in a circuit court may be appealed in the Supreme Court, but normally, less than ten percent of the requests for Supreme Court review are granted (O'Leary, "Environmental" 155). When environmental issues reach the Supreme Court, the Court can have a sweeping effect on environmental decision-making (Fiorino, *Making* 80). Territories outside of the United States, such as the District of Columbia or American Samoa, often have courts established under federal or territorial law which substitute for a State court system. State court judges are elected to four or six-year terms in nonpartisan, countywide elections, while federal court judges are appointed by the President and confirmed by the Senate, and enjoy lifetime appointments. The institutional organization of the federal courts differs from that of the President or Congress. There are 179 judges in thirteen federal circuit courts of appeals and 649 judges in federal district courts. They can greatly influence the EPA's policies and regulation through the appeals process. They can make decisions on issues only when litigants bring cases to them for decisions (Fiorino, *Making* 80).

There are three typical court cases involving the enforcement of environmental laws. The first is the case of the State or federal government suing an industry for not complying with the law. For instance, the EPA could prosecute a steel plant for violating the terms of its permit to discharge pollutants into a waterway. The remedy in such cases can be either

Figure 8. The Dual Court System



Source: O'Leary, Rosemary. "Environmental Policy in Court." *Environmental Policy: New Directions for the Twenty-First Century*. Ed. Norman J. Vig and Michael E. Kraft. Washington: CQ, 2003. 155. Print.

administrative or criminal fines, and in extraordinary cases, criminal prison terms. In these cases the government assumes an environmentally protective position in court and the industry usually defends itself by basing its arguments on the economic situation of its community, and the need for local employment (Paehlke, *Conservation* 133). The second case is when an industry sues government, arguing that the enforcement agency has exceeded its authority in making regulations to enforce environmental laws. Many of the regulations that the EPA and other agencies set could be directly appealed to the federal courts of appeal rather than to the district trial courts. Therefore, many cases initiated by industry begin at the appellate level because of the manner in which the law is written (Ibid.). The third case is when an environmental organization sues a government agency, because the group believes that the government is not taking its responsibility to enforce the laws seriously or is itself doing something that is against one or more of the laws designed to protect the environment or conserve natural resources (Ibid.). In such cases, the government agency will represent the economic interest in making developmental arguments against the environmental organization that is arguing in favor of conservation or environmental protection. In addition, it is also possible for environmental organizations to directly sue an industry that is in violation of a pollution control law. These cases were common during the 1980s, when various environmental organizations came to believe that the federal government was not interested in actively enforcing many of the pollution control laws. There are also examples of inter-governmental environmental cases. The EPA has prosecuted municipal governments for not conforming to the requirements of their sewage discharge permits. Reversing roles, States have been known to sue federal agencies. There have even been some incidents of two agencies in the federal government becoming involved in litigation with each other, as when the EPA sued the Tennessee Valley Administration for polluting the air with its numerous coal-fired electric generating plants (Alexander and Fairbridge 213).

Courts can shape the EPA in many ways. The first way is through setting or reshaping the

EPA's priorities. Courts decide which issues will get attention, and "Compliance with court orders has become the EPA's top priority" (O'Leary, "Impact" 561). For instance, a 1984 decision ordered the EPA to set effluent guidelines (technology-based discharge standards) for toxic pollutants under the Clean Water Act (CWA) (Fiorino, *Making* 83). This ruling committed the "EPA to a ten-year effort to establish effluent guidelines for many categories of dischargers" (Ibid.). The second way in which courts can shape the EPA is through redefining the relations between the EPA and other agencies (Ibid.). In 1984, for instance, a federal district court ordered the DOE to apply for EPA permits, when the CWA and the Resource Conservation and Recovery Act (RCRA) applied to operations at the Department of Energy (DOE)'s facilities (Ibid.). Another court ruling changed the delicate relations between the EPA and the OMB under E.O. 12291 when the judge held that the OMB review could not legally cause the EPA to miss a court-ordered deadline in *EDF v. Thomas* in 1986. Since this ruling, the OMB has been more careful about holding up rules (Ibid.). Court deadlines give the EPA leverage in negotiations with the OMB. The third way is through defining the analytical basis for the EPA (N. Miller, *Environmental Politics: Stakeholders* 167). For instance, a court remanded of an EPA regulation banning most uses of asbestos in the United States (Weisskopf, "Court" A19). In this case, the U.S. Court of Appeals for the Fifth Circuit found that the EPA had failed to meet the Toxic Substances Control Act (TSCA)'s "unreasonable risk" standard in issuing the asbestos ban, partly because the EPA had not sufficiently evaluated the risks posed by possible substitutes for asbestos (Ibid.). The court did not attach importance to the EPA's arguments regarding the ban's qualitative benefits and concluded that the EPA had failed to show that a near-total ban on asbestos was the least burdensome way to protect the public against unreasonable risk (Ibid.). The EPA was required by the court to base its regulation almost entirely on evidence of the quantitative risks of asbestos (Ibid.). Moreover, courts can subjectively shape the EPA by determining who does or does not have standing, or the right to sue; by deciding which cases

are ripe for review; by their choice of standard or review; by interpreting environmental statutes and the Constitution; by the remedies they choose (a punitive fine for polluters or probation) and by resolving environmental conflicts (O'Leary, "Impact" 561-562). The Supreme Court also can influence the EPA through the cases it chooses to hear; the limits the EPA decisions play in other branches of government; and the restriction the EPA decisions place on the States (Kamieniecki 137). However, environmental decisions from courts are decided by the state of the law, by the courts' environment, by justices' values, as well as by group interaction on the bench (O'Leary, "Environmental" 171). The precedent and rules for interpreting statutes can determine the state of law. Mass public opinion, litigants and interest groups, congressional expansion or narrowing of jurisdiction and presidential appointments can create different environments for courts. Justices may have different leanings towards liberal, moderate or conservative values or fall somewhere in between. Even individual justices can, at times, influence others (Ibid.). Thus, EPA environmental decisions that are developed, expanded, narrowed, and clarified in courts affect the air Americans breathe, the water they drink, and the food they eat (Ibid.).

2.2.4. Interest Groups

Interest groups are private organizations that seek to influence political decisions. As Jeffrey Berry writes, "They empower people by organizing those citizens with similar interests and expressing those interests to policymakers" (Berry 15). They protect their members' interests and offer some benefits to their members. Toward environmental issues, they are mainly represented by two parties: one is business interest groups, which include industry groups and trade associations including professional associations like the coal-industry, and the American Medical Association; the other is environmental organizations. Different interest groups have different interests and engage in different environmental issues. They may both have well-defined political agendas, and the financial resources necessary to

exert broad influence on the political and regulatory process. Interest groups work as a bridge for connecting citizens to government. They represent some people's opinions, and influence other people's. They play an important role on environmental decisions of agenda-setting, policy formation, federal budgeting, and the implementation process.

Interest groups play an important role in making environmental decisions in the American two-party system. The American political system closely links them to both the Democratic and the Republican parties. The United States moved from an agrarian economy characterized by trading and small firms to an economy dominated financially by huge, diversified, multi-national firms that possess significant wealth and political influence. American government also shifted from promoting economic growth by laissez-faire (government should intervene as little as possible in the direction of economic affairs) to enhancing selected industries, for instance, the railroads, oil companies, defense, and nuclear power (Kamieniecki 17-18). During this economic development, business was granted a privileged position in American economy and society. Due to the importance of big business in the economy, the government has grown accustomed to protecting and promoting business interests with the excuse of promoting efficiency, economic growth, job expansion, and reliance on domestic energy supplies or other equally positive social goals (Kraft and Kamieniecki, "Analyzing" 5). Since economic growth is the focus of each election for both the Democratic and the Republican Parties, presidential candidates and their political advisers understand the importance of party-affiliated interest groups in constructing successful electoral coalitions (Tichenor 201-204). Through connecting interest groups, presidents can also build supportive coalitions for their policies, because organized interests can effectively expand support for the President's agenda in Congress and other areas along with political parties (Ibid.). In addition, both Democrats and Republicans are linked to interest groups, and they nurture interest group coalitions that will help their candidates win an office or election. It is true, "Whether observed in the electoral or lobbying arenas, a

significant portion of the interest group community reflects ideological positions, takes stands on the issues of the day, or represents constituencies whose orientations are at least compatible with one of the two major parties" (Peterson, "Interest"). Interest group relationships with congressional members and federal bureaucrats are likely to be longer-lasting and more reliable than those with White House officials. The reason may be that White House officials are not as stable as Congress members due to the easier changing of administrations, and that gaining access to Congress and federal agencies is easier than gaining access to the White House for a lobbyist (Tichenor 200). As Paul C. Light put it, "There are 535 opportunities in Congress and only one in the White House. Where would you put your effort" (Ibid.)? Therefore, interest groups generally prefer to do more lobbying in Congress.

There is a strong conflict between business interest groups and environmental organizations regarding increased concern about environmental degradation. Business interest groups think that environmentalists exaggerate problems to alarm Americans to raise money for their cause, and to shape public policy to advance their own interests; while environmentalists "challenge these indicators of progress as both misleading and insufficient to address the problems" (Kraft and Kamieniecki, "Analyzing" 5). Environmental protection has made significant progress since the 1970s in improving air and water quality, conserving energy, preserving natural resources, and encouraging the safe transportation and disposal of chemical waste (Ibid.). Many companies have "spent billions of dollars to retool their plants and manufacturing processes in order to control emissions, save energy, and safely dispose of toxic waste" (Ibid.). Business interest groups think many environmental laws and regulations actually undermine public welfare because of their economic inefficiency, and they have been lobbying intensively at both national and State levels for policy reforms to reduce regulatory burdens and costs and to improve efficiency (Kraft and Kamieniecki, "Analyzing" 4), while environmental organizations mobilize the pubic by encouraging them

to take care of their lives and the environment. Business interest groups have more access to government and influence in policy making due to the financial resources at their disposal and the ideas of economic rationality, while environmental organizations rarely have the same access and resources necessary to organize an effective opposition to such business efforts (Kraft and Kamieniecki, "Analyzing" 21).

Environmental Organizations

Preservation, conservationism and environmentalism shape the priorities of environmental organizations. Early conservationists led by Gifford Pinchot with support from Theodore Roosevelt emphasized the wise management of natural resources for continued human use; while preservationists like John Muir argued for the preservation of nature for its own sake (Dunlap and Mertig, "Evolution" 2-5). Despite the conflict between conservation and preservation, their joint efforts led to legislation establishing early national parks and the creation of the U.S. Forest Service. They also led to conservation organizations like the Sierra Club and the National Audubon Society (Ibid.). Later, the Franklin Roosevelt Administration emphasized the mitigation of resource problems, especially flood control and soil conservation, and the development of resources such as hydro-energy through the Tennessee Valley Authority which erected nine dams and a string of massive electricity-generating stations (Ibid.). Roosevelt's New Deal enacted a number of natural resource measures. The Soil Conservation Service, founded in 1935, applied scientific practices to reduce the erosion of agricultural land. The 1937 Pittman-Robertson Act recognized the depletion of animal life, and established a fund for State fish and wildlife programs from the proceeds of federal taxes on hunting and fishing equipment ("Predecessor"). During the 1950s, more emphasis was placed on the preservation of areas of natural beauty and wilderness for public enjoyment, and it was strongly supported by older environmental organizations such as Sierra Club (Dunlap and Mertig, "Evolution" 2). Affluent life in the 1960s enabled more well-educated young Americans born in the Baby Boom generation to

generate concerns about public health. They advocated protecting the environment and joined environmental organizations. Environmentalism reached its peak in 1970 with the first national celebration of Earth Day and has been of major concern to Americans ever since (Dunlap and Mertig, "Evolution" 8). Today, for instance, reform environmentalism defines its discourse:

> - natural systems are the basis of all organic existence, including that of humans;
> - humankind is an element within natural ecosystems, and hence human survival is linked to ecosystem survival;
> - ethical human actions (actions that promote the good life for humankind) by default promote action toward all life on Earth in an ecologically responsible manner;
> - proper use of natural science can guide the relationship between humanity and its natural environment (Brulle 173-174).

In the early 1970s, many new environmental organizations, both lobbying and non-lobbying, were founded with widespread public support (see table 4). Since then the influence of American environmental organizations has evolved significantly as the larger scientific, economic, institutional, and political contexts of environmental policy have changed (Kraft, "Influence" 141). Different local, State, regional, national, and international environmental organizations have different agendas, different interests and different goals for environmental protection. For instance, the EDF tried to stop the ecological damage caused by toxic substances like DDT through spraying in 1967, while the U.S. Fish and Wildlife Service has launched major species and habitat preservation programs that have reduced the rate at which extinction and other environmental losses would otherwise have occurred (Graff 14). However, these organizations have worked together to protect the environment through scientific research, lawsuits, lobbying, and expanding on their beliefs.

Table 4

Membership Trends of Selected National Environmental Organizations

Group	Website	Year Founded	1970	1980	1990	2000	Budget (in millions)
Sierra Club	www.sierraclub.org	1892	113,000	181,000	630,000	642,000	$69.3
National Audubon Society	www.audubon.org	1905	148,000	400,000	600,000	550,000	$58.4
National Parks Conservation Assoc.	www.npca.org	1919	45,000	31,000	100,000	450,000	$16.6
Izaak Walton League	www.iwla.org	1922	54,000	52,000	50,000	50,000	$3.5
Wilderness Society	www.tws.org	1935	54,000	45,000	350,000	200,000	$14.3
National Wildlife Federation[a]	www.nwf.org	1936	3,100,000	4,000,000	5,800,000	4,000,000	$114.8
Defenders of Wildlife	www.defenders.org	1947	13,000	50,000	80,000	425,000	$17.1
Nature Conservancy	www.tnc.org	1951	22,000	80,000	600,000	1,029,000	$88.5
World Wildlife Fund—U.S.[b]	www.worldwildlife.org	1961	n/a	n/a	940,000	1,200,000	$89.7
Environmental Defense (Fund)	www.edf.org	1967	11,000	46,000	200,000	300,000	$32.2
Friends of the Earth	www.foe.org	1969	6,000	25,000	9,000	10,000	$4.3
Environmental Action[c]		1970	10,000	20,000	23,000	0	0
League of Conservation Voters	www.lcv.org	1970	n/a	35,000	25,000	40,000	$3.1
Natural Resources Defense Council	www.nrdc.org	1970	n/a	40,000	150,000	400,000	$33.7
Greenpeace USA	www.greenpeaceusa.org	1971	n/a	250,000	2,350,000	350,000	$13.5

Source: Annual reports; *Guidestar.org*; Ronald Shaiko, *Voices and Echoes for the Environment* (New York: Columbia University Press, 1999): 40–43; Tom Knudsen, "Environment, Inc." *Sacramento Bee,* April 22, 2001; *Public Interest Profiles* (Washington, D.C.: CQ Press); *Encyclopedia of Associations* (Detroit: Gale Research).

Note: Membership figures are rounded and are best-guess approximations based on conflicting data, nonuniform reporting dates, and rather elastic definitions as to what constitutes a "member" or regular contributor. Budget data are for operating expenses for the most recent fiscal year available. n/a = not available.

[a]Until the mid-1990s the NWF made a distinction between "regular" dues-paying members (around 997,000 in 1990) and "associate" members, mostly millions of schoolchildren enrolled in NWF educational programs. It now conflates the two, but based on past ratios there are probably around 900,000 regular dues-paying members in 2000, maybe fewer.

[b]The World Wildlife Fund did not begin to actively recruit dues-paying members until the early 1980s. It had 175,000 members in 1985.

[c]Environmental Action ceased operations in 1996.

Source: Bosso, Christopher J., and Deborah Lynn Guber. "Boundaries and Contours of American Environmental Activusm." Ed. Norman J. Vig and Michael E. Kraft. 7th ed. Washington: CQ, 2003. 93. Print.

Large national environmental organizations, such as the Sierra Club, the National Audubon Society, or the National Wildlife Federation, played a critical role in the development and evolution of the environmental movement, with several million dues-paying members, multimillion-dollar budgets, corps of full-time lobbyists, lawyers, and scientists, and widespread public support (Mitchell, Mertig and Dunlap 12). Besides activities like education campaigns, research, and litigation, their main common characteristic is engaging in open lobbying for the development and implementation of environmental legislation (Ibid.).

Sierra Club

The Sierra Club was founded by John Muir in 1892 and is the oldest organization preserving and expanding national parks, wildlife, and wilderness areas. It began with the idea that wilderness areas should be conserved and reserved for recreational purposes, and with the purposes: "to explore, enjoy, and render accessible the mountain regions of the American Pacific Coast; to publish authentic information about their beauty and biodiversity; to enlist the support and cooperation of the people and the government in preserving the forests and other natural features of the Sierra Nevada Mountains" (Wulff). In 1951, the Sierra Club consequently extended the purpose to "explore, enjoy and preserve the Sierra Nevada and other scenic resources of the United States" (Ibid.). Today, it has become an international organization whose goal has been enlarged: "to explore, enjoy, and protect the wild places of the earth; to practice and promote the responsible use of the earth's ecosystems and resources; to educate and enlist humanity to protect and restore the quality of the natural and human environment; and to use all lawful means to carry out these objectives" (Ibid.).

The Sierra Club was behind the creation of the National Park Service and the National Forest Service, as well as the formation of individual recreation areas, such as Yosemite, Sequoia, Mount Rainer, Olympic, Redwood, and Glacier National Parks (Ibid.). It opposes

strip mining, the use of DDT, offshore oil drilling, hazardous wastes, and most other forms of chemical or aesthetic pollution (Ibid.). It has sponsored a series of nature outings and publishes a monthly bulletin, as well as numerous books about ecology and the environment. Today, it has also broadened its program to deal with problems in the urban environment, such as sprawl and runaway growth; to preserve America's wild lands and tropical forests; to curb commercial logging on public lands; to protect water from factory farms; to end the toxic threat; overpopulation; energy and global warming, and Human Rights and the environment (Ibid.). The Sierra Club believes a healthy environment will support a healthy economy (Ibid.).

The Sierra Club pursues its goals through public education, lobbying to influence elected and appointed officials, litigation of government agencies and private companies, publications and participating in elections by endorsing candidates with strong environmental records (Ibid.). The Sierra Club has enjoyed long-established close relations with the governing class. From the early days when the Club consisted of mainly upper and middle-class mountaineers and conservationists, it has built a network of supporters in Washington as well as at local levels (Ibid.). Lobbying through outings with politicians has been an integral part of the Club's work. By taking politicians to endangered wild lands, the Sierra Club has shown them the issues and convinced them to take action (Ibid.). The creation of Yosemite, Sequoia, Mount Rainer, and Glacier National Parks and the enlargement of Grand Teton National Monument were all achievements of this type of lobbying. Like other environmental organizations, the Sierra Club also chooses to unite or work together with others, because each has only limited resources to confront an enormous range of issues (Landy, Roberts, and Thomas 24).

There are also some non-lobbying or radical environmental organizations in the United States. They do not pursue access to or alliances with the White House, and thus refuse governmental funding. Greenpeace is one of them, but certain organizations, like Earth First!,

even conducts violent actions.

Greenpeace USA

Greenpeace is actually the name of the boat which the Don't Make a Wave Committee used to protest against nuclear testing in 1971. The Don't Make a Wave Committee was formed in 1969, both by a number of peace activists who were motivated by their vision of a green and peaceful world, and by former Sierra Club members who were against nuclear testing ("Our").

Greenpeace has the goal "to end the nuclear lifecycle once and for all" (Ibid.). It wants to bring an end to nuclear production and use, to all nuclear weapon production, modernization and deployment (Ibid.). Although Greenpeace members still make up the minority of environmental activists who have the same opinion, they believe that a few individuals can make a difference (Ibid.). Greenpeace also engages itself in oceans, forests, global warming, genetic engineering, and toxics (Ibid.). It tries to protect whales all over the world, and to create a ban on factory trawlers, to preserve the remaining ancient forests around the world. They also advocate the elimination of polyvinyl chloride (PVC) plastic (one of the largest sources of persistent organic pollutants in the environment today), support clean energy solutions and fight global warming (Ibid.).

Greenpeace's core values are to bear witness to environmental destruction in a peaceful, non-violent manner (Ibid.). Its members try to influence the public on how they see their world through showing pictures or live videos they have taken on major news channels like CBS, ABC, and NBC. They also adopt radical, immediate, uncompromising, and urgent action towards activities damaging the environment and environmental change (Ibid.). The scene of Greenpeace members working in the open sea against casting for whales can easily be seen on the internet, TV and in newspapers. Since Greenpeace does not pursue access to or alliances with the White House and does not accept donations from governments or corporations, it has become "an independent campaign organization, which uses non-violent

creative confrontation to expose global environmental problems and to force solutions that are essential to a green and peaceful future" ("Internships").

Main Tactics Influencing Environmental Decision-making from Interest Groups

Since the EPA is charged with the implementation of congressional statutes, there are lots of opportunities to influence policy. For instance, the Clean Air Act Amendments of 1990s required the EPA to develop hundreds of rules and regulations. The formulation of these rules and regulations was subject to extensive lobbying by diverse interest groups (Furlong, "Business" 157). In addition, different interest groups with different strategies are involved in the EPA's decisions (Ibid.).

Interest groups mainly use direct lobbying in terms of resources, campaign contributions by providing money and organizational support and voter turnout (Wayne, "Interest" 70). They also support research centers and "Think Tanks," organize protests, seek litigation in Court, and conduct public education (Ibid.). In addition, both business interest groups and environmental organizations heavily rely on scientific credibility, which plays a vital role in persuading the public and policymakers to take action (Kraft, "Influence" 143). To get access to scientific information, many interest groups have very capable technical members of staff (Ibid.). People from these interest groups have often served on technical advisory bodies for the EPA and other agencies (Fiorino, *Making* 93). Their advice and analysis are often "sought by Congress, especially by members with an environmental agenda" (Ibid.). Environmental organizations try to keep in close contact with scientists and environmental research institutions, and some members work in research institutions. They use the scientific data in court trials and support these research institutions in showing scientific evidence of environmental hazards and keeping watch over the state of the environment for lobbying or educational purposes. Moreover, some leading environmentalists have served inside government. For instance, EPA Administrator, Russell Train, was the founder of both the Wildlife Leadership Foundation which established effective wildlife parks and reserves, and

the African Wildlife Foundation (AWF) which aided Africans in developing the capacity to manage their own wildlife resources. The Assistant Administrator for air under President Carter was a senior Nature Resource Defense Council (NRDC) official, and the Assistant Administrator for policy under President Clinton was the legislative director for the Sierra Club before coming to the EPA (Ibid.).

Table 5 shows all of the registrants by the type of interest groups reporting that lobby in both the legislative and executive branches. It indicates a large discrepancy in lobbying by business interests and other groups. Business interests, which include the categories "business" and "Trade Association," represent over 94 percent of all the organization registrants on environmental issues, while only about three percent of registrants are public interest groups, which include environmental organizations. Table 6 shows the client distribution, which also has a similar outcome.

Interest groups mostly employ the same tactics. Because not all interests represent or enjoy equal resources as they seek to influence environmental decision-making, many interest groups have a dominant role in American politics (Kamieniecki 13). Therefore, as weak parties, environmental organizations mostly rely on the media and protests to mobilize public opinion, and thus influence environmental decision-making. Protesting is an effective measure, because environmental legislations typically depend on the level of protests. This was proved by the first Earth Day Celebration in 1970, and the campaign that the Nature Resource Defend Council (NRDC) mounted in 1989, that led to the EPA outlawing the use of the pesticide Alar. Alar was used on apples to extend their storage life. Possible cancer risks from residues of Alar on apples had previously been demonstrated, but the EPA thought that the evidence was not insufficient to stop its use. The NRDC found higher risks than the EPA had done through commissioning an analysis of the health risks of Alar. It was publicized and thus caused a big public opinion protest. In the end, the use of Alar was stopped (Fiorino, *Making* 94). As the Washington Post observed, NRDC "achieved more in a few days than all

Table 5

Registrants for Environmental Issues by Organizational Type

Organizational type	Frequency	Percent	Cumulative percent
Business[1]	1842	83.3	83.3
Trade association[2]	241	10.9	94.1
Union	12	0.5	94.6
Public-interest group	69	3.1	97.8
Other[3]	49	2.2	100.0
Total	2213	100.0	100.0

[1] Business groups include individual corporations and professional lobbying firms.
[2] Trade associations also include professional associations such as the American Medical Association (AMA).
[3] "Other" represents the remainder of registrants such as government entities, universities, and unknown classifications.

Source: Furlong, Scott R. "Business and the Environment: Influencing Agency Policymaking." *Business and Environmental Policy: Corporate Interests in the American Political System.* Ed. Michael E. Kraft and Sheldon Kamieniecki. Cambridge: MIT P, 2007. 175. Print.

Table 6

Client for Environmental Issues by Organizational Type

Organizational type	Frequency	Percent	Cumulative percent
Business	1,171	52.9	52.9
Trade association[1]	451	20.4	73.3
Union	20	0.9	74.2
Public-interest group	140	6.3	80.6
Other[2]	430	19.4	100.0
Total	2,212	100.0	100.0

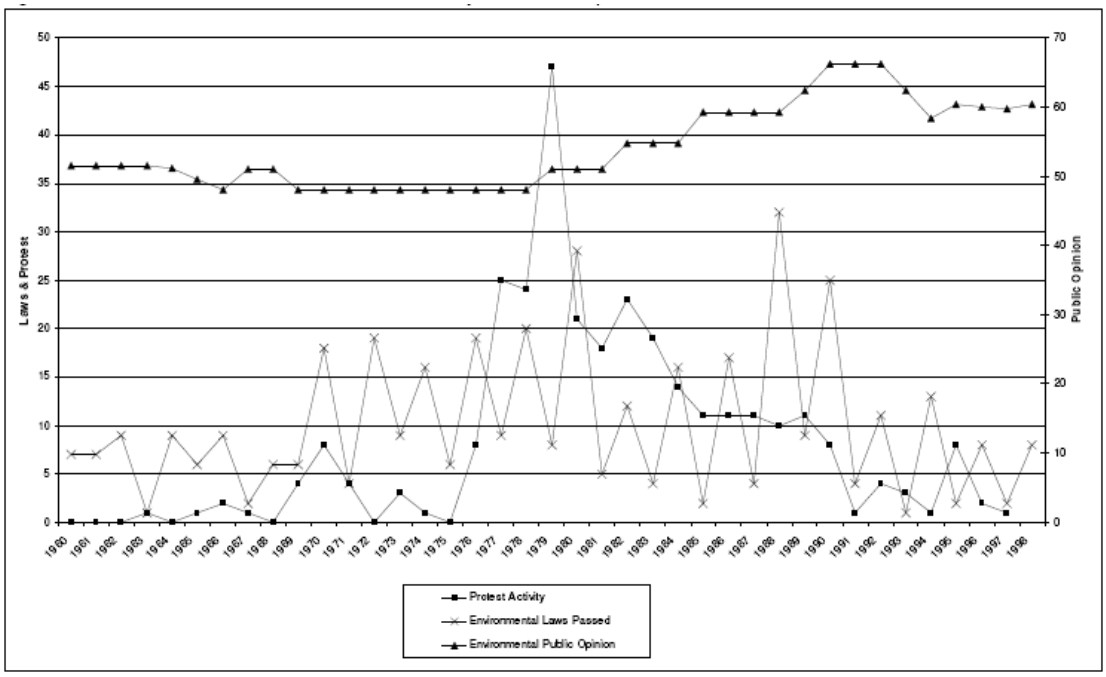
[1] Trade associations also include professional associations such as the AMA.
[2] "Other" represents the remainder of registrants such as government entities, universities, and unknown classifications.

Source: Furlong, Scott R. "Business and the Environment: Influencing Agency Policymaking." *Business and Environmental Policy: Corporate Interests in the American Political System.* Ed. Michael E. Kraft and Sheldon Kamieniecki. Cambridge: MIT P, 2007. 176. Print.

of the lobbying and litigating since Alar was found to cause cancer in laboratory animals in 1985" (Weisskopf, "From" A1). Figure 9 also shows that environmental laws passed are often accompanied by protect activities.

However, the prevailing interest group system can be changed by the President "Presidents have the institutional means, and have demonstrated the willingness, to influence interest groups to their own advantage" (Peterson 237). With this power, presidents could use their considerable resources to punish opponents and reward allies in the interest group community (Ibid.). They could encourage the creation of new organized interests and long-standing allies by offering more funding and support to them (Ginsburg and Shefter, "Presidency" 336).

Figure 9. Environmental Laws Passed, Protest Activity and Public Opinion, 1960-1998



Source: Agnone, Jon. "Amplifying Public Opinion: The Policy Impact of the U.S. Environmental Movement." *Policyagendas.org*. Policy Agendas Project: University of Texas at Austin Department of Government, June 2007. Web. 6 June 2008.

3

The Historical Context:

Shaping the EPA, and its Changing Roles

The Environmental Protection Agency is primarily a regulatory and enforcement agency. Under the Administrative Procedure Act, the National Environmental Policy Act (NEPA), and the U.S. Constitution, the EPA has delegated authority from Congress and mainly administers nine major federal environmental statutes. They are the Clean Air Act (CAA), the Clean Water Act (CWA); the Comprehensive Environmental Response, Compensation, and Liability Act (Superfund); the Marine Protection, Research, and Sanctuaries Act; the Resource Conservation and Recovery Act; the Federal Insecticide, Fungicide, and Rodenticide; the Toxic Substances Control Act; the Noise Control Act, and the Safe Drinking Water Act (Collin 59). It serves the administration and is overseen by multiple committees and subcommittees from Congress; it has a mostly open door for appeals to the courts; and it is influenced by interest groups.

Like most regulatory agencies, the EPA was created to remedy the negative effects of industry. Focusing on the effects of industrial pollution such as inadequate sanitation, polluted drinking water, and toxic fumes, it was founded to protect the environment. However, the Agency became the end product of a long process of balancing law, economics, politics and social needs by the President, Congress, courts and interest groups from the Nixon to the Clinton Administration. This resulted in inconsistency in protecting the federal environment and in its three typical roles: as a single-minded advocate of protecting human health (from 1970 to 1973) during the Nixon-Ford Administration, a deregulator of

environmental regulation (from 1981 to 1983) during the Reagan Administration, and a rational advocate of protecting human health and environment (from 1994 to 2000) during the Clinton Administration.

3.1. The EPA under the Nixon-Ford Administration

Following a decade of growing public concern about pollution, the EPA was created through the reorganization of several administrative functions in December 1970. Due to strong public support on environmental protection in early 1970s, environmental statutes set the legal framework for the EPA in protecting the environment, and thus defined the EPA as a single-minded advocate. The EPA itself also performed as a single-minded advocate of protecting public health and the environment with little regard to cost. This role was characterized by its strong enforcement of environmental laws and its high regard to public interests under Administrator Ruckelshaus and its independence of regulatory decision-making under Administrator Train. In this way, the EPA established its credibility and won public support. The strong environmental protection at the beginning of the 1970s was also enabled by President Nixon and the consensus among the President, Congress and courts to protect the environment. However, President Nixon abandoned this cause in 1974 due to the energy crisis.

3.1.1. Environmental Understanding from President Nixon

Richard Nixon came to the White House in 1969, and resigned on August 8th 1974 due to the Watergate scandal. During his tenure, he established a broad environmental program. However, President Nixon was opposed to environmental laws at the beginning of his presidency. He became President in 1969, and it was not until 1970 that his Administration approved a single State implementation plan of the Air Quality Act (AQA) of 1967 (Esposito 298).

Due to a dramatic increase in the number of television networks and local news air time

during the 1960s and the 1970s, more and more environmental catastrophes were shown on television and reported on the radio. One example was the Union crude oil explosion in January 1969 near Santa Barbara (California) that spread black gunk, dead birds and fish along two hundred miles of beach (Reeves 163). Another was when the Cuyahoga River in Ohio was so severely polluted, it caught fire (Anastas and Warner 5). The news about environmental catastrophes warned Americans that such dangers could threaten their homes, livelihood or families. This encouraged the public to come together to eradicate this threat. It became a "historic opportunity to dramatize the nation's need for a better and more livable environment" (Flippen, *Nixon* 25). On April 22nd 1970, the first Earth Day was celebrated on campuses and elsewhere throughout the country. It was one of the most remarkable protests against poor environmental protection, and showed the Nixon Administration the strong public support for this cause. As the environmental movement flourished at the end of the 1960s, President Nixon became ever-more aware of the rapidly rising concern for the environment (Train 79), understood the strength of this environmental movement, and realized that environmentalism was becoming a political force (Flippen, *Nixon* 67). He even felt the public had demanded very strong leadership on the environment, and recognized this as a way to cultivate a new constituency (Ibid.).

Despite Nixon's opposition, Congress passed the National Environmental Policy Act with bipartisan support in 1969 (Hogan A6). After this, President Nixon clearly knew that the Republican Party and his Administration could not afford to be seen as anti-environmentalists (Reeves 261). He paid special attention to two characteristics of environmental issues at that time: one was that environmental protection appeared to be the perfect issue to unite Americans (Flippen, *Conservative* 67). The other was that public opinion and public support would be easily gained through leading this environmental movement and it would help him to compete for the presidency in 1972. Therefore, he decided to use and lead with environmental issues in national politics. President Nixon was

the first President to include environmental protection in his inaugural address. He declared, "In rebuilding our cities and improving our rural areas; in protecting our environment and enhancing the quality of life; in all these and more, we will and must press urgently forward" (*Inaugural* 135). As he signed the National Environmental Policy Act (NEPA) on the first day of 1970, he declared the 1970s as the "Environmental Decade," by saying "it is particularly fitting that my first official act of the new decade is to approve the National Environmental Policy Act — the 1970's absolutely must be the years when America pays its debt to the past by rec1aiming the purity of the air, its waters and our living environment. It is literally now or never" (Whitaker 50). The purpose of NEPA is "to…encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the nation..." (Jensen, Christensen, Jr. and Bourgeron 15) It required that federal agencies prepare environmental impact statements before taking major action (Conlan 88). It also established a Council on Environmental Quality in the Executive Office of the President, which provided essential policy analysis and advice on a broad range of environmental problems, developed many environmental initiatives and offered guidance in the execution of the National Environmental Policy Act (Ibid.). On January 22nd 1970, President Nixon devoted one-third of his State of the Union Address to environmental concerns and mentioned both air and water pollution problems and broad issues of quality of life brought about by population growth and demographic shifts. He addressed something more than normal American values — freedom, liberty and the pursuit of happiness, stating that "clean air, clean water, open spaces should once again be the birthright of every American" (Cahn 30). On February 10th 1970, he emphasized the importance of strengthening federal programs of water and air pollution through launching a 37-point environmental action program (Lewis). From 1970 to 1972, President Nixon and Democratic-controlled Congress

created the Environmental Protection Agency, and set up environmental statutes including the Clean Air Act, the Clean Water Act, and the Marine Mammal Protection Act. President Nixon also called for stronger wildlife protection in his State of the Union speech in 1973, and signed the species legislation into law in December 1973.

Although President Nixon tried to lead with environmental issues in national politics, he favored economic growth over environmental protection. In private, with his assistant John Ehrlichman, who considered himself an environmentalist, the President remarked: "In a flat choice between smoke and jobs, we're for jobs... But just keep me out of trouble on environmental issues" (Reeves 163). The Safe Drinking Water Act of 1974 was opposed by the Nixon Administration as unwarranted instructions on State prerogatives (Conlan 88). To win conservative support, a federal control system designed to regulate the EPA was initiated in 1971.

In March 1970, President Nixon dictated a memo about organizing his own time, which he clearly recognized as a valuable commodity. He listed various domestic issues in which he wanted to be kept directly involved, such as crime, school integration, and the economy, but he consciously excluded the environment from that group (Reeves 172-173). He said, "I consider this [the environment] to be important, [but] I don't want to be bothered with the details. Just see that the job is done" (Ibid.). His attitude toward environmental issues enabled the EPA to be independent.

3.1.2. Environmental Understanding from Administrator Ruckelshaus and Administrator Train

William Doyle Ruckelshaus was the first EPA Agency Administrator, serving from December 1970 to April 1973. He graduated from Harvard Law School in 1960, and became Deputy Attorney General of Indiana. He was a member of the Indiana House of Representatives and its majority leader from 1967 to 1969. Before he came to the EPA, he

was Assistant Attorney General in charge of the Civil Division for the U.S. Department of Justice. Due to his experience in law, Ruckelshaus believed that pollution was caused primarily by "callous and unthinking businesses whose behavior could be changed only through federal regulation and laws" (Kraft and Kamieniecki, "Analyzing" 11), and the federal regulation relied on strong enforcement. He asked each American to take responsibility for and the action in protecting the environment. In his first speech to the National Press Club, Ruckelshaus said that "An environmental ethic is needed. Each of us must begin to realize our own relationship to the environment. Each of us must begin to measure the impact of our own decisions and actions on the quality of air, water, and soil of this nation" (Wisman).

Russell Errol Train was the second EPA Administrator serving from September 1973 to January 1977. He graduated from Columbia University Law School in 1948, and founded the African Wildlife Leadership Foundation in 1961. From 1965 to 1969, he was the President of the Conservation Foundation. Before he came to the EPA, he was the Chairman of the Council on Environmental Quality. In 1991, he won the presidential Medal of Freedom from President George H. Bush as one of most influential environmentalists. For Train, conserving the environment means, "the 'rational' use of the earth's resources to produce the highest quality of living for mankind" (Train 56). Environmental protection "would be to do a better job of development while increasingly taking environmental factors into account in our planning. This does not mean you won't build a dam, but it means when you build a dam you carefully select the site, and you build multiple-use factors into your plan and design" (U.S. Cong. S, *Hearings before* 6-7). In his mind, environmental quality is a far more complex and subtle objective (Train 81), involving the development of new attitudes and new values. He believes that Americans must make the investments and achieve the technological breakthroughs necessary to clean up their environment, and develop a new perception of man's relationship to nature (Ibid.). They must learn to control their numbers, develop

effective land-use policies, and find new measures of public and private success which emphasize quality rather than mere quantity (Ibid.). As EPA Administrator, Train tried to keep the EPA independent.

3.1.3. Presidential Election of 1972

During the Presidential election of 1972, President Nixon had a potential competitor from Democratic Party. He was Edmund Muskie, a Senator from Maine, who was nominated Vice-President with the Democratic Presidential candidate Hubert Humphrey in 1968. Senator Muskie was an environmentalist, and a leading campaigner for new and stronger measures to curb pollution and provide a cleaner environment. His environmental stance was characterized by the following four points: firstly, nationally uniform ambient standards; secondly, no balancing between health risks and economic costs; thirdly, rigid deadlines to be adhered to regardless of economic and technological obstacles; and fourthly, uniform emissions limits for new sources, even in areas without current pollution problems (Landy, Roberts, and Thomas 30). Senator Muskie pushed through air pollution legislation in 1963. He also introduced an air quality bill in 1967. The bill authorized the Secretary of the Department of Health, Education, and Welfare (HEW) to establish enforceable, uniform control levels for specific pollutants in various industries, and required the States to establish air quality standards on the basis of scientific studies to be carried out by the federal government (C. Bailey 130). The bill also required the federal government to set emission standards for automobiles, and required the registration of all fuel additives used in interstate commerce with HEW (Ibid.). The bill even asked the federal government to review and approve both the standards and enforcement plans (Esposito 270-271). During hearings in March and early April of 1970, Senator Muskie defended the 1967 Act, and blamed the Nixon Administration for failing to implement it adequately (Jones 202). He further characterized the EPA as “quasi-independent,” and set laws giving EPA administrators the

power to make key decisions (Landy, Roberts, and Thomas 30). The competition on environmental protection between Republican President Nixon and Democratic Senator Muskie was clear. As President Nixon tried to strengthen his environmental credentials, Senator Muskie responded by advocating strongly pro-environmental positions that he had opposed just months before (Lippman and Hansen 228). The situation at that time was written in the report in Ralph Nader's *Vanishing Air*,

> In 1970, for the first time, Americans rallied around the cause of preserving the environment. But their enormous enthusiasm has yet to find direction or true leadership. The two men with the greatest obligation to chart new passages—Richard Nixon and Edmund Muskie—instead dusted off old maps, and are now attempting, each in his own way, to steer the same course which has brought us to our present peril (Johns 204).

As early as March 1972, the White House was focusing on the coming presidential election. The Chairman of the Council on Environmental Quality, Russell Train, received a memo from President Nixon's Cabinet Secretary Whitaker. In this memo, Whitaker urged Train "to devote substantial portions of [his] calendar to increasing public awareness of what the administration has accomplished in the environmental area," and "to reach a wider audience" through "utilizing the media, both national and regional" (Train 110-111). Whitaker also asked Train to pick the areas where he wanted to go and build a media-oriented trip around it with his name and reputation (Ibid.). The 1972 election motivated President Nixon to keep leading with environmental issues in national politics.

3.1.4. The EPA under Administrator William Ruckelshaus

During Ruckelshaus' tenure, he made the EPA a single-minded advocate through accomplishing strong enforcement actions and emphasizing public interests on environmental regulation. Following the approval of the reorganization plans, the EPA

became the focal point for the implementation and enforcement of environmental laws (Train 101). Administrator Ruckelshaus revised the EPA's structure of 1970, and created programs that enacted NEPA, the Federal Water Pollution Control Act Amendment (FWPCA) of 1970, the Clean Water Act (CWA) of 1972 and the Federal Environmental Pesticide Control Act of 1972. Federal Command-and-Control was set as a basic model for environmental regulations. It was mainly employed through the implementation of the Clean Air Act Amendments of 1970, and the Clean Water Act of 1972. To enlarge public support and establish the EPA's credibility, Administrator Ruckelshaus banned the general use of the pesticide DDT, and created strong enforcement actions against industrial polluters.

Implementing the Clean Air Act Amendments of 1970

The CAA amendment of 1970 established the Command-and-Control environmental regulation, set ambitious target dates for emission control, and required pollution to be reduced to a given level regardless of economic cost or technological limitations (Opie 455). Since 1971, the EPA has defined how to enforce the Clean Air Act amendments of 1970 effectively. It introduced both the concepts of "thresholds," above which exposure to pollution would not be permitted, and "margins of safety" to compensate for long-term, low-level exposure or where effects were suspected of being not scientifically established (Reitze, *Air* 163). During the implementation of the CAA, the EPA focused on designating more Air Quality Control Regions and establishing National Air Quality Standards in 1971.

In order to implement the CAA, more Air Quality Control Regions (AQCRs) needed to be designated. An AQCR is a basic geographic area for air quality planning and can be within a single State or can include portions of two more States (Reitze, *Stationary* 43). Rules regarding an AQCR were created by the Air Quality Act (AQA) of 1967. Under the act, the Secretary of the Department of Health, Education, and Welfare (HEW) had 18 months to designate AQCRs after consulting with the appropriate State and local authorities. In June 1968, the National Air Pollution Control Administration within the HEW named 32 of the

most severely polluted areas of the country as the initial regions. Most of them were major cities, except for Steubenville, Ohio, a rural area that was highly polluted by industrial sources and had a topography that led to poor atmospheric dispersion (Ibid.). Under the CAA of 1970, the EPA started to designate more AQCRs. One of them was the Four Corners Interstate Air Quality Control Region designated on February 9th 1971. As described in the *Federal Register*:

> The Four Corners Interstate Air Quality Control Region includes Apache, Coconino, Navajo, Yavapai Counties in Arizona; Archuleta, Dolores, La Plata, Montezuma, and San Juan Counties in Colorado; San Juan County, in its entirety; portion of Rio Arriba County lying west (Pacific slope) of the Continental Divide; all portions of the Jicarilla Apache Indian Reservation lying east (Atlantic slope) of the Continental Divide; portion of Sandoval County lying west (Pacific slope) of the Continental Divide; portion of McKinley County lying west (Pacific slope) of the Continental Divide; portion of Valencia County lying within the Zuni and Ramah Navajo Indian Reservations, in the State of New Mexico; and Emery, Garfield, Grand, Iron, Kane, San Juan, Washington, and Wayne Counties in the State of Utah ("EPA Designates").

By the 1970s, an additional 25 control regions were designated, thus creating 57 AQCRs in total (Reitze, *Stationary* 43). In 1998, the number increased to 247 (Ibid.).

The second step in implementing the CAA was to set National Air Quality Standards via the Air Quality Act. The AQA was signed into law by President Johnson on November 21st 1967 (Reitze, *Air* 15). At that time, the AQA directed that ambient air quality standards be established throughout the nation, but did not require uniform national standards (Ibid.). The CAA amendments of 1970 established a dual set of primary and secondary standards, and

authorized the EPA to promulgate national ambient air quality standards (NAAQS) (Hays 223). Both primary and secondary standards set pollution limits at levels that protect public health and provide an adequate margin of safety. Primary air quality standards were to protect public health, while secondary standards were to be set at levels that would protect a variety of social conditions outlined as effects on materials, agricultural production, ecosystems, and aesthetics such as visibility (Ibid.). In establishing programs, the EPA confined the application of the 1970 Act to six "criteria pollutants." That means national air quality standards focused on six common classes of pollutants, sulfur oxides, particulate matter, carbon monoxide, photochemical oxidants, nitrogen oxides and hydrocarbons. Severely hazardous air pollutants, such as benzene and asbestos, were separately regulated (Opie 455). On April 30th 1971, the EPA set both primary and secondary National Ambient Air Quality Standards (NAAQS) for these "criteria pollutants." Administrator Ruckelshaus commented, "These are tough standards, they are based on investigations conducted at the outer limits of our capability to measure connections between levels of pollution and effects on man" ("EPA Sets National"). In addition, each State had to adopt a State Implementation Plan (SIP) providing for the "implementation, maintenance, and enforcement" of the primary standard in each AQCR (Reitze, *Air* 16). States were also required to plan to meet the standards by 1975. For stationary sources (a fixed-site producer of pollution, mainly power plants, refineries, and other facilities using industrial combustion processes), the States were expected to set emission limits to be enforced by civil and criminal sanctions (Reitze, *Stationary* 11).

The EPA Banning of DDT in 1972

DDT was developed as the first synthetic pesticide in early World War II. It was initially used with great effect to combat malaria, typhus, and the other insect-borne human diseases among both military and civilian populations. It came into wide agricultural and commercial usage in the United States in the late 1940s (Collin 300-301). Until 1970, approximately

675,000 tons had been applied domestically (Ibid.). The peak year for use in the United States was 1959, when nearly 80 million pounds were applied. DDT not only killed the target pests but often killed beneficial organisms as well (Ibid.). In 1962, Rachel Carson painted a scenario in which birds had all been poisoned by insecticides in her book *Silent Spring* (R. Bailey, "Silent"). The government set restrictions on the use of DDT in 1969, and DDT usage steadily declined to about 13 million pounds in 1971 due to other factors, including increased insect resistance and development of more effective alternative pesticides ("DDT").

After seven months of agency hearings, the EPA's administrative law judge Edmund Sweeney concluded that "DDT is not a carcinogenic hazard to man... DDT is not a mutagenic or teratogenic hazard to man... the use of DDT under the regulations involved here does not have a deleterious effect on freshwater fish, estuarine organisms, wild birds or other wildlife" (Milloy, "DDT"). However, Administrator Ruckelshaus said he was convinced that the continued massive use of DDT posed unacceptable risks to the environment and potential harm to human health ("DDT"). On June 14th 1972, Administrator Ruckelshaus cancelled nearly all of the remaining Federal registrations of DDT products, except public health, quarantine, and a few minor crop uses and export of the material (Ibid.). The effective date was delayed until December 1972 to permit an orderly transition to substitute pesticides, including the joint development with the U.S. Department of Agriculture of a special program to instruct farmers on safe use of substitutes (Ibid.). Administrator Ruckelshaus banned DDT because he wanted to win public support for the Nixon Administration.

Ruckelshaus' Strong Enforcement

Administrator Ruckelshaus believed that swift and strong enforcement action against massive pollution sources like big cities and big companies would demonstrate the EPA's willingness "to take on the large institutions in society which hadn't been paying attention to the environment" ("Drawing"). He tried to build a partnership with State and local

governments, through making the EPA a "work in concert — in a relationship of mutual concern and responsibility" with regard to State and local pollution control initiatives (Ibid.), taking enforcement initiatives only when municipal and State governments found themselves stuck in "the logjam of inertia" (Ibid.). But when he took enforcement actions, they were to have major effects. He knew that the EPA's effectiveness depended on forcing the most intransigent businesses to take responsibility for the waste they produced (Ibid.), and that the bigger the targets, the more credibility he could amass. "During its first sixty days (from late 1970 to early 1971), the EPA brought five times as many enforcement actions as the agencies it inherited had brought during any similar period" (Hoffman, *From Heresy* 65).

He announced his enforcement decision through a speech in a meeting attended by U.S. big city mayors before the annual Congress of Cities, stressing that the EPA was at that moment serving the cities of Atlanta, Detroit, and Cleveland with formal "180 day notices" that directed them to stop violating federally sponsored State water quality standards (Ibid.). To frighten polluters into submission, he relied on public support and chose to use the court's "big stick" as a last resort. As his General Counsel, John Quarles, later wrote:

> Ruckelshaus believed in the strength of public opinion and public support...He did not seek support for his actions in the established structures of political power. He turned instead directly to the press and to the public opinion…The results were impressive, especially during the period of public clamor for environmental reform (Quarles, *Cleaning up* 36).

Since the 1970s were a special era for environment protection, Administrator Ruckelshaus followed the trend and led public opinion to deal with problems he met. With the help of the public, the EPA urged and supervised the States to take greater responsibility to develop and enforce plans and bring firms into compliance with those standards. The EPA also became directly involved in the enforcement process. For instance, one of Union Carbide's plants seemed to be primarily responsible for blackening the skies in nearby

Parkersburg, West Virginia, and Marietta, Ohio. For years, State and federal officials had failed to make the company begin a clean-up. Administrator Ruckelshaus had the EPA send Union Carbide a lengthy letter detailing the history of the case. The EPA threatened Union Carbide with legal action within ten days unless the company agreed to comply with the recommendations of a previous interstate conference that had considered the problem. To frighten Union Carbide into submission, Administrator Ruckelshaus immediately released the letter to the press. On the day of the deadline, the company announced its willingness to comply (Quarles, *Cleaning up* 37-57).

Administrator Ruckelshaus frequently used the Court as a "big stick". In its first year, the EPA referred 152 pollution cases (most of them water related) to the Department of Justice for prosecution ("Drawing"), including: the Reserve Mining Corporation sued for dumping taconite filings into Lake Superior; the cities of Atlanta, Detroit, and Cleveland for illegal sewage discharges; the U.S. Plywood-Champion Papers for polluting the Ohio River; and the ITT Rayonier for dumping pulp waste products into Puget Sound (Sansom 24-25, 43). In March 1972, five companies, Chrysler, Ford, General Motors, International Harvester, and Volvo, asked for a one-year suspension of the 1975 hydrocarbon and carbon monoxide standards based on law. On May 12th, Administrator William Ruckelshaus denied the application (Whitaker 97).

The EPA won fame and public support through its strong enforcement, because Administrator Ruckelshaus sometimes made environmental decisions through political involvement instead of establishing legitimate procedures based on science. In the case of banning DDT, EPA hearing Judge Edmund Sweeney concluded that DDT should not be banned, pointing out that "DDT is not a carcinogenic, mutagenic, or teratogenic hazard to man. The uses of DDT under the regulations involved here do not have a deleterious effect on freshwater fish, estuarine organisms, wild birds, or other wildlife. The evidence in this proceeding supports the conclusion that there is a present need for the essential uses of

DDT." (J. Lehr and K. Lehr 6-24) In order to protect public interests and win their support, Administrator Ruckelshaus disregarded the hearings and banned DDT by himself without reading the hearing transcript (J. Edwards 208-209). Seven years later, he wrote to Allan Grant (American Farm Bureau Federation president) on April 26th 1979, stating: "Decisions by the government involving the uses of toxic substances are political with a small 'p.' The ultimate judgment remains political" (J. Lehr and K. Lehr 6-24). He refused to release EPA data to the U.S. Department of Agriculture, under the Federal Freedom of Information Act. He also refused to file Environmental Impact Statements regarding the anticipated environmental effects of the DDT ban (Ibid.).

Administrator Ruckelshaus sensed that agency credibility was essential to the EPA, which seeks to determine how much health or environmental protection the public should buy and at what price (Ruckelshaus, "Remarks"). He convinced the public that the Nixon Administration was serious about environmental protection (Landy, Roberts, and Thomas 35), thus establishing the credibility of the EPA and building strong public support for President Nixon. Administrator Ruckelshaus might have frightened the White House through his strong enforcement, President Nixon, however, supported him. Because he was facing Democratic Senator Muskie and the coming presidency election, he needed to win over the public through a positive image of the EPA that was created by hauling polluters into court. Because of Musikie's unexpected failure to capture the Democratic nomination, President Nixon was the only reliable candidate to lead environmental protection. Unsurprisingly, President Nixon triumphed in the 1972 election, which was one of the most one-sided in American history.

3.1.5. Energy Crisis and the Fading of Environmental Protection

Because the consumption of oil had been increasing since 1970 at an annual rate of more than a million barrels per day, the demand for oil surged. Between August 1972 and August

1973, the United States increased its crude oil imports direct from Arab nations from 0.38 million barrels per day to 1.1 million barrels per day ("EPA's"). In addition, it increased its imports of refined products which originated from Arab crude by about half a million barrels per day (Ibid.).

On October 17th 1973, the Organization of Producing and Exporting Countries (OPEC) announced its embargo of oil exports to countries supporting Israel in the Yom Kippur War. The United States imported thirty percent of its oil from such countries, and the embargo applied to this percentage (A. Miller, "Energy"), sending the United Sates into an energy crisis. Within months, crude oil prices nearly quadrupled; gas prices jumped some forty percent, and lines of queuing motorists appeared in some parts of the U.S. (Conley). Although the embargo ended in March 1974, it proved to be the end of the era of cheap oil. The energy crisis ended the postwar economic boom and sent the economy into deep recession with higher and higher oil prices. Between 1973 and 1975, Gross National Product (GNP) fell six percent, and unemployment doubled to nine percent (Yergin 635). At that time, many opponents of environmental regulation appeared, and they typically argued that the cost of compliance with a given regulation far exceeded the benefits to be achieved and that the risks addressed by a regulation were overstated and did not justify the cost of compliance (Train 161). They even constantly charged environmental programs with costing jobs and causing inflation (Train 188). The petroleum industry immediately described the energy crisis as partly a result of restrictive environmental regulations and "pressure by environmental organizations" (Stern A1). Power-plant operators also blamed environmentalists for slowing the development of the nation's abundant domestic energy sources, particularly coal (Jones C12). The National Association of Manufacturers further demanded the "removal of arbitrary restrictions on the development of energy resources" (Hill 80). In addition, "Spokespeople for a wide range of business interests joined the debate with a chorus of requests to relax various environmental regulations in order to save energy.

To them, the energy crisis was an opportunity to beat back environmental advances" (Smith 26). By late 1973, the environment beat reporter for *The New York Times*, Gladwin Hill, observed, "From the industrial sector particularly has come a drumfire of suggestions that the energy shortage necessitates broad-gauge repudiation of environmental controls" (Ibid.).

The EPA budget was slashed from almost $2.38 billion in 1973 to $518 million in 1974, and it was kept at a similar level by President Ford in FY 1975 and FY 1976 (see figure 1). President Nixon further effectively subsidized higher cost imported oil, established the national speed limit to conserve energy, and advocated "Project Independence" to make the U.S. independent from imported oil by accelerating the development of domestic fuels (Yergin 615-617). He even created the Federal Energy Office (FEO) by writing Executive Order 11980, and appointed William Simon and John Sawhill to lead the FEO to effectively allocate scarce fuel supplies, to encourage consumer conservation, and to initiate a new look at American energy demands in the future. He further directed the Federal Energy Agency (FEA) to work with other Government agencies to prepare a comprehensive plan to achieve the goals of Project Independence, the capacity for energy self-sufficiency by 1980 (U.S. Cong. S, *Hearings, Reports* 149).

3.1.6. The EPA under Administrator Russell Train

In September 1973, Russell Train began to serve as the second EPA Administrator. Due to the energy crisis, the environmental honeymoon had come to an end. EPA programs were severely constrained by the budget shortage from the EPA in the remaining years of the Ford Administration. The conflict between environmental and energy objectives characterized the years ahead at the EPA, and environmental programs became the whipping boy for inflation and job losses even as the economy soured during the Ford Administration (Train 156). The EPA was constantly put on the defensive within the administration. Administrator Train tried to keep the EPA independent and uphold environmental standards.

Balancing the Demands of the Energy Crisis with Environmental Issues

The EPA faced environmental controversies caused by energy needs from coal, oil, natural gas, electricity, and nuclear sources, and their interface with the environment, especially the years after the oil crisis. Compliance dates for meeting environmental standards mandated by statute, particularly the CAA, were hit by the energy crisis, inflation, and the threatening economic downturn. Congress responded with an extensive set of laws and regulations (Yergin 615-617). As the nation failed to meet the 1975 deadline for attaining air quality standards, Congress extended the deadline and even began revising the CAA. For instance, the Energy Supply and Environmental Coordination Act of 1974 provided an extension until 1977 of the 1975 auto emission standards, and also gave the auto industry the right to petition for a one-year suspension of the 1977 hydrocarbon and carbon monoxide standards (Train 169). President Nixon took three actions to deal with the oil crisis: firstly, reducing the impact of environmental regulations on energy; secondly, reducing energy consumption; and thirdly, increasing energy production ("EPA's"). To reduce the impact of environmental regulations on energy, President Nixon switched energy consumption from oil to coal and thus the EPA had to make temporary adjustments on regulations, and worked on meeting energy needs for both President Nixon and President Ford (Train 163). To reduce energy consumption, the EPA organized various programs to save energy. These programs included increasing the number of small cars and aircraft passenger load factor, applying improved insulation and glass standards to new commercial buildings, and supporting construction of mass transit systems ("EPA's"). These programs also included reuse and recycling instead of extracting, such as recycling steel, aluminum, and paper, and publishing fuel economy data for most vehicle models sold in the U.S. (Ibid.). These programs further included designing systems where less automotive transport was necessary and where mass transit was convenient in order to attain energy savings in transportation, encouraging development of more efficient automotive power systems

through research funding (Ibid.), and especially subsidizing oil and the creation of a national speed limit at fifty-five miles per hour (Conlan 91). In addition, the EPA supported regulation of coal mining (enforcing strict mining and reducing damage) and legislation on natural gas deregulation (deregulate new natural gas prices, because under-pricing created incentives for excessive consumption and discouraged exploration for and production of natural gas) ("EPA's"). The EPA also supported legislation on deepwater ports (continually importing crude oil from some nations by ship and thus necessitating deepwater ports), and power plant sitting (providing a systematic method of certifying new power plants with a preconstruction review of all costs and benefits) to increase energy production (Ibid.). Moreover, the EPA made agreements on nationwide studies of electric power, steel, non-ferrous metals, oil refineries, chemicals, and paper and pulp in order to get up-to-date data on the cost of pollution control equipment and the effects of those costs on Gross National Product, inflation, the balance of payments, and employment (Train 161).

In July 1974, Administrator Train addressed the energy-environment nexus, through saying: "We should seize upon the energy crisis as a good excuse and a great opportunity for making some very fundamental changes that we ought to be making anyway for other reasons" (Train, "Quality" 1051), he declared that the energy crisis was in fact an opportunity to reduce waste and inefficiency, and to cut the annual energy growth rate from 5 to 2.5 percent, or lower by 1985 (Train 178). He stressed the EPA's actions on the average vehicle weight reduction with corresponding reductions in fuel use, standards setting for space heating, restrictions on commercial lighting (Ibid.). He also emphasized the development of more mass transit, recycling, and energy conversion from wastes (Ibid.). However, at that time, President Nixon tried to cut the control of pollution in order to achieve short term cost savings in energy (Ibid.). In a meeting with Energy Policy Office director, John Love, and EPA Administrator Train, President Nixon declared that it was necessary to "lower the emission limits" because the shortage of oil required greater use of sulfur oxide-

producing coal. However, Administrator Train objected (Flippen, *Conservative* 144). Administrator Train made the point that the standards were health standards. He demonstrated their relevance to such issues as emphysema, bronchial disorders, respiratory disease gene rally, cardiac conditions, and lung cancer, and pointed out that these adverse health effects would increase as emissions standards were lowered (Train 162). President Nixon commented that when he was young there were more cases of tuberculosis from cold houses than from most other causes (Ibid.). President Nixon proposed a package of thirteen amendments to the Clean Air Amendments of 1970, inc1uding the freezing of the auto emission interim 1975 standards through 1976 and 1977. At that time, there was no longer a consensus between President Nixon and Administrator Train. In June, Congress understood the situation and changed the auto emission laws (Whitaker 102). When Gerald Ford came to the White House, he took a different view on the conflict of environment protection against economic growth. He attacked the economy-versus-environment view in his prepared remarks in Portland with these words:

> I assure the people of the Northwest that I do not accept the dismal proposition that pollution is the inevitable price of prosperity nor that we must compromise the environment to gain economic growth. We cannot enrich our lives by impoverishing our land. We can raise both standard of living and the quality of life (Train 189).

Administrator Train emphasized that environmental expenditures were a relatively small factor in inflation at that time, and that their effect would remain small for the foreseeable future (Ibid.). He also stressed that environmental expenditures were no more inherently inflationary or non-productive than expenditures for national defense, law enforcement, health, or education (Ibid.). As he cited examples of the EPA's careful analytical work, he indicated that the pollution control expenditures were worth the expense and the resultant improved efficiency could simultaneously cut costs, conserve energy, and curb pollution,

thus helping America to reduce inflation as well as pollution (Ibid.). However, the reality was grim. Taxing energy met with enormous political resistance, and the head of the Federal Energy Administration was forced to resign following the backlash to his support for a five-cent-per-gallon gasoline tax (A. Miller, "Energy").

Under the Ford Administration, several major energy laws were passed. These included the creation of the Strategic Petroleum Reserve (SPR), and minimum efficiency regulations for automobiles (aiming for 20 miles per gallon in 1980 and 28 in 1985) and appliances (labeling of electrical appliances enabled consumers to make better choices) (Ibid.). On behalf of Secretary of State Henry Kissinger, President Ford also initiated several efforts aimed at fostering international cooperation among consumers, such as the creation of the International Energy Agency (IEA) to promote oil production and alternative energy sources (Ibid.). However, there was no quality change on environmental protection: the EPA budget remained low in 1975 and 1976, and the EPA workforce also decreased in 1976.

The EPA led by Administrator Train, further identified noise levels affecting health and welfare and proposed quieting jets. It also supported both the Toxic Substances Control Act (TSCA) and the National Pollutant Discharge Elimination System (NPDES), which were passed by Congress and signed by President Ford at the end of 1976. Administrator Train declared the TSCA to be "one of the most important pieces of 'preventive medicine' legislation…Its basic aim is to give public health far more of the weight that it deserves in the decisions by which chemicals are commercially made and marketed, by which they enter and spread throughout the human environment" (Monosson).

The EPA's Independent Decision-making

As a native of Washington D. C., Administrator Train had close personal relations with many members of Congress, and the career civil service. He had served as a staff member on two congressional committees, joined the Treasury Department and had then been appointed a U.S. Tax Court Judge. He became the President of the Conservation Foundation in 1965

and was appointed Under Secretary of the Interior in 1969. A year later, he was made Chairman of the Council on Environmental Quality (Quarles, *Cleaning up* 199). His personal mandate and relationships gave him significant independence from the rest of the executive branch. Since the White House gave the EPA Administrator final authority over the substance of all EPA regulations (Landy, Roberts, and Thomas 38), Administrator Train believed the agency fully lived up to its responsibilities to the public as an independent agency in the executive branch charged with protecting the nation's environment (Train, "E.P.-Eh?"). He said, "In my time at the EPA, I don't recall any regulatory decision that was driven by political considerations. More to the present point, never once, to my best recollection, did either the Nixon or Ford White House was ever try to tell me how to make a decision" (Ibid.). Although the White House was interested in helping him make decisions, he kept his ideas. On one occasion, when the EPA was about to issue regulations concerning lead in gasoline, Administrator Train received a call from Melvin Laird, later Secretary of Defense under President Ford, who told him the White House was receiving a lot of complaints from the oil and auto industries over the EPA's proposed action. Laird asked whether those industries had had a full opportunity to express their views to the EPA and he said they had. Laird then asked whether the EPA had taken those views fully into account. He said he had. And with that, Laird said that was all he needed to know. Later Administrator Train issued the planned regulations without any change (Ibid.). On another occasion, President Ford asked Administrator Train to meet with him and several members of the cabinet along with Alan Greenspan (then chair of the Council of Economic Advisers) to explain the substance of a decision covering auto-emission controls that Train planned to announce the next day. The country was in an economic recession at the time, and there was understandable concern over the economic impact of the proposed EPA actions. They had a full discussion, but that was all. Administrator Train proceeded to issue the regulation as planned (Train 168). Moreover, when President Nixon declared it necessary to "lower the

emission limits," Administrator Train objected (Flippen, *Conservative* 144). Administrator Train stated that he certainly never thought of himself as being disloyal to Nixon; he was simply doing the job he had been given. John Whitaker commented that he was "for the environment first, Nixon second" (Flippen, *Nixon* 52).

As Congress interfered in the case of Armco Steel, a crucial question arose: who controlled the EPA? Representative Henry Reuss (chairman of the Subcommittee on Conservation and Natural Resources) called Peter Flanagan (EPA representative, and Justice Department official) before his Subcommittee to explain the administration's actions and suggested that the EPA should enforce congressional requirements regardless of the administration's position on the matter. John Quarles (EPA spokesman) found himself caught in the long-standing struggle between presidential and congressional power (U.S. Cong. HR 226). As a regulator and enforcer of the law, the EPA was bound by congressional mandates. But as part of the executive branch, the agency also had responsibility to the President. Thus, Administrators Ruckelshaus and Train would determine whether Congress or the President was decisive on any particular issue. As President Nixon was shaken first by the Vietnam War and then by the Watergate Scandal, Congress became ascendant in environmental matters ("Drawing"). Congress' dominance in the environmental issue, together with Administrator Train's close ties with Congress enabled the EPA to remain independent. As a former senior EPA official explained:

> Train survived because Richard Nixon did not. He drew his support from the Air and Water Pollution Subcommittee of the Senate Public Works Committee in resisting the Nixon White House's campaign to dismantle environmental legislation. What had been to Ruckelshaus a voice of encouragement was to Train a lifeline (Sansom 25).

3.1.7. "Quality of Life" Review

Since technology limitation caused the uncertainty or incompleteness of scientific data, and the business community complained that the EPA was nothing more than an environmental advocate with unfair government muscle behind it (Opie 448), the Nixon Administration conducted the first of many efforts to find ways to control and manage the EPA. President Nixon instituted the first White House review of environmental and other regulations near the end of his first term. Under the idea of centralization, President Nixon reorganized the Bureau of the Budget from Executive Office of the President (EOP) into the Office of Management and Budget (OMB) in 1970 and centralized administrative control through the OMB. The essence of the OMB was supported both by the Paperwork Reduction Act, and by the Data Quality Act (Tozzi). The Paperwork Reduction Act controls the information that the government collects; while the Data Quality Act controls the information that the government releases (Ibid.). The OMB administers these two statutes. Thus, the flow of scientific and technical information into the EPA to support science policy efforts and the release of risk assessments would be impacted by the OMB (Ibid.). On May 21st 1971, President Nixon established the "Quality of Life" review regulations program, led by OMB Director George Schultz, to examine how environmental regulations could be designed with minimal adverse impact on industrial activity (Frankel and Orszag 986 note 19). This program focused solely on environmental regulations to minimize burdens on business (U.S. OMB, *Report* 2). On July 31st 1972, Nixon further strengthened his control over regulatory policy through Circular A-19, in which the OMB required agencies to submit all proposed testimonies, reports, and legislation for OMB approval prior to their transmission to Congress (Marcus, *Promise* 125). All proposed EPA regulations, thirty days before draft publication, along with an analysis of the rule's objectives, alternatives, and expected costs and benefits were to be submitted for scrutiny by other relevant agencies, with the review process to be coordinated by the OMB (Ibid.). Following review, the OMB would

send proposed regulations out to the affected agencies, receive their comments, and then develop an administration position (Tozzi). Although this program was nominally extended to all federal policy proposals involving consumer protection, public health and safety, and occupational health and safety, in practice the EPA remained the only agency routinely required to submit its proposals to the OMB (Bruff, "Presidential"). This program was expected to have a significant impact on the policies of other agencies, impose significant costs on non-federal sectors, or create additional demands on the federal budget, thus ensuring that economic development and fiscal concerns received due consideration in the process of writing regulations (Landy, Roberts, and Thomas 37). However, activities from this program were not particularly significant. In many cases, this review process delayed the promulgation of regulations for several months (Ibid.). Administrator Ruckelshaus also maintained that while he paid close attention to the recommendations of other agencies, the final decision in all cases was his alone (U.S. Cong. S, *Implementation* 243). In fact, the "Quality of Life" review program did pave the way for later and more substantial White House participation in the regulatory process (Frankel and Orszag 986 note 19). Since the creation of the OMB, each administration has set out its own requirements for OMB regulatory analysis and review in a series of executive orders (Fiorino, *Making* 71). In an address to Congress in October 1974, President Ford called for eliminating unnecessary rules and regulations in light of public concern on consumer costs and inflation (Anderson 482). In order to better reduce consumer costs and combat inflation, he also recommended the creation of a National Commission on Regulatory Reform to study the independent regulatory commissions, and stated that his administration would appraise the inflationary effects of rules emanating from executive branch agencies (Anderson 483). The Ford Administration retained the Quality of Life Review process with extending the scope of regulatory review by requiring all executive branch agencies to prepare "Inflationary Impact Statements" for major proposals in a process overseen by a new Council on Wage and Price

Stability ("CWPS") (Conley). Since the CWPS mainly scrutinized regulations by the Civil Aeronautics Board and the Interstate Commerce Commission with the goal of combating inflation, this process had little impact on the EPA (Percival 139-144). The Quality of Life Review continued through the Ford Administration (Quarles, "Termination").

3.1.8. Congress, Courts and the EPA

The pro-environment momentum of the 1960s resulted in the National Environmental Protection Act (NEPA) at the end of 1969, which was largely the work of Sen. Henry Jackson (D-Wash.) and Lynton Caldwell (R. Andrews 285). There was little debate in Congress, little input from pro-environment lobbyists among the NGOs, and few immediate complaints from the polluters (Opie 447). This pro-environment momentum represented by Earth Day continued into the early 1970s. At that time, protecting the environment became a trend in the United States. To be against environmental protection was to be against improving public health, and against the rights of pursuing a better life. Protecting the environment also became a double-edged sword, with Republican President Richard Nixon on one side and a bipartisan coalition led by Senator Edmund Muskie, Chairman of the Senate Public Works Committee, on the other. With this bipartisan coalition, Congress enacted, and the President signed, a wide body of environmental legislation. For instance, in 1970, under the leadership of Senator Musikie and Rep. Paul Rogers, major revisions of the CAA were enacted. The House version was passed by a vote of 375 to one in June and the Senate passed a more stringent bill in September by a vote of 73 to zero (Reitze, *Air* 16). Because Democrats dominated both the House and the Senate, Congress retained the initiative in formulating most environmental legislation in the 1970s (Vig and Kraft, "Environmental" 14).

Throughout American history, Congress has chosen to carry out its will by delegating authority to administrative agencies, since agencies were seen as the logical way to extend

the capacities of Congress and carry out its wishes in a non-political and expert manner (Fiorino, *Making* 36). The EPA is one of these administrative agencies. During the Nixon and Ford Presidencies, Democrat-controlled Congress set up environmental statutes and added important amendments to them to respond to the immediate environmental problems at hand. These environmental statutes included the Clean Air Act (CAA) of 1970, the Clean Water Act of 1972 (CWA), the Safe Drinking Water Act (SDWA), the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), the Resource Conservation and Recovery Act (RCRA), and the Toxic Substances Control Act (TSCA). They established a framework for preventing and controlling pollution of air, water and chemicals and defined the basic parameters of the EPA's regulatory powers. The CAA of 1970 gave the EPA significant powers to establish and enforce national air quality standards and to regulate air pollution emitters from smokestacks to automobiles. It required "that air quality standards should be set based on medical science alone, rather than on the balancing of health against compliance costs" (R. Andrews 234). The CWA of 1972 bestowed the EPA the authority to establish and enforce national clean water standards, introduced technology-based effluent limitations, and required advanced technology on water pollution. The FIFRA of 1972 authorized the EPA to regulate a variety of chemicals found in pesticides. The SDWA in 1974 supplemented the CWA of 1972 by granting the EPA the power to regulate the quality of public drinking water. The RCRA in 1976 authorized the EPA to promulgate regulations for generators and transporters of solid waste, as well as owners and operators of solid waste treatment, storage, and disposal facilities to "establish such standards…as may be necessary to protect human health and the environment" (Pendergrass 173). The TSCA of 1976 authorized the EPA to regulate the use of toxic substances. These statutes and amendments also required the EPA to identify any substance found in air, water, drinking water, pesticides, buildings, and waste, which might be harmful to human health or the environment. The EPA could then take the responsibility of identifying how these substances are harmful and in what doses. Congress

also enacted citizen suit provisions in six of the EPA's seven major statutes and gave "citizen groups" the rights to sue in certain circumstances (Weiland, Caldwell, and O'Leary, 106).

Since courts were permitted by law to challenge EPA environmental decisions (Kraft and Kamieniecki, "Analyzing" 11), five main types of law suits appeared: the State or federal government sued an industry for not complying with the law; environmental organizations directly sued an industry for breaking a pollution control law; industry sued the EPA, environmental interest groups sued the EPA or the federal government and even States sued the EPA. During the early 1970s, the most common kind of environmental law suit was that in which an environmental organization sued the federal government under NEPA, arguing that "a federal agency should write an environmental impact statement (EIS) before building an environmentally destructive project" (Paehlke, *Conservation* 234). The environmental impact included not only the natural environment of wilderness areas, rivers, shorelines, and other unique geographical features, but also impacts on public health, and to assure "safe, healthful, productive, and aesthetically and culturally pleasing surroundings" for all Americans (Opie 452). Several federal courts, especially the D.C. Circuit Court, agreed with the environmental organizations, and ordered federal agencies to consider more environmental factors in their statements (Paehlke, *Conservation* 234). In turn, the EPA took courts as the vehicle to enforce its environmental standards. But courts were not always for EPA enforcement. The collective wisdom of courts often provided a confusing answer (Reitze, *Air* 63). In the case *Brown v. EPA*, an extensive EPA transportation control plan for California was attacked by at least 208 public and private parties, including California State University and California's then-Governor (Ibid.). The court found that the "plan specifically directed the State of California to undertake those tasks assigned to it" (Reitze, *Stationary* 119). But the court then held that "the CAA did not authorize legal measures against the State of California if the State failed to comply" (Reitze, *Air* 63). In order to avoid constitutional questions, the court construed the CAA as not authorizing the EPA

Administrator to require State enforcement, essentially upholding §113 of the Act, "which deals with federal enforcement powers against 'any person,' is not applicable to actions against s State, because a State is not 'any person'" (Ibid.). "A similar opinion was rendered in the case *Arizona v. EPA*" (Ibid.).

Sometimes the courts' decisions on environmental issues were redefined by government intervention. In the case of Armco Steel, Ruckelshaus sued for dumping over half a ton of toxic chemicals (mostly cyanides and phenols) and between three and six tons of ammonia into the Houston Ship Channel daily. This had been continuing for several decades and it resulted in numerous fish kills and the closure of shell fish beds in Galveston Bay. In September 1971, a federal district court judge found Armco guilty. The court ordered Armco to halt all toxic releases into the channel. The company faced closing its Houston furnaces to comply. Armco's president, William Verity, sent a letter to President Nixon complaining that the EPA's enforcement of the Federal Water Quality Act had violated a tenet of the President's pro-business policy, "industry would not be a whipping boy in solving our environmental problems" (Quarles, *Cleaning up* 63-64). He also told President Nixon that Armco had planned to lay off 300 workers prior to the EPA's action. Because of the increasing unemployment and Armco's contribution to the Nixon campaign, the White House pressed for a compromise settlement. Nixon aide Peter Flanagan called in EPA Enforcement Chief John Quarles, and strongly suggested that the EPA propose a sixty-day stay of the court order to provide Armco and the EPA time to negotiate an amicable solution (U.S. Cong. HR 225). But EPA officials continued to oppose concessions. In the end, the Nixon Administration and Armco negotiated a squeaky-clean settlement and Armco agreed to follow EPA guidelines for installing proven waste treatment technology at its Houston facility ("Drawing").

3.1.9. Interests Groups and the EPA

Since the founding of the EPA, relations between the EPA and industry have often been adversarial. In the early 1970s, "business groups were unable to prevent EPA legislative enactments at either the federal or the State level" (Kraft and Kamieniecki, "Analyzing" 11). In addition, their scattershot lobbying proved ineffective (Cohen 18). Facing stricter air-pollution controls, industries failed to establish a unified political front or to effectively advance common policy positions (Conley). Without coordination, dozens of trade associations and major corporations each advanced their own narrow proposals at the congressional hearings of 1969-70 (Ibid.). A jumble of their often conflicting plans, proposed revisions, and their scattershot lobbying that solely relied on the Republican Party made businesses fail to influence Congress to make compliance costs a major consideration in the statute (Ibid.). Because of the strong public environmental support and Democrats' control of Congress, President Nixon and President Ford watched concern for the environment explode as a public issue (Train 5). Although President Nixon wanted to stress economic growth and help business groups, he had to cooperate with Congress to pass the environmental statutes. This was all he could do, as his veto was easily overridden by Congress, and its non-compliance could damage his leading role on environmental issues in national politics. The EPA consolidated the environmental programs and Administrator Ruckelshaus defined his regulatory initiatives with the method "Command-and-Control." The EPA would enforce command and control pollution. Big industries and automakers were forced to take the best existing technologies for controlling pollution at the "end of the pipe," instead of encouraging them to rethink their production processes, materials, and energy inputs in any fundamental way (R. Andrews 234). A lot of firms claimed that the environmental statutes made them lose money. For instance, in the early 1970s, the chemical industry argued that the proposed Occupational Safety and Health Administration (OSHA) standards for vinyl chloride exposure in the workplace would cost between $65 billion and $90 billion and as

many as two million jobs (Green C1). Its trade association stated: “The standard is simply beyond the compliance capability of the industry” (Ibid.). Dow Chemicals from Monsanto estimated that it spent $147 million in 1975, including $63 million on environmental controls and $22 million on health and safety (American 435). They had no choice but to simply obey the law through regulatory compliance in terms of taking their environmental responsibility, especially in the early 1970s. However, they fought for their interests as well. They found themselves negotiating with State pollution control agencies and even sued them. They tried to influence public opinion through organizing public debate, advocacy advertising and public relations, and through lobbying the media by emphasizing environmental regulation as “overregulation” or “overkill,” which contributed to the nation’s economic problems including energy shortages, soaring capital costs and inflation, and high unemployment (Hays 243). Businesses learned about the importance of being united. They began increasingly to work together in political opposition, forging common policy positions through advisory councils and inter-industry business lobbies (Conley). During the energy crisis era, oil, gas, and electric power companies blamed rising fuel prices and the following result of the deeper post-1973 economic strains on unreasonable environmental restrictions (Ibid.). Companies such as Mobil Oil and American Electric Power charged that environmental rules were stoking rising energy prices, job losses, and inflation (Ibid.). W. Donaham Crawford, president of the Edison Electric Institute, blamed a “rapid imposition of severe environmental restrictions” for the energy shortages and urged the government to strike a “reasonable and cautious balance between the need for energy and the need for a wholesome environment” (“Edison”). Steelmakers stressed job losses; chemical firms including Dow, Monsanto, and American Cyanamid conducted extensive regulatory-cost surveys, called salvos, against the rising tide of environmental regulation and they warned of stifled innovation and flagging international competitiveness (Ibid.). Additionally, out-of-control bureaucracies, unreasonable paperwork, red tape and inflation, “which had averaged

4.8 percent between 1966 and 1973, increased at an average annual rate of 9.3 percent between 1974 and 1981" enabled major corporations to woo small businesses, employees, and investors to support the complaints of "overregulation" (Vogel, *Fluctuating* 113). Moreover, shared commitments and concrete policy proposals forged to inject cost considerations into environmental regulation, and lobbyists vigorously campaigned for statutes and administrative procedures (Rodgers 726-729). Thus, President Nixon was urged to build the OMB and initiate the Quality of Life Review process on environmental regulation. Congress was asked to include provisions in new environmental statutes requiring the EPA to balance the economic costs of regulation against the health and environmental benefits (Conley). As President Ford extended the scope of regulatory review in the Quality of Life Review process, Lester Brown, a staffer on the Subcommittee on Oversight and Investigations, charged that the OMB "interfered" with the statutory responsibilities and regulatory functions of the EPA, and wrote in 1976 that the OMB had "provided industry with an opportunity to review, comment on, delay, and change EPA actions behind closed doors. The public has not been afforded this opportunity and consequently faces industry-influenced and weakened guidelines, regulations, and standards difficult to modify" ("Office"). The manager of the Quality of Life Review, Jim Tozzi, also recalled "We made a lot of changes… When a regulation went out of the OMB, it was lean and mean" (Twohey 12). Congress made changes which limited the impact of environmental statutes through provisions that required agencies to completely justify their environmental quality standards and regulations (Kraft and Kamieniecki, "Analyzing" 11), and thus constrained the EPA's activities. As Richard Andrews wrote: "Under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), the EPA had to weigh the environmental and health risks against the economic benefits of agricultural production" (243). Similar problems occurred with the Toxic Substances Control Act (TSCA) of 1976. The EPA was required by the TSCA to use the "least burdensome requirements" to protect against an unreasonable risk. The TSCA also

directed the EPA, when determining whether a substance posed an "unreasonable risk," to consider other factors, including the substance's benefits and "the reasonably ascertainable economic consequences" of regulation (Conley).

Environmental Organizations

In the late 1960s and the early 1970s, environmental organizations became institutionalized. They shared a wide range of different concerns and focuses. Larger environmental organizations such as the National Wildlife Federation, the Audubon Society and the Sierra Club, which were traditionally concerned with the protection of land and wildlife, added toxic issues to their agendas in the 1960s and 1970s (Freudenberg and Steinsapir 32). Newer environmental organizations founded in the 1960s and 1970s, like the Environmental Defense Fund (EDF), and the Natural Resources Defense Council (NRDC), mainly focused on air pollution, water pollution and other toxic chemical problems, and emphasized more general environmental quality than human health (Ibid.). Both these older and larger environmental organizations and the newer ones formed the mainstream environmental organizations. They had many scientists and lawyers on staff, which had considerable experience working in courts, Congress or scientific meetings. These experts interacted regularly with industry and government experts, with whom they shared professional training and an understanding of the "rule of the game" (Ibid.). These mainstream environmental organizations primarily focused on building public opinion through education and forming environmental policy through national legislation or litigation (Mitchell, Mertig and Dunlap 12). They engaged in electoral campaigns, congressional and administrative lobbying, overseeing administrative decision making, even suing for environmental protection in courts (Ibid.). In 1969, only two full-time environmental lobbyists served in the environmental movement, but by 1975 it had expanded to forty lobbyists in the twelve mainstream organizations (Mitchell, "From" 93). To influence environmental outcomes, environmental organizations often used the rights to sue (Vig 105),

and 1,900 lawsuits were filed by environmental organizations in the federal courts in the 1970s (Schreurs 66). Such organizations as the NRDC, the EDF, the Sierra Club, the Legal Defense Fund, and the National Wildlife Federation (NWF) were particularly active on the legal front (Mitchell, "From" 109). Many of their challenges were based on NEPA requirements that environmental impact assessments be conducted for all federally funded projects. They also sued the government when it failed to enforce environmental regulations or standards (Schreurs 66). The thirteen-year battle between the Sierra Club and Walt Disney provides a good example. The Sierra Club fought Walt Disney's plan for a massive ski resort in the Mineral King area of the Sierra Nevada range and defeated the proposed development after the lawsuit went to the U.S. Supreme Court (Turner and Clifton 5-9).

Together with mainstream environmental organizations, grassroots environmental organizations fought for environmental protection by emphasizing the effects on human health (Freudenberg and Steinsapir 33). They had lawyers and scientists who had a stake in preserving their credibility with government decision-makers and other experts. They often took direct action like blocking the construction of hazardous waste facilities and new garbage incinerators, thus forcing industry and government to look for ways to reduce waste generation at the source (Ibid.). From the late 1960s to the early 1970s, efforts from both mainstream and grassroots environmental organizations complemented one another, resulting in the founding of environmental statutes (Ibid.). The concerns pushed by environmental organizations reached a peak in 1970, followed by a steady downturn throughout the decade. In 1965, 17 percent of respondents in a Gallup survey in 1972 said they wanted the government to devote most of its attention to reducing air and water pollution. However, by 1970, 53 percent of respondents wanted the government to devote most of its time to these issues (D. Taylor, 37-39). In Louis Haris, in 1970, 41 percent of the respondents said pollution and ecology posed one of "the two or three biggest problems facing people like yourself", while 13 percent of respondents said the same in 1972, and 6 percent in 1975

(Mitchell and Davies 6). The declining public awareness and concern continued into the mid-1970s. However, environmental organizations had a strong membership growth rate, which continued throughout the 1970s (Kraft, "Influence" 145).

The CAA developed the principle that protecting public health was paramount, and that the polluters should pay for the costs of pollution (R. Andrews 234). Environmental statutes defined the EPA's role as a single-minded advocate. Administrator Ruckelshaus' strong environmental enforcement and high regard for public opinion made this a reality. Since the Nixon-Ford Administration, environmental protection had become part of the fabric of American society. Environmental programs reached all levels of government. Industry considered environmental safeguards a necessary part of doing business. Environmental education spread in American schools. Protecting the environment became an integral and important part of American way of life ("Russell").

3.2. The EPA under the Carter Administration

Under President Carter, the EPA reached the high point in its history prior to the year 2000. Because the U.S. was under a single Democratic government (see table 1), environmental statutes were easily strengthened by other major laws including the CAA Amendments of 1977, the CWA of 1977, the Federal Pesticide Act, the Endangered American Wildness Act, and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (Superfund). During this time, the EPA also had the largest budget (real purchasing power) in its history prior to the year 2000 to organize its environmental programs. The EPA's budget suddenly increased from almost $.77 billion in 1976 to about $5.5 billion in 1978 and its workforce from 9,481 in 1976 to 13,078 in 1980 (See chart 1). The EPA strengthened environmental enforcement with civil litigation. It convinced Congress to enact Superfund, and introduced economic incentives to its regulations, thereby strengthening environmental protection. For instance, restoration of strip-mined lands was

required, more than 100 million acres of Alaskan wilderness was set aside for varying degrees of national protection and the toxic clean-up began with the $1.6 billion Superfund (Vig and Kraft, "Environmental" 14).

However, large federal expenses and inflation resulted in regulatory reforms to control the expenses, including the EPA' budget. Regulatory reforms were taken to enhance the internal management of the regulatory agencies by comparing the economic costs with benefits of policy alternatives (Eisner 170). President Carter signed Executive Order 12044, and introduced economic and cost-benefit analysis with the regulatory reform to strengthen the control of the EPA and to reduce regulatory burdens on business and government (Opie 448). He established the first OMB-wide office on regulatory review called the Office of Regulatory and Information Policy, and created the cabinet-level body Regulatory Analysis Review Groups (RARG). For the first time the Carter Administration set up a review process of the most important regulations proposed, and established principles for the development of federal regulations (Tozzi). Regulatory reforms slowed down the speed of environmental regulation to some degree and made the EPA begin to emphasize balance and compromise to achieve long-term goals (Vig and Kraft, "Environmental" 16). Regulatory reforms continued throughout the 1980s, and were taken to extremes to constrain EPA regulations in the early Regan Administration. The EPA under the Carter Administration was entering its first era of transition.

Since Carter was part of the Democratic Party, he had committed himself to a strong federal role in environmental protection during his election campaign (Mintz 28). In his 1976 Presidential campaign brochure, "Leaders for a Change," he stated: "to maintain strong environmental protection laws," and "to protect against relaxation of our current standards for air quality, water quality or automotive emissions," and "to preserve the natural heritage of America and to turn over to future generations a country that is environmentally sound" as being important (Carter 2). After taking office in 1977, President Carter kept his promise and

chose people with environmentalist backgrounds and perspectives as top managers for the EPA (Mintz 28). He appointed two environmental lobbyists, Barbara Blum, and David Hawkins, as the EPA Deputy Administrator and Assistant Administrator for Air and Waste Management (Berry 30). He also appointed Marvin Durning, the particularly ardent environmentalist from the State of Washington, as Assistant Administrator for enforcement (Mintz 28). These environmentalist EPA officials kept the door wide open for environmentalists (Berry 30). Additionally, EPA Administrator, Douglas Costle, was also a member of the Democratic Party with an environmentalist background and perspectives (Mintz 28). Administrator Costle held a bachelor's degree from Harvard University and received a law degree from the University of Chicago. He was the former director of Connecticut's Pollution Control Agency (Ibid.). When he served as Senior Staff Associate for Environmental and Natural Resources for the President's Advisory Council on Executive Organization, he headed the study which recommended the creation of the EPA in 1970 (Ibid.). These individuals enabled EPA programs and enforcement activities to receive relatively generous funding in the late 1970s (Ibid.), and released the EPA from the hard fiscal stringency during the late Nixon-Ford Administration. In 1977, Administrator Costle sharpened the focus on hazardous waste. He wanted to change the EPA from a "guardian of birds and bunnies" to a "preventive health agency" that would move against suspected carcinogens in toxic substances, pesticides, and drinking water (Opie 517). He showed this determination by telling the American Chemical Society in late 1978, that the EPA "cannot wait for [scientific] proof positive in the form of dead bodies" (Ibid.).

3.2.1. Strengthening Environmental Enforcement with Civil Litigation

The EPA under Administrator Costle made a change to undertake environmental enforcement. He introduced civil litigation to environmental enforcement. It was helped by his Assistant Administrator for Enforcement, Marvin Durning. Marvin Durning decided to

redirect EPA enforcement. He created a major source enforcement effort with the slogan "file first and negotiate later" (Mintz 28)

During 1977 and 1978, the EPA identified major violators of the Clean Air Act State Implementation Plans (SIPs) and of the Federal Water Pollution Control Act (FWPCA)'s July 1st 1977 deadline for the achievement of effluent limitations based upon best practicable technology. Then, the EPA referred each of these violators to the DOJ by recommending a civil action against them in an appropriate federal district court for injunctive relief and civil penalties. To avoid any of these suits being resolved subsequent to their being filed, EPA enforcement officials were discouraged from entering into negotiations with any parties subject to enforcement action until after litigation had commenced (Ibid.). This was administered by the newly introduced Civil Penalty Policy and National Penalty Panel. The Civil Penalty Policy not only forbade State and federal enforcement officials from negotiating settlement of the civil penalty aspects of any major air or water enforcement case for less than the amount of money which the defendant had saved by delaying compliance with applicable requirements, but also required additional penalties to apply to alleged violators that exhibited lack of good faith (Mintz 28-29). In addition, EPA headquarters strictly required each of its regional offices to produce a quota of litigation referrals within a given time period (Mintz 28). Thus, the EPA enhanced its influence and the effect of its enforcement with direct involvement of its headquarters staff in reviewing, and in some cases vetoing, regional recommendations on specific cases (Mintz 30). The EPA further eliminated the delays that had characterized some of the organization's prior administrative enforcement negotiations, and reinforced the EPA's image on enforcing environmental statutes, compelling compliance and deterring intentional violations (Mintz 32).

3.2.2. The EPA pursuing Superfund Legislation on Hazardous Waste

In 1977 and 1978, several incidents awakened the American public to the dangers posed

by the past disposal of hazardous wastes (Mintz 33). The "Valley of the Drums," a landfill strewn with more than 17,000 corroding drums of toxic and hazardous wastes in Brooks, Kentucky, contaminated a stream that flowed into the drinking source of a highly populated area (Ibid.). Another example was the degradation of the James River near Hopewell, Virginia with a highly toxic and non-degradable industrial waste — ketone. Further examples were the discovery of nearly 22,000 tons of toxic pollution from a former industrial waste disposal site buried beneath the residential neighborhood of Love Canal, NY and a nuclear accident at Three Mile Island on March 28th 1979. These incidents all drew the public's attention to the problem of hazardous and toxic wastes across the country. Public awareness of hazardous waste resulted not only in investigations into hazardous waste dumping from several congressional committees, but also EPA actions (Mintz 34). Since the EPA had not yet proposed any of the hazardous waste regulations, EPA officials felt an urgent need to solve the problem of hazardous and toxic wastes (Ibid.). They thought it was necessary to ask Congress for a new statute specifically aimed at correcting contamination from inactive dumps (Ibid.). However, the nation was working on trimming the costs of government operations at this time, and there was "considerable resistance within the administration" to proposing any legislative initiatives in this field (Mintz 34 note 44). Under this circumstance, EPA officials decided to increase and to orchestrate growing public and congressional concern about haphazard waste dumping (Mintz 34). In October 1978, EPA regional offices were required by the Assistant Administrator for Water and Waste Management to submit their "best professional estimate" of the total number of abandoned hazardous waste sites existing within their regions, and report on the number of sites that might contain "significant quantities" of hazardous wastes (Ibid.). In November 1978, the EPA publically released the results of its "preliminary inventory," and stated that they believed 32,254 sites might contain hazardous wastes and of those, 838 sites contained significant quantities thereof (Ibid.). EPA officials planned to propose a new abandoned

waste site statute, which they began to refer to as Superfund. To further prove its argument that this Superfund was urgently needed, the EPA began to compel known owners and operators of abandoned hazardous waste sites with the cooperation of the Department of Justice (DOJ) (Mintz 34-35). Besides promising to seek additional budgetary resources for hazardous waste enforcement and to divert existing agency resources to implement the program, EPA Deputy Administrator, Barbara Blum, established a Hazardous Waste Enforcement Task Force (HWETF) at the agency's headquarters to develop a hazardous waste site reporting and tracking system (Mintz 35). The HWETF also established hazardous waste enforcement policies, and increased participation from headquarters staff and the DOJ in developing hazardous waste cases (Mintz 35-36). EPA headquarters managers supported the HWETF by putting enormous pressure on regional officials to produce a steady stream of new enforcement referrals. Deputy Administrator, Barbara Blum, even asked her headquarters staff for a series of "regional report cards" to evaluate regional enforcement (Mintz 36). With the support from the DOJ and the Deputy Administrator, the HWETF achieved significant results. The EPA and the DOJ had filed fifty-four judicial enforcement actions to force cleaning up of abandoned dumps. The HWETF got rid of some red tape burdens that the administration's litigation referral system had generally imposed on EPA regional enforcement officials, and laid solid groundwork for the establishment of the Superfund Program in establishing a national site tracking system and a set of preliminary site assessment procedures (Mintz 38). In the end, Congress enacted the $1.6 billion Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (Superfund) on December 11th 1980, which provided broad Federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment ("CERCLA").

3.2.3. Establishing the Bubble Policy

The CAA Amendment of 1977 authorized emissions trading with "offset" or "credit" in "non-attainment areas," which were highly-polluted urban areas and did not meet national air quality standards (NAAQS). The Carter Administration, which was concentrating on trimming the cost of government operations (Mintz 34), also required the EPA to consider the economic consequences of their new regulations (Campagna 191). Thus, the EPA introduced economic incentives to its regulation. The Bubble Concept was one of them. It was introduced in December 1979, to "provide greater flexibility to sources to effectively manage their emissions" (American Chemical Society 277). It enabled private decision-makers to decide how to meet EPA requirements by treating multiple emission points within a facility. Administrator Costle said, in providing guidance to the States on the Bubble Concept: "If a company can, with equivalent environmental impact, get SO_2 out of one process for 50 cents a pound and out of another for $1.00, we should permit the company's engineers to control more of the first process and less of the second…with this new policy we will draw an imaginary bubble around the whole plant and tell the company that it can find the most efficient way of controlling the plant's emissions as whole…Under the current Command-and-Control approach, a company has no incentive to remove one ounce more pollution from any process than the regulations require, it consequently has little reason to innovate. With the bubble, however, a firm will actively look for new ways to push control further and at a lower cost. In the long run, the bubble will advance the frontier of pollution control technology…" (Scott 37). The term "bubble" referred to an imaginary bubble around a major pollution stationary source defined by the EPA as the entire plant (Ibid.), such as a refinery or a steel mill. Each source had its own emission limit to the "bubbled" portions and had several emissions credits ("Trading"). Therefore, within the bubble, a facility might increase the amount of its emissions if another facility decreased its emissions by the matching amount. Thus, certain "progress stifling" regulations could be avoided if "no net

increase" in air emissions or water effluents occurred at the source (Deland 277). A further step of the bubble applied to emissions trading, which was an approach to use marketable permits through trading emission rights. Since the EPA determined the allowable emissions, the rights to emit the allotted portion of the pollutants characterized by emission credits could be bought and sold among firms (Campagna 191). Firms that emitted less than they were permitted could sell these emission points to others (Ibid.). The emission credits were in the form of prospective, permanent reductions in annual emissions and were collected by plant closure or permanent and enforceable modifications or the proposed new facility to reduce emissions. Pollution reduction would be reached because ten to fifty percent of purchased credits must be retired depending on the non-attainment category (OECD, *Implementing* 54). On the one hand, firms could be awarded through lower emissions acquired through the improvement of technology and efficiency; on the other hand, firms that bought emission points could enhance their production and earn more money.

3.2.4. Regulatory Reform from the Carter Administration

Lou Cannon has noted that the 1970s began with twelve federal regulatory agencies and ended with eighteen, and the budgets of these agencies increased from $1.4 billion to $7.5 billion (Knott and Chidester 60). The Carter Administration experienced a fairly rapid expansion in the number and extent of regulatory programs with high cost of federal regulations, large governmental administration and heavy financial burden and a multitude of business complaints about regulation and its costs (Anderson 484). In addition, the cost of compliance with environmental regulations was steadily rising, with firms in the United States spending more than two percent of GNP on pollution control in the 1970s and 1980s (Hart 79). Together with big federal expenses and enormous costs from firms, escalating inflation and the experience with the passage and implementation of the Clean Air Act made costs a central criterion in the federal campaign to clean up pollution (Conley). Both

President Carter and Congress were convinced of the need to put regulatory reforms on the agenda. The Carter Administration conducted regulatory reforms through strengthening presidential supervision of the agency rule-making process, regulatory procedure reform legislation and deregulation (Anderson 484).

In March 1978, President Carter issued Executive Order 12044, *Improving Government Regulations*. It introduced more rational analysis and decision-making in federal regulations through establishing general principles for agencies to follow (U.S. OMB, *Report* 5). It directed agencies to assess policy alternatives, and to estimate the economic consequences of their decisions. It also required agencies to complete a regulatory analysis for all major rules, to write rules in plain English, to minimize paperwork burdens, and to prepare plans to evaluate rules once they were in place (Carter, "Executive" 12661). Thus, the Regulatory Analysis Review Group (RARG) was created. It was a source of economic expertise that could second-guess agencies, and thus advise the President (Fiorino, *Making* 72). It was composed of representatives of the OMB, the economic and regulatory agencies, and was required to review up to ten of the most important regulations each year (U.S. OMB, *Report* 6). Furthermore, in the middle of 1978, the Carter Administration began formulating a serial regulatory procedure reform bill (see table7) by working with key legislators and others to design its own proposal (Anderson 485). One example was the "Regulatory Reform Act" which was sent to Congress in March 1979 (see table 8). In this bill, not only were new rules emphasized such as: economic analysis, selection of the least burdensome alternative, and regular review and elimination of outmoded rules, streamlined procedures to reduce regulatory delay, and more opportunity for public participation in rule-making (Anderson 486); but also some economic incentives were included like a cost-benefit analysis of each proposal for changes in regulations, a calendar of upcoming rules, reducing paperwork requirements and a sunset provision to examine the effectiveness of regulations in practice (Campagna 172). President Carter sent his message with this bill to Congress. He stressed

Table 7

Regulatory Reform Bills, 1979-1980

S7SS and HR3263. Carter Administration
required agencies to conduct economic analyses, streamlined proceedings, mandated periodic review of rules, funded public interveners, and more.
HR6768, Carter Administration
evaluated administrative law judges.
S262. Senate Committee on Governmental Affairs
called for general procedural reform, similar to Carter bills.
S44S. Percy-Byrd
called for sunset review over eight years of thirty-two regulatory agencies.
S51, S52, S53, S54. Bentsen
provided for regulatory budget, economic analyses, OMB coordination of agencies.
S299. Culver
Required agencies to tailor regulations to small business (regulatory flexibility).
S2. Muskie
Called for sunset review of regulatory programs.
S93. Eagleton
Called for sunset review of regulation with an economic impact of more than $100 million.
HR1776. Levitas
Called for one-house legislative veto of rules.
S1291. Kennedy
Required agencies to assess competitive impact of regulations.
S2147. Senate Judiciary Committee
Provided for comprehensive regulatory reform and Regulatory Policy Board.
HR4660. House Small Business Committee
Lightened regulatory burden for small businesses.
HR6410. House Government Operations Committee
Provided for paperwork reduction.

Source: Anderson, James E. "The Struggle to Reform Regulatory Procedures, 1978-1998." *Policy Studies Journal* 26.3 (1998): 485. Print.

Table 8

The Regulation Reform Act

Regulatory Analysis. Agencies were required to prepare preliminary and final analyses for each major rule. The least-cost alternative for handling a problem was to be selected; if another alternative was chosen, an agency explanation was required.
Regulatory Agenda. Agencies were directed to publish at least semiannually in the Federal Register an agenda of major rules they expected to propose or issue during the coming year.
Regulatory Structure. Each agency was to create a single office with primary responsibility and management of the agencies' regulatory activities. It would apply statutory standards in supervising the insurance of significant rules (more numerous and less costly than major rules).
Improved Procedures. Agencies were to set deadlines for the completion of rulemaking procedures and explain failure to meet deadlines. Formal or trial-type hearings were to put less reliance on cross-examination. Rehearing conferences, discovery, and other means could be uscd to quicken decisions.
Review of Existing Rules. Under the supervision of OMB, agencies were to review all major rules every ten years.
Judicial Review. Initial review of all rules was assigned to courts of appeals rather than district courts, as usually was the case. Regulatory analyses were not subject to review.
Public Participation. Agencies were authorized to provide financial assistance to participants who would add to the fairness of the hearings or who personally could not afford to participate.
Administrative Law Judges (ALJs). More flexibility was provided for the selection and evaluation of AWs, who would serve seven-year terms. They would be under the jurisdiction of a reconstructed Administrative Conference of the United States.

Source: Anderson, James E. "The Struggle to Reform Regulatory Procedures, 1978-1998." *Policy Studies Journal* 26.3 (1998): 487. Print.

that the overall regulatory system had become “burdensome and unwieldy,” and that his administration had already taken to improve the regulatory system (Anderson 488). He recommended Congress procedural reform, paperwork reduction, and the revision of individual regulatory statutes (Ibid.).

Congress also coupled with the Carter Administration on regulatory reform. The Regulatory Flexibility Act won strong bipartisan support and passed in the Senate and the House by voice votes on August 6th and September 9th 1979, and was then signed into law by the President (Anderson 491). This act was a comprehensive effort by the Carter Administration and Congress to balance the social goals of federal regulations with the needs and capabilities of small businesses and other small entities in American society. Under this act, rule-making actions that likely had a significant economic effect on a substantial number of small entities were required to provide an analysis of those impacts (Ibid.). This analysis must include a statement of significant alternatives designed to minimize the economic impact on small entities (Ibid.). But some members of Congress criticized the act as weak and ineffectual, and as an attempt by the administration to derail more comprehensive reform legislation (Murray 2725). In the 96th Congress, a more specialized piece of legislation, the Paperwork Reduction Act that was tied to regulatory reform was adopted. It was signed into law by President Carter despite the opposition of several executive departments. It set as a goal a 25 percent reduction over the next three years of the paperwork burden imposed on the public by federal agencies. An Office of Information and Regulatory Affairs was established in the OMB to review all information requests made by the public (Anderson 492).

In addition, deregulation for economic regulatory programs included the Airline Deregulation Act, the Natural Gas Policy Act, the Staggers Rail Act, the Motor Carrier Reform Act, and the Depository Institution Deregulation. Since the late 1970s, regulatory reforms became a major trend and certainly had a strong influence on the EPA. Besides a planed 12 percent EPA budget cut in 1982, from President Carter (Brownstein and Easton

209), various checks on the EPA were established within the administration and these checks surely forced the EPA to pay more attention to trade-offs and alternative instruments (Nelson and Winter 375), and thus influenced more environmental programs. President Carter also delayed imposing certain new auto standards, allowed the construction of a nuclear power plant, and compromised with U.S. Steel on pollution reduction ("Douglas").

3.2.5. Interest Groups and Court

After suffering a string of policy defeats in the first half of the 1970s, business groups changed their strategy. Instead of only being allied with the Republican Party, business groups started to support both Republican and Democrat candidates for public office. It had become a Democratic "political life insurance" policy (Hrebenar 296). They were also revitalized by increasing cooperation among key business lobbyists, modern technology like computers, satellite communications, and new methods of media appeals (Wilson 224; Hrebenar and Scott 265). In the late 1970s, money came to play a more significant role in congressional campaigns, because most campaigns were forced to go "high-tech," and "high-tech" cost money (Hrebenar 296). Business groups took advantage of their financial situation and funded some alternative conservative think tanks, such as the American Enterprise Institute, the Heritage Foundation, the Center of the Study of American Business and the American Council for Capital Formation. Although Congress outlawed large political contributions from individual donors, the legal funding Political Action Committees (PACs) sponsored mainly by business groups had been growing rapidly since the mid-1970s. Only eighty-nine PACs existed in 1974, but by 1979, there were thirteen hundred. These PACs influenced a large part of the congressional agenda ("The 1970s"). An example was the U.S. Chamber of Commerce. The Chamber operated its own television studios to assist grassroots lobbying programs and beamed daily business programs through satellites across the nation to television stations or corporate offices (Hrebenar 296). The Chamber had further taken the

lead in targeting pro-business congressional candidates for many other smaller business PACs. By sending out periodic newsletters to other business PACs, the Chamber could arrange hundreds of thousands of dollars for the candidates who really need the money in the final days of a campaign (Ibid.). By 1980, even before the Reagan Administration, businesses had achieved virtual domination over Congress (Fisk 1140).

By the mid-1970s, the mainstream environmental movement was experiencing a natural decline (Albrecht 156). These trends accelerated during the Cater Administration. Mainstream environmental organizations increasingly became willing to accept compromises (Vig and Kraft, "Environmental" 16). However, grassroots environmental organizations were flowering all over the country due to incidents like the toxic contamination of Love Canal in 1978. Many of these groups became more proactive. They organized to halt the development of noxious or nuisance facilities as well as other locally unwanted land use (Taylor, "American"). These direct actions had made it difficult for congressional opponents to pass the proposed legislation designed to repeal or significantly weaken major environmental programs (Kamieniecki 81).

During the latter part of the 1970s, the most common environmental lawsuits in the early 1970s had fallen, and water and air pollution cases dominated federal environmental cases (Paehlke, *Conservation* 134). Although courts lost their environmental passion on its judgments (Vig and Kraft, "Environmental" 16), it was still the first forum to accept arguments from environmental organizations, which challenged the EPA's administrative interpretation of the Clean Air Act (Ibid.). Major corporations also increased their legal expertise in environmental law, and the number of cases business initiated against the federal government regulations escalated (Alexander and Fairbridge 213). In these cases, industry argued that regulations were too severe (Paehlke, *Conservation* 134); and viewed the EPA's "file first" approach as unnecessarily harsh and unduly rigid. Thus, industry resentment of the EPA's enforcement techniques gradually increased. The jobs-versus-environment issue,

which had first surfaced in the mid-1970s, continued to receive attention in the media in the early Carter years (Mintz 30). Since the beginning of the 1980s, Court interpretation of the Superfund centered around those who among "multiple contributors were responsible for cleaning up numerous abandoned leaking hazardous waste dumps" (Paehlke, *Conservation* 234). The courts faced a new kind of environmental case in which one industry or property owner sued another and/or both their insurance companies to determine liability for multi-million dollar cleanups (Ibid.). President Carter's regulatory review and the utility of cost-benefit analysis for regulatory decision makers was also strengthened by the U.S. Court of Appeals for the District of Columbia in *Sierra Club v. Costle*, which found that a part of the President's administrative overseeing responsibilities was to review regulations issued by his subordinates (U.S. OMB, *Report* 6).

The EPA under the Carter Administration moved away from single-minded advocacy, and began to conduct "matured" implementation with growing proficiency and flexibility (Ingram and Mann 138) and balance interests through introducing economic incentives to environmental regulations and programs (Vig and Kraft, "Environmental" 16). The EPA entered a transition era, in which it was pulled out of the reluctance of protecting the environment from the late Nixon-Ford Administration by the suddenly increasing budget from about $.77 billion in 1976 to about $5.5 billion in 1978, and the strengthened laws like the CAA Amendments of 1977, the CWA of 1977, the Federal Pesticide Act, the Endangered American Wildness Act and the CERCLA (Superfund), and then its regulations were put under the control of regulatory reforms. By 1980, the EPA had nearly 13,000 full-time employees with two-thirds of them in the agency's ten regional offices and other facilities outside of Washington, D.C. (Kraft, "U.S." 25). The EPA budget dropped to about $4.67 billion by 1980, but the cost of environmental protection was still considerable. This big federal expense made the President and Congress conduct regulatory reforms and lead the EPA to take economic incentives and measures in its programs. The increasing presidential

supervision of the agency rule-making process with economic and cost-benefit analysis, and the policy review from the Office of Management and Budget (OMB) and Regulatory Analysis Review Groups (RARG) and regulatory procedure reform legislation constrained the EPA, empowered the anti-environmental force, and offered stepping-stones toward the extreme regulations from the Reagan Administration. Additionally, because much of the initial legislation overestimated the speed with which new technologies could be developed and applied, and underestimated the compliance costs and the difficulties of writing standards for hundreds of major industries, the regulation implementation lagged considerably behind schedule in the Carter Administration (Ibid.). Since Congress even later became unwilling to enforce strict deadlines (Melnick 21), most of the original compliance deadlines were missed or postponed, and some of the required regulations fell years behind schedule (Vig and Kraft 377). By the end of the 1970s, more than 90 percent of industrial firms were on air and water pollution abatement schedules (Vig and Kraft, "Environmental" 16). Moreover, federal regulations, including new requirements for occupational health and safety, consumer product safety, and energy conservation, placed multiple burdens on the same industries, as did the different environmental laws (Ibid.). More conflicts emerged with regulated industries seeking to block implementation, and they were accelerated by environmental organizations (Wenner 192). These burdens and conflicts paved the way for the deregulation of the beginning of the Reagan Administration.

3.3. The EPA under the Reagan Administration

Due to the President's unwillingness to protect the environment, the EPA took on a different role under the Reagan Administration. Administrator Burford's two-year tenure marked a turning point in the fortunes of the EPA, and redirected the EPA's priorities from advocacy to a "neutral broker" position (Opie 448). Administrator Burford diminished the EPA's authority, cut its budget, pared back its regulations, and delegated more authority to

State and local governments (Kurian 206). Thus, she turned the EPA into a deregulator. Although Administrator Ruckelshaus' two-year tenure put the EPA on the road to recovery, and positioned the EPA as an advocate of public interests, open and candid regulation, and science-based risk management, and the four-year tenure of Administrator Lee Thomas continued Ruckelshaus' will, the EPA could still not emerge from President Reagan's shadow.

President Reagan favored reducing the scope of the government and promoting economic growth in terms of cost efficiency and administrative ease, at the expense of the environment. He emphasized the notion of limited government by "getting government off the backs of the people" in his first inaugural address:

> It is time to check and reverse the growth of government which shows signs of having grown beyond the consent of the governed. It is my intention to curb the size and influence of the Federal establishment and to demand recognition of the distinction between the powers granted to the Federal government and those reserved to the States or the people (Reagan, *Inaugural* 2).

President Reagan set forth a sweeping agenda of budget reductions, tax cuts, personnel freezes, block grants, and deregulation, all intended to dramatically lower the fiscal and administrative profile of the federal government (Conlan 96). He supported the reform of the social regulatory agencies, especially the EPA (Waterman 106). Therefore, anti-environmentalist rhetoric developed by both the Republicans and the Party's Christian right wing dominated the Reagan Administration. Reagan's Interior Secretary, James Watt, and EPA Administrator, Burford, were associated with corporate interests that had lobbied for reduced regulations. In 1981, Secretary James Watt stated: "my responsibility is to follow the scriptures which call upon us to occupy the land until Jesus returns. I do not know how many generations we can count on before the Lord returns" (Helvarg 38). Therefore, the EPA budget was cut, environmental programs were strongly constrained, and industries were

allowed to play a much greater role in regulating themselves than was allowed in the 1970s.

3.3.1. Environmental Stand from President Reagan

President Reagan was never friendly toward environmentalism. In 1980, he showed his anti-environmentalist position by saying both: “Trees are the biggest source of air pollution,” and “When you've seen one redwood, you’ve seen them all” (Opie 448-449). He said that environmental protection must not be “a cover for a ‘no-growth’ policy and a shrinking economy.” Facing the economic distress of the 1970s, high inflation, declining productivity, and stubborn unemployment, he questioned the wisdom of protective health, safety, and environmental regulation. He believed the “free market” would provide the level of protection that people were willing to support, and that the government should interfere with the market only in limited circumstances (Ackerman and Heinzerling 1555-1556). For President Reagan, government regulations strangled the American economy by stifling the ingenuity and creativity of the American people. Government was best when it governed least, and the best thing it could do was to get out of the way of the American people. He showed his position toward regulation by stating: “government is not the solution to our problem, government is the problem.” He also said that he contended with the “intervention and intrusion in our lives” from “unnecessary and excessive growth of government” (Knott and Chidester 60). Instead of improving government efficiency by restructuring government and regulation, President Reagan reduced the federal power, and increased individual liberty. He cut taxes, and reduced government expenditures and federal regulations to stimulate economic growth. His goal was “to have a government that regulates only where necessary and as efficiently and fairly as possible” (Reagan, “Message”). Due to his stance toward regulation, much of his agenda to reduce regulatory controls over private industry was directed at environmental regulations. He also advanced his pro-industry and anti-regulation policies by appointing industry-oriented individuals with the shared value of strong

development (Kenski and Ingram 290-291). Therefore, James Watt became Secretary of the Interior, Anne Burford EPA Administrator, and Robert Burford the head of the Bureau of Land Management (Opie 449).

3.3.2. Administrator Anne Gorsuch Burford

Anne Gorsuch Burford was the third Administrator of the EPA. She studied law and had legislative experience as a member of the Colorado State House of Representatives from 1976 to 1980. Before she came to the EPA, she had been a lawyer for the Mountain Bell Corporate Law Department. She agreed with President Reagan regarding environmental protection, believed that the EPA was too restrictive on businesses and that it was too big and too wasteful (P. Sullivan B6). President Reagan made her share his deep concern for his New Federalism to bring economic discipline to environmental protection, and to give the States greater enforcement powers (Martin C13). She said that her assignment at the EPA was to turn the agency around to support "industrial revitalization," and to lighten the regulatory "overburden" that the EPA had placed on industry (Opie 449). During her 22-month tenure, she cut the EPA budget by 22 percent, and reduced the number of cases filed against polluters. She also relaxed the Clean Air Act regulations, and facilitated the spraying of restricted-use pesticides. She further reduced agency employees, and hired staff from the industries they were supposed to be regulating. As EPA Administrator, she had an unsuitable personality with "wearing fur coats and smoking two packs of Marlboros a day, and her old four-door diesel car getting about 15 miles per gallon of gasoline" (Sullivan B6). As the EPA's policies were criticized for weakening federal environmental enforcement and pleasing polluting industries (Martin C13), she answered: "When congressional criticism about the EPA began to touch the presidency, Mr. Reagan solved his problem by jettisoning me and my people, people whose only 'crime' was loyal service, following orders" (Burford and Greenya 281). She had close ties to business groups. She earned $41,000 in 1980 as an

attorney for Mountain States Bell, took home another $14,350 for her seat in her Colorado General Assembly, and brought clients such as Amoco Production Co., Firestone, Plillips Petroleum, Rock Mountain Energy Co. Union Pacific Railroad and Western Crude Oil, Inc. to her husband's law firm (Brownstein and Easton 213). A congressional investigation also revealed her cronyism with industry, particularly in Colorado, illegal private meetings with representatives of regulated companies, and light penalties for violators (Opie 449). On March 9th 1983, she was forced to resign after she refused to turn over Superfund records (Sullivan B6).

3.3.3. The Change from William Ruckelshaus

In 1983, President Reagan replaced Administrator Burford with former Administrator Ruckelshaus seeking to defuse the issue caused by Administrator Burford as the 1984 election approached (Knott and Chidester 58). After Ruckelshaus' comeback to the EPA, he reinstated the strong and pervasive enforcement powers of the EPA and stressed science, saying: "Science and the law are thus partners at the EPA" (Ruckelshaus, "Science" 1026). However, he came to believe that the EPA should balance the desire to eliminate pollution against the cost of its control through risk assessment (Ruckelshaus, "Science" 1026-1028). He thought "This would entail some adjustment of the laws and it would happen by about 1976" (Ruckelshaus, "Science" 1027). Administrator Ruckelshaus "moved the EPA away from the brink of disaster and put it back on the road to recovery" (D. Andrews 10243). Since he knew that the environment would be a minor issue for President Reagan after the presidential election victory, he quietly resigned in 1984 (Knott and Chidester 59).

3.3.4. Administrator Lee M. Thomas

In February 1985, Lee Thomas succeeded Administrator Ruckelshaus. He was "the first non-lawyer and the first governmental careerist to head the EPA" (Landy, Roberts, and Thomas 255). He began his career as an official of the State government of South Carolina in

the field of criminal justice. He had headed the EPA Times Beach Toxic Waste Task Force and worked as the agency's Assistant Administrator for solid waste and emergency response before being appointed EPA Administrator. He shared many values with Administrator Ruckelshaus, especially on enforcement. Ruckelshaus commented on his appointment: "I couldn't be more pleased with the President's choice. Lee Thomas is one of the finest and most able public servants whom I have had the opportunity to work with and know" ("Lee"). In his first major speech as Administrator, he promised that the EPA would pursue a rigorous enforcement effort that would place new emphasis on the pursuit of criminal cases. He stated, "There won't be any letup, as long as I'm [EPA] administrator, in any time and attention you heard Bill Ruckelshaus give enforcement last year" (Mintz 67). He ensured "a strong enforcement presence in all of agency programs" as one of his six management goals. At a February 1987 senior management forum for EPA executives, he repeated that: "we will enforce environmental laws vigorously, consistently, and equitably, to achieve the greatest possible environmental result" (Ibid.). Like Administrator Ruckelshaus, he also emphasized science in the process of environmental decision making.

3.3.5. The EPA under President Reagan and his administrators

One of Reagan's economic advisers, Murray Weidenbaum, suggested that federal regulations were costing American businesses nearly $100 billion each year (21). The need to reduce the burden that regulation imposed on the economy in 1980 assured Reagan's conservative, pro-business belief. Reagan proclaimed that: "we must carefully remove the tentacles of excessive government regulation which are strangling our economy" (Florig 196). As a result, President Reagan sought to free American corporations from an expanding regulatory apparatus. He restrained the EPA with the budget cut (Knott and Chidester 60). He also tried to alter environmental laws and regulations. He avoided confrontations in Congress and pursued an "administrative strategy" by focusing on his appointment power,

use of executive orders, and other means to influence the EPA (Knott and Chidester 57). EPA Administrator Burford and Secretary of the Interior, James Watt, were loyal conservatives (Waterman 116), and could help President Reagan fulfil his wish. They took federal administrative offices, although they lacked what Carter's appointees had, extensive management and Washington experience in government, especially with Washington level politics (Waterman 119).

3.3.5.1. The EPA under Administrator Anne Gorsuch Burford

The EPA's independence from the president distinguished Administrator Burford from other EPA administrators throughout the Nixon, Ford and Carter presidencies. Administrator Burford showed her loyalty to President Reagan, and became an open and ardent advocate of the president's environmental program (Waterman 109). After taking the Administrator Office, Mrs. Burford sought to exclude environmentalists from positions of influence within the EPA through the appointment of pro-business candidates in different EPA positions. For instance, she appointed Rita Lavelle who was the former Public Relations Officer for Aerojet-General as the Assistant Administrator for Solid Waste and Emergency Response (the office that oversaw the Superfund program) (Waterman 119). The Sierra Club criticized that Lavelle's "only qualifications appear to be that she worked with President Reagan while he was Governor of California and as the Chief Spokesperson for a company with a dismal environmental record" (U.S. Cong. S, *Nominations of Frederick* 71). She also used different methods to limit environmental organizations' input. For instance, she denied environmental organizations the right of pre-notification of upcoming rule changes, while she was willing to grant this right to the regulated industry. She continued to limit private contact with environmental organizations, whilst meeting extensively with industrial and business representatives (Waterman 116).

Administrator Burford further massively cut the EPA's budget and personnel. Since

President Reagan wanted to make his agencies more efficient and less burdensome on business, the EPA budget was reduced from almost $4.67 billion in 1980 to $3.03 billion in 1981, and the workforce from 13,078 in 1980 to 10,832 in 1983. Since Administrator Burford came to the EPA, the agency had new enforcement strategies. Because the EPA had a less threatening, more flexible posture toward regulated industries, it reduced civil penalties assessed in the dollar amount and adopted new and more exclusive screening criteria for identifying potential violators (Eads and Fix 194). The EPA was also unwilling to test new legal or economic theories that might expand the existing classes of violators (Ibid.). It further reduced discretion for field personnel, and encouraged a reliance on State and local trade and professional associations as substitute federal enforcers (Ibid.). On the implementation of the Superfund, the EPA was criticized for a slowdown in enforcement of hazardous waste site clean-up, even by its own employees. Hugh Kaufmann had been a career professional with the EPA since 1971, and an assistant to the director of the Hazardous Waste Site Control Division, serving under Rita Lavelle. He appeared before several congressional committees, including a hearing on reauthorization of the Resource Conservation and Recovery Act (RCRA) of 1976. In March 1982, he charged the EPA with jeopardizing public health by failing to enforce hazardous waste and toxic chemical laws, arranging "sweetheart deals" with polluters, and allowing partisan politics to affect the program. Other EPA employees were making similar accusations to the press, and before congressional committees concerning EPA mismanagement and failure to enforce the law (R. Johnson 56-57). As a result, enforcement actions were sharply reduced (Brownstein and Easton 208). Cases averaged 150 to 200 per year during the Carter Administration, while only sixty-nine cases were sent to Justice in 1981 (Brownstein and Easton 214). Cases filed in court on environmental programs also dropped to their lowest levels with fifty-one in 1982 (U.S. EPA, *Environmental News* 3). This meant a large number of cases remained pending, and many environmental violations were ignored (Opie 449). In her proposed 1983 budget,

Administrator Burford proposed a massive 20 percent budget cut and a reduction of up to 3,200 staff, far more than the Office of Management and Budget (OMB) had asked (Brownstein and Easton 214). In this proposed measure, almost 44 percent of the enforcement budget would be cut (Ibid.). Former EPA Assistant Administrator for Planning and Management, Drayton, calculated that the proposed 1983 budget cut would reduce EPA purchasing power by a crippling 60 percent when inflation was taken into account. It would especially affect research activities and programs to control toxic substances, as it would be enforced at a time when EPA statutory responsibilities (particularly to control toxic chemicals) were greatly expanding (Brownstein and Easton 209). In order to decrease regulatory enforcement action, Administrator Burford also abolished the Office of Enforcement, and dispersed its functions to the various program departments. The EPA's enforcement under Administrator Burford was viewed as confused, disorganized, and discontinuous. Thus, EPA staff was demoralized by the openly hostile administration and its irresponsibility (Mintz 60). The EPA's effectiveness declined significantly and the agency even often disagreed with and confronted Congress (Ibid.). An attorney with the Natural Resources Defense Council, Jonathan Lash, commented: "The danger is not simply that the environmental programs will be slowed, but that the entire legal and institutional framework for environmental protection will be destroyed, and human beings will suffer death and disease as a result" (Brownstein and Easton 214).

In April 1982, after being criticized by some conservative economists for not using the reauthorization process to increase reliance on "market incentives," Administrator Burford expanded the use of economic incentives, such as the "bubble" concept in place of regulation (Brownstein and Easton 213). On June 26th 1984, the Supreme Court further affirmed the authority of the EPA to let facilities use a "bubble concept" to meet Clean Air Act requirements more quickly and inexpensively ("Statement"). By 1984, bubbles had been adopted in fewer than 200 instances (Viscusi 481).

3.3.5.2. The EPA under Administrator William Ruckelshaus

In 1983, former Administrator Ruckelshaus was asked to return to the EPA. In a meeting with President Reagan in the Oval Office before his appointment, Ruckelshaus made it clear that he wanted more flexibility and stature than Administrator Burford had, notably a free hand in personnel matters, policy review and direct access to the President ("William"). Reagan readily agreed with Ruckelshaus, and later asked for the resignation of five EPA officials, four of whom were Burford's top-ranking assistants (Ibid.). Ruckelshaus was then appointed the fifth EPA Administrator. Ruckelshaus was the best choice of top White House officials, and "more than anybody can pour cold water on the flames" (Ibid.). He was chosen to solve the problems that Administrator Burford left, and "was expected to step up enforcement against corporate polluters, clean up toxic waste dumps, beef up the agency's management and budget, and repair its shattered relationship with Congress" (Ibid.). President Reagan commented that Ruckelshaus was a man who "the EPA was fortunate to have as its first administrator, an extraordinary public servant who gave direction and momentum to the fledgling environmental agency. His assignment, not an easy one, was performed with dedication, integrity and a balanced understanding of the nation's needs. He soon became known — with good reason — as 'Mr. Clean'" (Reagan, "Remarks").

Administrator Ruckelshaus assured the nation he would again represent the public interest. In his first interview with *The Washington Post*, he said: "My job as EPA Administrator is the same today as it was when I held that job before and that is to represent the public interest to the best of my ability" (U.S. Cong. S, *Nomination of William* 228). But this time, he understood that effective enforcement of environmental regulations relied more on striking a balance between cost and benefit than single-minded Command-and-Control. He continued: "One of the things that strikes me in coming back to the EPA again is how hard these decisions are, particularly the ones that get up here, and how difficult it is to decide how [to] strike this balance" ("The Return"). In his speech "Science, Risk and Public Policy"

on June 22nd 1983, he particularly emphasized the importance of science and the quality of effectively managing risk. He also stressed the need for constructive regulatory reforms, stating: “Protecting human lives and our environment cannot be done in a vacuum, protection must be harmonized with other social goals, with goals involving our economy and the production of adequate energy...The issue today isn’t whether we are going to clean up, but how” (Ruckelshaus, “Science” 1027).

Administrator Ruckelshaus knew that the EPA’s reputation laid on protecting public interest, effective enforcement with science and law, the EPA’s candidacy and openness, and the morale of the EPA staff. Ruckelshaus began with improving employee morale and the EPA’s candidacy and openness. In his speech to the employees, he claimed that: “My real reason for asking you here today is to start to convince the American people what I know in my heart — there is no finer group of public servants in this country than the employees of the EPA. It was true at the beginning, and it’s true now.” He continued: “The trust of the public is sacred and must never be broken, it’s time we stopped chewing on each other and started pulling together” (“William”). The EPA started the “Fishbowl Policy” in May 1983, which was a number of operating principles to raise employee morale and to improve the flow of agency information as openly as possible through communicating with everyone from the environmentalists to those regulated by the EPA. It contained four areas: general principles; appointment calendars; litigation and formal adjudication; and rule-making proceedings. To attain the largest possible public participation in decision-making, the general principles required both that EPA employees should remain open and accessible to those representing all viewpoints, and that EPA employees responsible for decisions should seek out the views of those who would be affected by the decisions. The EPA would neither give privileged status to any special interest group, nor would it accept any recommendation without careful critical examination. Administrator Ruckelshaus also stipulated that the guidelines would be released to the public for comment as a basic principle. He said: “While

this is not a formal solicitation of views, we will have a thirty-day waiting period in which to receive the opinions of the public. We want to get feedback from the public because of the high and continuing degree of interest in how the agency deals with the regulated community and other affected parties" ("Ruckelshaus"). Administrator Ruckelshaus placed a copy of his appointment calendar for each week in the Office of Public Affairs, and made it available to the public at the end of the week. He also required all other key EPA officials to make their appointment calendars available in a similar way. Openness and candour were also brought to litigation and formal adjudication, and rule-making proceedings (Ibid.) He further improved the morale of EPA staff through gradually allocating more money for enforcement training and showing more consideration for the EPA's career enforcement staff (the permanent staff). Keith Casto who was Staff Attorney for Harzardous Waste, Enforcement Division, Region IV, from August 1979 to June 1981 and Staff Attorney Office of Regional Counsel, Region IV, from June 1981 to May 1985, commented in an interview with Joel A. Mintz on May 6th 1986: "The employees were once again viewed as being a valued part of the agency. This improved the situation immeasurably, it instilled new life" (Mintz 61).

Ruckelshaus then tried to recover the EPA's credibility, for example, by banning ethylene dibromide (EDB). EDB had been registered as a pesticide since 1948. Over 300 million pounds (150,000 tons) of EDB were being produced annually in the United States. Over 20 million pounds of that were being used as a pesticide, and the rest as an additive in leaded gasoline ("EPA Acts"). On September 30th 1983, the EPA ordered the immediate emergency suspension of EDB as a soil fumigant for agricultural crops, and announced the cancellation and phase-out of all other major pesticide uses of EDB, citing laboratory test results that showed that EDB causes reproductive disorders in test animals (Ibid.).

Administrator Ruckelshaus further enhanced EPA enforcement through improving relationships with the States and clarifying EPA policy regarding civil penalties. The EPA developed an oversight program which recognized that direct program administration and

enforcement were primarily State responsibilities, and that the EPA fostered more trust and mutual respect in the relationship between the EPA and States (U.S. Cong. GAO, *Environmental Protection Agency* 161). In June 1984, the framework for individual EPA or State enforcement agreements took effect, and set forth the EPA's methods for overseeing State enforcement programs. It established a set of criteria to be used for assessing good enforcement program performance, and called for semi-annual EPA reviews of State enforcement programs, quarterly State reporting on key performance measures, and regular EPA evaluations of State progress in addressing significant violations (Alm, "Implementing"). This oversight program, including the framework for individual EPA or State enforcement agreements, improved intergovernmental communication, and better defined the expectations and roles of federal and State enforcement officials (Mintz 63). The EPA continually strengthened civil enforcement. It issued a Uniform Policy on Civil Penalties, which required EPA program policies and regional office enforcement actions to recover the economic benefit of non-compliance from violators of environmental standards (Ibid.). The EPA further strengthened federal enforcement of hazardous waste. Administrator Ruckelshaus urged President Reagan to sign H.R. 2867, *Hazardous and Solid Waste Amendments of 1984*.

Because Administrator Ruckelshaus focused primarily on human health and did little to revive interest in ecological protection at the EPA (Russell III, "Environmental" 499-500), he began to question the priorities of agency leaders, including himself at the end of his tenure: "What is the impact of all this chemical loading over the years on the ecological systems in which human culture is embedded? After decades of so-called pesticide control, we have not even begun to ask this question. Indeed, it is odd how little time is spent at the upper levels of the EPA thinking about such things and how much time is spent worrying about tiny increases in the risk of a single human disease [cancer]" (Ruckelshaus, "Risk" 32). Before leaving the EPA, Administrator Ruckelshaus managed to promote risk assessment of

ecological issues as the EPA's regulatory approach (Russell III, "Environmental" 499).

3.3.5.3. The EPA under Administrator Lee Thomas

As Administrator Lee M. Thomas came on duty in February 1985, he announced his six management goals. The first one was to emphasize continued implementation of the basic programs for which the EPA was responsible; the second was to ensure a strong enforcement presence in all agency programs; the third was to decentralize programs and delegate additional responsibilities to regions and States; the fourth was to strengthen the EPA's scientific and technical base, to support program decisions, and to obtain measurable environmental results; the fifth was to improve community involvement, public education and the EPA's internal accountability system by continual operation of the fishbowl policy; and the sixth was to work hard to make the EPA the kind of agency that attracts and retains quality people (L. Thomas). While pursuing these goals, a number of changes were made, especially in the EPA's Superfund program. To curb the postponing of clean-up activities by lengthy enforcement negotiation and litigation, the EPA promptly shifted its emphasis to the clean-up of abandoned hazardous waste site problems. The agency also stressed the need to initiate more enforcement actions, including administrative orders, Consent Decrees, lawsuits and cost recovery actions, and even transformed the "lawyers first, shovels later" approach into a "shovels first, lawyers later" one (Mintz 64). The EPA renewed the enforcement technique of the early 1970s: the debarring of government contractors who are persistent violators of environmental standards by publicly listing them in the *Federal Register*. In 1986, the EPA revised its regulations to facilitate contractor listing and established a separate staff in the Office of Enforcement and Compliance monitoring to work with regional personnel in carrying out this program. The number of facilities on the agency's Violating Facility List increased from three in January 1986, to seventeen by October 1988. This listing action improved the EPA's position in negotiating settlement of additional enforcement cases

(Mintz 69). Administrator Thomas further introduced criminal cases to the enforcement procedure. He promised a national conference of EPA and State enforcement officials, that the EPA would pursue a rigorous enforcement effort with renewed emphasis on the pursuit of criminal cases ("Thomas"). He also stressed this goal at a February 1987 senior management forum for EPA executives by saying that "[w]e will enforce environmental laws vigorously, consistently, and equitably, to achieve the greatest possible environmental result" (U.S. Cong. GAO, *Environmental Protection Agency* 37-39). Additionally, the EPA and the Department of Justice (DOJ) streamlined referrals, filed procedures for similar civil judicial actions, and publicized these efforts as a way of enhancing their deterrent effects for the first time (Mintz 69). The Department of Justice filed eleven cases in the fiscal year 1985 (from October 1st 1984 to September 30th 1985) nationwide on behalf of the EPA, against violators of the Clean Air Act building demolition asbestos control requirements (Ibid.). In March 1986, the EPA not only filed another fifteen lawsuits against municipalities that were in violation of Clean Water Act requirements, but also initiated coordinated civil actions (together with the DOJ) against ten violators of Safe Drinking Water Act underground injection control regulations, eight metal-coating facilities in the Los Angeles basin, and twenty-seven electroplating plants located in the New York City metropolitan area (Ibid.).

Because the EPA implemented its agreement with States, federal-State cooperation on enforcement in a number of instances increased, intergovernmental consultation improved, and planning concerning certain enforcement cases advanced (Mintz 70). As the EPA expanded its enforcement activity, the agency's inefficient and counterproductive enforcement activities were caused by its strict segregation of environmental media, such as air, water, hazardous waste and toxic substances (Mintz 69). Career enforcement professionals in several sections of the EPA's organizational structure realized the need to integrate the agency's enforcement work at particular industrial facilities and in specific categories of industry and geographical regions. Administrator Thomas also announced his

intention of integrating all EPA environmental programs into a managed system with a multimedia perspective. Michael G. Smith, a branch chief in the Office of Regional Counsel of the EPA's Midwest regional office, recommended a cross-cutting multimedia enforcement strategy for a heavily industrialized portion of northwestern Indiana. This would provide greater clarity and consistency and increase the EPA's overall leverage in case-by-case enforcement negotiations. Smith's recommendation won the enthusiastic support of the Regional Administrator. At about the same time, Thomas Gallagher, the director of the EPA's Denver-based national enforcement investigations center, who had the responsibility for overseeing the agency's budding criminal enforcement program, lobbied other agency officials for the initiation of a coordinated approach to enforcement inspections and case development (Ibid.).

During Administrator Thomas' tenure, the EPA made a national strategy for toxic air pollutants to reduce the risks from toxic air pollutants. The EPA created a new Office of Wetlands Protection reporting directly to the Assistant Administrator for Water. The agency also mandated sanctions for States failing to meet air standards, and authorized the use of on-site thermal destruction to clean up the dioxin-contaminated creek and sewer sediments at Love Canal (Collin 78). The EPA further set standards for underground storage tanks and approved incineration of dioxin at Times Beach which was the final Superfund clean-up decision for the Times Beach and Minker and Stout and Romaine Creek sites in Missouri (Kraft, *Environmental Policy and Politics* 113).

Administrator Thomas' tenure was during the 99th and 100th Congress. Since Democrats took control of both the Senate and the House in the 100th Congress (1987-1988), the EPA budget increased to a relatively high level in 1987. The EPA also increased its Superfund enforcement staff in these two years from 765 to 1,027 full-time employees, including 103 new attorneys in the agency's Offices of Regional Counsel ("Superfund"). President Reagan was forced to accept expanded regulations from an assertive Congress in his second term of

presidency (Knott and Chidester 59). Congress passed the Hazardous chemical reporting rule in 1987, the Federal Insecticide, Fungicide and Rodenticide Act Amendments, and the Ocean Dumping Ban Act in 1988 in order to strengthen the EPA.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

On October 17th 1986, President Reagan signed the Superfund Amendments and Reauthorization Act of 1986 (SARA) into law, which amended the Superfund, the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). SARA, together with CERCLA, required the EPA to designate which substances were to be considered hazardous, and to set the minimum quantities for reporting releases according to whether such releases "may present substantial danger to the public health or welfare or the environment" (Briggum et al. 64). The famous Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) was enacted as Title III, Sections 311 and 312 of SARA. The Right-to-Know is defined as: "Public availability of plans, data sheets, forms, and follow-up notices directs the EPA, governors, State Emergency Response Commissions (SERCs) and local emergency planning committees to make emergency response plans, material safety data sheets, lists of chemicals, inventory forms, toxic chemical release forms, and follow-up emergency notices available to the general public" (U.S. Cong. CRS, *Emergency* 3). It established State commissions and local committees to develop and implement procedures for coping with releases of hazardous chemicals, and mandated annual reporting to government officials on environmental releases of such chemicals by the facilities that manufacture or use them in significant amounts. The EPA was required to facilitate planning, to enforce compliance when necessary, and to provide public access to information about environmental releases of toxic chemicals (U.S. Cong. CRS, *Emergency* 5). It also increased community awareness of chemical hazards through providing the public, as well as local governments, with information concerning potential chemical hazards present in their communities (Ibid.).

Although Lee Thomas kept the agency on the road to recovery, the EPA was still under the shadow of President Reagan, and was strictly constrained by the adoption of Executive Order 12498, which required the agency to submit a detailed plan to the OMB on all significant rules under development, indicating how their programs were consistent with the president's own agenda (Kraft, *Environmental Policy and Politics* 129). This Order also asked the OMB to give the purposed regulations from the EPA-recommended modifications. In addition, EPA enforcement programs still had a number of significant problems during Lee Thomas's tenure. These problems were internal to the EPA administrative structure, caused by criticism of the EPA from outside, as a result of errors and inconsistencies in the approaches of the EPA's top managers or merely a continuation of troubles that had arisen at earlier phases of the EPA's development (Mintz 72). For instance, problems appeared in the administrative structure. The EPA's enforcement work was characterized by lasting and intensive squabbling during decision-making among the various offices within the headquarters on during the allocation of enforcement mandates and responsibilities. These problems prolonged the development of agency policies and negotiating positions (Ibid.). The Chief of the Superfund Branch of Hazardous Waste Enforcement Division later stated:

> [EPA] didn't have people [in headquarters] who could give answers quickly. [In matters of case development strategy] you couldn't move from point A to point B without getting everyone in the Western Hemisphere to agree…. On any particular issue you might have three or four different [agency] positions, but it was never consistent….It was the worst management nightmare you could think of (Mintz 73).

This problem was particularly acute in the Superfund Program (Mintz 73). The Environment Law Institute stated in March 1989:

> Responsibility for developing and implementing and enforcement strategy for the Superfund Program is diffused, on the national level, among four EPA

> offices—the office of waste programs enforcement, the office of emergency and remedial response, the office of enforcement and compliance monitoring and the office of general counsel. As a result of this diffusion of responsibility, it is unclear who has ultimate responsibility for a national enforcement strategy. Each office tries to shape the agency's direction, and the agency's position and performance may be weakened in consequence…[I]t is frequently unclear which office has jurisdiction. There appears to be overlapping jurisdiction on some matters. Regional [EPA] personnel complain that they receive conflicting and inconsistent advice from the different [headquarters] office. This organizational structure results in inefficiency, uncertainty and duplication. Ultimately, it reduces the accountability of each office for Superfund enforcement (Environmental Law Institute 152-153).

These problems diminished the progress Administrator Thomas achieved (Mintz 72), and continually enmeshed President Reagan in anti-environmentalism. In addition, because EPA managers at that time were fully concentrated on restoring the Superfund program, they did not spend enough time implementing other laws, such as the Resource Conservation and Recovery Act (RCRA) (Mintz 65). Moreover, problems of federal environmental enforcement, such as the discord between the EPA and its Justice Department attorneys, affected enforcement in all environmental media, especially in the Superfund Program (Mintz 76-77). Therefore, congressional oversight committees, environmental organizations, and certain representatives of the media viewed the EPA's enforcement programs with intense suspicion throughout both Administrator Ruckelshaus' and Administrator Thomas's tenures (Mintz 65).

3.3.6. Federal Regulatory Reform from the "Quality of Life" Reviews to Reagan's Regulatory Relief

The federal regulatory reform began with the "Quality of Life" reviews under the Nixon Administration, which required the OMB to review regulations from federal agencies with a relatively simple analysis of costs. Due to the EPA's strong independence under Administrator Ruckelshaus, and cost ignorance in some environmental statues, it had little impact on regulations made by the EPA.

On November 27th 1974, President Ford signed Executive Order 11821, *Inflation Impact Statements*, which required all major regulations to be accompanied by a statement "certifying that the inflationary impact of the proposal has been evaluated" (Ford, "Executive Order 11821" 41501). The OMB concluded this statement with a review of the alternatives to the proposed action, of the costs associated with the recommended alternative, and of the inflationary effects of the action on markets, consumers, and businesses. The OMB also concluded this statement with a comparison of the benefits to be derived from the proposed action, with the estimated costs and inflationary impact. Thus, costs, benefits, and economic impact were to be quantified as much as possible (Ibid.). In response to the OMB, the EPA adopted final guidelines for Inflation Impact Statements in April 1975, which required the analysis of the costs, benefits, risks, and inflationary impact of the proposed action and its alternatives (Ibid.). However, the EPA pointed out that these guidelines "given the limitations in the state-of-the-art of benefits assessment of pollution control ...in most cases this type of valuation will not be feasible or meaningful" (Alm, "Proposed"). Executive Order 11821 expired at the end of 1976. But President Ford issued Executive Order 11949 on December 31st 1976 to extend the previous order for another year with changing the title of the required analyses to that of *Economic Impact Statements* (Ford, "Executive Order 11949" 1017). In January 1977, the EPA revised its guidelines for these analyses and changed the title of the analyses to *Economic Impact Analyses* in order to avoid confusion with

Environmental Impact Statements (Brands, "Change").

In March 1978, President Carter signed Executive Order 12044, which replaced the *Economic Impact Statements* with *Regulatory Analysis*. Although consideration of benefits was not an explicit requirement of the analysis, federal agencies were required to consider "the direct and indirect effects of the regulation," and to choose the "least burdensome" alternative (Carter, "Executive Order 12044" 12661). Responding to Executive Order 12044, the EPA published final guidelines for implementation in May 1979. Regulatory Analyses included marginal cost-effectiveness curves for each alternative and analyses of the economic impacts of the proposed standard and of each alternative ("Regulatory"). In 1980, Congress passed the Regulatory Flexibility Act, which required all federal agencies to analyze the impact of proposed regulations on small businesses, small non-profit organizations, and small governmental entities with the Regulatory Flexibility Analysis.

Following his inauguration in 1981, President Reagan began to strengthen the regulatory review oversight program from the Carter Administration. Regulatory relief, together with reducing government spending, tax cuts, and steady monetary growth had been accomplished by President Reagan as his four pillars for economic growth. He specifically used the term "regulatory relief" rather than "regulatory reform" to emphasize his desire to cut back regulations, not just to make them more cost-effective (U.S. OMB, *Report* 9). President Reagan issued Executive Order 12291, *Federal Regulation*, on February 17th 1981, and then an interagency Task Force on Regulatory Relief, chaired by Vice-President George Bush, was created to monitor regulatory activity, review regulations already in effect, and recommend cancellation of unnecessary or excessively costly regulations (Anderson 492).

Executive Order 12291 "established a process whereby proposed federal regulations with an annual effect on the economy of $100 million or more would be reviewed by the OMB with cost-benefit analyses for potential costs, potential benefits, net benefits and other less costly alternatives" (Milloy, "Reagan's"). It also replaced Regulatory Analysis with

Table 9

History of Regulatory Analysis

Act/Executive Order	Year	Title of Analysis	Types of Analysis
OMB Memo 10/5/71	1971	Quality of Life Review	Costs, Benefits
Executive Order 11821	1974	Inflation Impact Statement	Costs, Benefits Inflationary Impacts
Executive Order 11949	1976	Economic Impact Statement	Costs, Benefits, Economic Impacts
Executive Order 12044	1978	Regulatory Analysis	Costs, Economic Consequences
Regulatory Flexibility Act	1980	Regulatory Flexibility Analysis	Impacts on Small Businesses
Executive Order 12291	1981	Regulatory Impact Analysis	Costs, Benefits, Net Benefits

Source: U.S. Environmental Protection Agency (EPA). Office of Planning and Policy Evaluation. *EPA's Use of Benefit-Cost Analysis 1981-1986* (EPA-230-05-87-028). Washington: GPO, 1987. 2-2. Print.

Regulatory Impact Analysis (RIA). All federal agencies were required to prepare both RIAs for most major regulations and Regulatory Flexibility Analyses, except when the Administrator certified there would be no significant economic impact on small entities. The RIA restored the consideration of benefits to the regulatory process, and agencies were directed to choose the alternative that would maximize the "net benefits to society" (Reagan, "Executive" 13196-13197). It further bestowed upon the Office of Information and Regulatory Affairs (OIRA) power from the OMB to ensure that broader economic issues were appropriately addressed by the EPA prior to issuing a new regulation through delaying rule-making (Weidenbaum 23). Executive Order 12291 was the first to designate "net benefits" as the criterion for assessing proposed regulations. To quote Executive Order 12291, "regulatory objectives shall be chosen to maximize the net benefits to society," and "shall not be undertaken unless the potential benefits to society for the regulation outweigh the potential costs to society" (Reagan, "Executive" 13193-13194). In June 1981, the OMB issued guidance to help federal agencies prepare RIAs. The guidance elaborated the requirements of the executive order and explicitly called for estimates of the benefits, costs, and net benefits of all major regulatory alternatives (U.S. OMB, *Interim* 6). In December 1983, the EPA issued its own final guidelines for performing RIAs. President Reagan continually strengthened the OMB's overseeing role to tighten controls over line agencies, and their heads, with the Executive Order 12498 in 1985, *Regulatory Planning Process*, which required all federal agencies to annually send the OMB a detailed plan on all significant rules under development (Shanley 135). "The OMB coordinated the plans with other interested agencies and could recommend modifications" (Reagan, "Executive" 13196-13197). It further required federal regulations to enlarge the use of scientific risk assessment procedures to reduce health and safety risks (Milloy, "Reagan's").

Cost-Benefit Analysis

Based on the "free market" principle, that the government should interfere with the

market only in limited circumstances, conservative economists and policymakers questioned the wisdom of protective health, safety, and environmental regulation and argued that the "free market" would provide the level of protection that people were willing to support (Ackerman and Heinzerling 1553-1555). They undertook cost-benefit analyses to reduce environmental regulations (Ibid.).

Cost-benefit analysis sought to translate all relevant considerations into monetary terms of cost and benefit to determine whether regulations would be worth conducting or implementing in a supposedly neutral, mathematically precise way (Ibid.). The costs of protecting human health and the environment through environmental regulations would be measured in dollars, while economists created artificial prices for health and environmental benefits by studying what people would be willing to pay for them (Ibid.). After calculating the costs of a public policy, and monetizing the benefits achieved by the regulation, the "net benefits" would come out as the difference between the cost and benefit (Ibid.).

During the Reagan Administration, regulations which could not produce analyses with positive benefits were terrorized by economists at the OMB (Clark, Kosters, and Miller xi). However, the actual use of cost-benefit analyses on major regulations in the EPA's decision making was very limited. From February 1981 through February 1986, eighteen of 1,000 regulations issued by the EPA were considered major rules requiring RIAs. They were from the CAA, the CWA, the TSCA, the RCRA, CERCLA and FIFRA. The EPA prepared RIAs for fifteen of these major rules. The OMB exempted the other three major rules from the RIA requirements. Among these fifteen rule-prepared-RIAs, six net benefit cost-benefit studies were conducted (see table 10), including three from the CCA, two from the CWA and one from the TSCA. The net benefit cost-benefit analyses were mostly prepared for air and water regulations, because the data and analytic techniques necessary for the analysis of pollutant quantities, exposures, and adverse effects was more readily available for air and water regulations than for some of the other regulations. (U.S. EPA, *EPA's Use* 11). In the review

Table 10

The EPA's Major Rules

February 1981- February 1986

Act/Rule	Proposed	Final	RIA	Exemption
Clean Air Act				
National Ambient Air Quality Standards for Nitrogen Dioxide	1984	1985	Yes	
National Ambient Air Quality Standards for Particulate Matter	1984		Yes	
Requirements for Implementation Plans: Surface Coal Mines and Fugitive Emissions	1984		Yes	Published RIA 2/86
Control of Air Pollution from New Motor Vehicles and New Motor Vehicle Engines; Gaseous Emission & Particulate Emission Regs.	1984	1985	Yes	
Stack Height Regulation	1984	1985	No	Court Deadline
National Ambient Air Quality Standards for Carbon Monoxide	1980	1985	Yes	
Fuels and Fuel Additives: Gasoline Lead Content Regulations	1985	1985	Yes	
Clean Water Act				
Iron and Steel Manufacturing Point Source Category: Effluent Limitations Guidelines		1982	Yes	
Organic Chemicals and Plastics and Synthetic Fibers Industry Effluent Guidelines	1983		Yes	
Toxic Substances Control Act				
Asbestos: Proposed Mining and Import Restrictions and Proposed Manufacturing, Importation, and Processing Prohibition	1985	1986	Yes	
PCB Manufacture Processing, Distribution in Commerce, and Use Prohibitions in Electrical Transformers	1984	1985	Yes	
Premanufacture Notification: Premanufacture Notice Requirements and Review Procedures	1980	1983	Yes	
Resource Conservation and Recovery Act				
Standards for Owners and Operators of Hazardous Waste Land Disposal Facilities	1981	1982	No	Court Deadline
Codification Rules	1985	1985	No	Legislated Deadlines
Management of Used Oil	1985		Yes	
Restrictions on Land Disposal of Hazardous Wastes	1986		Yes	
Comprehensive Environmental Response, Compensation & Liability Act				
National Oil and Hazardous Substances Contingency Plan		1982	Yes	
Federal Insecticide, Fungicide and Rodenticide Act				
Data Requirements for Pesticides Registration	1982/84	1984	Yes	

Sources: U.S. Environmental Protection Agency (EPA). Office of Planning and Policy Evaluation. *EPA's Use of Benefit-cost Analysis 1981-1986* (EPA-230-05-87-028). Washington: GOP, 1987. 4-2. Print.

Table 11

EPA Cost-Benefit Analyses: 1981-86

Act/Rule	Benefits	Costs	Net Benefits
Clean Air Act			
NAAQS - N02	X	$	
NAAQS - PM	$	$	$
Surface Coal Mines	$	$	$
Heavy Duty Motor Vehicles	X	$	
NAAQS - CO	X	$	
Lead in Fuels	$	$	$
Clean Water Act			
Iron and Steel	$	$	$
Organic Chemicals	$	$	$
TSCA			
Asbestos	X	$	
PCBs	$	$	$
Premanufacture Review	X	$	X
RCRA			
Used Oil	X	$	
Land Disposal	X	$	
CERCLA			
Contingency Plan	X	$	
FIFRA			
Data Requirements	X	$	X

X = Item discussed.
$ = Item discussed and monetized.

Sources: U.S. Environmental Protection Agency (EPA). Office of Planning and Policy Evaluation. *EPA's Use of Benefit-cost Analysis 1981-1986* (EPA-230-05-87-028). Washington: GOP, 1987. 4-4. Print.

of these fifteen rule-prepared-RIAs between 1981 and 1986, "RIAs have in fact been influential in guiding agency decision-making, on occasion actually leading to regulations than would otherwise have occurred" (Goodstein 376).

Risk Assessment

Together with cost-benefit analysis, risk assessment was part of the regulatory process. Risk assessment meant "the methodology used to estimate the danger that something, usually a carcinogenic chemical, posed to a population" (Russell III, "Environmental" 499). It was expected to provide the best possible scientific characterization of risks based on a rigorous analysis of available information and knowledge (Hetes 1010). Like cost-benefit analysis, risk assessment emphasized quantitative measures of trade-offs.

In 1981, Congress instructed the Food and Drug Administration (FDA) to arrange for the National Research Council (NRC) to undertake a study of federal efforts to use risk assessment. Although this study did not recommend specific methods for conducting risk assessment, the risk assessment framework, specific definitions and its component steps from the 1983 NRC report have been widely adopted (NRC, *Science and Judgment* 33). Since risk assessment is a key source of scientific information for making sound decisions about managing risks to human health and the environment, Administrator Ruckelshaus committed himself to strengthening the risk assessment capabilities to establish environmental standards in compliance with the Clean Air Act. In the National Research Council report of 1983 (known as the Red Book), the risk assessment processes were divided into four components: firstly, hazard identification defining whether exposure to an agent can cause an increased incidence of an adverse health effects; secondly, exposure assessment fixing the intensity, frequency, and duration of actual or hypothetical exposures of humans to the agent; thirdly, dose-response assessment characterizing the relationship between exposure or dose and the incidence and severity of the adverse health effect; and fourthly, risk characterization estimating the probability of specific harm to an exposed individual or population (NRC,

Science and Decisions 174). In addition, Glenn W. Suter and Lawrence W. Barnthouse from the EPA's Office of Research and Development developed an environmental risk analysis at Oak Ridge National Laboratory, which was a method for identifying and quantifying the probability of adverse changes in the environment from human activities. In 1982 and 1986, they estimated risks associated with indirect coal liquefaction, including risks to fish, algae, timber, agriculture, and wildlife (Russell III, "Environmental" 499-500). In 1986, the National Research Council (NRC) recommended that the EPA adopt a set of guidelines to deal with assessing risks of carcinogenicity, mutagenicity, developmental toxicity, and effects of chemical mixtures, which include default options that are essentially policy judgments of how to accommodate uncertainties and various assumptions needed for assessing exposure and risk (NRC, *Science and Judgment* 174).

Risk assessment enabled scientists to describe ecological threats in the same language that the EPA used to describe threats to human health, thus the EPA got away from only focusing on human health, and put ecological protection on the agenda (Russell III, "Environmental" 499-500). The risk assessment was used by the EPA to characterize the nature and magnitude of health risks to humans and ecological receptors like birds, fish, and wildlife from chemical contaminants and other stressors present in the environment. Therefore, the EPA concentrated mainly on human health assessments at Superfund sites, and ecological risk assessments (Newman and Strojan 5). Risk assessment was viewed by Administrator Thomas as the quantitative estimation of the likelihood of adverse consequences (Edelstein and Makofske 60). In a multi-volume report published by the EPA in February 1987, *Unfinished Business: A Comparative Assessment of Environmental Problems,* Administrator Thomas stated: "In a world of limited resources, it may be wise to give priority attention to those pollutants and problems that pose the greatest risks to our society. That is the measure this study begins to apply. It represents, in my view, the first sketchy lines of what might become the future picture of environmental protection in America" (Minard, Jr. 29). In fact,

risk assessment became the EPA's analog of cost-benefit analysis, and worked as a process central to the work of the OMB, and the administration's overall effort to reduce regulation within the Reagan Administration (Edelstein and Makofske 60).

3.3.7. Congress, Court and the EPA

During Reagan's Presidency, members of Congress became more suspicious of EPA officials and gradually distrusted the White House and the EPA on rapid environmental clean-up (Opie 449). Congress compelled administrative compliance through conducting investigations, replacing administrators, strengthening most of the major acts and adding much tougher new ones, and adding new, intricate, and far-reaching regulatory programs to the responsibilities the EPA already had in order to reduce administrative discretion for agency officials, particularly for the EPA after 1983 (Kraft, "Environmental" 38). These new acts included the Nuclear Waste Policy Act in 1982 and its Amendment Act in 1987, Hazardous and Solid Waste Amendments (RCRA amendment) in 1984, Safe Drinking Water Act Amendments in 1986, the Superfund Amendments and Reauthorization Act (SARA) in 1986, the Water Quality Act in 1987, and the Ocean Dumping Act in 1988.

Administrator Burford's effort to dismantle the nation's environmental programs encountered intense opposition in Congress (Kurian 206). Congress was even consistently adversarial to the Reagan Administration's environmental policy. Two EPA officials noted in a candid law review analysis: "[B]etween 1980 and 1983, Congress perceived the EPA as an agency unwilling or unable to fulfill its mandate of environmental protection. Almost every section of the RCRA Amendments might be read as expressing a sense of frustration over the pace and scope of EPA action" (Mugdan and Adler 217). Congressional dissatisfaction also resulted in vigorous investigations on EPA clean-up activities. As a congressional investigation on toxic waste clean-up was conducted, both the Senate and the House aides complained that the administration was "doing as little as possible to help us" evaluate the

law and that the requested information went unanswered for months (Brownstein and Easton 212). Suspicion on rapid environmental clean-up grew in Congress. As subcommittees of the House of Representatives demanded thousands of pages of documents relating to toxic waste clean-up, EPA Administrator Burford refused to hand them over with the strategy of "cut down the amount of information and make it more of a political debate" (Ibid.). She even said she would go to jail rather than surrender them to Congress (Martin C13). Thus, suspicion was transformed into mistrust of the EPA's administration. Congress was emboldened by public opinion favoring environmental protection and resisted attempts to dismantle the regulatory process of the Reagan Administration (Dunlap, "Public" 88). Eventually, the White House gave up its claim of executive privilege to keep the documents secret. EPA Administrator Burford was also forced to resign on March 9th 1983 because of her mismanagement of toxic waste site clean-up enforcement, especially laxness at the dioxin-ridden Times Beach site in Missouri (Opie 449). Congress then forced President Reagan to replace Administrator Burford with the pro-environment William Ruckelshaus (Hunter and Waterman 117). Administrator Ruckelshaus tried to rebuild Congress' trust through better management of the Superfund programs. However, due to factors like the chronic shortage of resources, the clean-up enforcement was continually operated in the shadow of the partially revived Superfund campaign (Mintz 66). Because of the lasting residue of mistrust, Congress increasingly favored tougher environmental statutes and reduced administrative discretion for the EPA (Dunlap, "Public" 91-92) by enacting highly prescriptive laws that went into specific details, technologies, and rigorous timetables for fulfillment (Opie 449). In November 1984, Congress enacted the Hazardous and Solid Waste Amendments (HSWA) to modify the RCRA. Congress continued to organize different investigations on the EPA's Superfund programs. In December 1984, the Dingell Committee conducted a survey on groundwater monitoring (Mintz 66). This survey found that formal enforcement action had only affected about forty percent of the total hazardous waste

facilities (Ibid.). It resulted in a hearing by the Dingell Committee on April 29th 1985, which criticized EPA enforcement efforts. In response to congressional wrath, the EPA launched a loss of interim status initiative against the land disposal facilities. It targeted facilities that were required to lose their interim status and close down their operations if their owners or operators failed to submit a final permit application and certify compliance with applicable groundwater and financial responsibility requirements (Mintz 66-67).

During Reagan's second term, Congress forced the President to accept expanded environmental laws. The Superfund was at the core. In 1980, Congress passed the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) to deal with highly public incidents involving the improper disposal of toxic wastes, including the incident at Love Canal. $1.6 billion was allocated over five years to the Superfund to clean abandoned chemical waste sites. In 1986, Congress renewed it, supported by EPA Administrator Thomas and some Republican leaders in Congress. Although President Reagan was concerned about the fund's cost, he reluctantly signed the bill on October 17th 1986 after votes of 386 to 27 in the House and 88 to 8 in the Senate (Knott and Chidester 59). The law increased the Superfund's budget nearly five times to $8.5 billion (Ibid.). In addition, Congress passed the $18 billion Water Quality Act for sewage treatment programs at the end of 1986. President Reagan vetoed it. However, after Democrats took control of both the House and the Senate after the 100th Congress, this Water Quality Act was revisited in January 1987, and an even costlier $20 billion clean water bill was passed by a large majority (Knott and Chidester 60). President Reagan believed it was inappropriate for the federal government to spend so much money on the sewage treatment program and vetoed it again, claiming that it was "loaded with waste and larded with pork" (Reagan, Remark). In early February 1987 the House overrode Reagan's veto by a vote of 401 to 26, and the Senate by a vote of 86 to 14 (Trager 12).

Regarding the EPA's enforcement program, the agency could not have fully restored the

trust of interested representatives and senators (Mintz 79). Some malfunctions of EPA leaders contributed to the continuing tensions between the agency and Congress, such as the inability to anticipate and avoid criticism from Capitol Hill or to cultivate informal channels of communication with key congressional staff members. These exacerbated the difficulties faced by the EPA in obtaining Congress's approval and support, and sometimes intensified congressional suspicions (Ibid.). In September 1986 Thomas Adam, the Assistant Administrator for Enforcement and Compliance Monitoring, transferred Frederick P. Stiehl from the agency's associate enforcement counsel for hazardous waste enforcement to the position of associate enforcement counsel for pesticides and toxic substances. Adams later explained that he made the decision to replace Stiehl with a manager who "knew how to make things work politically within the agency," and it would benefit Stiehl's career (Mintz 79). However, this transfer was viewed by Stiehl as "disruptive to the staff" and "the wrong decision, made in the wrong way, at the wrong time" (Ibid.). On October 6th 1986, Representative Dingell sent a letter to Administrator Thomas questioning the legality of the Stiehl transfer and describing this personnel action as a matter "of some urgency and concern" which had "a serious adverse impact on employee morale" (Ibid.). Administrator Thomas answered that the decision had been made in "full compliance with statutory requirements" (Mintz 80). The reassignment of Frederick further raised Congress' suspicion on EPA enforcement, because Stiehl had participated in the EPA's hazardous waste enforcement efforts, had established a cordial working relationship with congressional committee staff members, and had a reputation as a dedicated, no-nonsense enforcement official (Ibid.). The case also caused anxiety amongst many of the Superfund enforcement staff, leading to a decline in employee morale. It was said that Adams's organizational changes had "sparked fear among some agency staff that a 'less confrontational' style is being developed in the enforcement office, that will result in headquarters becoming less willing to oppose the region over controversial enforcement actions" ("New Criminal").

Thus, it harmed EPA enforcement efforts, making Congress at times openly hostile to the EPA (Mintz 80). Frequent, intense, and often adversarial oversight hearings were conducted in the following years by congressional committees and subcommittees on diverse aspects of EPA enforcement (Ibid.). The GAO supplemented these investigations with a number of reports required by congressional committees or individual senators or members of the House of Representatives (Mintz 81). Faults with different components of the EPA's enforcement program were found by different investigations and reports from Congress (Ibid.). On April 11th 1988, a hearing was held by the Subcommittee on Energy, Environment and Natural Resources of the House Committee on Government Operations in Crystal City, Texas, at the site of a hazardous waste disposal facility that the EPA had earlier placed on its National Priorities List. Representative Mike Synar (D-OK), the subcommittee's chairman, fired at the EPA during the hearing:

> Two years after the [SARA] Amendments became law, the prospect for swift and permanent clean-up of these hazardous waste sites is not good. We are spending lots of money, we are fattening the pocketbooks of a lot of contractors; and we are also subsidizing the development of lots of thick, detailed technical documents. But… somewhere in these lengthy, technical Superfund processes we have lost sight of the ultimate goal, and that is the protection of the environment and public health from hazardous waste (Mintz 81).

Likewise, Representative Dennis Eckart (D-TX), criticized the pace of remedial activity, the vigor of the enforcement program, and the selection of clean-ups that emphasize treatment of waste and permanent solutions of the EPA Superfund enforcement (Ibid.).

Representative Eckart strongly criticized the EPA's inconsistency regarding the remedies chosen at the Superfund site and its inattention to CERCLA clean-up standards and permanent treatment requirements. These congressional concerns were supported by two

reports of outside assessments. One was *Right Train, Wrong Track: Failed Leadership in the Superfund Cleanup Program*, by a group of traditional environmental organizations such as the Environmental Defense Fund, Friends of the Earth, National Audubon Society, the Natural Resources Defense Council, the Sierra Club, and the industry trade group, Hazardous Waste Treatment Council, on February 1988 (Mintz 82). It analyzed the EPA's Superfund site remedy selection processes and accused the EPA of unscientifically setting clean-up goals, ignoring natural resource damage, and exempting Superfund sites from applicable environmental standards (Ibid.). The other report was *Are We Cleaning Up?: 10 Superfund Case Studies* by the Congressional Office of Technology Assessment (OTA). It found that the Superfund Program had been inconsistent in its selection of treatment remedies at similar sites and criticized the EPA for failing to use central management controls to further the agency's collective understanding of common site characteristics and common clean-up problems and solutions (Ibid.).

In response, the EPA initiated a public campaign to defend its Superfund performance. In an interview with *The New York Times* on June 18th 1988, the Assistant Administrator (from 1985 to 1989), Win Porter, called the OTA's report "a limited, superficial study" that drew "global conclusions" from inadequate data. He said that a few officials sitting in Washington conducted the study "while I have 3,000 people out there working hard to make the program a success….I really resent them undermining our credibility with the communities we work with" (Shabecoff, "Congress" A1). Administrator Thomas gave the same opinion in his remarks to the annual conference of the American Pollution Control Association in Dallas, Texas, stating that he resented that the OTA had made such broad allegations although it examined only ten sites and had "only minimal contact" with the EPA's Superfund workforce ("EPA Officials"). However, the defense from the EPA side also heightened the legislators' distrust, since many congressmen saw this kind of media-focused reports as an independent confirmation of their suspicions about poor agency implementation (Mintz 83).

Thus, these assured Congress of leaving little room for the EPA in implementation.

During the Reagan Administration, Administrator Burford "made notable progress on this front in the lower courts" (Nathan 134). For instance, only sixty-nine cases were sent to Justice in 1981 (Brownstein and Easton 214). After Administrator Ruckelshaus came back to the EPA, it began to take more litigation to protect its authority, and to coerce regulators into following its regulations and federal laws. "In fiscal year 1986, State and federal environmental civil, criminal and administrative enforcement actions continued to be undertaken at record levels… the agency referred 342 judicial actions to the Department of Justice, compared to 276 in the previous year….The criminal Enforcement Program experienced its most successful and productive year since the program commenced by referring an all-time high of forty-five criminal cases to the DOJ" (Mintz 69). And "in fiscal year 1987, the EPA and the States achieved record levels of environmental enforcements, using the full range of enforcement authorities. The agency referred 304 civil cases to the Department of Justice….The agency established an all-time record for the largest amount of civil penalties imposed in a year… over $ 24 million" (Mintz 70).

In his second term, President Regan tried to "fundamentally change the majority pattern of the U.S. Supreme Court" (Nathan 134). He nominated a large number of judges to the Supreme Court, to district courts and courts of appeal. For instance, he appointed four Justices to the Supreme Court, and another 78 judges to Courts of Appeal, including many leading conservative academics, such as Bork, Ralph K. Winter, Jr., Richard Posner, and Frank Easterbrook, and 290 judges to district courts (Hall, Ely, and Grossman 709).

In turn, courts also had a strong impact on environmental regulations. During the Reagan Administration, courts began to define the property rights of environmental regulation. "Developers and other landowners instituted numerous lawsuits arguing that any land use regulation by local, State, or federal authorities 'took' their property by limiting development of it" (Paehlke, Conservation 134). A similar case occurred between the Reagan

Administration and the State of California. The Reagan Administration argued that California had no right to challenge Secretary of Interior James Watt's efforts to sell oil exploration leases off the State's coastline, while the State of California argued that these sales must be cleared with State officials to ensure they conform to the State's coastal development plans. As the Reagan Administration had gone to court to protect federal authority on nuclear power and offshore oil exploration, the Supreme Court ruled unanimously in California's favor on April 20th 1983 and assured the State's power "to block construction of new nuclear plants until an adequate federal plan for disposal of nuclear waste has been developed" (Kenski and Ingram 290).

Courts further worked as a vehicle for interest groups. When environmental organizations filed a lawsuit to curb abuses of executive oversight review of agency rule-making, primarily by the OMB (Rosenbloom and O'Leary 76), the federal court sometimes ruled against arbitrary agency deregulatory actions and agency disregard of statutory requirements (Shanley 133). In the case of *Environmental Defense Fund v. Thomas* (1986), the EPA missed several statutory deadlines due to the OMB's review of EPA regulations on leaking underground storage tanks. The Environmental Defense Fund (EDF) sued the EPA and the OMB in the court for the District of Columbia and asserted that the reason for the delay was the OMB. The EDF asked for an order for the EPA to issue the regulations in time, and an injunction against the OMB to stop further delaying actions by the budget office in the future. In January 1986, Judge Thomas A. Flannery ruled that the delay in the issuance of the storage tank regulations had been caused by the OMB and that the OMB had no authority to cause the EPA to miss statutory deadlines. The OMB had argued that even if it had exceeded its authority by blocking regulatory action beyond the statutory deadline, the court was powerless to remedy the situation. Judge Flannery thought the court had jurisdiction over the OMB, declaring that the OMB must "obey the law Congress sets down" (Rosenbloom and O'Leary 76).

3.3.8. Interests Groups and the EPA

Under President Reagan's strong approach to economic growth, business groups played a dominant role in environmental regulation making. Increased environmental regulations at the end of the 1970s required large amounts of capital investment and expense to industries involved in oil, mining, electricity, coal and nuclear-powered electrical plants. The rising cost of federal environmental regulations reduced profits and turned business groups against the regulations (Merchant 200). Conservative policy research institutes, such as the American Enterprise Institute, the Heritage Foundation, and the Competitive Enterprise Institute, published several reports, books, articles, and position papers to fuel a reaction against federal environmental regulation (Kraft, "Environmental" 37). Business groups used lobbying, lawsuits, scientific research, and electoral politics to influence issues like air pollution, wildlife, and energy conservation. Business groups continually united themselves, and improved cooperation. In the 1980s, business groups constituted an up-front, professional lobby with professional staff, rather than engaging in widespread under-the-table practices (Hrebenar 326). They developed a fourfold lobbying strategy of gathering information, alerting and activating the grassroots, contracting individual members of Congress, and carrying their message to the public via massive media campaigns (Ibid.). As Uslaner stated, "Cabinet departments and all manner of independent agencies… are gold mines for lobbyists" (Uslaner 206). They targeted Congress and administrative institutions. The successful professional coalitional lobbying enabled business groups to continually gain clout both in Administration and in Congress in the early 1980s. Thus they reduced governmental regulation of business substantially, especially at the beginning of the Reagan Administration (Hrebenar 297). EPA Administrator Burford was associated with corporate representatives, such as John E. Daniel, the American Paper Institute's chief lobbyist from 1976 to 1980; Kathleen Bennett, a long-time lobbyist for the timber industry; Kitty Adams who worked for the Business Roundtable; and Robert Perry, an Exxon attorney, as general

counsel (Brownstein and Easton 212). Under Administrator Burford, the EPA allowed industries to play a much greater role in regulating themselves than was the case in the 1970s. The lobbyists for the biggest polluters were even invited to come into Congress and literally rewrite the Clean Water Act and the Clean Air Act ("Excerpts" B14). Business lobbying successfully introduced risk assessment and cost-benefit analysis into the regulatory process. While conducting direct coalitional lobbying to reduce the burdens and costs imposed on industry by new environmental laws, business groups began to displace those costs onto the public, raising the prices of consumer commodities. Economists Daniel Faber and James O'Connor argued that: "Environmental regulations added to the costs of capital but not to revenues… [P]ollution abatement devices and clean-up technologies usually increase cost, hence, everything else being the same, reduce profits, or increase prices" ("Struggle" 18). Additionally, lots of firms had broken the regulations. Waste was being discharged into landfills, inner city neighborhoods, toxic waste dumps, and even being exported to the Third World. Pollution was much worse and toxic waste sites more abundant in many areas, especially in reservations and inner cities. More dangerous chemicals such as nitrates, arsenic, and carcinogens also appeared in the environment than before. The environmental deregulation in the early 1980s became the financial and ideological reaction to the environmental movement of the 1970s (Merchant 200).

However, environmental organizations rarely had the same level of access and resources to administrative departments and agencies as business groups (Kraft and Kamieniecki, "Analyzing" 21), despite the fact that the number of environmental lobbyists of the twelve environmental organizations had swelled from forty in 1975, to eighty-eight in 1985 (Mitchell, "From" 109). Besides concentrating on defending and strengthening the Clean Air Act, expanding the Superfund, getting the Clean Water Act reauthorized, and cleaning up defense production facilities, mainstream environmental organizations like the Sierra Club made protecting wilderness their new environmental agenda during the Reagan

Administration. Environmental activities like defending Alaska's wildlife, saving old-growth forests, and "keeping the money changers out of the temples" captured the hearts of its members (McCloskey 80).

In 1984, methyl isocyanate was released killing over 3,000 people and injuring another 300,000 at a plant in Bhopal, India (Hoffman, "Institutional" 363). Similarly, the accidents at Love Canal, Times Beach and with the Exxon Valdez ship further provided the media with a seemingly endless supply of stories. These disasters turned local communities against chemical plants throughout the United States and awakened Americans to the potential threats in their backyards (Ibid.). Therefore, grassroots environmental organizations grew up quickly at the local community level, initially in response to specific environmental risks like the placement of waste disposal areas or incinerators, the building of lead smelters, the heavy use of pesticides in local agriculture, and nuclear weapons testing (Stephens 50). Because "The most polluted urban communities are those with crumbling infrastructure, ongoing economic disinvestment, deteriorating housing, inadequate schools, chronic unemployment, a high poverty rate, and an overloaded healthcare system" (Bullard, "Anatomy of Environmental Racism and" 17), members of grassroots environmental organizations were generally poor, ethnic, and working-class, and distinguished themselves from the mainstream environmentalists who were generally white, well-educated, and middle-class (Stephens 50). The grassroots environmental organizations wanted to participate in public environmental decision-making (Dowie 135) and to "rebuild the United States, community by community" (Gibbs x). They associated social justice with environmental quality, argued that all people have the right to a safe and healthy environment (Ibid.), and asked for environmental justice (Stephens 54). They kept the principles of ecological democracy, and utilized "[c]ommunity Right-to-Know laws, and citizen-enforcement provisions in federal and State legislation, and local input in waste clean-up methodology and sitting decisions" (Dowie 135). As they had little access to administrative departments and agencies and Congress, they tried to force

environmental issues onto the political agenda through direct confrontation, such as public demonstrations, petitions, community education hearings and debates. Some grassroots environmental organizations were good at using the media to spread what often seemed to be David and Goliath struggles of disenfranchised groups against powerful corporate polluters and State federal governments (Stephens 51). Since they were ethnic, poor and working-class, they removed ethnic, racial, and class barriers from and introduced diversity to the environmental movement (Dowie 217). They also formed multi-issue, multicultural coalitions instead of single-issue protests based in particular communities (Stephens 51).

Based on different issues such as toxic abatement, ecological economics, civil and human rights and wilderness preservation, grassroots environmental organizations were divided into four groups: splinter groups, the new conservation movement, environmental justice groups, and Not-In-My-Backyard (NIMBY) groups (Dowie 208). Splinter groups were founded, with more responsible environmental concerns, by individuals who had belonged to mainstream organizations and then left them because their personal ideologies and organizational visions clashed with establishment views (Dowie 208-209). David Brower was a good example. After being fired by the Sierra Club in 1969, he organized three distinct environmental NGOs: Friends of the Earth, the League of Conservation Voters, and the Earth Island Institute (Dowie 209 supra note 2). The New Conservation Movement consisted of thousands of small, local and regional groups formed by dedicated activists to save America's forests, especially the remaining five percent of ancient forests. Environmental justice and NIMBY groups addressed the uneven distribution of the costs of pollution and the benefits of environmental protection by connecting environmental issues with social justice, civil rights, and the democratic process (B. Edwards 35-36). Environmental justice groups were from ethnic communities and they argued that uneven distribution of environmental hazards was the result of inequalities in socio-economic and political power. They also argued that poor and minority Americans were subjected to disproportionate environmental risks, because

Americans who were ethnic or had low incomes were often living in close proximity to locally unwanted land uses (Ibid.). They concentrated on such issues as urban air pollution, lead paint and transfer stations for municipal garbage and hazardous waste. Sometimes they were able to take advantage of established lines of communication, skilled activists, black elected officials, and the national network of civil rights advocacy organizations (Ibid.). NIMBYs were generally locally-organized anti-toxic groups with the desire to protect their families and communities from toxic contamination arising from waste dumps, incinerators, ground water contamination, and air pollution (Ibid.). Their protests were scattered and disorganized and they lacked the necessary organizational infrastructure, communication networks, and sufficient representation in the political process of full-fledged social movements (Ibid.). But the Citizen's Clearing House for Hazardous Wastes (now known as the "Center for Health, Environment, and Justice") and other national organizing centers somehow made the grassroots groups more cohesive (Dowie 128 supra note 2). The Love Canal Homeowners' Association was one of most influential NIMBYs. Love Canal was a housing development built on a highly toxic industrial chemicals landfill (Dowie 127-128). Due to the polluted land, the local residents suffered from different illnesses, such as skin irritations (Dowie 127). The LCHA made a community-initiated health survey, organized dramatic protests, and even took EPA officials hostage (Gottlieb 246).

Additionally, a number of radical non-lobbying environmentalist groups took direct action against governmental decisions, accusing the mainstream environmental organizations of being too willing to compromise the environmental agenda. Earth First! was one of them. It was founded in 1981, espousing "No compromise in the defense of Mother Earth" and employed such radical tactics as direct action, civil disobedience, Guerilla Theater, and "ecotage," the sabotage of equipment used for clear cutting, road-building, and dam construction (Geary).

Despite the ever-growing grassroots environmental movement, the clean-up did not get at

the roots of the problems themselves. For example, a successful protest against high levels of lead contamination in the soil of a poor, largely Latino community in West Dallas led to a clean-up project. But this project moved the lead-contaminated soil to a landfill in Louisiana and resulted in the redepositing of lead-contaminated soil there (Bullard, "Anatomy of Environmental Racism" 29).

The grassroots environmental movement during the Reagan Administration changed America's attitude toward the environment and public health. A *New York Times* national poll in June 1989 showed that eighty percent of the population agreed with the statements, "Protecting the environment is so important that requirements and standards cannot be too high, and continuing environmental improvements must be made regardless of the cost." In 1981, early in the Reagan Administration, only forty-five percent of respondents had agreed with this position ("Grass-roots" A1). While the grassroots environmental organizations enriched themselves with more groups and more members during the Reagan Administration, mainstream environmental organizations also expanded their membership. Between 1980 and 1990, the Sierra Club's membership multiplied from 180,000 to 630,000, while the Wilderness Society's membership soared from 45,000 to 350,000 (see table 4). They kept environmental issues at the forefront of public consciousness, fought the additional cuts all the way to the President, and asked for new federal laws and regulations to increase industry's accountability to the public for the environmental impact of their operations (Brownstein and Easton 209). Therefore, a number of new environmental laws were passed, including the Resource Conservation and Recovery Act Amendments of 1984, the Safe Drinking Water Act Amendments of 1986, and the Superfund Amendments and Reauthorization Act of 1986.

When President Reagan came to the White House in 1981, the United States was under the shadow of large governmental administration and heavy financial burden, high inflation, declining productivity and stubborn unemployment. In addition, the United States needed

money to pull through the economic and military competition with the Soviet Union. Regulatory relief was carried out by President Reagan to reduce costs. This cost-focus made the EPA's environmental protection orientation shift from life value to money. This change caused the Reagan Administration to balance economic costs and environmental benefits on a dollar basis (Paehlke, "Environmental" 81), and strongly constrained environmental regulation. President Reagan pursued an "administrative strategy" by focusing on his appointment power, the use of executive orders, and other means to influence the various environmental regulatory processes, and to alter environmental policies instead of directly confronting Congress. EPA Administrator, Burford supported "industrial revitalization" and lightened the regulatory "overburden" that the EPA had placed on industry (Opie 449). The EPA lost its principles while pursuing a cooperative relationship with industries in a manner of bottom-up negotiations with the industrial groups. Because of closed meetings and rumors of secret deals, the EPA suffered negative publicity (Hoffman, From Heresy 86-87). Administrator Burford cut one-third of the EPA budget and one-fifth of the EPA staff between 1980 and 1983, leaving the EPA without the resources to fulfill all of its functions, and the EPA's 1983 fiscal year budget proposal even called for a twenty-eight percent cut from 1981 levels (Knott and Chidester 57). It resulted in slashed funding for the Superfund and slow implementation. Thus, the EPA acted as a deregulator, and was pulled back from key programs overseeing hazardous wastes, toxic substances, clean air, and clean water. President Reagan further let the public down. He eliminated tax credits on solar energy for homeowners, cut the federal research-and-development funding for solar power, and even removed the solar panels from the White House roof ("Congress"). In April 1986, Administrator Ruckelshaus observed that the public's distrust of the president's environmental policies "was worse today than it's been at any time" (Knott and Chidester 60). However, Congress, supported by environmental organizations, offset the White House's unwillingness to protect the environment and forced President Reagan to replace

Burford with Ruckelshaus at the EPA. Congress continually wrote new laws and forced the EPA to deal with problems like hazardous waste. Strong political support for environmental programs encouraged Congress to assert public concern and hold the EPA accountable for protecting the environment (Fiorino, *Making* 69). Although Administrator Thomas tried to repair the Superfund implementation, the intensified conflict between the EPA and Congress made the EPA more cautious about implementing Superfund programs.

3.4. The EPA under the George H. W. Bush Administration

The EPA entered another transition era during the Bush Administration, which transformed the environmental deregulation and the reluctant environmental protection during the Reagan Administration into an active, rational advocate of environmental protection in the Clinton Administration. Contrary to the first transition in the Carter Administration, which tried to slow down the environmental regulation process through regulatory reforms, the Bush Administration took the initiative to somehow revitalize environmental protection in the first two years of term. This environmental revitalization was enabled by the Bush Administration's efforts to work in harmony with Congress in signing legislation to phase out ozone-destroying chlorofluorocarbons (Ringquist 34), and to craft the Clean Air Act Amendments of 1990.

Learning lessons from the anti-environmental behaviors of the early eighties, President Bush chose to use and lead with environmental issues in national politics, just as President Nixon had. During the presidential campaign of 1988, he changed President Reagan's public conservatism to conservationism on environment, and attacked the environmental record of his Democratic competitor, Michael Dukakis, on the clean-up of Boston Harbor (Mintz 84). He pledged to be an "environmental president," promising firm measures to halt the greenhouse effect and declared that "all existing wetlands, no matter how small, should be preserved" ("Swamp" A18). He said that it was time to put America's best minds to work, to

turn technology and the power of the marketplace to the advantage of the environment, to create, to innovate, and to tip the scales in favor of recovery, restoration, and renewal (Bush, "Remarks"). He also announced that every American expects and deserves to breathe clean air, and, as President, it was his mission to guarantee this (Ibid.). On Earth Day in 1990, he even stated that "Every day is Earth Day" (Ibid.). However, environmentalists viewed his commitment and credentials with some suspicion, as he had worked for President Reagan in chairing the President's Task Force on Regulatory Relief (Shanley 131).

President Bush faced fiscal problems left by President Reagan, such as almost $3 trillion deficit, a savings and loan bailout and a nuclear weapons plant clean-up estimated to cost hundreds of billions of dollars (Ibid.). He chose to balance economic development and environmental protection. On the one hand, he preserved his pledge to be an environmentalist president through his appointment strategy, budgetary policy, and the EPA's cabinet-rank status. While appointing the conservative candidate in the natural resources field, particularly in the Departments of the Interior and Energy, he chose professional environmentalist William Reilly as EPA Administrator, who was the president of the World Wildlife Fund and the Conservation Foundation and considered a protégé of former EPA Administrator Russell Train (Mintz 84). In addition, the Bush Administration significantly increased the budget for protecting the environment. The EPA budget was increased from almost $5.03 billion in 1988 to about $6.67 billion in 1992, and the workforce from 14,442 in 1988 to 17,010 in 1992 (see chart 1). In the natural resources area, the Bush Administration's budget requests for FY 1991 and FY 1992 centered on its "America the Beautiful" program, wetlands protection, and soil conservation. The "America the Beautiful" initiative had a $630 million budget in FY 1991 and $925 million in FY 1992 from the Department of the Interior (Shanley 139). President Bush believed in ensuring strict enforcement and the "polluters pay principle," and emphasized prevention instead of just clean-up (Bush). Although President Bush has been less committed to using administrative

reorganization and privatization in his administrative presidency, he did support raising the EPA to cabinet-rank status, and revived and reorganized the President's Council on Environmental Quality (Shanley 137). He also tried to improve relations with Congress through cooperating with them to formulate the CAA Amendment of 1990. On November 15th 1990, President Bush signed the Clean Air Act Amendments of 1990. This Act tightened auto emission standards and pollution control requirements for cities that did not fulfill federal air quality standards, and mandated a forty percent reduction in sulfur dioxide to promote acid rain control (Shanley 144). This Act also required control technology for major toxic air installations, prescribed cleaner gasoline and the introduction of clean fuel vehicles most polluted areas in the U. S. (Ibid.). This Act even included an elaborate and detailed Command-and-Control system of permits, standards, deadlines, and stronger civil and criminal penalties (Ibid.). Supported by Administrator Reilly, the Pollution Prevention Act of 1990 was signed as part of the Reconciliation Act. It set up a modest sixteen-million-dollar pilot program for 1991-1993 with technical assistance and matching grants to States to create and encourage pollution source reduction programs (Shanley 145), thus forcing the EPA to focus on the prevention — not just the correction (clean-up) — of environmental damage.

On the other hand, President Bush placated opposing interests and more conservative allies through extending the regulatory review program of the Reagan Presidency. During the first two years, the Bush Administration also kept the pace of new health, safety, and environmental regulations the same as at the end of the Reagan Administration (U.S. OMB, *Report* 32). In response to concerns about increasing regulatory burdens, he established the Council on Competitiveness in March 1989, which replaced the Task Force on Regulatory Relief from the Reagan Administration as the new regulatory traffic cop (Milloy, "Reagan's"). The Council on Competitiveness headed by Vice-President Quayle not only reviewed all federal regulations with the aim of eliminating those that inhibited U.S.

competitiveness, but also intervened in many specific regulatory matters. For instance, it stopped an EPA proposal that would have required municipalities to divert twenty-five percent of their solid waste destined for incineration into recycling programs (Weidenbaum 23). President Bush also preserved and refined the power of presidential and OMB overseeing of agency regulatory policies and their annual agendas under Reagan's executive orders, and further expanded OMB overseeing of agency risk assessments (Shanley 137). Thus, the OMB continued to wield significant and controversial power in information collection and regulatory review. The OMB reviewed almost three-quarters of all agency rules of eight federal agencies. The EPA had the largest percentage of agency rules deemed consistent with change, and had the largest number of rules returned by the OMB for reconsideration. In the first year of the Bush Administration, the number of rules withdrawn by an agency, returned for reconsideration or suspended by the OMB was even slightly higher than that of Reagan's last year (Shanley 142). The regulatory process was intensified in January 1992. President Bush placed a three-month moratorium on the issuance of new regulations. Agencies like the EPA were required to evaluate existing regulations and to accelerate action on initiatives that would "eliminate any unnecessary regulatory burden" (Weidenbaum 23-24).

The EPA under Administrator Reilly

President Bush's more pro-environmental attitude from his balance strategy left room for EPA Administrator Reilly to make changes in environmental protection, especially in the EPA's enforcement efforts in the first two years of the Bush Administration (Mintz 84).

In Administrator Reilly's opening remarks at his January 1989 confirmation hearing before the Senate Environment and Public Works Committee, he committed himself to assertive EPA enforcement effort with the following words:

> I want to stress before this committee that I understand and accept as my duty, first and foremost, to implement the environmental laws of this land as

> Congress has written them….[E]nforcement must be inspired by a sense of vigor and urgency, for the aim of the enterprise is no less than the protection of human health, of life, and of the natural order that sustains civilization. So I pledge to take aggressive and timely enforcement action, whenever it is warranted, to safeguard public health or environmental quality (Mintz 86).

He promised his first act as Administrator would be to make legislation to strengthen the CAA. The key component of that legislation would be a program for reducing acid precipitation caused by pollution from coal-burning power plants and other sources. He also claimed that members of the Bush transition staff and EPA staff had been working out details of the legislation and that the bill would be ready to go to Congress within a few weeks with the specific goal of reducing the pollution caused by acid rain (Shabecoff, "E.P.A." A1). His commitment played a key role in revising the CAA of 1970 and of 1977, and led to the passage of the Clean Air Act Amendments of 1990. On June 13th 1989, the EPA released a report titled *The Ninety Day Study*, which was undertaken by a task group of EPA managers and professionals "as thorough a review of the [Superfund] program as could be completed in about ninety days" (Mintz 87). In order to restore public confidence, *The Ninety Day Study* contained detailed recommendations for the EPA's implementation of CERCLA (Superfund), such as several measures promoting consistency in the selection of Superfund site clean-up remedies, and specific steps for accelerating and improving remedial actions, bringing innovative techniques to reduce pollution in the Superfund Program, improving CERCLA management and administrative support, and communicating program results to the public (Ibid.). Administrator Reilly also pledged to request greater budget from Congress to implement the *Ninety Day Study* suggestions. For Capitol Hill, his acts were seen as salutary and encouraging, and somehow substantially succeeded in boosting the EPA's credibility in Congress, thus generating a "rhetorical cease-fire" with Congress and other critics (Ibid.). To further improve credibility on Capitol Hill and the EPA-Congress relations in enforcement,

Administrator Reilly appointed James Strock as the Assistant Administrator for Enforcement and Compliance Monitoring. James Stock was a special assistant to the EPA Administrator from 1983 to 1985. Later, he became a member of the staff of the Senate Committee on Environment and Public Works, and gained a reputation as an advocate of strong and effective EPA enforcement on Capitol Hill (Mintz 88). Unlike his predecessor, Thomas Adams, he devoted a lot of time to holding informal dialogue with interested congressional committee staff members. Both these private talks and his existing reputation on Capitol Hill helped restore the faith of at least some congressional observers in the agency's commitment to vigorous enforcement (Ibid.).

Administrator Reilly pointed out: "Throughout the 1970s and the 1980s, Congress constructed an arsenal of laws, typically in response to an episode of media attention and public alarm ... Many of these laws addressed serious problems but they were typically conceived in isolation, and constructed without reference to other environmental problems or laws…No law ever directed that we seek out the best opportunities to reduce environmental risks, in toto; nor that we employ the most efficient, cost-effective means of addressing them" (von Mühlendahl 500). After that, direct actions were taken to solve these problems on EPA enforcement. The EPA extended the responsibility and influence of the Office of Enforcement to overcome the fragmentation of enforcement authority at the EPA headquarters level. The EPA replaced the Office of Enforcement and Compliance Monitoring with the new Office of Enforcement, and created a new multimedia Office of Federal Facilities Enforcement through reorganizing the former Office of Solid Waste and Emergency Response, Federal Facilities Hazardous Waste Compliance Office, and the Office of Federal Activities from the Office of Enforcement and Compliance Monitoring. In addition, the EPA made the jurisdiction of the Pesticides and Toxic Substance Enforcement Division cover enforcement actions under the community Right-to-Know provisions of CERCLA Title III, and divided the former headquarters Hazardous Waste Enforcement

Division into two new units: a Superfund Enforcement Division and an RCRA Enforcement Division with emphasis on RCRA enforcement. The RCRA Enforcement Division was headed by aggressive attorney Kathie Stein, who had been recruited from the staff of the Environmental Defense Fund. Moreover, the EPA required its regional counsel to report all legal aspects of the enforcement work of EPA regional offices to the Assistant Administrator for Enforcement, rather than to the agency's general counsel. The EPA Administrator and his Deputy were also required to periodically rate his regional Administrators and deputy Administrators as to their job performance on enforcement activities ("Enforcement"). The Assistant Administrator for Enforcement and Compliance Monitoring, James Strock, created a new enforcement agenda. In this agenda, he emphasized the development of regional screening processes to judge the strategic value of individual enforcement, geographically-based approaches for developing special enforcement initiatives, and compliance-based approaches on multimedia initiatives and cooperation across EPA programs and regions. This case-screening process was to "aid the decision whether a single-media or multimedia response is warranted and what form of authority should be used to address the violation," and it "should involve coordination among the Program directors, Regional counsels and criminal enforcement agents to assure that the best remedy is selected for a particular case" (Strock, "EPA's" 10330). Alongside the overall goal of "twenty-five percent enforcement with multimedia efforts" established by Administrator Reilly on September 25th 1990, James Strock emphasized better communication of the EPA's goals and achievements (Mintz 90-91).

Several other incentives were contained in Strock's new enforcement agenda, such as assisting State agencies to develop their own cross-media targeting and case-screening capability, developing a comprehensive enforcement training capability with emphasis on multimedia casework, reviewing existing permits and regulations with a view to enhancing their precision and enforceability, and developing the right mix of EPA administrative, civil,

and criminal enforcement cases (Strock, "EPA's" 10327-10328). In the criminal enforcement programs, Strock favored more resources, improved training of investigators, and the fostering of a team approach among special agents, enforcement attorneys, and technical staff (Strock, "Environmental" 917, 937).

Ecological protection characterized the EPA in the Bush Administration. Since the Nixon Administration, human-health-centered environmental protection had been supported by environmental laws from Congress and environmental regulations from the EPA. The U.S. government focused on human wellbeing in environmental protection and "Administrators always found it easier to justify EPA actions to hostile Congressional committees when they based actions on human health" (Russell III, "Environmental" 500). Therefore, the EPA had a culture of emphasizing human health. Human health deserved protection, but Americans debated the extent to which nonhuman species deserved protection (Ibid.). Administrator Reilly said that huge sums of money had been spent on hypothetical risks experienced by a few individuals, while ecological matters affecting millions of people were not adequately addressed (Pediatr 241-242). Inspired by what William Ruckelshaus called "the essential unity of nature," and due to the conviction that human wellbeing was linked to the wellbeing of other species, Administrator Reilly made ecological assessments a part of EPA duty and began to direct the EPA to ecology-centered environmental protection in order to prevent and solve ecological problems arising in the United States. In 1991, the EPA issued its *Framework for Ecological Risk Assessment*, which formalized its ecological risk assessment procedure. In this report, ecological risk assessment was defined as "a process that evaluates the likelihood that adverse ecological effects may occur or are occurring as a result of exposure to one or more stressors" (Russell III, "Environmental" 499). Ecological risk assessment was also divided into three phases: problem formulation; analysis; and risk characterization. Each of these phases was further divided into smaller steps, most of which were analogues of steps in health risk assessment (Ibid.). The EPA's ecological assessments

strengthened the agency's agendas. It was reported by *Science* in a 1992 article: "As if trying to determine human health risks from radiation, dioxin, and other hazards isn't enough trouble, the Environmental Protection Agency may soon try its hand at the even more difficult chore of assessing ecological risk" (Ibid.). Since interest in ecological issues had been growing in the EPA, by 1993, ecological assessments had been undertaken by various programs from the Office of Prevention, Pesticides, and Toxic Substances, the Office of Solid Waste and Emergency Response, the Office of Water, and the Office of Air and Radiation (Ibid.). Administrator Reilly also set an example on conducting ecological assessments for future administrations. He announced that it would be a "matter of policy" not to tolerate "an unnecessary risk of regularly repeated bird kills" from pesticides without a countervailing benefit (Ibid.). He also vetoed a one billion dollar dam project in Colorado entitled Two Forks by explaining that he understood the value of water for Colorado, but that he had to "respect other values important to Coloradans and all Americans: a beautiful free flowing trout stream of the highest quality, wetlands, a downstream habitat of endangered whooping cranes, and other environmental resources" (Russell III, "Environmental" 499).

Despite the efforts made by the EPA, enforcement failed to overcome the continuing fragmentation of enforcement authority within EPA headquarters (Mintz 94). The agency's ineffectual enforcement structure went unchanged during the Bush Administration, although the GAO reviewed this question (Mintz 95). This continued damaging the efficiency of the EPA's enforcement work (Ibid.). Additionally, the agency's efforts to approach a multimedia enforcement encountered two significant difficulties: inadequate information management capability due to poorly designed information systems and internal resistance from single medium-oriented enforcement personnel (Ibid.). These difficulties significantly limited effectiveness in certain EPA regions (Mintz 96). The EPA still suffered problems, such as personnel shortages, inconsistencies in the enforcement approaches of its regional office, and inadequate guidance from headquarters (Mintz 97). On ecological assessments, many

employees, especially managers, often had no formal training in ecological disciplines, and the EPA needed internal expertise and knowledge to support its actions on a wide range of ecological issues (Russell III, "Environmental" 500).

Facing a nagging recession, relatively high unemployment, and an impending election in 1992, the Bush Administration increasingly shifted its emphasis toward developing natural resources, altering environmental law, easing up pollution control regulations, and limiting citizens' appeals to prevent private enterprise activities in public lands (Shanley 151). As a result, certain important categories of violations were ignored by the EPA and its regional offices and sometimes appropriate enforcement action on other RCRA infractions was not taken in time (Mintz 97). Since Administrator Reilly lacked enough consensus of opinion with President Bush on further environmental protection after 1990, the EPA often clashed with "Quayle Council," the Council on Competitiveness headed by Vice President Dan Quayle, The "Quayle Council" intervened in regulatory processes to rewrite environmental rules and regulations, and tried to revive the flagging national economy at the expense of the environment during the last eighteen months of the Bush Administration (Vig, "Presidential" 110). These disagreements resulted in several painful and significant defeats for Administrator Reilly during the spring and summer of 1992 (Schneider A1), and the morale of the enforcement staff again declined within the EPA. Moreover, the improved relationship between the EPA and Congress at the beginning of the Bush Administration did not continue and Congress and the GAO intensified criticism of EPA enforcement, especially after Jim Strock left the EPA in 1991 (Mintz 97). Renewed suspicion and mistrust lay between Congress and the EPA at the end of the Bush Administration (Mintz 100).

During the first year of the Bush Administration, the EPA made 364 civil judicial referrals to the Department of Justice and more than 4,000 administrative actions (Mintz 92). Superfund settlements and judicial enforcement actions increased significantly, and $34.9 million in civil penalties were assessed against violators of environmental laws in FY 1989,

including $21.3 million in civil judicial penalties and $13.6 million in administrative penalties (Mintz 183 note 31). The environmental regulations published in the code of the *Federal Register* from 1986 to 1991 also increased from under 9,000 to over 18,000 (Wilson and Sasseville 17). President Bush followed President Reagan, and continued to nominate and appoint judges that were relatively hostile to environmental protection and regulation in general to the Supreme Court, district court and courts of appeal (Emmert and Traut 54-56). For instance, he nominated Circuit Judge David Souter as an Associate Justice of the Supreme Court on July 25th 1990 and Judge Clarence Thomas to the Supreme Court one year later. Both nominations were confirmed in the Senate. Therefore, courts gave large support to environmental challenges and became keen on reducing the impact of environmental regulation (Kovacic 706).

The Bush Administration expanded market-based economic incentives rather than Command-and-Control regulations to achieve emission reductions more efficiently (Vig, "Presidential" 110). These economic incentives included a system of marketable pollution allowances for sulfur dioxide emissions, banking emissions credits for utilities and emission trading for chemical companies (Shanley 144). He further supported incentives for energy conservation and renewable energy alternatives. In his National Energy Strategy (NES), a variety of actions were taken to promote both energy efficiency and improved and new energy technologies. These actions involved improving energy efficiency in buildings and transport, and accelerating development and improvement in nuclear power production of electricity. These actions also included expanding the use of natural gas and clean coal technology, and renewable energy alternatives such as hydropower, biomass, and solar and wind technology (U.S. DOE 172, 181, 183-4). As a result, more funds were sought for solar-related and alternative energy options, and greater attention was given to issues like acid rain, global warming, and the health impacts of air pollution (Shanley 141).

Supported by President Bush, the EPA approached reduction in regulatory burdens and

costs with market-based incentives and encouraged cooperative and voluntary agreements with industry (Kraft, *Environmental Policy and Politics* 221). Administrator Reilly understood the balance strategy and he stressed solutions made by the reconciliation of interests. He said at his 1989 confirmation hearing before the Senate Environment and Public Works Committee:

> We must usher in a new era in the history of environmental policy, an era marked by reconciliation of interests, by imaginative solutions arrived at through cooperation and consensus, by the resolve to listen and work out our differences (Faber and O'Connor, "Environmental" 559).

To reach the reconciliation of interests, President Bush established a President's Commission on Environmental Quality to bring business and environmental leaders together (Ibid.). The EPA began to promote partnership with industry. Administrator Reilly further stressed a voluntary, collaborative, and flexible approach to pollution prevention. In 1991, the EPA created a voluntary industry partnership for energy-efficient lighting and for reducing toxic chemical emissions. It launched the Green Lights Program, which encouraged companies to perform energy audits and install energy-efficient lighting (Wilson and Sasseville 22), Because there were 1.4 billion pounds of releases or transfers of seventeen priority pollutants reported to the EPA Toxic Release Inventory (TRI) in 1988 (Ibid.) and it covered many new kinds of toxic releases, Administrator Reilly initiated programs to encourage industry to voluntarily reduce them instead of seeking legal authority to control them. The 33/50 program launched by Administrator Reilly in 1991 was one of these. It committed publicly to reducing releases of seventeen priority TRI chemicals by thirty-three percent in 1992 and fifty percent in 1995 (Fiorino, *New Environmental* 134). Over 1,100 firms, including General Motors, W.R. Grace, and the Gillette Company, were involved in this voluntary emission reduction. In 1994, a year ahead of schedule, the 33/50 program achieved its aim, as releases of TRI chemicals had declined by fifty percent from the 1988 base year (Wilson and

Sasseville 22-23). Beginning with the 33/50 program, the EPA steadily strengthened the use of consensus-based cooperative and voluntary agreements with business while making regulations (Kraft, *Environmental Policy and Politics* 221). This voluntary commitment was carried over into the Clinton Administration. Therefore, cooperation programs among business, government and environmental communities increased. Some business groups even entered cooperative agreements with environmental advocacy groups through taking part in EPA programs. The 1992 accord fashioned between McDonald's restaurant and the Environmental Defense Fund (EDF) entered the public spotlight, phasing out the Styrofoam clamshell packages in which hamburgers were served. Companies like General Motors and British Petroleum one after another signed agreements with the EDF to work together on a much broader range of issues, such as the scrapping of old vehicles, fuel efficiency standards, pollution-reduction credits, urban smog, and the source of global warming, the emission of greenhouse gases. Moreover, in 1991, Chevron enlisted the World Wildlife Fund to advise it on environmental issues (N. Miller, *Environmental Politics: Interest* 123). These cooperation programs also changed companies. For instance, in 1991, approximately half of the Fortune 100 companies, and more than two-thirds of Fortune 50 companies had environmental vice-presidents (Hoffman, *From Heresy* 107-140). Therefore, in the National Press Club on new environmentalism on April 30th 1992, Administrator Reilly concluded that the EPA was leading environmental protection by integrating environmental goals with the economic goals

> The environment-versus-economy formulation that has characterized so much of the environmental policy debate in America for the past twenty years is increasingly rejected by both the public and leading elements of the business community. In the newly emerging marketplace, the green of environmental protection is beginning to form a ready alliance with the green of profits. A new environmentalism is taking shape in this country; it integrates

environment and economics (Wilson and Sasseville 22).

In his first two years, President Bush overcame President Reagan's legacy as an environmental deregulator by working in harmony with Congress, signing environmental legislation and implementing it, such as the Clean Air Act Amendment of 1990. Later, however, the EPA fell victim to the constraints of the Council on Competitiveness, headed by Vice-President Dan Quayle. The EPA under the Bush Administration began to move away from heavily prescriptive environmental regulation (Kraft, Environmental Policy and Politics 221). It ushered in an era of actively seeking possible reduction in regulatory burden and costs through building partnerships with industry as well as with state and local governments, and spreading economic incentives and encouraging voluntary action from industry while making regulations (Ibid.). It further provided the Clinton Administration with environmental protection topics such as pollution prevention from primary causes, the Cap-and-Trade emissions trading and ecological assessments.

3.5. The EPA under the Clinton Administration

Bill Clinton and Al Gore won the presidential election in 1992. Since Gore attracted a large turnout from environmentally-oriented voters, he was responsible for creating the administration's environmental focus and for developing candidates for senior positions who oversaw environmental issues during the transition after the election. Carol Browner who worked as Legislative Director for Senator Gore from 1988 to 1991, became EPA Administrator. She shared environmental opinions with Vice-President Gore, who could directly affect President Clinton regarding the environment. Under Administrator Browner, the EPA became a rational advocate for protecting the environment. It advocated environmental protection through achieving greater pollution control for less money, and rationally accelerated economic growth through ensuring energy security, creating jobs, and promoting market incentives and cleaner production.

3.5.1. President Clinton and Vice-President Gore

When Bill Clinton was Governor of Arkansas, his record on the environment was fair to poor ("Bill Clinton" A14). He received very little support from environmentalists during the primary elections when he ran for the Presidency (Dowie 177). But later he changed his mind and decided to lead environmental initiatives to promote the national economy. In a speech on Earth Day 1992, he said, "Over the years, I have learned something that George Bush and his advisors still don't understand, to reject the false choice between economic growth and environmental protection. Today, you can't have a healthy economy without a healthy environment, and you don't have to sacrifice environmental protection to get economic growth" (Levin 304). He thought that the false choice made by President Bush resulted in weak standards and lax enforcement that failed to hold polluters responsible, and that Americans must have both a clean and safe environment and a growing economy (Clinton, *Between Hope and History* 103-105).

Vice-President Al Gore was an advocate for environmental protection. He had made himself popular among Greens by announcing that Rachel Carson would "sit in on all important decisions of this administration" (Buell 178). President George H.W. Bush mocked Gore as "ozone man" in the 1992 campaign against Bill Clinton, and claimed: "This guy is so far out in the environmental extreme we'll be up to our necks in owls and outta work for every American" (Remnick 47). President Clinton and his Vice-President Gore were in accordance on "making greater use of environmental initiatives to promote larger strategic and economic goals …helping American environmental industrial sectors capture a larger share of a $400 billion global market" (Luke 128). They argued that the jobs-versus-environment debate presented a false choice because environmental clean-up creates jobs, and the future competitiveness of the U.S. economy would depend on developing environmentally clean, energy-efficient technologies (Vig, "Presidential" 111). They began to create a new developing model of a strong economy with a clean environment through

working to grow green business from new environmental technologies and responsible polluters. Vice-President Gore even emphasized economic growth with ecological responsibility. Gore argued that America's mass consumption resulted in biosphere abuse, and that Americans must reestablish "a natural and healthy relationship between human beings and the earth" and replace the brutal exploitation of nature and mass consumption with an "environmentalism of the spirit" (Gore 218). He thought that "the task of restoring the natural balance of the Earth's ecological system" could reaffirm America's long-standing "interest in social justice, democratic government, and free market economics" (Gore 270).

3.5.2. Administrator Carol Browner

Administrator Carol Browner earned a B.A. in English, and a law degree from the University of Florida in Gainesville. After working as an aide in the Florida House of Representatives, she came to Washington D.C. and worked for Citizen Action, a grassroots organization that lobbies for a variety of issues, including the environment. From 1986 to 1988, Browner was the chief legislative aide on environmental issues to Sen. Lawton Chiles (D-Fla.), who later became Florida's governor. Following that, she was Senator Al Gore's (D-Tenn.) senior legislative aide until 1991, when she was appointed Florida Secretary of the Environment. In Florida, she settled a lawsuit against the State for environmental damage done to Everglades National Park, and launched the largest ecological restoration project to purify and restore the natural flow of water to the Everglades (Romero). At her swearing-in ceremony as EPA Administrator in January 1993, She said: "I want my son to be able to grow up and enjoy the natural wonders of the United States in the same way that I have, I believe that we will now be able to make the investment in our economy that we so desperately need, yet preserve the air, land, and water" (Ibid.). Her 1999 official biography on the EPA website noted that Administrator Browner is guided both "by the philosophy that safeguarding the environment means protecting where we live and how we live" and by the

idea that “the environment and the economy go hand in hand” (Ibid.). Since Administrator Browner won strong urban and minority support, she became a staunch advocate of environmental justice (Landy, Roberts, and Thomas 309).

3.5.3. The Optimistic Beginning

After Bill Clinton won the 1992 election, “environmental activists were on the run for the first time since the green lobby swept through Washington more than two decades ago” (Dowd 91). President Clinton had even promised to elevate the EPA head to full cabinet status. Since Vice-President Gore was responsible for creating the administration’s environmental focus, and for developing candidates for senior positions that oversaw environmental issues, Bruce Babbitt, president of the League of Conservation Voters, was chosen as the head of the Department of the Interior; Carol Browner, Gore’s former Senate aide, was appointed as EPA Administrator; retired Senator Tim Wirth as the head of the Department of Energy. Environmentalists prized both the access to the President and the access to the four key environmental agencies: the Interior; the EPA; the DOE; and the Department of Agriculture. Additionally, the new administration hired about two dozen environmentalists directly from national environmental organizations. They were assigned not only to agencies and departments like the EPA, Agriculture, and Interior but also to the EPA’s offices in the States, the Office of Management and Budget, and the National Security Council (Dowie 178). On his first day in office, President Clinton abolished former Vice President Dan Quayle’s Competitiveness Council, and shortly after that he signed the Biodiversity Treaty that Bush had refused to sign at the Earth Summit in Rio. He held the ancient-forest summit he had promised, and increased funding for endangered species and renewable energy. He also directed the government to support green production, and signed an executive order both mandating government-wide use of civil rights laws to advance environmental equity in poor communities and requiring all federal agencies to “make

environmental justice a part of what they do" (Dowie 191).

3.5.4. Hard Reality in Clinton's First Two Years

President Clinton showed his rational stance on environmental protection and tried not to cause regulatory burden for his Administration. President Clinton cancelled the Council on Competitiveness (Kraft, *Environmental Policy and Politics* 139), but signed Executive Order 12866 on regulatory planning and review in September 1993. This order retained the requirement for cost-benefit analysis of major rules, and for the OMB's authority to review proposed and final rules before agencies could issue them. It also gave the EPA more discretion in using qualitative data to compare costs and benefits (Fiorino, *Making* 77) and asked the EPA to seek balance in the implementation of environmental statutes (Kraft, *Environmental Policy and Politics* 138).

In New Hampshire during the 1992 election campaign, Bill Clinton promised to support an increase in Corporate Average Fuel Economy (CAFE) standards to the current 27.5 miles per gallon. He repeated this to the League of Conservation Voters and printed it in his campaign literature. However, during his first year in office, he not only allowed the auto lobby to block the appointment of fourteen separate candidates to the National Highway Traffic Safety Administration (which would enforce the CAFE standard), but also refused to raise the standard above 27.5 mpg (Dowie 182). In addition, he allowed former NRDC lawyer Mary Nichols, who was appointed to oversee clean air matters at the EPA, to cut a deal with Detroit car makers in 1994. This deal rejected the auto emission levels with the California's strict clean air standards proposed by thirteen Eastern States, and thus made the country lose the opportunity to stimulate a booming new automobile industry through creating sufficient demand for electric cars by high emission standards (Ibid.). Similar incidents also happened to Vice-President Gore. During the presidential campaign of 1992, Gore promised a group of supporters that the EPA would not allow any hazardous waste

incinerators to be located near an elementary school in Liverpool, Ohio, which was operated by Waste Technologies Incorporated during the Bush Administration. However, Vice-President Gore signed off on a test burn of Waste Technology Inc.'s massive garbage incinerator near a working class neighborhood in Liverpool, Ohio early in the first year of the Clinton Administration (Frank). With the approval from Vice-President Gore, the EPA issued an operating permit for the toxic burner. Administrator Carol Browner explained that the previous Administration had issued the permit and that the EPA Ethics Officer removed her from participation in this case because her husband worked for an organization that has taken a position on the WTI (W. Nixon). However environmentalists argued that this was because the money behind WTI came from Jackson Stephens who was one of Clinton's top campaign contributors (Frank). In winter 1993, the EPA was still not in the cabinet and the CEQ had been shut down and replaced with the White House Office on Environmental Policy. Compared to FY 1993, both the EPA budget and the EPA workforce in 1994 had been cut (see chart 1). Although both Congress and the administration were Democratic-controlled from 1993-94, the Clinton Administration did not pass a single piece of meaningful federal legislation (Dowie 176). Incidents like the removal of the Delaney Clause, which caused negligible risk to be embedded in the philosophy of regulation by executive order, was a particular let-down for environmentalists.

The Delaney Clause Confusion

The Delaney Clause was a 1958 amendment to the Food, Drug, and Cosmetic Act of 1938, named after Congressman James Delaney of New York. It said: "The Secretary of the Food and Drug Administration shall not approve for use in food any chemical additive found to induce cancer in man, or, after tests, found to induce cancer in animals" (Singer). It focused on processed foods with cancer-causing pesticides, and was designed to prevent cancer in humans by setting up zero-tolerance for carcinogenic residues in all food products. Due to technology advancement, this zero-risk standard was thought unscientific. In 1988, the EPA

eased restrictions on several pesticides, but this change was legally challenged by the Natural Resources Defense Council (NRDC). In 1992, the Ninth Circuit Court of Appeals in San Francisco ruled in favor of the NRDC on the basis of the Delaney Clause. The EPA therefore had no choice but to follow the law, and limit or totally ban 35 compounds. Many of them were basic pesticides used in agriculture (Ibid.). Almost immediately upon taking office, Administrator Carol Browner decided to reevaluate the Delaney amendment to the Food and Drug Act (Dowie 181). On August 3rd 1996, the Delaney Clause was removed with the passage of the Food Quality Protection Act (FQPA), which amended the Federal Food, Drug and Cosmetic Act (FFDCA), and the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) to provide a comprehensive regulatory scheme for pesticides. The new FQPA established a health-based safety standard for pesticides in foods, citing "reasonable certainly of no harm" for cancer and non-cancer health effects as the standard in processed foods and raw agricultural commodities, thus replacing the Delaney amendment to require a less than "one-in-a-million" (a risk of less than one excess cancer per million persons exposed) lifetime risk threshold (Somogyi and Appel 234). The key point was that the criterion of risk assessment, a zero-risk standard, was replaced by a negligible risk standard and thus set the standard for future environmental legislation, for instance, on standard setting of cancer risk from asbestos and radon. FDA Commissioner, David Kessler, called it "an assault on forty years of consumer protection" (Hamowy 190).

3.5.5. Clinton's Achievement on Environmental Protection

After the election in November 1994, Republicans took control of both the Senate and the House. Environmental regulations were criticized by Congress for being too costly, too inflexible, and for often focusing on problems that posed too few environmental and health risks (Kurian 208). President Clinton was under pressure from Congress, various critics and the coming election in 1996. In response to Congress's criticism, on March 16th 1995, the

Clinton Administration announced plans for an initiative, "Streamlining Environmental Regulation", which defined the reinvention agenda at the EPA for the rest of the 1990s (Fiorino, *New Environmental* 53). These initiatives called for improving the EPA's current system through twenty-five high priority actions, and aimed at greatly enhancing flexibility, cost-effectiveness and innovation. They covered eight aspects: Performance and Market-based Regulations, Setting Priorities based on Sound Science, Building Partnerships, Cutting Red Tape, Better Accountability Compliance and Enforcement, the Power of Information, Alternative Performance-based Strategies, and New Tools for Government and Industry. Under each aspect, there were different initiatives. For instance, under Performance and Market-based Regulations, there were open-market air emissions trading and effluent trading in watersheds, Project XL, alternative strategies for sectors, alternative strategies for communities, and alternative strategies for agencies under Alternative Performance-based Strategies (U.S. White House, *Reinventing* 2-4).

Like President Reagan, President Clinton was forced, by congressional opposition, to employ his executive power to pursue his environmental agenda (Vig, "Presidential" 114). President Clinton signed Executive Order 12873, *Federal Acquisition, Recycling and Waste Prevention*, which set the theme of protecting the environment through prevention, and directed federal agencies to evaluate the environmental attributes of the products and services they purchased. President Clinton also signed Executive Order 13101, *Greening the Government through Waste Prevention, Recycling, and Federal Acquisition*, on September 14th 1998, which required the EPA to incorporate waste prevention and recycling into the agency's daily operations, and asked the EPA to work to increase and expand markets for recovered materials through greater Federal Government preference and demand for such products. President Clinton even signed Executive Order 13148, *Greening the Government through Leadership in Environmental Management*, on April 21st 2000, which required the EPA to incorporate environmental management systems into its day-to-day decision-making

and long-term planning processes ("Laws").

The Clinton Administration further promoted three environment laws in the following years: a safe Drinking Water Act, a revitalized Clean Water Act and a reformed Superfund program (Clinton, *My Life* 576). In 1993, a cryptosporidium broke out in Milwaukee, Wisconsin. 400,000 people were sick, and more than 100 died due to drinking water. This accident led the Clinton Administration to take action to expand drinking water protection and provide stronger protection for communities. On August 6th 1996, President Clinton also signed the Safe Drinking Water Act Amendments. The Act authorized a $9.6 billion drinking water treatment loan fund directly to States to upgrade drinking water treatment systems in communities nationwide throughout 2003 ("President"). On February 19th 1998, President Clinton further announced a Clean Water Action Plan to continue making America's waterways safe for fishing and swimming, for instance, by reducing "nonpoint" pollution — run-off from farms, city streets and other sources and coastal waters from outbreaks of harmful organisms like Pfiesteria and alarming conditions like the "dead zone" in the Gulf of Mexico ("Clean"). On November 29th 1999, President Clinton even signed a reformed Superfund program, the Superfund Recycling Equity Act (SREA). The Clinton Administration continually protected public lands and endangered species. It arranged agreements to protect the Florida Everglades, Yellowstone National Park, and ancient redwood groves in California, and actively promoted voluntary agreements to establish habitat conservation plans in order to protect endangered species and other wildlife throughout the Unites States. President Clinton even used his executive authority to issue proclamations establishing nineteen new national monuments and enlarging three others, in total covering 6.1 million acres. One example was the new Grand Staircase Escalante National Monument created in 1996, which protected 1.3 million acres of the red rock canyon in Utah. In January 2001, President Clinton further issued one more executive order protecting nearly 60 million acres of roadless areas in national forests from future road

construction and hence from development (Vig, "Presidential" 117-118). Moreover, he often vetoed bills containing riders that would have weakened environmental protection from Republican Congress ("The Legislative"). By the year 2000, the EPA budget for environmental programs increased from about $6.52 billion in 1996 to about $7.56 billion and the workforce from 17,081 in 1996 to 18,100. In spite of congressional opposition, Clinton signed the 'Kyoto Protocol' treaty in 1998, which would reduce U.S. greenhouse gas emissions to seven percent below 1990 levels by 2008 to 2012 (Vig, "Presidential" 114). Before leaving office, President Clinton claimed to have protected more land in the lower forty-eight States than any president in history, including Teddy Roosevelt. He also acknowledged in his book, *My Life*: "It was important to me and Al Gore, and by the time we left office we had cleaned up three times as many Superfund sites as the Reagan and Bush administrations combined" (Clinton, *My life* 576).

3.5.6. EPA Initiatives under Administrator Browner

In testimony before the House of Representatives subcommittee on Energy and Environment of the Science committee in May 1997, EPA Administrator Browner proclaimed "The Clinton Administration views protecting public health and environment as one of its highest priorities" (Browner, "Proposed"). She took advice from three former EPA administrators, Train, Ruckelshaus, and Reilly, to assess risks, weigh costs and benefits and made the EPA a rational environmental advocate. Administrator Browner led the EPA to expand the use of market incentives and cleaner production, to enlarge public-private partnerships, and to reach extensive public involvement in environmental decision-making while protecting the environment. She emphasized environmental protection at lower costs, and a new partnership between the regulated and the regulators. In an interview with *FORTUNE*, she said: "We need to create incentives for plant managers in companies all across the country to look for ways to get the most pollution control for the least amount of

money. I need those guys working with me" (Dowd 102).

To enlarge public involvement in environmental decision-making, the EPA expanded the public's access to information about local pollution through steadily enhancing America's Right-to-Know. Firstly, the EPA doubled the number of chemicals that must be reported to communities, and issued a citizen Right-to-Know list of toxic chemicals. On August 3rd 1993, the Clinton Administration issued Executive Order 12856, *Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements*, to require polluters to disclose information to the public, and added toxic releases to the Right-to-Know. To strengthen this order, at the beginning of 1994, the EPA announced a new citizen Right-to-Know toxic substance list aimed at preventing chemical release accidents in the United States. It was the first time that the EPA had ever issued a final rule with chemical accident prevention ("EPA Administrator"). Administrator Browner said: "Like the recent announcement on doubling the size of the EPA's Toxics Release Inventory, today's rule signifies this Administration's commitment to putting people first… By providing citizens with a list of potential toxic dangers, it will empower communities to deal with risk in their environment" (Ibid.). Secondly, the EPA expanded the Right-to-Know about pollution in their neighborhoods through building an information center with an Internet website, which enabled Americans to easily obtain up-to-date, comprehensive, accurate environmental information about their communities simply by entering a zip code ("New EPA"). Thirdly, the EPA extended a lead-based paint Right-to-Know program to single-family home transactions to cooperate with the August 1995 Pollution Disclosure Executive Order requiring federal contractors to inform the public about pollution. It marked the first time that all home buyers and tenants had the right to know about potential lead-based paint hazards before they bought or rented older housing beginning on December 6, 1996 under a new EPA or Department of Housing and Urban Development program. The EPA even offered home buyers and renters a short pamphlet — "Protect Your Family from Lead in Your Home" containing basic lead-

poisoning prevention tips ("Lead-Based").

Administrator Browner promoted new topics through focusing EPA programs further on concrete groups of people, typically the most vulnerable. The EPA organized its agenda to protect children on a national level from environmental risks, and to protect the interests of minority groups through expanding environmental justice. In 1995, the EPA established an agency-wide policy to ensure that environmental health risks to children were explicitly and consistently evaluated in risk assessments, risk characterizations, and environmental and public health standards. In 1996, this policy was strengthened by the national agenda to protect children's health from environmental threats to ensure a consistent improvement of risk assessments specifically addressing children ("EPA Leadership"). On September 11th 1996, the EPA released a report, *Environmental Health Threats to Children*, on how and why children were affected by environmental threats. In this report, the EPA recognized that environmental protection primarily derived to protect adults might prove insufficient to protect children who faced an array of complex environmental threats to their health, such as asthma-exacerbating air pollution, lead-based paint in older homes, treatment-resistant microbes in drinking water, and persistent chemicals that may cause cancer or induce reproductive or developmental changes (Collin 132). Through emphasizing healthy children and strong families as fundamental to the future of the nation, the EPA made children's health issues both a top priority and a central focus of its efforts to protect public health and the environment (Ibid.). This report resulted in Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, on April 21st 1997. To help implement this order, Administrator Browner created an Office of Children's Health Protection at the EPA in 1997, to "make the protection of children's health a fundamental goal of public health and environmental protection in the United States" ("Carol"). The new office incorporated a Children's Health Protection Advisory Committee to make policy recommendations to the administration. In its first years, the office focused on issues like

asthma rates and exposure to toxic chemicals like lead-based paint (Ibid.). Administrator Browner said in a testimony before the Senate Committee on Environment and Public Works in May 1997: "We have prided ourselves on protecting the most vulnerable among us, especially our children, from the harmful effects of pollution" (Ibid.).

Besides protecting children from environmental risks, environmental justice became another focus of the EPA. It had been an important issue with environmental grassroots movements since the Reagan Administration, which mixed environmental protection with racism. Minority groups found that they were mostly living in polluted areas, and their homelands were easily polluted and uneasily cleaned up. Therefore, they concluded that they were being treated racially. Studies of air-quality demographic proved this finding. Among Americans breathing polluted air, 57 percent of whites resided in counties with federally substandard air quality, while 65 percent of blacks and 80 percent of Hispanics lived in counties with similar or worse conditions (Wernette and Nieves 16-17). Two examples also offered facts to support the finding. One was that African Americans made up 78.9 percent of the population of Emelle, Alabama, the site of the nation's largest hazardous waste landfills (R. Moore, "Toxics"). The other was that almost all the 10,000 citizens in Chicago's Altgeld Gardens were African Americans. Altgeld Garden was a typical example. Its night sky was lit by the vapor lamps of oil refineries, chemical plants, sewage treatment plants, steel mills, and smelters, which owned half a dozen incinerators and scattered over 100 abandoned toxic dumps through the community (Grossman 31-33). These resulted in less than half of the residents being in good health; about half of the pregnancies in the families studied ended in miscarriages, birth defects, or sickly infants and about 25 percent of the children suffered from pulmonary diseases (Ibid.). Many facts proved that not all Americans had not been treated equally and poisoned equally, although created equal (Lavelle and Coyle 2). Marianne Lavelle and Marcia Coyle published a comprehensive analysis of all environmental lawsuits settled during the previous seven years in 1992 in the *National Law*

Journal in Washington. They found that "penalties against pollution law violators in minority areas are lower than those imposed for violators in largely white areas" (Ibid.). The average penalty imposed by courts for violations of the Resource Conservation and Recovery Act was $335,000 in white areas, and only $55,000 in minority areas (Ibid.). In addition, under the Superfund clean-up program, it took 20 percent longer to place abandoned hazardous-waste sites in minority communities on the National Priority list than those in white neighborhoods. The factor in such cases was clearly not poverty, but race (Ibid.). After conducting an analysis of every residential toxic-waste site in the Superfund program, Lavelle and Coyle also found that the EPA took much longer to address hazards in minority communities than it did in white communities. Even when cleanup was ordered, the EPA was likely to order a "containment" procedure in minority areas and permanent "treatment" in white areas (Ibid.) Lavelle and Coyle further studied 352 Clean Air Act cases and found that the populations benefiting from enforcement of the act were 78.7 percent white, 14.2 percent black, and 8.2 percent Hispanic (Ibid.).

In response to public concerns, in 1992, the EPA under former Administrator Reilly, created the Office of Environmental Justice, and implemented a new organizational infrastructure to integrate environmental justice into EPA policies, programs, and activities (Collin 247). Administrator Carol Browner strengthened it, and listed environmental justice as one of the top priorities for the EPA by stating that: "incorporating environmental justice into everyday activities and decisions will be a major undertaking. Fundamental reform will be needed in agency operations" (Davies and Mazurek 180). On September 30th 1993, the EPA established the National Environmental Justice Advisory Council (NEJAC), which included representatives from community-based groups, business and industry, academic and educational institutions, State and local governments, Tribal governments, indigenous organizations, non-governmental and environmental organizations. Through bringing these members together, the NEJAC solved environmental justice problems by creating dialogue

and improving cooperation, and helped to devise an environmental justice strategy for the EPA (Ibid.). In addition, the NEJAC provided a valuable forum for integrating environmental justice with other EPA priorities and initiatives (Collin 247). In February 1994, the Clinton Administration issued Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,* which focused federal attention on the environmental and human health conditions of minority and low-income communities, and assured that federal regulations did not have a disparate impact on minority and low-income groups (Lee A21). The EPA further emphasized the belief that "all Americans deserve to be protected from pollution" (U.S. EPA, *EPA's Environmental* 1). In April 1995, the EPA published its "Environmental Justice Strategy" with two goals which mixed activism and regulatory caution. One goal was: "No segment of the population, regardless of race, color, national origin, or income, as a result of EPA policies, programs, and activities, suffers disproportionately from adverse human health or environmental effects, and all people live in clean, healthy, and sustainable communities" (Ibid.). It required the EPA to examine its internal administrative procedures, and to assure that its programs and policies contributed to environmental justices (Davies and Mazurek 180). The other goal was: "Those who live with environmental decisions — community residents, State, Tribal and local governments, environmental organizations, and businesses — must have every opportunity for public participation in the making of those decisions. "An informed and involved community is a necessary and integral part of the process to protect the environment." (U.S. EPA, *EPA's Environmental* 102) It asked the EPA to increase public participation in environmental decision-making (Davies and Mazurek 180). To fulfill the responsibility of environmental justice, the EPA established numerous environmental pilot projects both at headquarters and in the regions, which ranged from research in risk communication strategies to explaining pollution risks to urban minority communities to projects that involved linking clean-ups at hazardous waste sites to minority hiring

requirements (Davies and Mazurek 181). Furthermore, the EPA promoted environmental justice in different ways. For instance, it developed different training programs for both the EPA and State regulatory officials, and established a small grants program in 1994 that offered $3 million to some 170 community-based or grassroots organizations and Tribal governments to help them in public outreach and to employ technical experts to analyze and interpret environmental data. The EPA further developed the Community or University partnership program to increase training and educational opportunities for local communities, and to develop collaboration models between universities and affected communities (Ibid.). Moreover, the EPA tried to integrate environmental justice into its policies, programs, and activities. It initiated a new internal infrastructure to work with the expanded Office of Environmental Justice. This new Office established an executive steering committee with the top management team from both media program offices like air, water, toxic, and the ten regional offices to ensure that environmental justice was incorporated into agency operations through having direct oversight of the EPA's operating plans, budget needs, and research direction (Gaylord and Bell 36).

As a problem-oriented administrative agency, the EPA tried to find problems and made rational decisions to deal with them. The incident in Pretty Prairie, Kansas, was one of them. Pretty Prairie, Kansas was a little town with a population of 600. It faced a financial crisis caused by an EPA requirement, which asked the little town to spend as much as $450,000 to build a new water-treatment plant or dig a new well in order to reduce nitrates in the water from twenty to ten parts per million, and lowering the risk of so-called blue-baby syndrome, a treatable blood condition affecting babies under six months. However, there were only four babies of that age in Pretty Prairie, and all were "red-cheeked and cooing" (Dowd 98-99). One rational solution for the town was to buy the children bottled water. The EPA refused it. Then the town offered to buy all 600 residents bottled water. The EPA still wanted either a new water-treatment plant or a new well (Ibid.). These problems also included the incident

that happened at the Amoco refinery in Yorktown, Virginia. Amoco found that it could achieve a far greater reduction in benzene emissions through spending $6 million to improve the way it loaded gasoline into barges than by spending $30 million upgrading its waste-water treatment system. But that route wasn't an option under existing laws because EPA regulations focused on sewage systems and ignored barges (Ibid.).

To solve these problems, on July 20th 1994 Administrator Browner announced the Common Sense Initiative, which was focused on a more cooperative, consensus-building approach to environmental regulation (Kraft, *Environmental Policy and Politics* 135). It was "based on the principle that we best protect the environment by setting tough environmental goals, while encouraging flexibility and innovation in how the goals are met" ("Common"). It built stakeholder panels, and involved diverse interests in a collaborative process through bringing together government officials at all levels, environmentalists and industry leaders to achieve greater environmental protection at a lower cost (Fiorino, *New Environmental* 131). It created pollution control and prevention strategies on an industry-by-industry basis rather than by the current pollutant-by-pollutant approach, and focused on results rather than "one-size-fits-all" regulations. Administrator Browner selected six industries to participate in the Common Sense Initiative, which included auto, computer and electronic, iron and steel, metal finishing and plating, petroleum refining, and printing manufacturers, employing almost four million Americans and representing almost fourteen percent of Gross Domestic Product ("Browner"). By the end of 1998, the EPA's Common Sense Initiative set a partnership with more than 300 individuals from industry, State and local governments, environmental justice groups, and labor, and it served as a laboratory for testing new environmental management approaches, based on the needs of industry and other interest groups ("EPA Administrator Carol M. Browner receives"). On December 17th, Vice-President Gore's Hammer Award was presented to Administrator Browner for bringing Common Sense reform to environmental regulation. Gore said: "This Common Sense

Initiative is reinventing government at its best… Together, government, industry and the private sector are finding new, more effective ways to protect our environment and our children" (Ibid.). Although the GAO under the Republican Congress found that the Initiative was not achieving its desired results in 1997 (S. Johnson 349), the GAO acknowledged the progress made by the EPA. The most important factor was that it provided useful experiences for the reinvention initiatives in the coming Clinton years (Fiorino, *New Environmental* 131).

The EPA further stimulated a number of voluntary government programs, which included Project XL from the Reinventing Environmental Regulation. Firms voluntarily participated in these programs for many reasons. Some firms wanted recognition from the government, and by extension, from others, such as investors, employees, insurers, and communities. Others desired positive relationships with regulators and the access to information and resources, and a public commitment, and thus to hold the firm or facility accountable for its performance (Fiorino, *New Environmental* 137-8).

Project XL was a consensus-based approach to prevent pollution and achieve climate change (Fiorino, *New Environmental* 133). It relied on four key elements: a site-specific approach, regulatory flexibility, achievement of "superior environmental performance," and the active involvement of stakeholders, including local communities and environmental organizations (Grimeaud 173). It aimed at providing more environmental and public health protection at a lower cost, and encouraging industry to achieve "cleaner, smarter and cheaper" results and to explore innovative solutions to their environmental problems through offering regulated firms "the flexibility to develop alternative strategies that will replace or modify specific regulatory requirements on the condition that they produce greater environmental benefit" ("Regulatory"). Project XL was a "consensus-based approach," in which government and industry would work together to create a "win-win" solution improving both the environment and the economy (Fiorino, *New Environmental* 140).

Regional Administrator John H. Hankinson, Jr. said: “The EPA has found that allowing facilities and other entities to explore non-traditional pollution control solutions can result in the regulated community achieving environmental protection results beyond those anticipated by traditional means. We have also found that better environmental decisions result from a collaborative process with people working together” (“First XL”). Because participation in Project XL was voluntary, it was carried out without specific statutory authority and thus enabled the government to respond to issues and try new ideas free from detailed legal prescriptions (Fiorino, *New Environmental* 133).

Project XL works as follows. The EPA requires the applicant (company from industry) to work with federal, State, and local authorities and citizens groups on a final project agreement. This project agreement defines the steps the company would take to improve its performance, the flexibility regulators would provide, the way to measure performance, and the expected environmental benefits that would be achieved. A company can implement the final project agreement following approval from the EPA and local stakeholders. Because these agreements would be challenged under the citizen suit provisions of environmental statutes, companies take it seriously (Fiorino, *New Environmental* 140-1). The EPA launched the first Project XL plan of its fifty pilot Project XL initiatives on July 12th 1996. By November 2000, more than 50 XL projects and XL project proposals on air, water, hazardous waste and multimedia had been produced throughout United States. Among them, sixteen projects had been in implementation for a year or more, covering various industry or public sectors, such as Air Force bases, specialty chemical manufacturing, printed wiring board manufacturing, semiconductor manufacturing, microelectronics manufacturing and pharmaceutical manufacturing. These projects were described in some detail, including background, progress in meeting commitments, benefits for the environment, benefits for stakeholders, benefits for the project sponsors, spin-off benefits, key issues needing resolution, lessons learned, and information resources. At that time another thirty-seven

projects had been under implementation for less than one year or still under development, covering industry or public sectors like industrial facilities, abandoned coal mines, bioreactor landfills and solid waste management facilities (U.S. EPA, *Project XL Volume 2* 16). By November 2000, the EPA's XL projects recycled 10,855 tons of solid waste, reused 1,846 million gallons of water (see table 12) and explored more than 70 innovations (U.S. EPA, *Project XL Volume 1* 2).

The EPA's behaviors of saving energy, improving energy efficiency, and spreading economic incentives further demonstrated its rational characteristic. In 1991, the EPA created the first program to promote energy efficiency, the Green Lights Program, to improve lighting efficiency. Its participants were required to achieve a prescribed level of lighting energy efficiency. Through surveying all of their domestic facilities and upgrading their lighting, its participants typically cut their lighting bills in half while maintaining or improving lighting quality and increasing employee productivity. By June 1995, Green Lights had hundreds of partners, including forty percent of the Fortune 500 companies, and covered industries such as electric utilities, lighting manufacturers, and distributors (Rocky Mountain Institute 329). Based on the Green Lights Program, together with the DOE, the EPA established a series of Energy Star programs, which built a partnership with industry to promote the manufacture and purchase of energy-efficient products. The Energy Star Buildings Program helped commercial buildings attain additional energy savings (Ibid.).The Energy Star Computer Program helped the computer industry to promote the manufacture of energy-efficient personal computers, monitors and printers. On October 20th 1994, the EPA presented the first Energy Star Computer Awards in Washington, D.C. to twelve organizations in six States that had made outstanding voluntary efforts in manufacturing energy-efficient computers, monitors and printers, and educated the public on the benefits of energy-efficiency and pollution prevention. By the year 2000, participation had increased from 150 participants to more than 500, accounting for about eighty-five percent of the U.S.

Table 12

Selected Cumulative Environmental Benefits*

	1997-1999	1997-2000
emissions eliminated (criteria air pollutants - nitrogen oxides, sulfur dioxide, particulate matter, carbon monoxide)**	20,853 tons	31,775 tons
solid waste recycled	2,089 tons	10,855 tons
water reused	1,069 million gallons	1,846 million gallons

Source: U.S. Environmental Protection Agency (EPA). Office of the Administrator. *Project XL 2000 Comprehensive Report—Volume 1: Directory of Regulatory, Policy, and Technology Innovations* (EPA-R-00-023A). Washington: GPO, 2000. 12. Print.

* This summary is based on results reported by Crompton Sisterville (formerly Witco), Intel, Molex, Vandenberg AFB, and Weyerhaeuser.

** Eliminations in emissions are calculated by subtracting reported actual emissions from established baselines for the environmental parameters for each project.

sales of desktop computers and ninety percent of the laser printer market ("EPA Presents").

In addition, the EPA under Browner developed its market-based economic incentives keeping to the rule: "the more an enterprise pollutes, the more it pays" (Whitaker 73). In 1995, the EPA extended the option of reducing acid rain by trading pollution credits to all industrial fossil fuel-burning sources, and later revitalized open-market trading to enable the spreading of emissions trading.

Because human behaviors like burning fossil fuels caused more and more acid rain, which particularly damages lakes, streams, forests, plants and animals, the EPA used a Cap-and-Trade system to reduce the emission of sulfur dioxide (SO_2). The Cap-and-Trade emission trading provided an incentive for those that could easily reduce emissions most cheaply to do so, and reached the goal of achieving pollution reduction at the lowest possible cost to society (Montgomery 396). Trading pollution credits under the Cap-and-Trade could be generated through pollution control in excess of regulatory requirements, and plant shut-downs. Following the rule "the buyer was paying a charge for polluting, while the seller was being rewarded for having reduced emissions by more than was needed" (Ibid.), companies that needed to increase their emission allowance must buy credits from those who polluted less. The trading unit of the Cap-and-Trade was counted in terms of the quantity (x tons) of emissions reduced, and the credits could be used in the same year, or banked for use in future years. However, some proportion (usually ten percent) of credits must be retired if they were banked for use in future years. Thus emission trading resulted in a net decrease in emissions. There was a range of purposes for purchasing credits, such as offsets for new or modified sources, to allow operational flexibility (by permitting temporary pollution spikes), or as an alternative route to compliance with permit limits (OECD, *Implementing* 54).

Because the Reasonably Available Control Technology (RACT) is required on existing sources in areas that are not meeting national ambient air quality standards, and certain State-level requirements were more stringent than those of the EPA, the agency encouraged the

development of open-market trading in the mid-1990s. The EPA also published an Open Market Trading Rule (OMTR) to improve company flexibility in reducing emissions of SO_2, NO_2, Volatile Organic Compounds (VOCs), carbon monoxide, Particulate Matter (PM), or Reactive Organic Gases (ROG) through the exchange and banking of emission-reduction credits (OECD, *Implementing* 54). The OMTR program did not require establishment of an emissions baseline (a time-consuming and very contentious process) or an emissions cap, but allowed a facility to reduce emissions by whatever means feasible to create emission-reduction credits expressed in terms of tons of emissions (Erbes 160). Credits could also be generated through pollution control in excess of regulatory requirements, and plant shut-downs and could be sold to other facilities to use as needed to meet other emission limits (Ibid.). Because purchased credits could be used for a range of purposes, including offsets for new or modified sources, to allow operational flexibility, or as an alternative route to compliance with permit limits, it took full advantage of natural market forces (OECD, *Implementing* 54).

As a rational advocate, the EPA further promoted cleaner production. Unlike the traditional "end-of-pipe" Command-and-Control, which tried to reduce pollutants or curb pollution emissions at the end of the production process, the cleaner production prevented pollution through reducing generation of pollutants at the source by using cleaner products and production methods. Firstly, the EPA stimulated the development of cleaner products through emphasizing recycling, using cleaner technologies and improving production process with better design, better controls, material substitution, lifecycle analysis and product stewardship (Kraft, *Environmental Policy and Politics* 235). The EPA was required by Executive Order 12873 in 1993, *Federal Acquisition, Recycling and Waste Prevention*, and Executive Order 13101 in 1998, *Greening the Government through Waste Prevention, Recycling, and Federal Acquisition*, to incorporate waste prevention and recycling into its daily operations and to work to increase and expand markets for recovered materials. The

EPA, together with the DOE, promoted the clean production of refrigerators. They encouraged refrigerator manufacturers to build new, chlorofluorocarbon-free, super-efficient models by offering manufacturers a guaranteed market and making up price difference with the conventional ones that exceeded energy performance standards. This program was further expanded to other industries to accelerate the commercialization of advanced, energy-efficient technologies through partnerships with key market players ("Energy"). The EPA also spread industry ecology that included technological innovation, voluntary and cooperative approaches to environmental management, substitution of services for products, and recycling and reuse (V. Thomas et al. 6). Secondly, the EPA further encouraged cleaner production. One good example was renewable energy. In 1994, the Clinton Administration signed Executive Order 12902, *Energy Efficiency and Water Conservation at Federal Facilities*, to formally define the administration's "green energy sources." The Order cited renewable energy sources as "agriculture and urban waste, geothermal energy, solar energy, and wind energy" (Clinton, "Executive Order 12902" 11463), and instructed the federal government to "begin implementing cost-effective recommendations for the installation of energy efficiency, water conservation, and renewable energy technologies" for most federal facilities (Clinton, "Executive Order 12902" 11463). The Clinton Administration further accelerated the development of renewable energy through rewarding the pioneers in the field, and building partnerships with companies to develop more powerful wind turbines. For instance, Central and South West Services, Inc. was awarded $1 million by the Department of Energy (DOE) for a wind turbine plant near Fort Davis, Texas in 1994. Two years later, this company hired Zond Energy Systems to install twelve wind turbines. In 1998, the DOE began developing a wind power technology facility in Storm Lake, Iowa with Zond Energy Systems, and one year later announced the "public-private partnership" with Zond Energy Systems (Morano). On June 3rd 1999, the Clinton Administration signed Executive Order 13123, *Greening the Government through Efficient Energy Management* to reinforce

Executive Order 12902. Sec.403. (4) (h), *Off-Grid Generation*, stipulated that federal agencies "shall use off-grid generation systems, including solar hot water, solar electric, solar outdoor lighting, small wind turbines, fuel cells, and other off-grid alternatives, where such systems are lifecycle cost-effective and offer benefits including energy efficiency, pollution prevention, source energy reductions, avoided infrastructure costs, or expedited service" (Clinton, "Executive Order 13123" 30856). Thus, the EPA, together with the DOE, expanded the Energy Star program to office buildings, hospitals, homes, and over thirty categories of Energy Star products. This was also good preparation for the EPA's Green Power Partnership in 2001, which encouraged private and public organizations to buy green power.

The EPA also boosted the use of renewable ethanol as an alternative fuel, mainly because ethanol as a substitute energy source could enhance U.S. energy security and boost economic growth. In the late 1970s, two main fuel additives existed. One was Methyl Tertiary-Butyl Ether (MTBE) that had been used for oxygenating gasoline. It was a cheaper, non-renewable substance as it was derived from fossil fuels, and was linked to groundwater and soil contamination. The other was ethanol. As a renewable corn-based gasoline substitute, ethanol not only reduced the demand of fossil fuels, but also enhanced the fuel performance because it raised the level of oxygen in gasoline when used as a blended fuel. In June 1994, the EPA issued a proposed rule to ensure a market for ethanol, requiring that at least thirty percent of gasoline contain a "renewable oxygenate" by 1996 (Vogel, "Trouble" 115). This action was strongly favored by the Clinton Administration. It was not only because the biggest ethanol producer, Archer Daniels Midland Corporation, spent a fortune donating to the Democrat Party and on lobbying Capitol Hill over the past twenty years (S. Moore), but also because it could reduce dependence on imported oil, and boost economic growth. The political economy of ethanol lies in farm welfare and job creation. Farm income increased due to annual ethanol subsidies of $770 million, and farmers benefited from increasing corn prices raised by increasing demand for ethanol (Vogel, "Trouble" 116-117). Accompanied

by protecting ethanol domestic producers through imposing a prohibitive tariff on ethanol imports, jobs were created by promoting greater production of ethanol due to rising demand. To better protect air and drinking water, the EPA announced actions to significantly reduce or eliminate the use of the fuel additive MTBE, and boost the use of safe alternatives like ethanol on March 20th 2000 ("Clinton-Gore"). The indirect effect of ethanol replacing MTBE, and reducing fossil fuel consumption helped protect drinking water and soil and reduce air pollution. However, whether ethanol itself preserved clean-air benefits was not proved. The GAO said in 1997: "Available evidence suggests that the ethanol program has little effect on the environment," and getting rid of ethanol subsidies would "slightly increase carbon monoxide emissions… but slightly reduce emissions of ozone precursors," and "change in greenhouse gas emissions that would occur if ethanol fuel were not subsidized is likely to be minimal" (S. Moore). Indeed, expanding the use of ethanol in gasoline was mainly a strategy for the EPA to help the Clinton Administration reduce fossil fuel consumption and create jobs.

EPA initiatives under Administrator Browner still made great progress in public health and ecology through strengthening existing regulations and regulation enforcement. For instance, on protecting drinking water, the EPA not only played a key role in enacting rules to strengthen the Safe Drinking Water Act in 1996, which overhauled public water system standards, but also worked feverishly with environmental organizations and farm worker unions to produce new regulations in January 2001, to require substantially lower quantities of arsenic (a naturally occurring substance) in drinking water (Olson 89). On protecting air, the EPA set a final rule: to reduce, by almost ninety percent, toxic air emissions from the chemical industry and another final rule for electric utility power plants to reduce acid rain on March 1st 1994 ("EPA Announces"). The EPA further protected the ozone layer in 1993, through phasing out products like chlorofluorocarbons (CFCs) that deplete ozone, and issuing tighter ambient air quality standards for ozone and small particulate matter, thus

indirectly protecting children, the elderly, asthmatics, and other vulnerable population groups against lung disease. Besides cleaning air and water, in March 1997, the EPA also issued a comprehensive, detailed plan for implementing the 1996 Food Quality Protection Act (FQPA) that included sweeping new food safety protection and required major changes in how pesticides were regulated, with the goal of improving environmental and public health protection, especially for children (Collin 343). Moreover, the EPA banned two pesticides that studies found to disrupt brain development in children in 1999. The EPA further showed its interest in performance-based regulation in July 1999 in its *Aiming for Excellence* report. In June 2000, the EPA launched its National Environmental Performance Track, which was the final reinvention initiative of Administrator Browner, and left a legacy that carried over into the next Administration (Fiorino, *New Environmental* 145).

3.5.7. Congress, Court and the EPA

In 1993, Democrats had single-party control of Congress and the presidency. Although the EPA budget was increased to its highest ever levels from 1993 to 1997, the single Democrat government proposed to leave environmental issues untouched. Congress reduced its interest in pollution control from 1993 to 1994. For instance, in air pollution control, the intensity of law setting was notably lower than in the 1980s. The high number of bill introductions and committee hearings were just marginal adjustments of the existing environmental laws (C. Bailey 249). With the exception of the Desert Protection Act, not a single piece of significant environmental legislation was signed into law. This was as a result of the absence of conflict on environmental issues between Congress and the Administration, and a loose but powerful coalition of business leaders who lobbied excessive regulation. This was also due to sensible economics dominating the Clinton Administration and Congress, and State and local government officials who were tired of taking concrete measures when Washington issued new clean-up calls, and the fact that more and more farmers, ranchers,

and other landowners became angry about environmental laws increasingly eroding private property rights (Stinebrickner 224). In spring 1993, despite strong opposition from the green lobby, the Clinton Administration and Democratic Congress passed, with a final vote of 95 to three, an amendment that required risk assessment and cost-benefit analysis on all major new environmental rules (Ibid.). Sound science and sensible economics became Congress' focus in making new rules. Representative Billy Tauzin (D-Louisiana) stated: "We can no longer ignore the costs government imposes when it regulates. The heartbeat of this movement is a call for restraint and responsibility as the cornerstone of our nation's regulatory system" (Ibid.). Therefore, a majority of members in both the House and the Senate were supporting "no money, no mandate" legislation (Dowd 99).

The Republican takeover of both the Senate and the House in the November 1994 mid-term elections changed this pattern of interest and conflicts on environmental issues occurred again. Congress began to limit the EPA's ability to enforce the law, and introduce new bills. It also repealed parts of the Clean Air Act to remove federal rules, and strengthened regulatory review to require extensive cost-benefit analyses and risk assessments for major regulations and even cut the EPA's budget (C. Bailey 249).

Congress further reformed the general regulatory process by intensifying regulatory review and intervening in it. In 1996, it passed the Small Business Regulatory Enforcement and Fairness Act, which provided for congressional review of "major rules" from federal agencies' regulations. "Major rules" involving annual costs of $100 million or more on the economy, industry, government, consumers, or those affecting competition, productivity, or international trade could not take effect until congressional review was complete. Congress has sixty days from the publication of the final rule in the *Federal Register* to review and stop the implementation (Weidenbaum 24-25). In addition, the Center for Regulatory Effectiveness (CRE) was founded in 1996, at the request of the House and the Senate leadership, to aid the implementation of the Congressional Review Act. The CRE presented

its proposals to the general public, to the regulated industry, and to interest groups on its website, refined its proposal through considerable discussion, and handed findings and conclusions over to Congress (Tozzi).

Congress still tried to pick apart federal rules through introducing new bills, including repealing some portions of the Clean Air Act, making moves to increase logging on public lands, and scaling back rules on pesticides in foods ("Carol"). Bills on the Clean Air Act in the 104th Congress (1995-96) provided a good example. More than thirty-two bills were introduced in the House to extend deadlines, exempt particular industries, introduce greater flexibility, or repeal portions of the Clean Air Act, while only two bills were introduced in the House to strengthen the Act. Twelve bills, introduced in the Senate to amend the Clean Air Act, covered similar ground, but none went as far as to recommend repeal (C. Bailey 258). Senator Fairchild introduced a bill to undermine EPA efforts to control hazardous air pollutants. The bill allowed States to opt out of the federal permit system which required all pollution sources to keep information about emission levels and compliance records in one document, and eliminate automobile emissions and maintenance programs (C. Bailey 259). Fortunately, while many of these bills passed the House, they encountered strong opposition in the Senate.

Republican leaders also sought to dismantle the EPA through budget cuts and riders. The House Appropriations Subcommittee on Veterans Affairs-Housing and Urban Development (VA-HUD) chaired by Rep. Jerry Lewis (R. CA) reported the FY 1996 appropriations bill on July 10th 1995, which not only proposed to reduce the EPA's budget by thirty-three percent, but also contained seventeen riders that restricted the EPA's authority to implement a variety of environmental laws. The bill was approved on July 18th 1995 by both the House Appropriations Committee and the House. On September 26th 1995, the Senate's version of FY 1996 VA-HUD Appropriations Bill passed in the Chamber. It was slightly less extreme than the House-passed bill, and proposed to cut the EPA's budget by twenty-two percent and

contained seven riders which reduced the EPA's authority. Later, in a conference committee, the Senate and the House reached a compromise on the bill, proposed cuts of twenty-five percent in the EPA budget, and included eleven environmental riders. Four of these riders specifically limited the EPA's authority to enforce sections of the Clean Air Act 1990 (C. Bailey 261-262). President Clinton vetoed the final version of the bill on December 18th 1995, and claimed that the bill "would threaten public health and the environment" (Clinton, "Message" 1901). Administrator Browner complained about her years working with President Clinton, Vice-President Gore and a Republican Congress: "I think one of the most difficult moments for the agency was when the Republican leadership in Congress literally shut us down, wouldn't give us our funding, tried to limit our ability to enforce the law, you know, not once, not twice, but I think 17 times. Those were some difficult days, not just for the EPA, but I think for the entire country. And thankfully, we had a Vice-President who said no, who was prepared to veto bills" (Romero). In addition, an EPA budget of $7.7 billion was proposed by President Clinton in FY 1998, while $7.4 billion was approved by Congress. Similarly, The FY 1999 budget sought $7.8 billion for the EPA; Congress approved $7.6 billion (U.S. Cong. CRS, *Environmental* 16).

In response to Congress, the Clinton Administration accepted a need for change and took reinventing environmental regulation initiatives as "Streamlining Environmental Regulation" on March 16th 1995 (Kurian 208). Congress had also sent clear signals that it expected the EPA to change the way it implemented environmental statutes to reduce the regulatory burden on businesses and property owners since 1995, because the EPA had implemented several initiatives and few of them were consistent with congressional directives (Eisner, Worsham, and Ringquist 166). However, in 1997, the EPA continually announced new tighter regulations for the amount of ozone and small particulate matter (PM) that States could have in their atmosphere. The agency claimed that the revised standards would result in 1.5 million fewer annual cases of significant breathing problems from ozone and 15,000

fewer deaths each year from particulate air pollution (Judis 16). Whilst opponents argued that air quality was better than at any time in the last thirty years, and feared the burdens these regulations could place upon industry. Republicans claimed that the new regulations were not scientifically justified, and introduced legislation requiring the EPA to establish scientific certainty before issuing new regulations. Even congressional Democrats and traditional Democratic constituents (labor unions and big-city mayors) opposed the new regulations (Eisner, Worsham, and Ringquist 166). Furthermore, the EPA took few congressional directives into consideration in the 1997 global warming conference in Kyoto, Japan. At the conference, EPA officials played a prominent role in the U.S. delegation, and the Clinton Administration pledged that the United States would reduce its emissions of greenhouse gases by seven percent below 1990 levels by 2012, a fifteen percent reduction from current levels, and a forty percent reduction from projected levels for 2012 (Eisner, Worsham, and Ringquist 166-167).

Courts had been pushed back to a moderate position on the environment by President Clinton's appointment of two Justices to the Supreme Court and several judges to Courts of Appeal and to District Courts. The EPA had achieved a record in enforcement actions in 1999. It referred 403 civil cases to the DOJ and 241 criminal cases for prosecution. It also filed 3,935 civil and administrative actions, assessed $52 million in criminal fines and $167 million in civil penalties (Kraft, *Environmental Policy and Politics* 137). The EPA imposed the largest civil penalty ever, a $30 million fine, on a single pipeline operator, Koch Industries, for "egregious violations of the Clean Water Act" (Ibid.). The new phenomenon was that the court's oversight of administrative regulatory decisions abandoned the traditional deference to bureaucratic expertise, and was promoted to question both the process and the substance of administrative activities (Weissert 219). The case *American Trucking Associations Inc. v. EPA* provided a good example. After the EPA announced tighter regulations for the amount of ozone and small particulate matter, Congress tried to

stop them with the rights written in the Small Business Regulatory Enforcement and Fairness Act of 1996. But Congress failed to strike them down within sixty days. Together with the lobbyists of K Street, the American Trucking Associations Inc. sued the EPA to overturn the standards, because its diesel trucks would be directly affected by them. The lobbyists from K Street were against the standards on behalf of automobile companies, steel producers, mining and oil companies, utility companies, and other affected industries. They asserted that the costs of compliance exceeded the benefits to public health, and the Clean Air Act stipulated that the EPA can only consider what is requisite to protect public health. They also introduced an argument developed by the Cato Institute, the think tank funded by corporations that oppose government regulation. Citing the Supreme Court's 1935 ruling in A.L.A. *Schechter Poultry Corp. v. United States*, in which the Court overturned the National Industrial Recovery Act partly on the grounds that Congress' delegation of power was far too sweeping, the Cato Institute argued that Congress was violating Article I of the U.S. Constitution, which vested "all legislative powers" in the Congress itself, by granting the EPA the authority to set specific rules about environmental standards. Two corporate lobbyists, C. Boyden Gray, and Alan Charles Raul, were also involved in the case and argued that the EPA had failed to scientifically prove that new standards were needed to protect public health (Judis 17). On May 14th 1999, the three-judge panel of the Court of Appeals for the District of Columbia Circuit with two Reagan appointees sided with the petitioners and found that the EPA was violating the delegation of power by stating: "Although the factors the EPA uses in determining the degree of public health concern associated with the different levels of ozone and PM are reasonable, the EPA appears to have articulated no 'intelligible principle' to channel its application of these factors; nor is one apparent from the statute. …[W]hat the EPA lacks is any determinate criterion for drawing lines. It has failed to state intelligibly how much is too much" (Tietenberg 269). However, the Supreme Court reversed the holding of the Court of Appeal for the District of Columbia Circuit that the

EPA's interpretation of the CAA resulted in an unconstitutional delegation of legislative powers to the EPA through the case *Whitman v. American Trucking Associations* on February 27th 2001. A unanimous Supreme Court ruled that the way the federal government set clean-air standards is constitutional, rejecting industry arguments that the EPA must balance compliance costs against the health benefits of cleaner air, and thus upheld the authority of the EPA to set national ambient air quality standards (NAAQS), without regard to cost or disability, in order to protect public health from air pollution, and removed any legal constrains that might prevent the EPA from issuing standards that were unattainable (Lutter, "Head").

3.5.8. Interest Groups and the EPA

At the beginning of the Clinton Administration, mainstream environmental organizations in particular suffered serious financial and membership losses, such as the Sierra Club whose membership dropped from 630,000 to 500,000 between 1990 and 1994. Whilst grassroots movement had been growing rapidly, fighting for environmental justice, mainstream environmental organizations still participated in governmental decision-making through public education, collection and dissemination of scientific information, lobbying of public officials, and litigation. At local, regional and State levels, these groups had shifted "from an earlier adversarial style to one characterized much more by cooperation, collaboration, and professionalism" (Kraft, "Influence" 147). Several leading environmental organizations, particularly the Sierra Club, and the League of Conservation Voters (LCV), still placed considerable importance on campaign contributions and candidate endorsements in election campaigns. In 1996 and 1998, the Sierra Club spent as much as $7 million on voter education, issue-advocacy advertisements, and direct support for the candidates (Kraft, "Environmental" 52). Environmental lobbying, however, had been fading, although they had a larger number of lobbyists than before (Dowie 192). The reason was that money played a

very important role in making environmental decisions. The energy and natural resource industries and corporate Political Action Committees (PACs) made much higher contributions to congressional candidates than pro-environmental organizations. In 1992, pro-environmental organizations contributed about $1.3 million to congressional candidates, while the energy and natural resource industries alone gave almost $22 million (Dowie 193) and all business PACs contributed $295.4 million (Dowie 280 note 23). An environmental lobbyist said: "The most I can offer a congressional representative is $10,000 — $5,000 for the primary and $5,000 for the general election. That seems like a lot until you consider that the guy coming in after me from the Chemical Manufacturers Association has a hundred companies behind him, each with their own PAC that can offer $10,000 a piece. I'm out-gunned" (Dowie 193). Some changes occurred in environmental organizations during the Clinton Administration. For example, some organizations like the Environmental Defense Fund (EDF) distinguished itself from other groups by supporting regulatory market incentives such as tradable permits for acid rain control (Stavins 16). In 1996, environmentalists formed a national Green Party to challenge the two-party system, in order to push through needed environmental change. The party first gained widespread public attention during Ralph Nader's presidential runs in 1996 and 2000. In 2000, Green Party candidate Ralph Nader received 2,882,955 votes, or 2.7 percent of the popular vote (Cook, Jr.).

As the non-mainstream grassroots environmental organizations had been developing into a national political force, fighting for environmental justice, business groups constituted a genuine environmental "backlash," through supporting some public relations groups and think tanks. Various topics were involved, for instance: "The economic costs that environmental regulation imposes on both the private and public sectors were crippling to the economy and taxpayers and disproportionate to the benefits it promotes; and environmental concerns were most effectively and economically addressed by laissez-faire government and

a free market economy" (N. Miller 117-118). One of these public relations groups and think tanks was the "Wise Use" group, a loose coalition of around 400 small groups of ranchers, representatives of extractive industries, property rights activists, off-road vehicle recreationists, farmers, and right-wing ideologues (N. Miller 118). The name "Wise Use" came from the "wise use" idea of the former chief of the U.S. Forest Service, Gifford Pinchot, to describe responsible conservation, the balancing of preservation and the profitable use of land in a manner that accomplishes all. The group enlisted the substantial support of corporations such as Chevron, Exxon, and the American Farm Bureau, as well as the help of national lobbies of the extractive industries. It was intent on promoting the expansion of private property rights and the reduction of government regulation of publicly-held property. For instance, repealing the Endangered Species Act, opposing repeal of the 1972 Mining Act, and generally opening up federal lands to development. The Wise Use group had spread throughout much of the United States since the late 1980s, and had challenged the constitutional validity of government regulation during the Clinton Administration (Ibid.). Citizens for a Sound Economy (CSE), and the Cato Institute (The CSE was founded by David and Charles Koch. Charles Koch also co-founded the Cato Institute.), were two typical members of the Wise Use group. The CSE was almost totally supported by corporations. For instance, eighty-five percent of its 1998 revenues of $16.2 million was generated from Koch Industries as well as other corporations, including U.S. West and Philip Morris. In order to inform the public that "environmental conservation requires a commonsense approach that limits the scope of government," acid rain was a "so-called threat [that] is largely non-existent," and global warming was "a verdict in search of evidence," the CSE spent $17 million on producing more than 130 policy papers, delivering them to every single congressional office, sending out thousands of pieces of mail, and getting their viewpoints published in more than 4,000 news articles around the nation in 1995 (C. Moore 56). CSE representatives also appeared on hundreds of radio and television shows and published 235

op-ed (opposite the editorial page) articles (Ibid.). As the Clinton Administration's 1993 proposal for an energy tax was designed to curb consumption of imported oil and gasoline, Senator David Boren (D-Okla.) was hammered on radio and television as well as in print, and then opposed the Clinton tax (Ibid.). In the end, the legislation was defeated with the help of a massive press and public relations campaign mounted by the CSE. Besides influencing public opinion, the Wise Use group affected the judiciary. The Cato Institute actively took part in the case *American Trucking Associations Inc. v. EPA*, which, in 1999, successfully overturned the air standards of 1997 for the amount of ozone and small soot particles set by the EPA.

The Clinton Administration tried to reduce the conflicts on environmental regulation among the EPA, business and environmental organizations. It initiated the Reinventing Environmental Regulation to search for ways to protect the environment at low cost by approaching market incentives and building collaborative stakeholder partnerships among the EPA, business and environmental organizations, and communities. As a result, cooperation and collaboration between business groups and the government increased (Kamieniecki 31). The EPA launched a number of voluntary government programs to encourage companies to join the cleaner production movement. The Energy Star program certified energy-efficient appliances, electronic equipment, personal computers and computer equipment, and many other products, and achieved considerable energy and cost savings (Press and Mazmanian 282-283). Project XL began in November 1995, to support industry in seeking cleaner, more cost-effective environmental management strategies through rewarding superior corporate environmental performers with greater statutory and regulatory flexibility. The EPA tried to develop integrated, comprehensive strategies for protecting air and water quality and land through employing the Common Sense Initiative to move environmental protection beyond the traditional Command-and-Control, pollutant-by-pollutant approach to a new industrial sector-by-sector approach (Kamieniecki 32). In

addition, media like daily newspapers, mass-circulation magazines, and industry publications advertised that "green" was practical and profitable. Even *Science* published the article "Environment and the Economy" in its June 25th 1993 issue with an extensive, multi-part section (N. Miller 112).

As the principal target of environmental regulation, business groups faced a strong EPA supported by Vice-President Gore. They were forced not only to adopt corporate codes of conduct, and undertake a systematic advertising campaign highlighting "green" products and "green" imagery, but also shifted to work jointly with, and often fund, environmental advocacy groups and even improve their environmental management practices (N. Miller 127). Corporate social responsibility and sustainable development had been steadily adopted by both the government and firms. It concentrated on a "win-win" solution that realized substantial cost savings, and pollution reductions with the increasing cooperation in the form of partnerships and stakeholders (Ehrenfeld 228). As a result, business groups' cooperative agreements with environmental advocacy groups were expanded during the Clinton Administration. For instance, the Rainforest Action Network urged Home Depot to phase out the sale of wood products from environmentally sensitive areas by 2002, and "certified" wood as the product of environmentally sound logging practices. Another example came from a major fish marketer, Unilever. Together with the World Wildlife Fund, Unilever created a Marine Stewardship Council (MSC) in 1997, which rewarded sustainable fishing practices with an eco-label and fishery certification program. Fish with the blue MSC eco-label indicated that the fishery did not contribute to the environmental problem of overfishing (N. Miller 123). These agreements were "win-win." Environmental organizations made these programs reliable, and won public support through protecting the environment, whilst business groups funded them and profited from associations with environmental organizations. Industry had also taken initiatives, such as developing voluntary programs to improve its environmental management practices. For instance, the Chemical Manufacturers

Association instituted the Responsible Care program, to quiet criticism of their industry, by improving the environmental, health, and safety performance record of their members. The Responsible Care program contained a variety of elements from community education and emergency response to pollution prevention, process safety, and employee health (N. Miller 115). During the 1990s, the core functions of the environmental health and safety field were becoming institutionalized in most firms, and a professional environmental culture was emerging with the addition of staff with specialized environmental education and training. Company environmental managers were now directly engaging with environmental organizations, business associations and other corporations (Jamsion 5).

During the eight-year Clinton Administration, the EPA functioned as a rational advocate for protecting the environment and set the precedent for the future EPA. The Clinton Administration sustained economic growth while protecting the environment. Under Administrator Browner, the EPA not only effectively protected the environment, for instance, through promoting the protection of ecosystems, fighting for the depleting ozone layer and global warming and giving higher priority to the protection of children and environmental justice, but also made rational choices to eliminate red tape by reducing paperwork, creating jobs and realizing greater and cheaper pollution control by promoting the use of market incentives and public-private partnerships. By the late 1990s, clear evidence of progress was that the levels of many pervasive air pollutants had declined, and major water bodies were far cleaner than they had been in the 1960s. Public awareness of the need to protect the environment also strongly increased (Kurian 208).

4

Case Study: Automobile Emissions

By the 1960s, automobiles had become popular in the United States due to the world's cheapest gasoline and the advantages the automobile brought to Americans, such as freedom from space constraints and an elevation of personal social status. As a result, the personal automobile became the single greatest polluter in numerous cities (U.S. EPA, *Automobile Emissions* 1). Auto emissions in major urban areas contributed thirty to sixty percent of main air pollutants, resulting in such diseases as cancer, bronchitis, pneumonia, emphysema, asthma, and the common cold. In the 1960s, it was estimated that the health effects of auto emissions cost the U.S. $680 million annually in health care, lost productivity, and premature death (Opie 457).

4.1. What are Automobile Emissions?

The combustion process of fuel in an engine produced both the power to move a car and the air pollutants. The main air pollutants included hydrocarbon (HC) emissions, nitrogen oxides (NO_2), carbon monoxide (CO) and carbon dioxide (CO_2). Both fuel evaporation and fuel burning partially in the engine resulted in hydrocarbon emissions. Various nitrogen oxides (NO_2) formed in the engine under high pressure and temperature. Carbon monoxide (CO) resulted when carbon in the fuel was partially oxidized in combustion process of fuel, while carbon dioxide (CO_2) resulted when carbon in the fuel was fully oxidized in the fuel combustion process. In addition, evaporation of the fuel itself also produced air pollutants (see figure 10). Hydrocarbons reacted with nitrogen oxides and sunlight, and thus formed ground-level ozone (a major component of smog). Ozone irritated the eyes, damaged the lungs, aggravated respiratory problems, and even caused cancer. Nitrogen oxides (NO_2)

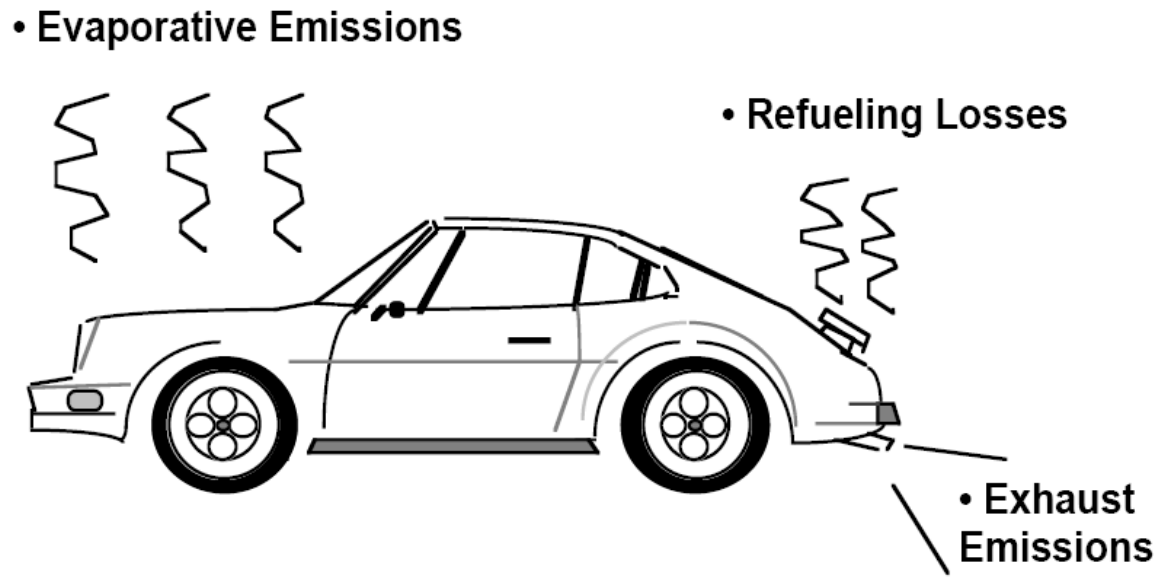
contributed to both the formation of ozone and acid rain. Carbon monoxide (CO) was particularly dangerous to persons with heart disease because it reduced the inward flow of oxygen. Carbon dioxide did not directly impair human health, but it was a kid of "greenhouse gas," which caused global warming (U.S. EPA, *Automobiles and Carbon* 1-4).

4.2. The EPA Role in Controlling Automobile Emissions

The EPA's auto emissions control covered different activities, such as making regulations and setting standards, conducting Compliance Programs with Certification, Inspections or Investigations of the manufacturers' certification records and facilities, imports (supports certification by preventing the entry of uncertified vehicles into the United States), Selective Enforcement Auditing (identifies a number of production models for assembly line testing throughout a given model year) ("U.S. Environmental"). The history of auto emissions control is a vivid portrayal of the EPA's role in protecting the U.S. federal environment. The variance and changing intensity of auto emissions regulation from the EPA proved the agency to be a single-minded advocate during the Nixon-Ford Administration, a deregulator of environmental regulation at the beginning of the Reagan Administration, and a rational advocate during the Clinton Administration, and reflected the EPA as an end product of balancing science, law, economics, politics and social needs.

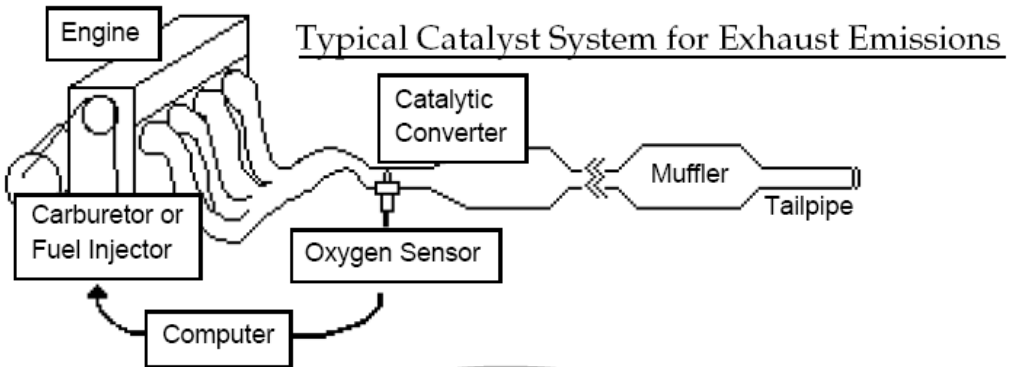
From 1970 to 1973, the EPA worked as a single-minded advocate. It established and maintained stringent standards against auto emissions. The CAA Amendment of 1970 required the EPA to set pollution emission standards to protect public health. This Act gave specific instructions on the regulated pollutants, and set the date of meeting the standards in terms of vehicle or engine model years ("Ibid."). This Act also called for a ninety percent reduction in both hydrocarbon (HC) and carbon monoxide (CO) emissions beginning with automobiles from the year 1975, a 0.41 gram per mile HC standard and a 3.4 gram per mile CO standard were required to be met by new cars since 1975, and NO_2 emissions must be

Figure 10. Sources of Auto Emissions



Source: U.S. Environmental Protection Agency (EPA). *Automobile Emissions: An Overview* (EPA 400-F-92-007). Washington, D.C.: U.S. EPA, Office of Mobile Sources, August 1994. 1. Print.

Figure 11. Basic Controls for Exhaust and Evaporative Emissions

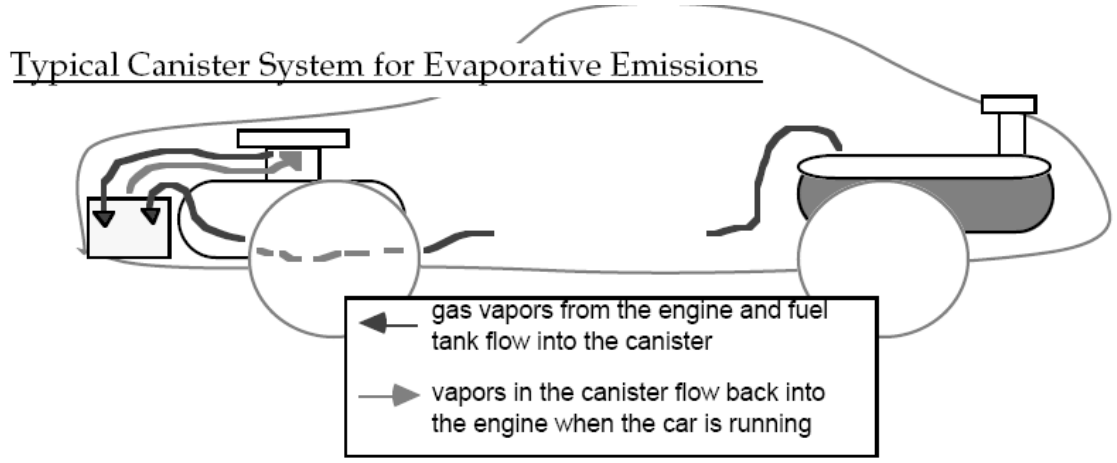


Source: U.S. Environmental Protection Agency (EPA). *Automobile Emissions: An Overview* (EPA 400-F-92-007). Washington, D.C.: U.S. EPA, Office of Mobile Sources, August 1994. 4. Print.

reduced to 0.4 grams per mile by 1976 (Holum 173). Because no particular technology was specified to meet auto emission standards under the CAA, automakers were required by the CAA to decide how to meet the pollution limits through developing new emission control technologies (Train 169).

In 1971, the EPA formulated air pollution regulation, and established the National Ambient Air Quality Standards (NAAQS) for six air contaminants that were present to some degree in auto emissions. These contaminants were ozone (O_3), particulate matter (PM), carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen oxides (NO_2) and lead (Pb). Administrator Ruckelshaus differentiated States and ordered a two-tier system: one was a very tight standard for California that required catalysts; another was a slightly less stringent standard for the rest of the nation that did not require catalysts (Whitaker 100). In the same year, for the first time, new cars were required by the EPA to meet evaporative emission standards. As a result, charcoal canisters were designed by automakers to collect hydrocarbon vapors (see figure 12). Besides the charcoal canisters, in 1972, exhaust gas recirculation valves were used to reduce nitrogen oxides. The emission reductions were further enabled by the fundamental improvements in engine design (U.S. EPA, *Automobile Emissions* 1-4). In 1972, as five companies, Chrysler, Ford, General Motors, International Harvester, and Volvo, asked for a one-year suspension of the 1975 hydrocarbon and carbon monoxide standards, Administrator Ruckelshaus denied the application without hesitation (Whitaker 97). Although these five companies later sued, the court also denied their request for the suspension of the deadline, and remanded the case to the EPA for further consideration according to a National Academy of Sciences' report which said that the technology was not available to meet the 1974 emission standards (Whitaker 99). In 1973, the EPA began to initiate its inspection program when a major domestic auto maker was alleged to be filing false certification reports ("U.S. Environmental"). To reduce lead emissions, at the end of 1973, the EPA set new regulations to phase out lead, which restricted

Figure 12. Typical Canister System for Evaporative Emissions



Source: U.S. Environmental Protection Agency (EPA). *Automobile Emissions: An Overview* (EPA 400-F-92-007). Washington, D.C.: U.S. EPA, Office of Mobile Sources, August 1994. 4. Print.

the average lead content, measured quarterly, in all grades of gasoline produced by any refinery to 1.7 grams per gallon (gpg) by July 1st 1975, 1.2 grams per gallon by July 1st 1976, 0.9 grams per gallon by July 1st 1977, and 0.6 grams per gallon by July 1st 1978 ("EPA Requires"). However, the sudden rise in imported oil prices caused by the Arab oil boycott in late 1973 forced Congress and the Nixon Administration to change the auto emission laws by passing the Energy Supply and Environmental Coordination Act in 1974, which provided an extension until 1977 of the 1975 auto emission standards and postponed the HC and CO standards until 1978 (Train 169). In March 1975, the EPA announced the deadline extension. Administrator train, meanwhile, made it clear that emission levels would continue to go down ("Mr."). In the same year, the EPA enacted the Corporate Average Fuel Economy (CAFE) regulations to improve fuel economy (expressed in miles per gallon (mpg)) for passenger cars and light trucks. In addition, the Department of Transportation established standards for light trucks in the 1978 model year (MY), and improved the average fuel economy of cars and light trucks sold in the U.S. since 1975.

The regulations on the phase-out of lead at the end of 1973 prompted the requirement of new catalytic converters on imported cars from July 1975, because the catalytic converter was seen as an invention that sharply reduced smog from cars through breaking down compounds of nitrogen and oxygen from car exhausts (M. Wald A16). The EPA required most 1975 cars to install two-way catalytic converters to oxidize both carbon monoxide to carbon dioxide, and unburnt hydrocarbons (unburnt and partially-burnt fuel) to carbon dioxide and water (see figure 11). Since catalytic converters could only be run on unleaded gasoline, the use of two-way catalytic converters in 1975 expanded the use of unleaded gasoline. This resulted in dramatic reductions in ambient lead levels (U.S. EPA, *Automobile Emissions* 1-4). To deal with the energy crisis, Administrator Train also created many incentives to save fuel, such as the reduction of the average vehicle weight with corresponding reductions in fuel use, increasing the population of small autos, encouraging

development of more efficient automotive power systems through research funding ("EPA's Position"), and especially subsidizing oil and the creation of a national speed limit at fifty-five miles per hour (Conlan 91). In 1976, the Selective Enforcement Auditing (SEA) program from the EPA took effect to implement the assembly line testing authority ("U.S. Environmental").

During the Carter Administration, the CAA was amended by Congress in 1977. This act further expanded the EPA's authority to regulate the content of fuels, and directed the EPA to promulgate testing regulations and test existing and new fuels and fuel additives (Reitze, *Air* 321). In September 1978, Administrator Costle set a new atmospheric air quality standard, which was the first national ambient air standard the EPA had issued since 1971. It was mainly to protect public health from exposure to airborne lead (lead harms human nervous and blood-forming systems) ("EPA Sets"). At the request of automakers, the HC standard was further delayed until 1980, and both the CO and NO_2 standards were also delayed until 1981. In that year, for the first time, new cars met the standards of the CAA Amendment of 1977 (U.S. EPA, *Milestones* 1-3). Between 1980 and 1981, automakers installed new cars with even more sophisticated emission control systems in response to tighter standards, which included a three-way catalyst with on-board computers and oxygen sensors. This three-way catalyst could convert carbon monoxide and hydrocarbons to carbon dioxide and water, and could also reduce nitrogen oxides to elemental nitrogen and oxygen (U.S. EPA, *Automobile Emissions* 1-4). This contributed to the continuing phase-down of the use of lead in gasoline in the 1980s.

The EPA's deregulatory role under Administrator Burford during the Reagan Administration was also reflected by auto emissions regulations. Between 1981 and 1983, except for Inspection and Maintenance (I/M) programs which were conducted by States and required passenger vehicles to undergo periodic testing for malfunctioning emission control systems in 64 cities nationwide, little was done to strengthen auto emissions regulation.

During Administrator Thomas' tenure, the EPA's new limits on lead in gasoline started on Jan. 1st 1986 and the stringent emission standards for diesel-powered trucks and buses were adopted by the EPA, but they would take first effect in 1994 (U.S. EPA, *Motor Vehicles* 5).

During the first two years of Bush's tenure, the EPA actively responded to auto emissions. In 1989, the EPA set fuel volatility limits to reduce evaporative emissions. The agency continued to impose strict limits on diesel fuel sulfur content to help buses and trucks meet the 1985 emission standards in 1990. The CAA Amendment of 1990 added provisions for acid rain, ozone depletion and toxic air pollution to the EPA's agendas, and set stricter tailpipe emission standards for cars, trucks, and buses to further reduce HC, CO, NO_2, and particulate emissions (Hollembeak 208). This Act also expanded Inspection and Maintenance programs with more stringent testing, and encouraged the EPA to launch new vehicle technologies and clean fuels programs (the development of alternative fuels) (Ibid.). According to this Act, the EPA began to study non-road engines (that is, boat, farm equipment, home equipment, construction equipment), and to set possible regulation for emissions from non-road vehicles in heavily polluted cities (Ibid.). However, after 1990, the Bush Administration reduced the speed limit to control auto emissions. In 1991, the EPA announced lower tailpipe standards for HC and NO_2, which would take effect beginning with 1994 models. In the next year, the EPA further set emission limits both for carbon monoxide at cold temperatures (20°F) and on maximum gasoline vapor pressure nationwide, and validated regulations setting minimum oxygen content for gasoline in areas where carbon monoxide levels exceeded national pollution standards. (U.S. EPA, *Milestones* 1-3).

As a rational environmental advocate under the Clinton Administration, the EPA tried to enhance national energy independency and economic growth with auto emissions regulations. It intensified the auto emissions control, and regulated the federal auto emission through a "win-win" approach of building cooperation partnerships and creating various stakeholders. In 1993, the EPA set limits on the sulfur content of diesel fuel, and made it illegal to produce

vehicles requiring leaded gasoline. In the same year, the EPA further validated new standards for sulfur content of diesel fuel. Both the illegal leaded gasoline production and the new valid standards enabled sulfur to be reduced at the maximum level by eighty percent (U.S. EPA, *Motor Vehicles* 5). To reduce greenhouse gas emissions, energy demand, and the importation of foreign oil, the EPA added ethanol to gasoline with a thirty percent share. Administrator Brower said: "The EPA's proposal would help farmers by boosting the demand for ethanol while protecting the environment" (Adler 11). In 1993, besides the Motor Challenge program launched by the DOE to improve the efficiency of electric motor systems, the Clinton Administration announced a joint research program entitled "a new Generation of Vehicles" (PNGV) with the Big Three auto companies, Ford, GM and DaimlerChrysler, to develop, by the year 2004, a passenger vehicle that would be three times more fuel efficient than a 1994 intermediate size car. In this research program, the Clinton Administration and automakers in Detroit became partners and worked together to improve automobile fuel efficiency and emissions reductions (Dunn 71). In the early 1990s, cars, trucks, and buses contributed to almost half the emissions of ozone precursors, volatile organic carbon (VOCs) and nitrogen oxide, and up to ninety percent of the CO emissions were in urban areas. Additionally, a large portion of the emission reductions gained from motor vehicle emission controls had been offset by the rapid growth in the number of vehicles on the highways and total miles driven (Spellman 184). Therefore, in 1994, the EPA introduced cleaner vehicle standards and technologies, and set both tighter tailpipe emission standards for hydrocarbons, nitrogen oxides and carbon monoxide, and cold temperature carbon monoxide standards for light-duty vehicles with congressional formulas and guidelines. These required that trucks and buses must meet stringent diesel particulate emission standards, and that new cars must be equipped with on-board diagnostic systems (U.S. EPA, *Motor Vehicles* 5). In 1995, the EPA launched new programs requiring cleaner or reformulated gasoline for the cities with the worst ozone problems and in other areas that voluntarily join the program (Spellman 184-

185). In the same year, the EPA further barred leaded gasoline from commerce, banned leaded gasoline from use in motor vehicle fuel, and required all 1996 model year cars and light trucks to meet new tailpipe and cold-temperature carbon monoxide standards in 1996. On November 27th 1996, the EPA conducted the first update in twenty years for ozone and the first in ten years for particulate matter through amending the National Ambient Air Quality Standards, and put into effect the two NAAQS for ozone and particulate matter smaller than 2.5 μm diameter (PM2.5) (Spellman 184). At this time, reactions also came from automakers. In 1996, the Big Seven automakers, Ford, GM, DaimlerChrysler, Honda, Hyundai, Nissan and Toyota, began to commit to manufacture zero-emission vehicles. In March 1998, the EPA launched a voluntary program, the National Low Emission Vehicle (LEV) program, after receiving notifications from all auto manufacturers and the relevant States lawfully opting into the program (Reitze, *Air* 311). The National LEV program was a measure to reduce air pollution, and to harmonize federal and California motor vehicle standards. It was also intended to reduce design and testing costs for manufacturers, and to prevent inconsistent State regulatory requirements. It tried to achieve emission reductions in north-eastern States by voluntarily adopting the California LEV program (Ibid.). New cars and light-duty tricks would meet more stringent tailpipe standards than the EPA could mandate prior to model year 2004, starting in the north-eastern States in model year 1999 and nationally in model years 2001 (Ibid.). The EPA further initiated the clean-fuel fleet programs with various stakeholders in 1998 (U.S. EPA, *Motor Vehicles* 5). In 1999, the EPA implemented modifications to the passenger car and light-duty truck certification process by reducing upfront certification requirements while expanding the use of in-use testing to verify compliance. In December 2000, Administrator Browner proposed the Diesel Engine and Low-Sulfur Diesel Fuel rule, which required a ninety-seven percent decline of the sulfur content of diesel fuel, and it was adopted by the EPA in 2002 (“Carol”). Although the regulations generated little demand from environmentalists, and the Sports Utility Vehicles

(SUVs) and small trucks that became popular during the 1990s were largely exempt from federal auto regulations (Levy 125), the EPA strengthened reducing auto emissions by cooperating with automakers and States in the form of partnerships and stakeholders. In late1999, the EPA further issued tougher vehicle emission standards to begin taking effect in 2004. It was the first time that both cars and light trucks (including sport utility vehicles) would be subjected to the same national emission control system (Kraft, *Environmental Policy and Politics* 133).

5

Conclusion

5.1. Strategies, Methods and Problems in the EPA's Roles

By 2000, the EPA had thirty years of history. Its resources have grown from about a $1 billion budget and 4,000 staff in 1970 to a hefty more than $7.5 billion and a workforce of 18,000 (see table 13). As cost was becoming more important in environmental protection, Command-and-Control strategy was steadily supplemented by regulatory reforms, cost-benefit analysis, risk assessment, co-operation and collaborative decision-making, public-private partnerships, the use of market-based economic-incentives, and voluntary agreements with interest groups on pollution control. Therefore, relations between the EPA and industry changed from the regulator versus the regulated to a collaborative stakeholder partnership with shared responsibilities (Sexton, Murdock, and Marcus 66). Cooperative, voluntary agreements were added to federally-dominant Command-and-Control (Ibid.). The EPA also developed its theme of environmental protection from reducing or repairing environmental damage by the end-of-pipe controls to pollution prevention by reducing generation of pollutants at their point of origin (Blodgett 58). Public participation on environmental decision-making was also expanded. The environmental decision-making process from the EPA also changed from a "top-down" regulator-centered Command-and-Control model (regulators decide, announce, and defend decisions) to a form with mixed stakeholders and broad public participation from both "bottom-up" and "top-down." The one-size-fits-all federal regulation was changed to place-based environmental decision-making (Sexton, Murdock, and Marcus 66).

The CAA of 1970 established the "Polluter-Pays Principle" and "Command-and-Control"

strategy, and both have remained intact until now (Kraft and Kamieniecki, "Analyzing" 12). The "Polluter-Pays Principle (PPP)" has been guiding the management on the EPA's attainment of environmental regulations (Ulbert 101). It requires the costs of pollution to be paid by those who cause it. It aims at realizing that the prices of goods and services fully reflect the costs of production, thus promoting efficiency and justice, and defining how to allocate costs within a State (Portney 12). It was first mentioned in the 1972 Recommendation by the OECD Council on Guiding Principles concerning International Economic Aspects of Environmental Policies. It stated that: "The principle to be used for allocating costs of pollution prevention and control measures to encourage rational use of scarce environmental resources and to avoid distortions in international trade and investment is the so-called Polluter-Pays Principle. This principle means that the polluter should bear the expenses of carrying out the above-mentioned measures decided by public authorities to ensure that the environment is in an acceptable state" (Lucia). In 1989, costs related to accidental pollution were also added to the PPP by the OECD. The PPP was reaffirmed in the 1992 Rio Declaration (Ibid.).

The federally-dominant Command-and-Control strategy is accompanied by an overall goal of reducing pollution to a given level with ambitious target dates (Opie 455). It requires various types of industrial and business activities to be regulated by the EPA under environmental laws, and thus forces companies to improve and adopt new technologies and processes to clean up pollution emissions by specified dates (Kurian 207). Like its appearance, Command-and-Control contained the "command" to set regulations with environmental standards and the "control" to control the sources of pollution after setting the environmental standards. The "command" relied on regulations and standards with adequate margins of safety, because environmental standards could improve the design of federal intervention as to what must be done and how to better identify the issues. The EPA had adopted the zero-risk principle (prior to the Clinton Administration) and the negligible-risk

Table 13

The EPA's Budget and Workforce, 1970-2003

Fiscal Year	*Budget*	*Workforce*
FY 1970	$1,003,984,000	4,084
FY 1971	$1,288,784,000	5,744
FY 1972	$2,447,565,000	8,358
FY 1973	$2,377,226,000	9,077
FY 1974	$518,348,000	9,743
FY 1975	$698,835,000	10,438
FY 1976	$771,695,000	9,481
FY 1977	$2,763,745,000	11,315
FY 1978	$5,498,635,000	11,986
FY 1979	$5,402,561,000	12,160
FY 1980	$4,669,415,000	13,078
FY 1981	$3,030,669,000	12,667
FY 1982	$3,676,013,000	11,402
FY 1983	$3,688,688,000	10,832
FY 1984	$4,067,000,000	11,420
FY 1985	$4,353,655,000	12,410
FY 1986	$3,663,841,000	12,892
FY 1987	$5,364,092,000	13,442
FY 1988	$5,027,442,000	14,442
FY 1989	$5,155,125,000	14,370
FY 1990	$5,461,808,000	16,318
FY 1991	$6,094,287,000	16,415
FY 1992	$6,668,853,000	17,010
FY 1993	$6,892,424,000	17,280
FY 1994	$6,658,927,000	17,106
FY 1995	$6,658,227,000	17,663
FY 1996	$6,522,953,000	17,081
FY 1997	$6,799,393,000	17,951
FY 1998	$7,360,946,000	18,283
FY 1999	$7,590,352,000	18,375
FY 2000	$7,562,800,000	18,100

Source: Colin, Robert W. *The Environmental Protection Agency: Clean up America's Act*. Westport, Connecticut and London: Greenwood Press, 2006, pp. 3.

principle (since the Clinton Administration) to guide management in designing federal intervention in environmental, health and safety regulations. The EPA further adopted the balance principle to avoid the problems caused by standard-setting like high or low regulatory levels. Because Congress set some laws to reduce pollution in a given medium, like ambient air or drinking water, and others focused on the sources or effects of pollution, such as pesticides or acid rain (Fiorino, *Making* 97), the EPA set two types of environmental standards at levels that ensured against any adverse health effects: ambient standards and emissions standards. Ambient standards must be maintained and set the minimum desired level of air or water quality and the maximum level of a pollutant; while emissions standards specified the maximum level of permitted emissions (Asafu-Adjaye 84). After selecting environmental standards from the "Command", the EPA takes "Control" of the regulation by supervising environmental monitoring and enforcement conducted by States. The enforcement from States is sometimes in the form of different kinds of punishment such as a fine from State governments (Kurian 207).

While setting environmental standards to protect health and other values, the EPA had to pay more attention to cost and other adverse consequences of the regulations. This was expressed in terms of dollars versus health (Portney 19). Stringent environmental regulations and standards imposed significant economic costs on corporations and firms for pollution control (Hetes 1009). These costs were either shifted to consumers in the form of higher product prices or borne by stakeholders, laborers or management in the form of reduced earnings. Consumers might be discouraged by these higher prices from purchasing products whose production generates pollution; leading to a decline in sales and the production of certain products from corporations and firms; thus reducing profits. This could result in employees being laid-off, or even bankruptcy of some corporations and firms and the diminution of some industry branches (Portney 19-20). At this time, this dollar-versus-health was characterized by conflict: environmental protection against economic development or

against jobs.

The EPA employed its strategies and methods to protect the environment, and to reach the goals of different administrations. With these strategies and methods, the EPA had engaged both in centralizing environmental regulations, for instance, through Command-and-Control and in decentralizing environmental regulations, for instance, with market-based economic incentives.

5.1.1. Strategies and Economic Incentives forming the EPA's Roles from the Nixon to the Clinton Administration

President Nixon decided to use and lead with environmental issues in national politics. He led environmental issues and thus won public support. In a 1970 message to Congress, he even announced his goal of producing an "unconventionally powered, virtually pollution-free automobile within five years" (Train 89). From 1970 to 1973, the EPA worked as an environmental advocate. It emphasized pollution reduction and prevention mainly through taking control of emissions and effluents in air, water or soil (Mazmanian and Kraft 10-13). The EPA centralized environmental regulations by supplementing "end-of-pipe" to the Command-and-Control. Under the "end-of-pipe" Command-and-Control, pollutants were reduced or emissions were curbed at the end of the production process. As the federal environmental regulations continued, the conflict of environmental protection versus economic development was deeply felt during the Arab oil embargo in 1973. To deal with the energy crisis, the Nixon-Ford Administration switched energy consumption from oil to coal to limit the demand for imported oil. The Nixon-Ford Administration further applied different methods to save and ration energy and raw materials, such as subsidizing oil, setting a speed limit, resource recovery programs encouraging reuse, recycling in place of extracting, for instance, recycling steel, aluminum, fuel economy labeling programs, etc.

During the Carter Administration, the EPA made changes. The agency was pulled back to

actively protecting the federal environment by the newly set environmental statutes and by the EPA's big budget. Because the enormous federal expenses forced the democratic government to strengthen regulatory reform to reduce it, environmental programs from the EPA began to be put under the control of regulatory reforms. The Carter Administration further invested millions of dollars in researching alternative sources for electrical power (Koff), and federally developed fuel substitutes like ethanol and renewable energy sources like solar power and wind. Thus, the modern solar power industry was born, and led to the insulation of millions of American homes. In the National Energy Plan of 1978, the promoted incentives of both business solar credit and business tax credits showed the Carter Administration's intention to emphasize this conservational and renewable energy (Lazzari 2). The Carter Administration also published a report called *A New Prosperity*, detailing how emerging technologies and smart policies could together help the United States meet twenty-eight percent of its electricity needs from renewable sources by the year 2000 ("Congress"). Accompanying governmental initiatives, individuals also voluntarily promoted environmental protection. Denis Hayes, the national coordinator of the first Earth Day in 1970, organized a one-day program, Sun Day, "to convey to the American public that there were options, that it was possible to run a modern industrial state on sunshine" (Weltman). On May 3rd 1978, Sun Day began with a sunrise ceremony at the United Nations led by Ambassador Andrew Young, and continued with hundreds of events across the United States (Ibid.). On Earth Day 1979, President Carter announced an additional $100 million in federal solar spending, and even installed a solar thermal water heater on the roof of the White House. His administration further extended federal solar energy tax credits to homeowners. An example was the American Solar King company, which sold solar water heating systems and reported sales of more than $30 million in 1985. Thus, solar industry began to get more economic attention ("Congress"). These energy actions indirectly helped the nation protect the environment. In 1977, Congress enacted the CAA Amendment to improve the flexibility

and effectiveness of the environmental regulations and promote economic growth. The CAA Amendment of 1977 authorized emissions trading with "offset" or "credit" in "non-attainment areas" which were highly-polluted urban areas that did not meet national air quality standards (NAAQS). EPA Administrator Douglas Costle developed incentive-based methods of emissions trading like the "bubble concept." These approaches to emissions trading had a great influence on future environmental regulations because they built the stepping stones and provided valuable practical experience for the development of more efficient and cost-effective trading programs in the future (U.S. EPA, *Tools of the Trade* 2-11). In 1980, Congress enacted the Comprehensive Environmental Response, Compensation and Liability Act (Superfund), and thus the theme of pollution clean-up was added to the environmental protection agenda.

President Reagan believed his "New Federalism" with decentralization and defunding to promote economic recovery in terms of incentives, enforcement, cost efficiency and administrative ease. Since the basic parameters of environmental protection were defined by environmental statutes such as the Superfund, the CAA, the CWA, the SDWA, FIFRA, the RCRA, the TSCA, and CERCLA, the Reagan Administration chose to alter the direction of federal policies by maximizing control of policy implementation within the executive branch rather than rewriting them (Vig, "Presidential" 107). He appointed Anne M. Gorsuch Burford as EPA Administrator. Administrator Burford strongly believed in decentralization, which meant nearly all responsibility for environmental regulations should be devolved to the States. She also put these beliefs into practice during her tenure (Ringquist 45). President Reagan established a more formal and comprehensive centralized regulatory oversight program, entitled "Regulatory Relief", to eliminate or revise regulations considered burdensome by industry (Vig and Kraft 436). Regulatory Relief introduced the concept of "net benefit" into the regulatory process, and thus strongly differed from the regulatory reform during the Carter Administration. President Reagan further created the Task Force on

Regulatory Relief, chaired by Vice-President Bush, to oversee the regulatory process (U.S. OMB, *Report* 6). Both regulatory relief and the Task Force on Regulatory Relief enabled the Reagan Administration and EPA Administrator Burford to decentralize the EPA's regulatory powers, reduce the EPA's budget, make closed decisions and achieve regulatory delays (Kraft, *Environmental Policy and Politics* 129). Thus, the EPA was transformed into an environmental deregulator. When Administrator Ruckelshaus returned to the EPA, he reorganized the agency's enforcement structure by creating a new Office of Enforcement and Compliance Monitoring, and reestablished the General Counsel as a separate office (Shanley 112). Administrator Ruckelshaus continued to list environmental regulation violators in the *Federal Register*, promoted risk assessment, and expanded environmental protection from the emphasis on public health to all species. Besides preceding most of what Ruckelshaus pursued, Administrator Thomas shifted the EPA from focusing on the public health strategy of former Administrator Costle towards focusing on criminal environmental enforcement. It was because "The willingness of the administration to bring criminal actions against corporate officials has enhanced their interest in supervising their lower-ranking personnel to pay attention to environmental values, and reading in the paper about criminal actions being brought against one's industry or one's company is a great motivator" (Mintz 70). Thus, the EPA's enforcement actions formed a process ranging from notices of violation to administrative orders, to civil judicial actions and to criminal prosecutions (Mintz 102). In his eight-year tenure, President Reagan never proposed any legislation to strengthen the Clean Air Act (Shabecoff, "E.P.A." A1). His administration even strongly enlarged exports of toxic waste to the Third World. The amount rose from about nine million metric tons in 1970 to at least 247 million in 1984 (Jensen 213). Because of President Reagan, the EPA was in the shadow of deregulating environment and unwillingly protecting the environment.

During the Bush Administration, the EPA also made changes. After President Bush won the presidential election in 1988, he decided to use and lead with environmental issues in

national politics just as President Nixon had done. He balanced and placated opposing interests, and made difficult political choices by straddling issues and buying time whenever possible (Shabecoff, "In" 20).

President Bush decentralized responsibility for environmental protection to private industry by enhancing the use of market incentives for pollution control (Ringquist 45), because he believed that marketable pollution allowances would achieve more efficient emission reductions than Command-and-Control regulation (Shabecoff, "In" 20). Title IV of the CAA Amendment of 1990 brought the Cap-and-Trade mechanism to achieving cost-effective emissions reductions to the Acid Rain Program. Since then, the use of trading in Clean Air Act programs has been significantly expanded. Helped by the Environmental Defense Fund, the Bush Administration ensured the smooth operation of a sulphur emission market, which reduced sulphur emissions cheaply (at a cost of about ten percent of critics' estimates in opposing acid rain control legislation in the 1980s) and rapidly (faster than expected) (Graff 17).

Due to the mismanagement of Administrator Burford, Congress continually strengthened control of the EPA by prescribing extremely detailed and rigid requirements for implementation to compel administrative compliance (Kraft, "Environmental" 39). The EPA was also directed to focus both on pollution prevention and on clean-up (Shabecoff, "In" 20). Under the growing congressional concerns on the Superfund program, on June 19th 1991, Administrator Reilly directed the EPA's Office of Solid Waste and Emergency Response to investigate EPA decision-making in accelerating the rate of the Superfund remedial actions and the EPA's methods to evaluate and manage environmental risks (Mintz 97-98). Administrator Reilly further appointed an agency task force to study the EPA's Superfund contracting system ("Reilly"). Thus, the EPA introduced pollution prevention through pollutant source reduction, and emphasized ecology in protecting the environment (Opie 454). The EPA further promoted partnership with industry and stressed a voluntary,

collaborative, and flexible approach to pollution prevention.

However, President Bush abandoned the cooperation with Congress under the pressures from a stagnant economy and the conservative wing of his party. The Bush Administration launched a number of anti-environmental initiatives since late 1990. Against his "no net loss of wetlands" campaign promise, he proposed redefining wetlands in such a way that half of all those remaining could lose federal protection (Ringquist 34). He allowed polluters to exceed emission limits for toxic air pollutants without public notice or comment, and proposed the elimination of public hearings and court challenges to oil, coal, gas, mineral, and timber leases and sales of public lands (Ibid.). Vice-President Quayle's Council on Competitiveness further weakened the 1990 Clean Air Act (Ibid.).

Cost-effective pollution prevention programs, cleaner production, and the expansion of public participation in environmental decision-making made the EPA under the Clinton Administration a rational advocate. In 1994, the EPA launched its "Common Sense Initiative" to make health protection cheaper and smarter by focusing on results with place-based environmental decisions rather than one-size-fits-all regulations (Collin 336-337). The EPA then launched reinventing environmental regulation to improve the agency's flexibility, cost-effectiveness and innovation. Initiative programs like Project XL built public-private partnerships and fostered stakeholders among business, government, environmental communities, and other related parties, in which incentives for action arose from mutual interests. One example was the Public-Private-People Partnerships (4P), which enabled industry, government and the environmental community to work together for success. The 4P were voluntary agreements between governments and individual firms taking the form of "non-mandatory contracts between equal partners, one of which is government, in which incentives for action arise from mutual interests rather than from sanctions" (OECD, *Meeting* 7). The 4P were led by a core group of experts from the Natural Resources Defense Council, Amoco Petroleum, the Dow Chemical Company, Monsanto, Rayonier, and the New Jersey

Department of Environmental Protection. Through site-specific work, the group dealt with internal, external, or regulatory barriers and conducted cost-saving pollution prevention (Gunningham and Sinclair 86). Since President Clinton wanted to continually support State discretion in environmental regulation (Ringquist 45), emission trading was encouraged by the Clinton Administration. The EPA allowed emission trading in its air and water programs and gave companies the broadest flexibility in finding the lowest cost approaches to pollution reduction through its Economic Incentive Programs. The Acid Rain Program was one of these. It was consistent with the Reinventing Environmental Regulation and part of the Common Sense approach to the integration of smarter environmental and public health protection. In the Acid Rain Program, since 1995 the EPA had offered trading pollution credits under the Cap-and-Trade system to all industrial fossil fuel-burning sources in order to reduce acid rain ("EPA Expands Open-Market").

Besides promoting waste prevention and recycling in its daily operations, the EPA further developed new sources of energy with an emphasis on renewable sources like solar power and wind. Additionally, the Clinton Administration improved its management to promote cleaner production from many industries. For instance, offering market share for green products with green procurement. Because government consumed far more office equipment and motor vehicles than that of any other single purchaser, it was the dominant purchaser in many markets. This market dominance enabled the Clinton Administration to dictate market preferences for green products (Gunningham and Sinclair 84).

Voluntary cooperation from firms also helped the EPA be a rational advocate. Competition on customers' preferences, on corporate image, and on internal priorities drove firms willing to generate incentives to innovate, to respond market demands and thus achieve green production. The cleaner production partnership led by government brought mutually beneficial outcomes. Smaller firms reduced compliance costs, improved productivity and improved their environmental performance through gaining expertise, quality control,

product design and advice on clean technologies or regulatory compliance audits from larger firms, whilst larger firms not only gained a cleaner production supply chain by building more reliable, clean and efficient suppliers (Ibid.), but also assured market share through the administration's green procurement.

As a rational advocate, the EPA tried to reach the goal of sustainable development through further enhancing environmental protection while maintaining economic prosperity (Kraft, "Influence" 146-147).

5.1.2. Problems

As an environmental regulator, the EPA faced a lot of problems in its thirty-year history. During the Nixon Administration, industry resentment of the EPA's enforcement gradually increased (Mintz 30). Conflicts, such as jobs versus environment, and cost against health, appeared in the mid-1970s (Ibid.). From then on, these conflicts became the focus of environmental regulation under each administration and each EPA. Especially at the beginning of the Reagan Administration, cost defeated health and the stringent use of risk-assessment had made the EPA a risk-assessment agency instead of a pollution-reduction agency (McCloskey 81).

As an administrative agency, the EPA faced environmental controversies from the federal government, because federal government itself was both a polluter and a regulator. Power plants and environmentally damaging water projects were good examples. In general, they were both sponsored, and built by government agencies. Other government agencies even sponsored some of the most ambitious and least economically sustainable electricity generation projects, such as the Washington Public Power Supply System with a network of nuclear power plants in the Pacific Northwest (Graff 14-15). Therefore, federal and State governments were widely viewed as the cause of environmental problems. They were both part of the problem and part of the solution in environmental controversies (Ibid.). Since the

Nixon Administration, the EPA has been involved in the planning of future power facilities because of the confrontation between the location of power plants and the related environmental concerns (R. Nixon, "President"). This kind of problems continued to be caught in the issues around federal energy reserve in the following administrations. The Clinton Administration made changes in power plants illegal activities. Because many power plant owners estimated that the administration would not enforce environmental laws and regulations, they routinely disobeyed environmental laws, and their companies did not follow pollution controls in their modernization. Thus, they saved money but damaged health and air quality. The illegal activities of the power plant owners were called by Sylvia Lowrance, the EPA's top official for enforcement and compliance from 1996 to 2002, "the most significant non-compliance pattern the EPA had ever found" (Shulman 67). Since 1997, the EPA had been investigating these power plants for non-compliance with environmental laws. In November 1999, Attorney General Janet Reno sued eight utility holding companies that operated fifty-one older coal plants in ten States, charging that they violated the New Source Review of the Clean Air Act (Goodell 157). It was alleged that "these power plants had been illegally releasing enormous quantities of pollution, in some cases for twenty years or more" (Shulman 67). They were referred to by the Justice Department lawsuit as "significant contributors to some of the most severe environmental problems facing the nation today" (Goodell 157). With the exception of power plants, issues such as water projects and the use of nuclear energy still confused the EPA.

During the Reagan Administration, cost-benefit analysis also became one of the EPA's problems, because it undermined environmental standards, which curbed known dangers to health and safety (Brownstein and Easton xv). That was why Representative John D. Dingell (Democrat) from Michigan asked: "What is the cost-benefit analysis that is going to determine the price of a healthy child?" (Benenson 680) The stringent use of risk-assessment was also at the expense of public health.

In the process of the EPA's environmental decision-making, environmental decisions had increasingly been driven more by media hype and partisan politics than by sensible science (Dowd 95). They were also increasingly made through balancing environmental goals with economic and political needs, rather than utilizing reliable science. The Clinton Administration expanded public involvement in environmental decision-making and founded a "win-win" approach to environmental protection. However, "it was unclear if the goal of opportunities for the public to participate in environmental decisions will lead to increased opportunities for the public to determine final outcomes" (Clarence and Mazurek 181), and in a "win-win" solution, how many "win" was at the expense of the environment?

Environmental statutes also caused problems at the EPA. Each statute was written to solve the immediate environmental problem at hand and often without any regard to how that environmental problem related to other environmental problems and programs implanted by the EPA (Sussman). These defects in environmental statutes brought the EPA the need for better coordination between regions, headquarters enforcement offices, and media program offices, and made improving management efficiency a priority, for instance, through performing management reforms such as cross-media, cross-program, or cross-statute cooperation, especially when more environmental laws came out.

The EPA still had other shortcomings on management. For instance, its management, reliable science, and reliable information were criticized for lacking complete and sufficiently accurate information on managing risks and measuring results (U.S. Cong. GAO, *Environmental Protection: Observations* 6), and for narrow thinking about problems encouraged by the EPA's media-specific program offices and the statutes they implement (U.S. EPA, *Studies Addressing* 17).

5.2. The EPA and Science

Since its creation, the EPA was had not been a science agency, rather primarily a regulatory and enforcement agency (Powell 57). All environmental research in the United States is allocated to the federal government, State governments, universities, private companies, etc. The federal government only carries out a portion of all environmental research, and the EPA accounts for only less than fifteen percent of federal environmental research (Davies, *Science at EPA* ix). Other federal agencies like the National Aeronautics and Space Administration (NASA), the Department of Energy, and the Department of Defense carry out more environmental research than the EPA (Ibid.).

In addition, the Office of Research and Development (ORD) from the EPA owned about one-third of the EPA's budget in 1973. Due to the energy crisis, the 1974 budget for ORD was largely cut. Since 1977, the ORD proportion of funding in the EPA's total budget had remained low and it reached its lowest point in 1983 (approximately three percent) (see table 14 and figure 13). Although, in 1983, EPA Administrator Ruckelshaus emphasized the need for science at the EPA (Ruckelshaus 1026), the agency's research still suffered from uneven quality, inadequate funds, poor direction and a lack of first-rate scientists and equipment due to the shortage of budget for research and development under the Reagan Administration (Leary A13). In 1992, the budget for ORD returned roughly to its 1980 level after adjusting for inflation (Carnegie 16). During the Clinton Administration, ORD's appropriations increased steadily, but still had only around a five percent portion of the EPA total budget (see table 14 and figure 13).

Moreover, other federal administrative institutions and agencies also influenced the generation and use of research within the EPA. Congress set the general framework for research by enacting laws and amendments, and impacted the day-to-day research work through oversight and informal contact. The courts significantly influenced the use of research through judging right or wrong to EPA actions (Davies, *Science at EPA* ix).

Table 14

EPA Research and Development Budget Appropriations Account Compared with EPA Budget Authority, FY 1976-1996 ($ million, unadjusted)

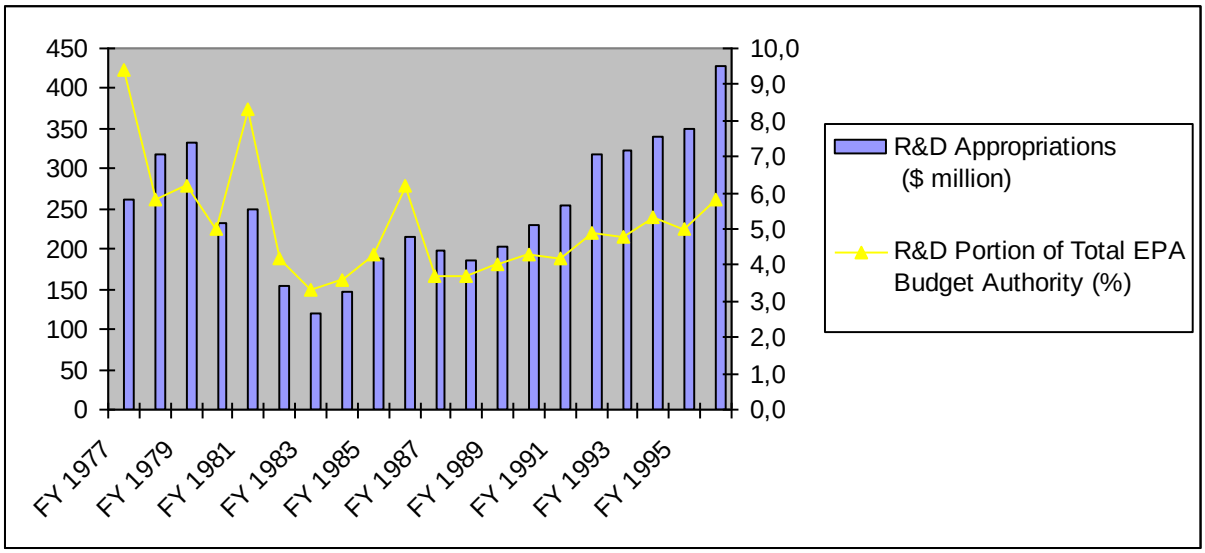
Fiscal Year	*R&D Appropriations*	*R&D Portion of Total EPA Budget Authority*	*Total EPA Budget Authority*
FY 76	265	**34.3%**	772
TQ	64	**33.9%**	189
FY 77	261	**9.4%**	2,764
FY 78	317	**5.8%**	5,499
FY 79	333	**6.2%**	5,403
FY 80	233	**5.0%**	4,669
FY 81	250	**8.3%**	3,026
FY 82	154	**4.2%**	3,674
FY 83	121	**3.3%**	3,688
FY 84	146	**3.6%**	4,064
FY 85	189	**4.3%**	4,346
FY 86	214	**6.2%**	3,446
FY 87	198	**3.7%**	5,344
FY 88	186	**3.7%**	4,968
FY 89	203	**4.0%**	5,081
FY 90	230	**4.3%**	5,380
FY 91	255	**4.2%**	6,004
FY 92	318	**4.9%**	6,461
FY 93	323	**4.8%**	6,737
FY 94	339	**5.3%**	6,346
FY 95	350[a]	**5.0%**	6,994[a]
FY 96	427[b]	**5.8%**	7.331[b]

Source: Powell, Mark R. *Science at EPA: Information in the Regulatory Process*. Washington D.C.: Resources for the Future, 1999. 58. Print.

a. Enacted appropriations.

b. The figure is the administration's proposed appropriations for ORD. The House-Senate conference bill allocated $525 million to an agencywide Science and Technology (S&T) account (Washington Post, November 17, 1995, p.A18). The agency's S&T account authorization for FY 1997 was $552 million (U.S. CRS 1997).

Figure 13. EPA Research and Development Budget Appropriations Account Compared with EPA Budget Authority, FY 1976-1996 ($ million, unadjusted) [a]



Source: Powell, Mark R. *Science at EPA: Information in the Regulatory Process*. Washington D.C.: Resources for the Future, 1999. 58. Print.

a. Date taken from Table 1.

The OMB did so as well because it controlled the flow of scientific and technical information into the EPA (Tozzi). Outside sources like universities and firms were also influential because EPA research partly relied on outside sources. Thus, the EPA was constrained to be a regulatory and enforcement agency.

Since the EPA's science had also been tempered by economic and political reality, the agency's role in protecting the federal environment from the Nixon Administration to the Clinton Administration became an end product of the process of balancing science, law, economics, politics and social needs. While protecting the environment, the EPA also changed Americans' minds and offered experiences and ideas for the future. Today, economic incentives such as the trading of emission rights, the taxing of pollutants, and subsidies for pollution control (for instance, government subsidies on products like organic fuels to improve the market competitiveness of eco-friendly products) are willingly accepted by Americans to meet environmental objectives (Graff 15). Pollution-free automobiles from President Nixon have become a reality; solar-energy panels and groups of wind turbines can be seen everywhere; speed limit signs have been set up on each highway and main street; drinks with deposits can be bought in every shop; organic and environmentally sound products have become popular and more and more people are motivated to voluntarily protect the environment.

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