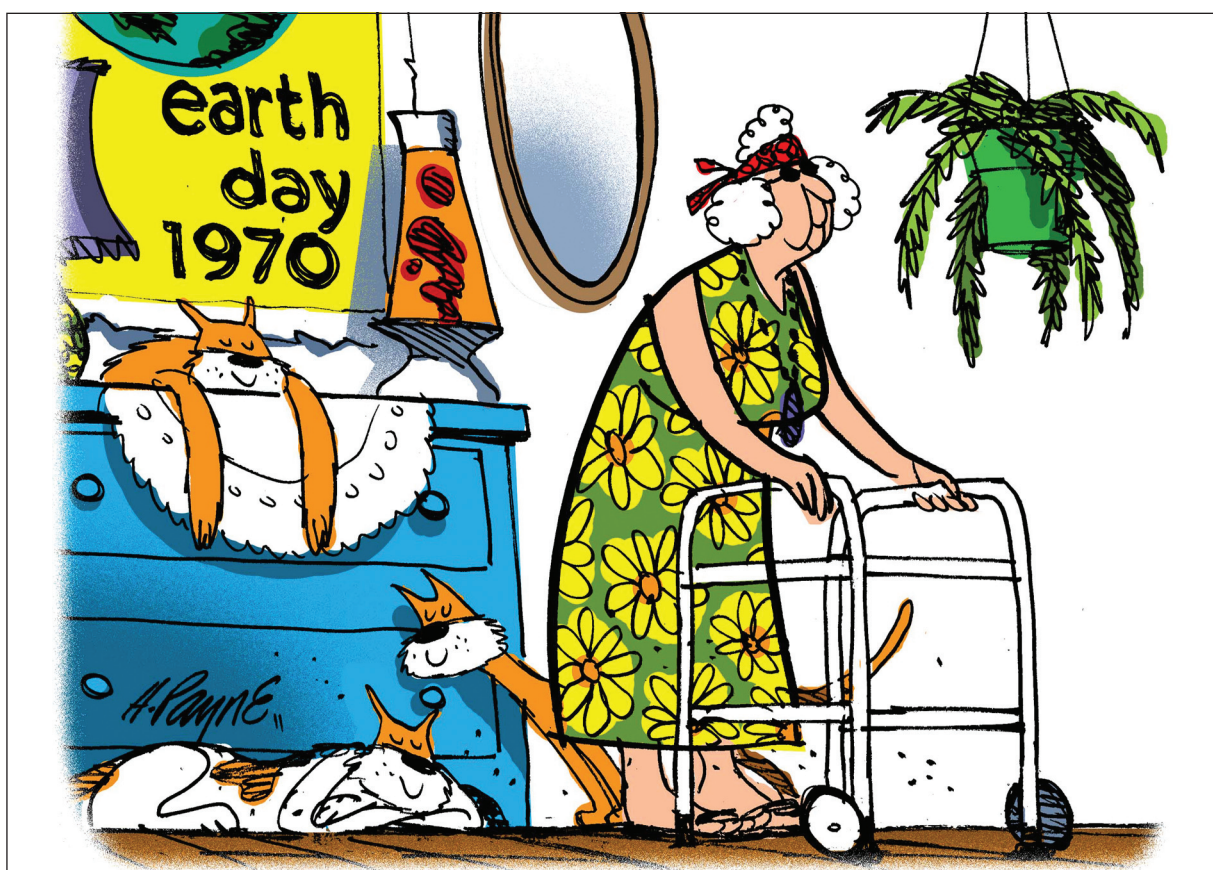


The Environmental FORUM[®]

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Has the Pizazz Gone Out of Environmental Protection?

Joint Pain

*The Clean Air Act's
Arteriosclerosis*

Toxicology

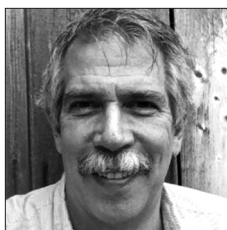
*Stakeholders and
the Role of Risk*

The Practice

*Changes Over the Next
Five to Ten Years*

Any Big Ideas Left?

Clearly, we are not running out of problems, but are we running out of solutions? At this point, it is not clear what paradigm, or more broadly, what vision, drives thinking about our collective environmental future



David Rejeski is the Director of the Science and Technology Innovation Program at the Woodrow Wilson International Center for Scholars. He is also a Visiting Scholar at the Environmental Law Institute. Last year, ELI launched Environment

2050, a project to envision what our environmental governance system should look like in 2050 and to create a roadmap of the steps necessary between now and 2030 to advance down that path. As part of that project, ELI began with an exercise to develop and rank a list of environmental policy accomplishments of the past four decades, with an emphasis on U.S. activities.

Shortly after the first Earth Day on April 22, 1970, one of its organizers declared, “It was a gamble but it worked.” Earth Day was cathartic — people were mobilized, agendas were created, and the dystopian prophets saw their book sales soar, but, as one newspaper later commented, “Earth Day was great, but what happens now?”

By 1980, observers were already lamenting that “the environmental movement is losing a bit of its former kick.” Denis Hayes, writing in 1990, remarked, “Two decades after the first Earth Day, those of us who set out the change the world are poised on the threshold of utter failure. Measured on virtually any scale, the world is in worse shape today than it was 20 years ago.”

Fast forward another 20 years and we find a whole genre of so-called “collapse literature” focused on the impending implosion of the planet and end of life as we know it, ranging from Jared Diamond’s *Collapse: How Societies Choose to Fail or Succeed*, to Paul Hawkin’s recent film *The 11th Hour*. This apocalyptic fare is loaded with descriptions of short-fused challenges knocking at humanity’s door like mass extinctions, tipping points, planetary transformation, atmospheric tsunamis, and runaway over-heating, all evoking the iconic ending of that classic 1991 movie *Thelma and Louise*, when the road trip heroines drive off the rim of the Grand Canyon in their Thunderbird convertible.

Clearly, we are not running out of problems, but are we running out of solutions? The first Earth Day coincided with a spasm of policy and legislative action resulting in the creation of the Environmental Protection Agency, passage of the National Environmental Policy Act, and enactment of the Clean Air Act and Clean Water Act. One may question President Nixon’s motives at the time, but back in 1970 serious problems were being matched with serious solutions that involved the creation of whole new institutions, systems of law, and the professionalization of a rag-tag social movement. As some historians have noted, the real story of this period “is the prominent, continuous lawmaking surge that lasted from late 1963 through 1975 or 1976,” in the words of Yale political scientist David Mayhew.

How does this dramatic increase in environmental lawmaking fit into the general arc of environmental history over the past 40 years? Was this increase really significant, like Joe DiMaggio’s

56-game hitting streak in 1941, or the beginning of a slide to mediocrity, like the Chicago Cubs' descent into baseball hell after their 1945 World Series loss?

Unfortunately, environmentalists are not as obsessed with measuring performance as baseball fans. Attempts to calibrate environmental policy achievements relative to other government accomplishments are rare. In 2004, the Brookings Institution asked over 500 historians and political scientists to rank the 50 greatest accomplishments of our government over the last 50 years. Ensuring safe drinking water and clean air were at the top of the list along with helping to rebuild Europe after World War II, expanding the right to vote, tackling disease, and reducing workplace discrimination. More recently, the Aspen Institute held a small workshop to explore the greatest accomplishments of the Environmental Protection Agency, and the top 10 included cleaner water, the banning of DDT, the phase out of lead, the Toxic Substances Control Act, and the Resource Conservation and Recovery Act.

Last fall, the Environmental Law Institute began an exercise to develop and rank order a list of environmental policy accomplishments of the past four decades, with an emphasis on U.S. activities. The idea was to “throw these ideas on the wall” and apply a principle developed by literary historian Franco Moretti known as “distance reading,” which attempts to discern patterns by taking broad analytical swaths through time, searching for an emerging picture, rather than focusing on individual pixels. As people began to volunteer their favorite accomplishments, and we began to plot these on a timeline, two clusters appeared around 1970 and 1990, which became quite striking when a five-year moving average was applied to the data.

Anybody familiar with innovation research knows that fresh ideas frequently appear in cycles or waves, often separated by decades. The first

peak fits well with theories of organizational innovation that stress that new organizations often generate breakthroughs precisely because they lack fully formalized, mature structures and rigid rule systems. They have the luxury to “build from scratch” and often become magnets for creative minds. In 1970, the new White House Council on Environmental Quality was one such place, as was the new Environmental Protection Agency. In the 1990s, the newly created European Union may have served a similar function, attracting people from different cultural backgrounds to be part of the grand project of continental unity.

In searching for underlying causes for these two innovation peaks, we looked at a number of possible explanations, ranging from fluctuating GDP to unemployment, finding no obvious correlations. Party control of the Congress and Executive Branch provided conflicting explanations for the patterns. Mayhew has spent years examining the impact of divided party control on the legislative agenda and found little evidence that favorable political circumstances yield significant legislative gains.

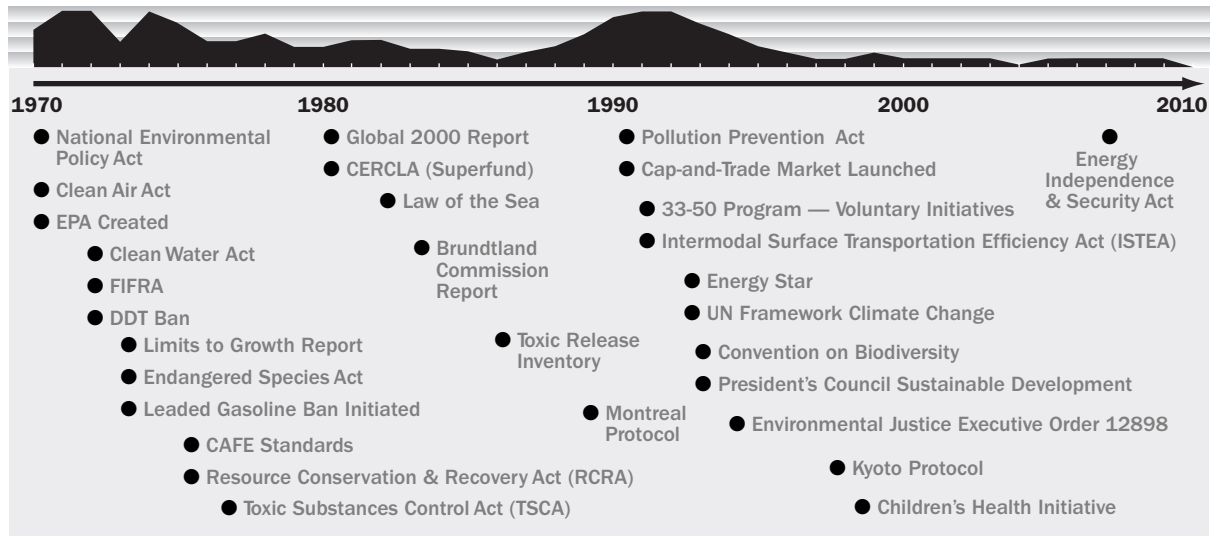
The Republican White House worked with the Democratic Congress to pass landmark pieces of legislation in the early 1970s, including in addition to NEPA, the CAA,

and the CWA the Occupational Safety and Health Act (1970), the Consumer Product Safety Act (1972), and the Equal Employment Opportunity Act (1972). However, bipartisan cooperation soon disintegrated and over the 40-year timeframe, this decline of support for the environmental agenda was clear in voting records (tracked by the League of Conservation Voters) where Republicans supported environmental legislation 27 percent of the time in 1973, 19 percent in 1994, and 10 percent in 2004, while Democrats voted for the same agendas 56, 68, and 86 percent of the time during those same years.

Linking the patterns to public opinion provides a clearer picture, though again, causality cannot be positively inferred. The explosion of concern



Accomplishments: 5-Year Moving Average



TOP TIER

1. Clean Water Act
2. Clean Air Act
3. EPA created
4. Lead phase-out
5. Endangered Species Act
6. NEPA
7. Freedom of Information Act
8. CERCLA (Superfund)
9. RCRA
10. Montreal Protocol

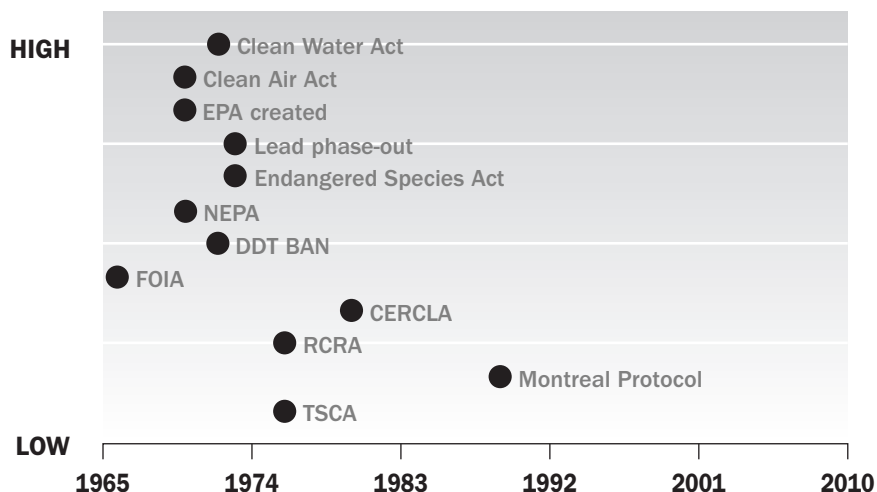
TIER TWO

11. Toxic Substance Control Act
12. CAFE standards
13. FIFRA
14. Toxic Release Inventory
15. Energy efficiency labels
16. U.N. Climate Change Framework
17. Kyoto Protocol
18. Cap and Trade market
19. Law of the Sea
20. Environmental Justice Executive Order

TIER THREE

21. Children's Health Initiative
22. Pollution Prevention Act
23. Brundtland Commission
24. Toxic Release Inventory
25. Limits to Growth report
26. PCSD
27. Voluntary Programs
28. Farm Bill
29. ISTEA
30. Environmental Ed Act
31. Global 2000 Report

Accomplishment Ranking



The top graphic shows the results from the initial survey of environmental policy accomplishments (with a 5-year moving average showing peak activity periods). The middle graphic shows the environmental policy accomplishments, listed by rank (based on an on-line survey of 240 people). The bottom graphic shows the top-ranked environmental policy accomplishments, sorted by year.

about the environment in the late 1960s was so rapid that it was called the “miracle of public opinion” by some social scientists. But the rapid ascent, peaking around Earth Day in 1970, was followed by an equally rapid decline throughout most of the decade, which led some observers to predict the disappearance of environment as an issue. However, by the late 1980s, backlash against Reagan administration policies, the emergence of new environmental problems such as climate change, the destruction of the ozone layer, loss of the rain forests, and the *Exxon Valdez* oil spill helped catalyze pro-environment sentiment.

Analysis by social scientists around 1990 found that concern for the environment had reached another all time high across a variety of measures, ranging from the perceived “seriousness” or threat of environmental problems to the degree of threat, support for government actions, and emergence of more pro-environmental behavior on the part of the public. A *National Journal* article written in 1990 went so far as to exclaim that, “anti-environmental values have no legitimacy in the public debate.”

That period saw a new emphasis on threats to the entire planet spurred by NASA scientist James Hansen’s testimony before the U.S. Senate in 1988 and a 10-fold increase in the number of articles in the popular press devoted to climate change. In 1989, 32 bills were introduced on climate change and 28 days of hearings were conducted by congressional committees.

Surveys taken around 1990 found that a large portion of the public believed that environmental quality was declining, not just at a local but a global level, and they exhibited an increasing sense of pessimism concerning our planet’s future. Seeking to distance himself from the Reagan environmental record, then-candidate George H. W. Bush ran commercials criticizing his opponent Michael Dukakis for allowing Boston Harbor to become polluted. In the early 1970s and late 1980s a Republican Executive Branch, under increasing public pressure to act on the environment, was clearly more motivated to work with a Democratic Congress to move a legislative and programmatic agenda forward.

After the initial mapping of accomplishments was completed, we launched an on-line survey that was sent via email to over 2,000 professionals with backgrounds in law, science, and public policy. Some 240 people responded to the survey resulting in the following demographic breakdown: age 20-35 (18 percent), age 36-50 (27 percent), age 51-65 (42 percent), and over 65 (10 percent). In addition, 24 percent were in academia, 24 percent employed by government, 32 percent in industry, and 19 percent in non-governmental organizations. 28 percent of the respondents were female and 72 percent male. 48 percent had a background in law, 20 percent in science, 12 percent in public administration, and the remainder in economics, planning, engineering, and the humanities.

The figure on page 38 shows the resulting rankings of 31 accomplishments. The top three choices were the Clean Water Act, Clean Air Act, and the creation of the EPA and, interestingly, there were no differences in these choices across any of the demographic groups represented in the survey — women, men, young, old, lawyers, engineers, academics and NGOs all converged on these three achievements, followed closely by the bans affecting lead and DDT, the Endangered Species Act, and the National Environmental Policy Act.

Once one moves below the top three choices, however, a number of differences appeared based on social-economic variables. Social science research over the past 30 years has shown that environmental attitudes tend to be negatively associated with age, positively related to education and liberalism and, at a weaker level, with occupation, income, urban residency, and gender. Interestingly we found no statistically significant differences in our rankings linked to age. Differences based on gender, profession, and employer did appear.

Research generally supports the notion that men and women have different views on the environment. Both structural and socialization theories posit that gender segmentation in the workforce and the “caretaker” role of women in society predisposes them toward greater environmental concern. Studies have shown that women have greater concerns regarding the use of nuclear power and are likely to be more sensitive to risks to health and the environment posed by pollutants.

Females in the survey tended to rank initiatives focused on children’s health, pollution prevention, biodiversity, and sustainability higher than men.

Compared to male respondents, they gave particularly high rankings to the President's Council on Sustainable Development set up in 1994. Lawyers in the sample, not surprisingly, had a strong preference for laws, and chose such things as the Law of the Sea, the Toxic Substances Control Act, and Endangered Species Act with greater frequency than respondents with other professional backgrounds. Where people worked — in industry, academia, or in non-governmental organizations — created statistically significant differences in their rankings of the Montreal Protocol, the U.N. Framework Convention on Climate Change, the Freedom of Information Act, and the National Environmental Policy Act.

We expected to uncover significant differences across geographic regions, especially between the mid-western and western states and the northeast. Geographic differences played an important role during the so-called Sagebrush Rebellion of public land reform that shaped Republican politics in western states in the 1970s and beyond. However, the ideology and politics of the respondents may have trumped locality and no major differences in rankings were found.

The most provocative finding of the survey appears when the top-ranked choices were plotted on the timeline (bottom figure). Almost all the highest ranked achievements occurred in a small window of time from 1970 to 1974. From this perspective the burst of innovation around 1990 seems less impressive.

This pattern raises a larger question. Were the survey respondents captives of some type of collective nostalgia, or did we really run out of big ideas? As we crept toward the second millennium, many observers noted that the environmental movement was feeding on leftovers. Political scientist Richard Andrews observed, "Even after more than three decades of the modern 'environmental era,' policies have only selectively, modestly, and temporarily held back the larger national and global forces of human population growth, landscape transformation, natural resource use, and waste generation."

In 2005, Michael Shellenberger and Ted Nordhaus wrote the highly controversial article "The Death of Environmentalism," accusing the environmental movement of "group think," a take

on Irving Janis's classic 1982 work on defective decisionmaking that arises when cohesive groups try to maintain the status quo from assaults by non-conformists and outsiders bearing high-risk strategies. They said, "What the environmental movement needs more than anything else right now is to take a collective step back to rethink everything." Unfortunately, many leaders in the environmental movement disagreed with them in what became an acrimonious battle over their attempts to sabotage the movement.

As the global ante has risen, some have noted that environmentalism is not just failing to deliver solutions, but is actually contributing to the problem, by locking in sub-optimal approaches, incremental laws, and actions that create systemic risks, of the type that plague financial markets, electric grids, and ecosystems. Paul Hawkin has pointed out that about one-third of the earth's resources have been consumed in the last 30 years, when most of our modern environmental laws have been in effect guarding the planet. University of Oregon environmental law professor Mary Wood recently noted, "Environmental law and bureaucracy is detached — dangerously detached — from reality."

Have we really exhausted the conceptual toolbox and now stand empty handed facing the Casandras? Or has innovation simply moved to more fertile ground? People who responded to the open-ended part of our survey and those who have subsequently reacted to the findings provided some clues and suggestions, which are worth further investigation.

Some people pointed to state and local government, echoing James Madison when he said that "the operations of the federal government will be most extensive and important in times of war and danger; those of the state governments, in times of peace and security." A number of people emphasized the critical role states and municipalities have played as laboratories for environmental innovation over the past few decades. When nanotechnology appeared on the scene, it was municipalities like Berkeley and Cambridge that took the lead in designing regulatory and voluntary compliance approaches, followed by states like California, while the federal government searched (slowly) for solutions in the margins of existing, and admittedly weak, regulations like the Toxic Substances Control Act's. No doubt some of that experimental latitude has existed because the federal government chose not to override the prerog-

ative of the states and localities to move beyond federal regulations.

Other survey respondents pointed to Europe — and such policy initiatives as the 2007 REACH legislation (Registration, Evaluation, Authorization and Restriction of Chemical substances), the EU Novel Food legislation, and EU sustainability efforts — as examples of more recent innovations that seem to have eluded the United States. It may be that the newness of the EU allowed policymakers to overcome the resistance to change that is inherent in older institutions.

Another option is that our laws and regulatory efforts have been internalized by industry — what might be termed the “privatization of regulation.” After 30 years of trying, EPA still cannot remove asbestos from the marketplace (a substance banned in 30 countries). Yet, recently Wal-Mart decided to ban polybrominated flame-retardants from its products and is telling its suppliers to come up with alternatives, and Whole Foods recently decided to ban bisphenol A from baby products. Lately, Google is acting more like a public sector entity, with its recent investment in an underwater transmission line for off-shore wind energy along the Atlantic coastline. Hewlett Packard’s initiative to create a Central Nervous System for the Earth is the kind of audacious, let’s-put-a-man-on-the-moon goal that used to come from the public sector.

The deeper question raised by the survey is whether early legislative and regulatory successes limited later innovation capacity through what organizational theorists call a competency trap. These traps arise when people and organizations become so good at doing one or two things that resources are channeled along the path of past success at the exclusion of new ideas. This leads to a kind of idea bankruptcy where organizations appear detached from reality, oblivious to new inputs, and searching for solutions within the boundaries of familiar conceptual neighborhoods. As venture capitalist Eugene Kleiner once said, “It is difficult to see the picture when you are inside the frame.”

Thomas Kuhn, who wrote perceptively on the nature of paradigm shifts, once said, “The failure of existing rules is the prelude to a search for new ones.” Of course, Kuhn also noted that the “failure of existing rules” had to be perceived and widely

debated before the old paradigm succumbed to the new.

At this point, it is not clear what paradigm, or more broadly, what vision, drives thinking about our collective environmental future. Though climate change clearly constitutes a significant global risk, it has failed to provide the metaphorical glue needed to bring together diverse constituencies and catalyze the broad populist support the environmental movement enjoyed in its two periods of growth two decades apart.

Since 1970, a number of conceptual models have helped frame interventions, both legal and voluntary, including waste management, pollution control, pollution prevention, sustainable development, and, more recently, eco-innovation. This sequence moved policies away from end-of-pipe solutions to more holistic approaches focused on product life cycles, the value chain, and the coupling of environmental, social, and ethical concerns.

Yet as a society, we still seem to be far away from implementing what Senator Edmund Muskie called for on the first Earth Day, “A total strategy to protect the total environment.” At the moment, the most compelling metaphor focusing social change strategies that encompass sustainability is food, which has brought together diverse constituents supporting everything from farmland preservation, to school lunch reform, animal rights, urban agriculture, and local economic growth. Michael Pollan recently observed that food is serving as a type of “edible dynamic” — a means to a political end that is only nominally about food itself.

Today, any reinvention of environmental policy is facing strong political headwinds and the constraints of ever-tighter public sector budgets. The promise of a new paradigm is not even on the horizon and any paradigm change may depend on the creation of new organizational structures that few politicians are ready to explore. In the absence of any transformational ideas and compelling visions that could catalyze change and bring together diverse constituencies around a new environmental agenda, the path forward will look much like the road behind us. •