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Zygmunt J.B. Plater

FACING A TIME OF COUNTER-REVOLUTION—THE KEPONE INCIDENT AND A REVIEW OF FIRST PRINCIPLES

*Zygmunt J.B. Plater**

The Kepone contamination episode of 1966-75 was a milestone that focused an entire nation's attention on environmental hazards and our need to do better in recognizing and avoiding them. We have learned a great deal from that unfortunate story.[1] The evolution of American environmental law since the Kepone debacle has repeatedly used the incident as a touchstone in identifying environmental pollution's causes, effects, and potential solutions.[2]

Twenty years have passed, and today we seem to be at another milestone. Quite suddenly, our national political process is being positioned to halt and reconsider what we as a society have accomplished in environmental protection over the past several decades. The same market forces that necessitated the development of environmental law in the first place—now marching behind a facade of populism—are initiating a broadranging and quite radical demolition of the environmental

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* Professor of Law, Boston College Law School. I offer my congratulations and appreciation to the University of Richmond Law School and this law review for preparing what was a useful and extremely enjoyable symposium. My thanks, for data on fisheries, to my colleagues Alison Rieser, Eleanor Dorsey, and Peter Shelley.

1. *See generally* Allied-Signal, Inc. v. Commissioner, 63 T.C.M. (CCH) 2672 (1992), *aff'd without opinion*, 54 F.3d 767 (3d Cir. 1995) (chronicling the Kepone story); ZYGMUNT J.B. PLATER ET AL., ENVIRONMENTAL LAW AND POLICY: NATURE, LAW, AND SOCIETY 42-48, 336-42 (1992) [hereinafter NLS]; William Goldfarb, *Kepone: A Case Study*, 8 ENVTL. L. 645 (1978); Christopher D. Stone, *A Slap on the Wrist for the Kepone Mob, reprinted in* CORPORATE VIOLENCE 121 (Stuart L. Hills ed., 1977); Morton Mintz & Daniel Klaidman, *Creative Settlement or Improper Deal?*, LEGAL TIMES, May 11, 1992, at 1.

2. For examples of how the Kepone incident has been invoked as a touchstone, with repeated legislative uses of the Kepone narrative in the formation of environmental protection policy and regulation, see William Goldfarb, *Changes in the Clean Water Act Since Kepone: Would They Have Made a Difference?*, 29 U. RICH. L. REV. 603 (1995).

protections built up over that time. The terms of the current debate are so broad and indiscriminate that it seems appropriate to use the Kepone story, with its repercussions and echoes, to go back to first principles in order to understand the present, and help chart a course for the future.[3]

This essay offers four propositions, about two things that have changed, and two things that have not, in the years since Kepone, taking account of where we are, and seeking some points of consensus. Environmental law is always controversial, because from the very beginning environmental issues have been regarded as inherently iconoclastic, and yet there may be some areas of consensus about public policy and environmental law that have evolved over these past decades.

Here are the propositions:

• First, entrepreneurial human nature inevitably necessitates environmental law, and powerfully resists it. Human nature has not suddenly changed in the past twenty years, and that means that the fundamental behavioral logic that produced the Kepone crisis still must be acknowledged as a chronic inherent limitation of human economic systems, requiring the counterbalancing application of civic values. Some form of regulation importing societal interests and values into the marketplace is inevitably necessary, but it is atavistically resisted by the human nature engine that drives economic enterprise.

• Second, environmental science, public policy consensus, and environmental law have changed dramatically since the 1970s, growing in volume and sophistication, and representing an intricately-evolved system of human knowledge and technology

3. No single conference can canvass the full range of issues that are shaping environmental law, or even all of the repercussions of the Kepone event. The field sprawls far too wide for that. As my colleagues and I concluded when we decided to prepare a coursebook approaching environmental law from the legal process perspective, it is very difficult to discern any subject area other than environmental law that extends so broadly throughout the structures of modern legal systems—local, state, federal, and international; civil, criminal, and administrative; based on common law, statutes, and regulations; ranging from Bentham's utilitarianism to Kantian norms; from empiricism to metaphysics. A vehicle this wideranging cannot be sandwiched into one essay without becoming a superficial catalogue, so this piece will treat a few points worthy of note.

that can surely be improved, but cannot reasonably be unlearned or peremptorily rejected.

• Third, the societal importance of active citizen engagement in governance and the legal system has not changed. As Americans, we do not believe that government can do it all, and leaving the implementation of national policies up to public and private executives and bureaucracies does not work very well in this rambunctious country. Nor is the importance of active citizen pluralism likely to diminish.

• Fourth, here in 1995 the momentum of environmental policymaking is facing fundamental challenge. The long-anticipated corporate counter-revolution has arrived. On its terms hardly a "conservative" or "populist" reform movement, the agenda represents a continuation of the human logic of market forces, passing costs on to others or to the future and powerfully resisting social accountability and the imposition of civic restraints. The New Unlearning is forcing a review of basic principles, and a process of consolidation, improvement, and defense of what has been accomplished.

This essay reviews these propositions with reference to the Kepone case and to some other past and ongoing environmental controversies that illustrate them.

I. RONALD COASE & RACHEL CARSON: EXTERNALIZATION, CUMULATIVE CONSEQUENCES, AND REGULATION

A. *The Inexorable Tendency to Externalize, and the Inevitability of Cumulative Consequences*

Our human nature has not changed over the past twenty years, and that means that the fundamental behavioral logic that produced the Kepone crisis still dominates the way market forces act, and still requires a civic system that will induce the players to take account of broader societal interests.

The basic logic remains as Ronald Coase and Rachel Carson discerned it in the 1960s, and as the Kepone case revealed it in the 1970s: humans tend to make decisions in relatively short-term horizons, in insulated, self-referential terms. We tend to try to maximize our personal pleasures and profits, we strenu-

ously avoid and ignore burdensome liabilities if we can, and we may hope or pretend that negative consequences will disappear and not accumulate to the detriment of others. Coase, the economist, showed us how this process of cost externalization is a completely logical and powerful tendency in individualized human behavior.[4] When we are involved in a productive activity (or any activity, for that matter, the economists say), we resolutely display an inclination to pass wide the costs and to hold close the profits and subsidies. It is a fundamentally rational strategy in individual terms. As a consequence, there is a powerful inherent pressure within corporate management, and market forces generally, to externalize pollution and other social costs into the environment.

Rachel Carson showed us, however, that this tendency is dominated by short-term individualized thinking and can be quite dysfunctional in overall terms. Humans, corporations, and disparate segments of the environment are not dissociated individual islands floating in a vacuum; they live in a web of direct and indirect interconnections. Externalities go somewhere and tend to have serious accumulated consequences that can end up dwarfing the short term actions that spawned them.[5] Then and now, however, humans and their marketplace do not voluntarily rush to take into account the negative effects of what they do, so law is necessary and inevitable.

Viewed in these terms, the Kepone case offers a classic example of the powerful tendency of corporate managers operating under market forces to externalize pollution unless there is a credible threat of external accounting and liability.

To understand the phenomenon, we must begin with the perspective of the human decision makers, the corporate executives who brought the Kepone controversy into being. Did the Kepone debacle arise out of managerial ignorance? The answer appears to be that it did not. What did Allied's managers know about Kepone? They knew from the beginning that Kepone was very effective in killing certain bugs, and that there were customers in the marketplace who would buy it. They also knew, however, how toxic the Kepone chemical was to humans and

4. *See* R.H. Coase, *The Problem of Social Cost*, 3 J. L. & ECON. 1 (1960).
5. *See* Rachel Carson, SILENT SPRING (1962).

other higher lifeforms beyond insects.[6] The toxicity tests on laboratory animals, showing serious long-term neurotoxic effects, had been so alarming that Allied withdrew its application for any use of the pesticide in the United States (where health standards are generally higher than in most other countries).[7]

The factual record of the Kepone saga is complex and voluminous,[8] but let us initially consider just one particular example—the continuing liquid discharges of untreated Kepone wastes into the environment from 1966, when production began, to 1975 when it was finally closed down.[9]

Allied's managers must have known intellectually that Kepone's liquid wastes were toxic, but this reality could be obscured from acknowledgment by a veil of internal expediency. At that time in the 1970s, environmental consciousness had not generally arrived. Wastes were hardly considered, and they were taken for granted as the trivial and inevitable byproducts of the manufacture of useful goods. To the extent that Allied's managers might have considered undertaking the process of neutralizing wastes and disposing of them benignly, they would surely have recognized it as potentially a very expensive proposition. Moreover, if they spoke of it amongst themselves, the corporate managers could well have thought, "but everybody does it," which meant that any company that went out of its way to dispose of wastes conscientiously would take on those heavy expenses only to reap a competitive disadvantage. So what did the executives decide? From the moment Allied began production in 1966 until 1974, the Semi-Works summarily

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6. The manuals developed for use in the Semi-Works evidence a substantial knowledge of the dangers of contact with human skin, cuticle, lungs, and other organs.

7. It appears that some Kepone ultimately was sold for use in ant traps in the United States, though apparently without registration. *See* Allied-Signal, Inc. v. Commissioner 63 T.C.M. (CCH) 2672, 2672 (1992), *aff'd without opinion*, 54 F.3d 767 (1995).

8. The proceedings of the first day of this symposium have provided a significant addition to the Kepone record, and this essay can consider only a fraction of the actions and consequences. Notably outside the scope of discussion here is the entire question of "externalizing" negative accounting by marketing the toxic product only in underdeveloped consumer nations.

9. There were also substantial amounts of THEIC and TEIC dumped along with the Kepone waste, although compared to Kepone these substances are not chemically active.

dumped these Kepone wastes without treatment, discharging some into the disposal lagoons behind the Semi-Works and some through a pipe into Gravelly Run. From there the wastes drained into the James River and downstream a hundred miles to the Chesapeake Bay, where they were taken up into the ecosystem, from plankton, to bluefish, to humans. But out of sight was out of mind. Like industrial managers everywhere, as Coase's logic explains, Allied's officials were naturally inclined toward externalizing the costs of production as much as they could.[10]

1. The External Veil of Diffusion: Spreading Costs Broadly in a Natural System

Needless to say, discharging pollution into the environment serves the practical tactic of widespread diffusion, so that externalized pollutants are harder to see: they are less concentrated, are commingled with other discharges, and are harder to trace back to their sources. If the workers at Kepone had not exhibited such vivid neurological consequences, it is indeed possible that the Kepone pollution of the Chesapeake Bay would never have been tested and would have gone undiscovered. One of the fundamental problems of environmental degradation is that the costs, though often many times greater than the profits reaped by the actors, are spread so widely and indirectly that they are not readily tangible.[11] In addition, many environmental externalities are "paid" by nonhuman species destroyed or degraded by the effects of externalized human actions; if no human economic interest is directly linked to

10. Coase's further arguments, that the marketplace would broker these costs so that it did not matter who started out with rights, depended, as is usual in economic theory, on such an array of premises, including perfect knowledge of what was going on and zero transaction costs, that Coase's theories have been far more persuasive for their underlying explanation of entrepreneurial behavior than for their market-trusting economic prescriptions for solutions.

11. Widespread diffusion can indeed lessen environmental effects. One of the rationales regularly espoused by industrial polluters is that "The solution to pollution is dilution," implying that externalization into the environment is as benign a strategy as it is cheap. In fact, however, as the Kepone case showed, many pollutants do not thin out evenly through the environment, but rather collect in nodes, "hot spots," and localized sites like bottom sediments or fish livers, where their effects are reconcentrated rather than dispersed.

them, they may be for all intents and purposes invisible. But as Rachel Carson argued, these things do have consequences that accumulate as immutably as natural laws, and they tend eventually to become inescapably evident.

From 1960 to 1970, Allied's executives had few practical statutory concerns to induce them to take account of these discharges. As in most states, Virginia's regulation was extremely tolerant of pollution sources that were tied to major economic activities, and the federal government's water pollution statutes were not enforced.[12] Note also that absent an actively enforced regulatory system, the common law clearly did not then have enough credibility to require the executives making such decisions to think twice about dumping into Gravelly Run.

In 1970, however, the federal government resurrected the Refuse Act's permitting program, and Allied learned that it was supposed to tell the government what it was dumping and to obtain a permit. If Allied's executives revealed that they were dumping a toxic chemical into the James River, they faced unpredictable regulatory repercussions; so the decision was made to list the Semi-Works discharge as an unidentified "temporary discharge," which did not come under the RAP Program.[13]

In 1972, the RAP Federal Program was replaced by the Clean Water Act's National Pollutant Discharge Elimination System (NPDES) permit program, under the Federal Water Pollution Control Act Amendments of 1972. Now Allied was directly requested to disclose the nature, volume, and strength of all their discharges from the Semi-Works. The Allied managers considered three options: to ignore the reporting requirements of the law and do nothing, hoping that EPA would not find out about it; to divert the Semi-Works effluent into another legal outfall pipe for which a permit had been obtained; or to try to improve the quality of the discharges while telling EPA

12. The Refuse Act, codified at 33 U.S.C. § 407 (1988), had been on the books since 1899, but was not yet recognized and enforced as a national pollution control provision. *See* NLS *supra* note 1, at 322-27. The Federal Water Pollution Control Act, then on the books, was a feeble study-discuss-and-scold act.

13. *See* Goldfarb, *supra* note 1, at 648.

as little as possible about what they were doing. It is noteworthy that each of the options that the company considered was illegal. The company ultimately decided to follow the first strategy, so that up until the time that it transferred its Kepone operations to Life Sciences Products (LSP),[14] the managers had, despite the requirements of two federal laws, matter-of-factly decided to continue dumping its liquid effluents into Gravelly Run without any treatment whatsoever, from which it went into the waters and the bottom sediments of the James River and the Chesapeake Bay, into the food chain, into the fatty tissues of fish and the humans who ate them.

The same externalizing tendency was evident beginning in 1974 in the relationship between Allied and LSP, with its increased pollution of the workplace, air, and water resources.

Indeed, LSP was Allied's domestic *maquiladora*—an early example of what, in the last dozen years, has become a trend of American corporations to shift their dirtiest operations to a satellite corporate shell that can be less attentive to protective rules, another form of structural externalization. The satellite corporation is not an autonomous actor. It is controlled by the parent corporation and, in effect, merely provides an external processing service, like a grist mill of old.[15] In the classic milling arrangement, a mill receives a raw material like grain for processing, it grinds the grain, and then returns the processed product for a service fee. Under the "tolling" agreement with LSP, Allied supplied all the raw materials for Kepone production, retained the title to them throughout the process, determined the monthly production rate of Kepone, and received the pesticide as packed by LSP into Allied containers, to be transported to the wharves in Allied trucks. Allied paid for all of LSP's capital expenditures, including, it appears, underwriting LSP's purchase of land and its ex-gas station production build-

14. The tolling contract was executed in late 1973, and production began in March 1974. Given the company's product, as well as its unintended consequences, the name choice for the company is another example of self-referential corporate irony, like "Forever Wild Development Co.," a real estate venture within New York's Adirondack Park boundaries, and the "Save Our Cumberland Mountains Stripmine Co." in Tennessee.

15. In fact the word "maquila" in Spanish is a word for "mill."

ing, and Allied paid all of LSP's taxes, except corporate income taxes.[16]

The results of LSP's operations were sad. The liquid discharges into the James continued, and air pollution from Kepone dust became a serious hazard in and outside the LSP plant.[17] The ambient pollution at LSP undoubtedly occurred on a far worse scale than at the Semi-Works.

The most horrific manifestation of the pollution was the physical poisoning of workers at the site. Conditions within the LSP workplace "might have shocked Charles Dickens," Kepone dust was "flying through the air . . . saturating the workers' clothing, getting . . . into sandwiches they munched. . . ."[18] workers were "virtually swimming in the stuff." Workers were not required to wear protective equipment, even when it was available, and no warning signs were posted. Kepone is a chlorinated hydrocarbon that can be absorbed through the skin as well as breathed in or swallowed. As it accumulates in the body it generates neurological symptoms, including eye tremors, hand tremors, and serious liver dysfunction. Seventy percent of the workers had "the shakes," a neurological condition involving tremors. In addition to being identified as a carcinogen, Kepone apparently has effects on the reproductive system as well. Some workers showed dramatically lowered sperm counts and low sperm motility.[19]

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16. *See Stone*, *supra* note 1, at 122 (noting that a Richmond bank was persuaded to finance LSP's startup despite the fact that Hundtofte and Moore, its putative owners, had put up only a thousand or less of their own money); *see also* Goldfarb, *supra* note 1, at 650.

17. Kepone dust blew around the LSP plant and into the air, crossing the street to the west onto the school grounds, and blowing further. In fact, Kepone dust was carried by the winds in a plume that carried detectable amounts of Kepone as far as Richmond. Allied-Signal, Inc. v. Commissioner, 63 T.C.M. (CCH) at 2674 (1992). Hundtofte and Moore had written the health manual used at Allied, where workplace conditions were far better than those at LSP, but a decision was apparently made that the LSP operation could not or would not absorb the costs of safe workplace conditions.

18. JOSEPH L. BODARACCO, HARVARD BUSINESS SCHOOL, ALLIED CHEMICAL CORPORATION 5 (1979). Interestingly, the HBS case study essentially ignores the role of Allied managers in the Kepone affair, treating contamination as the result of isolated renegade acts of the Life Sciences company, which was identified only as a small Allied "supplier," thereby finessing the point that the tolling contract was a carefully-considered corporate externalization by Allied itself.

19. Telephone Interview with Edward Taylor, Esquire, Plaintiffs' Attorney in the

It seems quite clear that Allied's managers knew about LSP's casual approach to pollution control from the moment of execution of the tolling contract. LSP agreed to make Kepone at 54 cents a pound—later reduced to 32-38 cents a pound in consideration of Allied's substantial support of LSP's production process. Outside competitors' bids had proposed to charge Allied as much as $3.00 a pound to make Kepone, with an expense of 30 cents a pound for waste disposal costs alone. After production began, Allied officials regularly toured the LSP plant[20] and monitored LSP's operations. From LSP's inception, and from its sporadic negotiations on LSP's behalf with the Hopewell sewer department and the Commonwealth of Virginia, Allied undoubtedly understood LSP's character—a bare bones processing operation demonstrating minimal concern for pollution discharges.

Given the basic logic toward cost externalization, and the status of LSP as a tolling *maquiladora* for which a primary raison d'etre was to avoid liability, it is hardly surprising that no internal corporate initiatives occurred within Allied to prevent the Kepone discharges. Like the *maquiladoras* in Mexico, LSP was induced by its own officers and by its supervisory corporate managers at Allied to produce its low budget product at high environmental cost.

When finally the whistle was blown on Kepone, it was not by an insider within the corporation, not by a government official, and not even by a worker, but by an outsider, Doctor Chou, who persistently followed up on the health effects to his patients who worked at LSP. He sent successive blood samples to the Center for Disease Control, which revealed some of the highest levels of Kepone thought possible to accumulate in the human bloodstream.[21] Only after Dr. Chou's dramatic identification of the Kepone poisoning did the governmental units move to shut down the discharges and (shortly thereafter, when follow-up tests were made downstream to Chesapeake Bay), shut down fishing in the James and portions of the Bay.

I talked with several people in Hopewell who said in heartfelt terms that they wish people would just forget about the

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Kepone Incident. (Feb. 14, 1995).

20. Goldfarb, *supra* note 1, at 650.

21. *Id.* at 652.

Kepone story, which for years has stigmatized their city. One person said "it could have happened anywhere." Of course a poisoning of this scope and notoriety could not have happened anywhere; the Kepone pollution's scope and toxicity are not generally prevalent conditions. But it *could* have happened in a number of other places—in fact it has, including Rocky Flats, Times Beach, Galveston Ship Channel, and others, and also almost certainly in some places that have not yet been revealed—but the Kepone incident became dramatically visible as a poisoning, and had a magnitude of scope that made it easier to raise the broader questions and to teach the broader lessons.

And why did the Kepone story receive such particular notoriety? The Kepone story's notoriety occurred not so much because it was unique as because it was vivid. The poisoning of the LSP plant's workers—the majority of whom required hospital treatment—was dramatic, as was the starkness of the corporate record of persistent dumping of known toxins into the air and water in defiance of federal and state laws.

Kepone also gained special prominence from the richness of the impacted downstream resources, the James River estuary and Chesapeake Bay. These were not just intangible aesthetic losses, but the wiping out, for thirteen years, of commercial fisheries in a vast public resource.[22] As Judge Merhige said in the *Pruitt* case, the "costs were borne most directly by the wildlife of the Chesapeake Bay,"[23] but in this case that ecosystem was also visibly connected to a major economic activity. Furthermore, the Kepone story hit at a media moment when there were no other major competing stories, so a horde of reporters was dispatched to Hopewell to make this incident into a highly photogenic chronicle of a public disaster.

In more basic terms, although it may well be that the Kepone case on its particular facts could not have happened in many places, the Hopewell citizen was right that this kind of polluting *behavior* could have happened almost anywhere. The human players in the Allied-LSP Kepone drama were motivated by an inherent tendency to externalize as Ronald Coase had

22. Rex Springston, *Do Politicians Pose Peril to Environment? Pendulum Swings Back, Symposium Crowd Told*, RICH. TIMES-DISPATCH, Mar. 3, 1995, at B1.

23. Pruitt v. Allied Chemical Corp., 523 F. Supp. 975, 978 (E.D. Va. 1981).

described it in 1960.[24] My point is not to say that the people involved in the Allied-LSP corporate decisions were bad people; precisely the opposite. They, like individual actors throughout the society, and in a number of other dramatic environmental controversies, were locked into a set of internal inclinations that pressured them forcefully to externalize. The inherent pressure of these market forces ultimately requires some external imposition of public values in order to achieve a balance. We need our good fences to make good neighbors.

2. The Internal Veil of Operational Expediency

Why didn't the managers take account of the obvious hazards of the releases of Kepone toxics into the workplace and the external environment? One answer is that ignoring such questions produces useful functional effects. Anyone who has worked in a business knows that there are strong inherent pressures within economic enterprises to maximize the positive and minimize the negative.[25] The natural internal pressures of a stressful production-oriented society mean that factories all over the country at that time were inclined to behave the same way as LSP and Allied had. In part it was because industrial managers were still not sensitive to environmental pollution as a legal problem. Many still thought of it as a fad that would quickly disappear.[26] In social terms, environmental pollution was not recognized as a public danger either; it's the way we always had produced goods. But the practical downside threat of liability was negligible as well, and that had direct consequences. Regulation was primitive, and the common law had not yet been recognized and developed to take account of environmental

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24. That is, the natural course of externalizing behavior resulted in cumulative pollution discharges into the commons, the results of which Rachel Carson had observed in her work at the same time.

25. The phenomenon of veiling pollution discharges is both internal and external, involving both deception and self-deception, as they are parsed in Professor Rodgers' thoughtful piece, *Deception, Self-Deception, and Myth: Evaluating Long-Term Environmental Settlements*, 29 U. RICH. L. REV. 567 (1995).

26. As an example of the fad image of the field, to be an environmental law teacher in the mid 1970s was no easy niche. Some professors had to take on a heavy roster of traditional megalithic courses in order to be allowed the luxury of teaching the fad environmental course, short-lived and irrelevant to real legal practice as it was deemed to be.

harms, so that there were no credible perceived compulsions to take account of the consequences of the discharges. Even if altruism had raised its head within in the enterprise (a tendency which historically has not provided notable restraint), Allied's managers could assume that their competitors were going to continue discharging as much as they could, so they themselves would have to follow suit in order to stay even.[27] In that setting, it is understandable that managers will tend, as much as they can, to avoid paying the profitless expenditures of pollution control, and will discount in their personal calculus the speculative long term costs, like the possibility or the probability of being caught, if ever, and the likelihood that substantial fines or civil awards might ultimately be levied against their companies.[28]

And what of the industrial workers, who must have had some idea that their health was being affected by the working conditions at LSP? Again there is an instinct to stay with a job and not question conditions that are producing wages, at least until the point where a vivid symptom is definitively revealed. In some industries, unions have been able to operate as the whistleblowing defenders of workers' health, but LSP was not unionized. As another common manifestation of this veil of internal expediency, it may well be that there was amongst the workers an unspoken (or even unconscious) group collusion in not asking the frightening questions that might reveal distressing facts that would put good wages at risk. So it was Dr. Chou, the outsider from Taiwan, who pulled the veil off the workers' eyes, and the picture thereby revealed made everyone ask, "how could this be?"

3. Cumulative Externalizations—Some Comparisons

In addition to observing the corporate calculus which produced the Kepone incident, which can represent here a generic

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27. Within the American managerial force, moreover, we have created an executive reward structure which tends to measure success in terms of quarterly performance, which often means executives are not rewarded for research and development expenses or reinvestment, a tendency not shared with Japanese corporations, for instance, and one that bodes ill for long term competitiveness.

28. *See* Stone, *supra* note 1.

pollution setting leading directly into modern command-and-control regulatory systems, let us consider two other stories—the Alaska oil spill as a case study in multicorporate management which can also represent large public works projects, and the crash of the North Atlantic ground fisheries, a paradigm case of externalizations in a renewable sustainable resource setting.

a. The Exxon *Valdez* Oil Spill

Given the backdrop of today's highly-charged political debates, where perception tends to be everything and media coverage makes a volatile difference in the rapid spurts of legislative process, we can ask ourselves in each environmental setting how easy it is to *see* the externalizing cause and effect. The more difficult it is to see both cause and effect, the less likely it is that public scrutiny and regulation will be brought to bear effectively. As we have noted, for example, the Kepone poisoning became visible, and directly attributable to the corporate managers who had created it, because of a series of coincidences—the vividness of the workplace poisoning revealed by Dr. Chou and the impact of the Chesapeake Bay fishing closures.

The wreck of the Exxon *Valdez*, the largest oil spill in U.S. waters, also became dramatically and inescapably visible to the eyes of regulators and the world because of the photogenicity of its massive pods of floating oil, struggling oiled birds and sea mammals on a previously wild and beautiful coast.[29]

On Thursday night, March 23, 1989, shortly after nine o'clock, the M/V Exxon *Valdez* cast off from the oil loading terminal near the little port town of Valdez, Alaska, which was chiselled into a rocky mountainside at the inland end of the Valdez fjord where the Trans-Alaska Pipeline terminates. The single-hulled supertanker carried 53 million gallons of Alaska crude for the trip to the refinery at Long Beach, California.

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29. The author was coordinator of the State of Alaska Oil Spill Commission's legal research task force, examining how such a disaster happened and how a repeat occurrence could be avoided. Opinions and conclusions expressed here are private, and not the statements of the Commission. *See* ALASKA OIL SPILL COMMISSION, SPILL: THE WRECK OF THE EXXON VALDEZ (1990) [hereinafter OIL SPILL COMMISSION].

Two hours later, having sailed through the fjord, it gathered speed to about 12 knots and headed out through Prince William Sound, an arm of the Gulf of Alaska, one of the world's richest fishing grounds. (It was the beginning of the spring spawning season for birds, marine mammals, and the millions of fish that returned to these waters annually to reproduce.) There were iceberg warnings that night; the Sound was littered with huge chunks of floating ice calved off the Columbia Glacier on the Sound's northeast flank. At 11:25 p.m., Captain Hazelwood radioed the Coast Guard his intention[30] to turn from the right hand outbound lane into the incoming lane in order to avoid ice, and soon thereafter went below to his cabin.

Left on the bridge was Third Mate Gregory Cousins. According to regulations, there should have been at least two officers and a lookout, but Cousins was at the helm alone because the others were exhausted. (He himself had had little sleep over the past twenty-four hours because he had had to supervise the loading of the ship.) The ship was put on autopilot and plowed along through the dark.

A half hour later, at four minutes before midnight, Lookout Jones sleepily came up to the bridge, and noticed that a red navigation light that should have been on the left was on the right. She told Cousins, who began trying to turn, initially forgetting that the ship was still on autopilot. By the time the order for "hard right rudder" was given, it was physically impossible for the tanker to turn enough to miss the underwater granite spines of Bligh Reef half a mile away. Five minutes later the ship shuddered three times and came to a stop atop the rocks. In the next forty-eight hours at least eleven million gallons of crude poured out into the Sound, ultimately to be caught up by wind and currents and pushed inexorably westward over twelve hundred miles of coastline, causing massive destruction of the natural systems it touched. The results of the Exxon *Valdez* oil spill were easy for the public and political process to see, and hard for the industry to hide.[31]

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30. The captain did not have to receive permission to use the inbound lane. Because of industry requests, the approach lanes had not been designated as mandatory, but only voluntary.

31. That understandably did not stop Exxon and the Alyeska consortium from trying to limit the access of reporters to oil spill disaster sites.

But far more difficult to see was *why* it had occurred. From the State of Alaska Oil Spill Commission's study of the disaster, it became clear that the Exxon *Valdez* disaster was not the quirk result of a captain with a drinking problem, but a completely foreseeable result of a series of industry decisions (backed by governmental subventions). Deeply rooted *complacency* in both the private and the public bureaucracies, the Commission said, lay at the heart of why the oil spill disaster had occurred.[32] In spite of desperate efforts by local citizens, particularly the commercial fishermen of Prince William Sound, to warn of the serious risks being taken by the Alyeska consortium,[33] corporate managers and governmental officials alike continued to minimize the need for serious attention to safety redundancy, spill prevention, and emergency response preparations.

Following the logic of the marketplace, the companies that made up the Alyeska consortium from the beginning in 1976 had been shaving costs throughout the TAPS operation from the oil fields of Prudhoe Bay along 800 miles of pipeline to the terminal at Valdez and in their shipping operations, in a process that unfortunately made the Exxon *Valdez* spill predictable. Supertankers of the Exxon *Valdez* class, for example, originally carried a complement of thirty-six seamen. Over the years, as the companies within the Alyeska consortium sought to increase their profits, it was discovered that by laying off one seaman, one could save the equivalent of more than $150,000 per year. Then, when no disaster occurred, another manager could decide to cut another seaman, and then another.[34] By the time the Exxon *Valdez* sailed up to the Valdez Terminal to load up with oil for the return to voyage to Long Beach, California, she carried only *sixteen* seamen. The added workload on

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32. "The vigilance over tanker traffic that was established in the early days of pipeline flow had given way to complacency and neglect." OIL SPILL COMMISSION, *supra* note 29, at iii.

33. As part of the fishermen's continuing attempts to wake up the official players and the public to the dangers of the tanker operations, one skipper pleaded in a public meeting on that night of March 23, "Gentlemen, it's not *what if*, but *when*." Thirty minutes later it happened. Speech of Captain Riki Ott to Valdez City Council (March 23, 1989), *in* OIL SPILL COMMISSION, *supra* note 29, app. N, at 10 (emphasis added).

34. Along the Alaska coast, opprobrium directed against "MBA bean-counters" is part of the wreck's local legacy.

the crew had been compounded by cutbacks on ground crews. Supertankers had originally been prepared for the voyage by professional loading crews permanently stationed at the Valdez terminal, to assure that ships would not be fractured or stressed by improper loading procedures. To save costs, however, the Alyeska companies decided to discharge the professional loading crews, requiring the ship's own crew to do that job as well.[35] As a result of these cost-cutting measures, the risk that crews would be operating with insufficient sleep and insufficient ability to navigate their craft through the iceberg-strewn shipping lanes of the Gulf of Alaska—and the disasters that could follow—were risks that were passed on, in effect, to the environment and the public.

Then there's the question of single hull tankers versus double hull tankers. By building single hull tankers, the company saved about two million dollars per ship, but in the event of a major collision, this meant that oil would be discharged directly into the sea. So long as a major spill didn't occur (or economic accounting for spills remained unlikely), however, that money was saved. The logic of the managers who made the decision not to buy double hull tankers, and to lobby strenuously and successfully against governmental efforts to require such double hull vessels, was defensible in corporate terms so long as a major disaster did not occur. In retrospect, with Exxon alone absorbing more than four *billion* dollars in economic damages and fines, the calculus seems naïve. However, in an industry where most lesser spills are never identified or picked up by the popular media, where government regulation has been ten-

35. When a single hulled supertanker is being loaded with oil, the job has to be done carefully. If the middle tanks are filled first, the ship sinks in the middle and the bow and the stern ends lift up cracking the boat in two; if the bow and the stern tanks are filled first the middle lifts up, cracking the boat in two. A single-hulled supertanker like the Exxon *Valdez* is basically a huge mass of 53 million gallons of heavy, hot crude oil, surrounded by a thin shell of steel 987 feet long and less than one and one-half inches thick, all of which is plowing along at 16 knots through iceberg-littered sea lanes, with only that thin tissue of metal between the oil on the inside and the ocean on the outside.

One of the serious consequences of forcing a supertanker's crew to manage its own vessel's loading is that, as in this case, officers who must take on the heavy workload of navigating the ship in its subsequent passage through Prince William Sound can be exhausted by their previous duties and efforts in the loading process. *See generally* ART DAVIDSON, IN THE WAKE OF THE EXXON VALDEZ (1990).

tative and often dominated by industry, and where a relatively short horizon of decisionmaking dominates management, the decisions that were made were completely predictable. You maximize profits and minimize outlays if you can . . . and you can. Costs, and this includes the risks of disasters as in the Alaska case, can be externalized onto the public and to the commons, and unless there is an incident which forces an accounting, economic externalization will remain a powerful behavioral logic.

Accordingly, as with the regulatory response to pollution incidents like Kepone, the Alaska oil spill only belatedly led to renewed recognition of the need for more stringent governmental oversight, both state and federal, of the oil industry's northern empire.[36]

b. The Atlantic Ground Fisheries, Off the Coast of New England

The Atlantic fisheries, off the coast of New England, offer another setting where the externalization phenomenon has become dramatically visible, but in this case, unlike the oil spill and pollution scenarios, both the effect *and the cause* are readily visible to the public and to the political process.

In the waters of the Atlantic off Cape Cod, there historically has existed an extraordinary fishery on what is known as George's Bank, an underwater plateau with some of the same rich natural conditions found in the Gulf of Alaska. With nutrient-laden upwelling currents and remarkable spawning habitat, the George's Bank fishery historically produced a sustainable annual yield of more than 350 million pounds of high quality groundfish—cod, haddock, halibut, and yellow-tail flounder, as well as other commercial fish species. Rugged little family-owned boats from ports all along the coast of New England and the maritime provinces of Canada went out to the banks and brought back the fresh fish that supplied a substantial part of the North American market.

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36. *See* Oil Pollution Act of 1990, 33 U.S.C. §§ 2701-2761 (1986 West & Supp. 1995); ALASKA STAT. § 37.14.400 (1993).

But the Bank's fishery produced a scenario of classic economics, a tragedy of the commons.[37] When the electronic and mechanical technology of fishing fleets began to increase in the 1960s, factory ships from Europe began taking massive hauls of fish from George's Bank, so that by the early 1970s fish populations and yields began to drop. In 1976 the federal Fishery and Conservation Management Act[38] temporarily solved the problems created by the foreign fishing fleet and set up the perplex we have today. The Magnuson Act, as it is called, extended the nation's Exclusive Economic Zone (EEZ) out to 200 hundred miles and effectively barred foreign ships from George's Bank and other coastal fisheries.[39] That legislation bought time for several years and brought back yields. In a classic example of exploitation of the commons, however, new American vessels soon rushed in to take advantage of what was recognized as a resource trove. While technology escalated dramatically, the size of the fleet doubled in ten short years, in part exploiting subsidies the fishermen had lobbied from Congress.[40]

The results were predictable: beginning in the early 1980s the size and quantity of groundfish began to drop (with two years of short term reversals when spawning conditions proved particularly good). Quota regulations were instituted, but were politically undercut in 1982.[41] The more that populations dropped, the harder the fishing boats worked to keep up their catch yields. By 1991 it was clear that there was a disaster at hand. Fisherman were spending more time at sea, harvesting fewer and fewer fish, and the fish they were catching were ever

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37. [T]he oceans of the world continue to suffer from the survival of the philosophy of the commons. Maritime nations still respond automatically to the shibboleth of the "freedom of the seas." Professing to believe in the "inexhaustible resources of the oceans," they bring species after species of fish and whales closer to extinction.

Garrett Hardin, *The Tragedy of the Commons*, 162 SCI. 1243, 1245 (1968).

38. 16 U.S.C. §§ 1801-1882 (1988 & Supp. V 1993).

39. In an International Court of Justice case, the United States successfully barred Canada from all but the northern sixth of George's Bank. Delimitation of the Maritime Boundary in the Gulf of Maine Area (Canada v. U.S.), 1984 I.C.J. 246 (Oct. 12).

40. Direct subsidies for the purchase of fishing vessels provided guaranteed financing for new boats and equipment. The fishermen also benefitted from Reagan-era tax subsidies that were extended generally and generously to permit accelerated depreciation in the purchase of capital assets.

41. *See infra* note 46.

younger and smaller.[42] The stock of groundfish that survived to spawn was being decimated. In 1994, the groundfish industry crashed, as populations dropped below viable commercial levels. Finally, an emergency moratorium was imposed, and it will be years before groundfish populations will be rebuilt sufficiently to start commercial fishing again.[43]

The perspective of the crews and captains in the fishing industry followed the Kepone script. For some, there was a powerful inclination to deny reality, the internal veil of operational expediency pulled over their eyes. They continued to insist, against the evidence of the scientists and their own declining catches, that the fisheries resource was not disappearing, that the government should not be concerned; the fisheries would inevitably come back, and, in the meantime, no restriction on fishing efforts should be imposed.[44] Other captains and crews recognized what they were doing to their common resource, but were impelled by circumstances and market forces to go on fishing. They had no alternative: if they didn't, someone else would, and each month, as long as they could catch anything, they still had to try to pay the mortgages on their boats and homes. "[It's] like the last buffalo hunts," said one fishermen. "I don't know what happened to the buffalo hunters years ago, but without rules and regulations that same thing [will] happen to the . . . fisherman."[45]

Again, the individual actors in this resource theater were locked into a situation where they understandably wanted to

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42. As catches fell, crew sizes were decreased to try to stretch out the meager returns for the benefit of boat owners. By 1994, boats that had been fishing with a crew of five in 1977 were sometimes fishing with a crew of only *one*—and that one was the skipper himself, who tied the wheel of the ongoing boat as he went back to the work deck to sort and stow the catch of each drag of the nets, while the boat plowed along on the next drag.

43. *See* Eleanor H. Dorsey, *The 602 Guidelines on Overfishing: A Perspective from New England, in* NATIONAL COALITION FOR MARINE CONSERVATION, CONSERVING AMERICA'S FISHERIES: PROCEEDINGS OF A NATIONAL SYMPOSIUM ON THE MAGNUSON ACT (R.H. Stroud ed., 1994).

44. Richard Gutting, an attorney lobbyist for the industry, argued that declining populations, if they existed, were due to pollution, loss of wetlands, natural climate cycles and natural reproductive cycles—not overfishing—implying that relatively unregulated fishing should be allowed to continue. *Declining Fisheries, Weekend Edition* (National Public Radio broadcast, Dec. 3, 1994).

45. *Id.* (quoting Ed Miller of Montauk, N.Y.).

maximize their individual profit, and could, in the short term at least, pass on their depredations onto a much larger and diffuse group—onto the public, the public resource, and the North Atlantic fishery context as a whole. In the fisheries setting, however, the externalization process is far easier to see in both cause and effect. One can see the externality in exactly the same terms as the profit—units of fish that are, or are not, there to be caught.

The fisheries case is the rare situation where the circle can be seen to be closed: the industry that hurts the resource is the one that ultimately is most directly hurt by its own actions. Note, however, that this doesn't mean that the market forces instinctively are capable of self-correction to protect the commons.

Even when they can see the crash of the groundfisheries and acknowledge that it results from their continued overfishing, the individual market players are locked into playing out the tragedy of the commons. It now appears that, even if an eight-year moratorium can re-build groundfish stocks to the point where they can sustain a commercial fishery, it will take far longer to reach a maximum sustainable yield at the historical levels of the George's Bank fishery. The fishing industry cannot voluntarily self-impose such a moratorium; it requires government regulation, strictly enforced.

B. *The Need for Regulation*

Looking at these three different environmental settings—the dumping of Kepone wastes, industry practices leading to the Exxon *Valdez* oil spill, and the crash of commercial fisheries—the conclusion seems inevitable that there is a practical need for some form of regulation to offset the dynamic power and inside perspective of human decisionmakers in the marketplace who are so powerfully inclined to externalize costs onto the public. There is an inevitable utilitarian need for good fences, imposing civic values and a long term civic perspective upon market processes. This need not necessarily be governmental regulation, but from where else will it come?

As observed, voluntary self regulation within an industry is not a credible strategy, at least absent a credibly strong govern-

mental backdrop. The common law is a possibility. The common law is a complex system that integrates some public values into private actions. The common law faces severe limitations, however, in each of the environmental settings here considered. In none of these settings was the common law a sufficient *prior* constraint or deterrent to induce the market to absorb the cost of what it was doing by pulling back. As noted briefly below, environmental lawsuits since the early 1970s have created some degree of deterrent expectation in market players, but on a scale that is clearly insufficient to integrate the public interest fully into industrial decisions.

Market-based approaches to the implementation of public values are indeed possible and desirable in many cases, for if a public value can be integrated into the market calculus, most of us consider the market an extremely effective social mechanism. The problem is that implementation of market-based approaches may require more, rather than less, government action and ultimately will be resisted insofar as they still represent costs which economic actors would prefer to externalize. In the fisheries field, for instance, commentators have urged that the resource commons be "privatized" by giving the existing boatowners an ITQ (individual transferable quota) quasi-property right in a share of the annual allowable catch, anticipating that each stakeholder would then help to enforce the overall maximum quota limits, and ITQ trades would assure the most efficient allocation of investment and effort.[46] But the setting and adjusting of quotas remains a critical function for government, as is determining how the ITQs are to be defined and who gets them, how they are to be measured in practice and enforced, and how ongoing implementation is to be monitored to assure that the system works. As with the tradable rights provisions of the 1990 Clean Air Act Amendments,[47] the system is not greatly simplified by adoption of market incentives, and the trading mechanisms become even more fiendishly complex when they must address multiple pollutants or multiple fish species with different characteristics.

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46. *See* Franz T. Litz, *Harnessing Market Forces in Natural Resources Management: Lessons from the Surf Clam Industry*, 21 B.C. ENVTL. AFF. L. REV. 335 (1994).

47. 42 U.S.C. §§ 7651-7651o (Supp. III 1991).

There are other economically-oriented forms of regulation. Tax policy and federal spending policy can provide potent incentives to market players to accommodate important public values. As Patrick Parenteau has written:

> Environmental law does need to adapt to changing circumstances, to learn from its mistakes as well as its successes and to continue to experiment with fresh approaches. We certainly need more economic incentives—more carrots to go with the sticks—but these cost money and we do not hear the agents of change in Congress talking about using tax and fiscal policies to achieve environmental goals. Nor do we hear the reformers talking about eliminating the perverse federal policies and subsidies that encourage destructive practices such as overgrazing, unsustainable forestry, wetland conversion and resource depletion.[48]

Market-tuned governmental environmental programs thus can be part of what we refer to as "regulation," but because they are no panacea and there are limits to what we can pay, the crux of governmental policies implementing public values will continue to lie in the area of mandatory positive rules.

Could we hope to rely on altruism? There is a growing ethological literature exploring the possibility that humans might be able to develop an altruistic gene, a gene for generosity and selflessness,[49] but suffice it to say that that does not currently appear to be a sufficient likelihood upon which to bet our society's long term welfare.

So if there appears to be a need for mandatory integration of public values into the private actions that comprise the marketplace, the impetus probably must come from governmental mandates. Whether these are regulations employing economically-based incentives, citizen-enforced laws or command and control regulatory systems reasonably designed and applied doesn't matter, so long as they are efficient and effective. None of these protective systems will be spontaneously implemented by the marketplace.

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48. Patrick Parenteau, *25 Years of Environmental Progress Comes to a Screeching Halt*, THE VALLEY NEWS (Vermont), April 23, 1995, at 8.

49. *See* RICHARD DAWKINS, THE SELFISH GENE (1976); ROBERT TRIVERS, SOCIAL EVOLUTION (1985).

There lately has been strident criticism of regulation generally. In the three environmental settings noted here, however (and they are good examples of at least three general forms of externalization), the problem arguably is not that there has been too much regulation, but that there has been too little.

Consider Kepone. In that case the market forces drove to the point of disaster before industries were forced to take account of the consequences of decisions that they had made for more than a decade. What could have been done better? Clearly there should have been enforced public standards that the managers of Allied and LSP knew they had to live up to—standards for workplace safety and environmental discharges sufficiently strict to prevent the harms that occurred, standards enforced by inspections and implementation by outsiders, not relying on insiders.

Where was government in the Kepone story? Federal agency inspectors and officials did not constitute an effective enforcement system.[50] Virginia's workplace safety officials apparently were not heard from, and its water pollution officials did not react in 1974 when they learned that LSP's discharges had knocked out the Hopewell sewage treatment capacity. The state merely decided that a study should be commenced to determine what the proper effluent limits for Kepone might be. A year later, the state did require LSP to install pretreatment equipment, but then did nothing when nineteen out of twenty-one samples showed violation of its requirements. Local officials, whose citizens were most directly impacted, were, of the three levels of government regulation, apparently the least interested in enforcing environmental requirements, even when the sewage sludge digester at the Hopewell sewage treatment plant was rendered inoperative. Why do you suppose such governmental lassitude occurred in the face of a clear toxic threat? The answer is not hard to find. In the balance of momentum between governmental regulators and industries that produce jobs and payrolls, the pragmatics of power rarely lie with government.

Where was governmental regulation in the Gulf of Alaska? In the Alaska oil transport trade, it was clear that the industry

50. *See infra* note 74. Neither EPA nor other regulatory agencies appear to have taken action prior to the public outcry.

had become, in effect, self-regulating. The Coast Guard and other federal and state government agencies repeatedly went along with the seriatim reductions in crew sizes, the lack of mandatory sea lanes, scaled-down requirements for response preparations to handle oil spills, and so on. When the state government tried to establish several regulatory requirements for loading and shipping facilities, the industry successfully persuaded a trial court to throw out the state's rules on the basis of claimed federal preemption.[51] After the Exxon *Valdez* spill, it became clear that both state and federal governments had to tighten the standards required of the industry and actually to enforce them to be sure that they are not subverted.

The regulatory proposition is perhaps clearest in the fisheries setting. Where were the regulators on George's Bank? In the Magnuson Act, eight regional fisheries management councils were set up to monitor the resource and to provide standards to prevent overfishing by establishing a "total allowable catch."[52] The job of actually regulating a fishery turns out to be difficult, however. Politically it requires a strong and insistent regulatory program that can withstand the industry's relentless resistance.

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51. Chevron v. Hammond, No. A77-195-Civ., (D. Alaska, June 30, 1978); *see also* Chevron v. Hammond, 726 F.2d 483 (9th Cir. 1984). When the Ninth Circuit got a portion of this opinion on appeal it reversed, but in the meantime the state government had withdrawn most of the state regulations that had been resisted by the oil industry. *See* UNIVERSITY OF ALASKA SEA GRANT LEGAL RESEARCH TEAM, FEDERAL PREEMPTION CONSIDERATIONS FOR STATE OIL SPILL PREVENTION AND RESPONSE ARRANGEMENTS (1989).

52. The total allowable catch which sets the baseline for defining overfishing is also statutorily required to achieve "optimal yield . . . for the United States fishing industry," 16 U.S.C. § 1851(a)(1) (1988), a standard that has been interpreted to extend the catch beyond the safe "sustainable yield" level, using "economic [or] social . . . factor[s]," 16 U.S.C. § 1802(21)(B) (1988 & Supp. III 1991), a phrase that has invited exploitative lobbying pressures and legal challenges of regulation.

See Fisherman's Dock Coop., Inc. v. Brown, 867 F. Supp. 385, 386 (E.D. Va. 1994) (requiring regulators to make a massive increase in allowed total catch). "Unfortunately . . . the judge's decision did not create more fish." Pierce, *Summer Flounder Management Woes*, DMF NEWS (Division of Marine Fisheries, Mass.) Jan.-Mar. 1995, at 6. Subsequently the judge threatened the Secretary of Commerce with a contempt of court citation for not ordering increased catches while the case was on appeal, before which threat the Secretary retreated, allowing the disastrous quota expansion despite evidence that current data on illegal fishing and poor reproduction demonstrated that Judge Doumar's decision had been drastically wrong on the merits. Taylor Whiteside, Fisherman's Dock Cooperative v. Brown as a Case Study of the Different Paradigms of Scientific and Judicial Decisionmaking 12-13 (unpublished manuscript, Boston College Law School).

Scientifically it requires a technically competent job of estimating varying species populations at all age levels to estimate survival levels necessary to achieve and sustain maximum yields. It requires accurate catch data and the stipulation of enforcement standards that can practically be enforced: quotas, limits on numbers of trips, mesh sizes, size limits, etc.[53] And then it requires actual enforcement.

C. *Resistance to Regulation*

But the market forces that necessitate regulation in the first place do not go to sleep when government enters the field. Instead, the logic of externalization of costs continues powerfully to motivate resistance and undercutting of regulatory efforts.

In the New England fisheries for example, as catches started to dwindle, the regional management council, using Coast Guard enforcement on the water and state conservation officers on the docks, tried to enforce landing quotas and trip limitations, but their efforts were immediately rolled back by industry protests and political backlash. Under political pressure in 1982, the New England council dropped all numerical quotas and was persuaded to redefine the "total allowable catch" (which sets the baseline for defining illegal "overfishing" under the terms of the Act). Henceforth, the "total allowable catch" was defined by rule to be retrospectively whatever the maximum amount that the fishermen actually caught. Thus, in theory, in order to violate the law, fishermen would have to catch more than they could feasibly catch.[54] Even where there is law on the books and a regulator in the field, it appears that

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53. Even the councils' ability to regulate is under a cloud. There has been a substantial continuing question whether the councils' guidelines are enforceable, since an amendment to the Magnuson Act says that "The Secretary shall establish *advisory* guidelines (which shall not have the force and effect of law), based on the national standards, to assist in the development of fishery and management plans." 16 U.S.C. § 1851(b) (emphasis added). Some have argued that this must be interpreted as precluding other than advisory actions. *See* Dorsey, *supra* note 43, at 187.

54. This regulatory vignette was promulgated in the 1982 Groundfish Management Plan Amendments of the New England Regional Fisheries Management Council. *See* 47 Fed. Reg. 43705 (Mon., Oct. 4, 1982) (codified at 50 C.F.R. pt. 651). Besides dropping the quotas, the regulation dropped limits on the number of fishing trips boats could make, and retreated to a reliance upon limitations of minimum net mesh sizes, a high seas regulatory approach that has been virtually impossible to police.

the market forces that press participants to make profits and pass on costs to the public, end up undermining the regulatory effort. Regulators' inability to regulate reflects the powerfully broad and intrusive effort that a focused industry can bring to bear.

Like water flowing downhill, market forces and the Coasian natural laws that drive them inherently resist any artificial barriers that curtail their profit-maximizing externalizations of social costs. To place a single sandbag into the current is difficult and not likely to have significant effect. As others are added with great effort, the natural forces still pour around them. When finally a working accumulation of sandbags is secured, the waters may turn to the path of less resistance, but do not stop trying to infiltrate and undercut the obstacles blocking their maximum satisfaction. Across the entire face of the environmental law dike, the pressures are felt. Lobbyists, lawyers, media managers, PACs, and the host of political players apply insistent and comprehensive pressures within all three branches of government to obtain specialized subsidies and to suborn programs created to look out for broader societal interests. Agencies are blunted or captured by the classic double-pronged tactics of the marketplace—strident resistance and seduction—and when citizens attempt to get around the phenomenon of agency capture[55] by going to the courts, the forces

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55. *See* NLS, *supra* note 1, at 722, 764-66, 827-28.

Attorney General Olney wrote to the president of a railroad in 1892 in response to the latter's plea for abolition of the ICC, in effect "don't worry":

> The Commission . . . is, or can be made, of great use to the railroads. It satisfies the popular clamor for government supervision of railroads, at the same time that the supervision is almost entirely nominal. Further, the older such a commission gets to be, the more inclined it will be found to take the . . . railroad view of things. It thus becomes a sort of barrier between the railroad corporations and the people and a sort of protection against hasty and crude legislation hostile to railroad interests. . . . The part of wisdom is not to destroy the Commission, but to utilize it.

Letter from Richard Olney to Charles Perkins (1892), *in* Louis L. Jaffe, *The Effective Limits of the Administrative Process*, 67 HARV. L. REV. 1105, 1109 (1954).

"We don't want to be a regulatory agency. We want to be a development agency on our national lands," said former Sec. of Interior Manuel Lujan, in a September 1992 speech to coal industry executives and a press conference thereafter, explaining why his department would continue to refrain from strict enforcement of stripmining regulations. Keith Schneider, *U.S. Mine Inspectors Charge Interference by Agency Director*, N.Y. TIMES, Nov. 22, 1992, at 1, 30.

of the marketplace try to undercut citizen standing and judicial remedies.

The consequences of these long-thwarted pressures of resistance to public civic regulation can be seen in the corporate counter reformation that has currently seized the political moment in Washington, noted in our fourth inquiry below.

II. THE DRAMATIC GROWTH OF ENVIRONMENTAL SCIENCE, ENVIRONMENTAL LAW, AND ENVIRONMENTAL POLICY

Looking back over the past twenty-five years it is obvious that our knowledge of environmental science, law, and policy has increased exponentially. Environmental science has increased in sophistication and volume. When the Kepone tragedy occurred, scientific data was still often being logged manually and spatially manipulated with grease pencils on transparent mylar sheets laid over paper topographic maps. Today we have, for instance, nuclear magnetic resonance (NMR) techniques for multi-spectrum chemical analyses of environmental pollutants in the sediments of the Chesapeake Bay.[56] We have far better knowledge of the behavior of water and pollutants carried in water to the benthos of a river, an estuary and a bay system. We know a great deal more about how organisms interconnect in complex natural systems, and how artificial incursions disequilibriate the systems. We have computer-based Geographic Information Systems (GIS) for multi-variable mapping and analysis of what scientists from a variety of disciplines contribute to complex resource issues. We have gained substantial improvements in natural resources damages assessment,[57] as

56. We also have learned that organochlorines may be responsible in part for serious human symptoms, including reproductive consequences. Certain of the family of such chlorines have been implicated, for instance, as estrogen mimics which have been shown in some cases to cause serious gender disruptions in vertebrate organisms. *See* Marla Cone, *Sexual Confusion in the Wild: From Gators to Gulls, Scientists Say Pollution May Be Playing Havoc With Animals' Hormones*, L.A. TIMES Oct. 2, 1994, at A1. If you want to get the attention of the public, including corporate executives, about the diffuse environmental consequences of industrial extranalities, bringing it home to the genitals is often an effective strategy.

57. *See* Danielle Stager, Comment, *From Kepone to Exxon Valdez Oil and Beyond: An Overview of Natural Resource Damage Assessment*, 29 U. RICH. L. REV. 749 (1995).

well as a variety of technical improvements on restoration techniques to repair some of the injuries caused by environmental disruptions.[58]

Of course, the more we know, the more we don't know, but the growth in scientific knowledge means that we will never be able return to the ignorance of the 1960s when people could say they did not know what the possible consequences of their actions in the environment might be.

A. *The Growth of Environmental Law*

As some of the other presentations in this symposium note,[59] it is probably true that the Kepone case could not happen today as it did in the 1960s and 1970s, not because the tendency to externalize has disappeared, but because today it is counteracted and balanced, to a substantial degree at least, by mandatory regulation.

Since the day that Allied began discharging Kepone pesticide wastes in 1966, the American legal system has developed an extraordinary structure and volume of environmental law that did not exist at all, or existed only in extremely primitive form at that time.

Instead of running through a sprawling catalogue of the literally dozens of major statutes and nonstatutory environmental law principles now on the books, it makes sense rather to emphasize that what has evolved is a remarkably intricate legal ecosystem, a biodiversity of law. The structures and doctrines of environmental law today are not of any one model, nor even of a dozen models. By an ongoing evolution of legal re-

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58. The latter areas have profited from Alaska's sad experience, including hopeful new technologies for capturing and retrieving ocean born oil spills. In fisheries management we find that the electronic technology that allowed fishermen to target underwater schools of fish with great accuracy, has also allowed scientists to do accurate population surveys, habitat analysis and harvest data so as to permit improved regulatory management of the resource. In settings like the ancient forests, ecologists have discovered remarkably important linkages between diverse natural habitats (as opposed to tree farms) and the maintenance of climate and water balance within the forest as well as the ecological interconnectedness between indicator species like the spotted owl and the salmon that spawn in the streams running from the federal forest habitats.

59. *See,* in this symposium, Goldfarb, *supra* note 2; Rodgers, *supra* note 25.

sponses to hazards as they arose, continued experimentation, trial and error, midcourse revisions upon midcourse revisions, we have built a body of many different kinds of law aimed at different types of problems, presumably seeking optimal enforceability and reasonableness in resolving important problems.

It is this complex diversity of law that makes it probable that the Kepone case on its own terms is now an artifact (at least so long as the Contract for America remains unenacted).

1. The Common Law

To some extent the change in legal accountability is attributable to an evolution in the common law. Twenty years ago, for example, there was no field called "toxic torts." Today there are specialized toxic torts courses taught at many law schools; there are casebooks and several online and loose-leaf law reporter services dedicated in whole or part to toxic torts. If the Kepone case were to break today, it would be far easier for the courts to manage the large classes of potential plaintiffs, to process epidemiological evidence (especially now after *Daubert*, without the obstacles of the *Frye* rule[60]), and to seek innovative remedies like medical monitoring, fund recoveries, restoration, and the like. Today, under public nuisance and other retooled common law actions, we also have advanced possibilities for natural resources remedies, mitigation and restoration standards, and a variety of novel equitable remedies.[61]

In the Exxon *Valdez* oil spill case, it is noteworthy that the State of Alaska itself, and the vast majority of private plaintiffs who sought relief in the courts after that disaster, primarily relied upon the common law. The multi-billion dollar settlements that have been coming out of those cases surely demonstrate a credible internalizing precedent for corporate managers. We do not know what the total civil settlements for the Kepone case—both state and private plaintiffs—added up to, but the best guess is that it was less than twenty million dollars. Compare to this Exxon's liabilities of more than four *billion* dollars

60. Daubert v. Merrill-Dow, 113 S.Ct. 2786 (1993), *rev'g* Frye v. United States, 293 F. 1013 (D.C. Cir. 1923).

61. *See* NLS, *supra* note 1, at 142-70.

in civil damages and response expenses, and it is clear that the common law has discovered that environmental injuries are real.[62]

But the common law is limited in its effectiveness by the fact that it is typically retrospective and localized in scope.[63] The common law often requires proof of the unprovable. When pollution like Kepone physically contacts tens of thousands of people in widely differing modes and concentrations, how easy is it to prove in a common law action whose symptoms were caused by that exposure, and whose by other causes? Further, for tort actions beyond human health, it is an even more difficult job for the common law to capture harms to wildlife and natural systems, a job that Judge Merhige found to be too daunting in *Pruitt*,[64] that is only a bit easier today.

But positive law presents a very different story. When legislatures decree public values and establish mandatory standards to implement them, the legal system is able to take account of science beyond the capabilities of any common law court. A toxic discharge can be prohibited or restricted by a police power regulatory system without having to prove who is being hurt and how much. Thus it is in the realm of public law that the environmental law evolution really flowered.

Starting at the end of the 1960s, there began a parade of regulatory statutes the like of which we probably will never see again, virtually all driven by popular political fervor:[65] the Na-

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62. The total Exxon cleanup and civil damages bill will undoubtedly exceed four billion dollars, and perhaps more than twice that if some of the pending punitive damage claims are successful.

The largest tort recoveries in recent years have often been for environmental torts, including asbestos poisoning. In 1989, each of two workers exposed to asbestos settled for $76 million. Amy Dockser Marcus, *Juries Rule Against 'Tort Reform' With Huge Awards*, WALL ST. J., Feb. 9, 1990, at B1 (reporting the *Coyne and McCoubrey v. Celotex* settlement). The structured settlement of a recent asbestos class action was for $4 billion (settlement available from Ness Motley, Loadholt, Richardson, and Poole, 151 Meetinghouse St., Charleston, S.C. 29402).

63. Most common law environmental cases appear to be after-the-fact adjudications because anticipatory injunctions are so often difficult to obtain.

64. 523 F. Supp. 975 (E.D. Va. 1981).

65. Significant federal statutes were indeed passed prior to the late '60s, including most notably the Wilderness Act of 1964, Pub. L. 88-577, 78 Stat. 890 (codified as amended at 16 U.S.C. §§ 1131-1136 (1988)), the Wild and Scenic Rivers Act of 1968, Pub. L. 90-542, 82 Stat. 906 (codified as amended at 16 U.S.C. §§ 1271-1287

tional Environmental Policy Act of 1969,[66] the Clean Air Act of 1970,[67] the Occupational Safety and Health Act of 1970,[68] the Fish and Wildlife Coordination, and the Noise Control Act of 1972,[69] the Clean Water[70] and Coastal Zone Management Acts of 1972,[71] and more than two dozen others.[72] In the years that have followed, the scope and number of environmental statutes have continued to grow.

These modern statutory systems, wittingly or unwittingly, have reflected Rachel Carson's teachings, addressing ecological and economic values and problems that had not been acknowledged or had been inadequately accounted for in previous public and private law, targeting public as well as private enterprises.

(1988)), and the Parklands Act, which was embodied in the Department of Transportation Act of 1966 § 4(f), Pub. L. 89-670, 80 Stat. 931, and the Federal-Aid Highway Act of 1968, § 18, Pub. L. 90-495, 82 Stat. 815 (codified as amended at 23 U.S.C. § 138 (1988)). Each of these, however, was relatively adjectival and circumscribed in effective scope, *cf.* the following list, and less the product of wide popular appeal than the backchamber pressure from the midcentury remnants of the early conservation movement, motivated by a rarefied noblesse. This is not to take away from those important and dramatic accomplishments, but rather to note that they were less a function of the new post-SILENT SPRING paradigm shifts.

66. Pub. L. 91-190, 83 Stat. 852 (codified as amended at 42 U.S.C. §§ 4321-4370 (1988)).

67. Pub. L. 91-604, 84 Stat. 1676 (codified as amended at 42 U.S.C. §§ 7401-7671q (1988 & Supp. V 1993)).

68. Pub. L. 91-596, 84 Stat. 1590 (codified as amended 29 U.S.C. §§ 651-678 (1988 & Supp. V 1993)).

69. Pub. L. 92-574, 86 Stat. 1234 (codified as amended at 42 U.S.C. §§ 4901-4918 (1988)).

70. Federal Water Pollution Control Act Amendments of 1972, Pub. L. 92-499, 86 Stat. 815 (codified as amended at 33 U.S.C. §§ 1251-1387 (1988 & Supp. V 1993)).

71. Pub. L. 92-583, 86 Stat. 1280 (codified as amended at 16 U.S.C. §§ 1451-1464 (1988)).

72. By my count there were 27 important environmental statutes passed in the three years after NEPA. *See* ZYGMUNT J.B. PLATER ET AL., SUPPLEMENT FOR ENVIRONMENTAL LAW AND POLICY: NATURE, LAW, AND SOCIETY 359 app. at 9-16 (1994). Only Jimmy Carter's years come close, with 20 in an equivalent span, many of which were perfecting amendments. *See* ZYGMUNT J.B. PLATER ET AL., TEACHERS MANUAL TO ACCOMPANY ENVIRONMENTAL LAW AND POLICY: NATURE, LAW AND SOCIETY at 360-62 (1992).

2. Kepone and Statutory Law. What has changed in the Public Law, as it Would Have Applied to Kepone?

Actually, the legal structure that deals with the most direct poisoning exposures encountered in the Kepone case has not changed much at all: the Occupational Safety and Health Administration (OSHA) was created in 1970, before Life Sciences began Allied's tolled Kepone production.[73] But OSHA has never been a particularly powerful, consistent, or effective agency; indeed, it was almost eliminated in the early 1980s. OSHA enforcement has been chronically criticized as overconcerned with technical detail and generally ineffective. In late 1974, OSHA received a complaint from an LSP worker who claimed to have been fired for refusing to work in the dangerous Kepone-laden work setting. OSHA merely sent an inquiry to LSP, and after receiving a mollifying response from LSP, OSHA closed the file without even making an on-site inspection.[74] Nevertheless, conditions at LSP were so egregious that even in 1975 it is altogether likely that the occupational health problems in the LSP workplace would eventually have reached OSHA attention, which would have led to some kind of federal enforcement of health standards in the workplace, and fines (though those may have been minimal).[75] Since the Kepone case, moreover, many workers have achieved a heightened consciousness of their own vulnerability to workplace chemicals and of their regulatory rights, so that it is possible that conditions as they existed in LSP would not long continue in a similar modern workplace.

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73. *See* Occupational Safety and Health Act of 1970, § 2(b)(3), Pub. L. 91-596, 84 Stat. 1590.

74. Stone, *supra* note 1, at 129. The problem with OSHA may be that it is spread so extremely thin, theoretically entrusted with inspecting more than three million jobsites with only a few hundred inspectors, arousing resentment and potential legal challenge at every turn. When OSHA's regulations were broad and flexible, administrative lawyers criticized them in court as void for vagueness. When the agency responded with excruciatingly precise details, industry lawyers responded with criticism of arbitrariness and unreasonableness. With the diminution of union power, OSHA has lacked a politically viable base.

75. *Cf.* the *Film Recovery* case, where OSHA fined the corporation that had been convicted of homicide in the death of a worker by open exposure to cyanide fumes an initial sum of $4855, subsequently reduced by half when the company protested. Steven Ferrey, *Hard Time: Criminal Prosecution for Polluters*, 10 THE AMICUS J. 11 (1988).

In the field of water pollution regulation, however, there has been a marked increase in the standards and procedures of both federal and state water pollution control. As Professor Goldfarb chronicles in his contribution to this symposium,[76] beginning in 1972, the Clean Water Act[77] tied state and federal regulatory structures together in a system that applies industry-wide discharge standards with enforcement procedures that dischargers must take seriously, including criminal as well as civil penalties.

Beyond the Clean Water Act, perhaps the most dramatic change in positive law has been in the creation of highly specialized federal toxic substances statutes. In the case of Kepone, today Allied would face strengthened market access restrictions for pesticides[78] and direct stringent regulatory attention upon the disposal of hazardous wastes. The Resource Conservation and Recovery Act (RCRA)[79] and Superfund (the Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA))[80] subject any industry dealing with chemicals to excruciating detail in the handling of hazardous wastes and strenuous requirements for correcting contaminations of land and water. The toxic sites where Kepone wastes were discharged—Allied's storage lagoons, Gravelly Run, soils around the LSP plant, and waters downstream from the sewage treatment works—would face a mind-numbing regulatory process. Allied's liability would be strict and inexorable for its own actions and the actions of its tolled partner, LSP.[81]

Adding a special punch to the corporate calculus that faces these new statutory systems is the advent of environmental criminal law. Criminal liabilities that could have been applied against environmental polluters from knowing endangerment of public health all the way up to homicide had always existed on the books, but were generally dormant. The post-1970 federal

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76. Goldfarb, *supra* note 2.

77. 33 U.S.C. § 1251-1387 (1988).

78. *See* Federal Insecticide, Fungicide, and Rodenticide Act, 7 U.S.C. §§ 136-136y (1994).

79. 42 U.S.C. §§ 6901-6992 (1988).

80. 42 U.S.C. §§ 9601-9675 (1988).

81. Although liability for foreign *maquiladoras* is developing only slowly, domestic tolling agreements have been readily subjected to federal hazardous substance liability. *See* United States v. Aceto Agric. Chem. Corp., 872 F.2d 1373 (8th Cir. 1989).

statutes each rather matter-of-factly included criminal penalties, but for the first decade after 1970 there was relatively little criminal prosecution under the general criminal laws of the states or the federal environmental statutes' criminal provisions.

What was rare at the time of Kepone, however, has subsequently become an accepted term: "environmental crime." In the 1980s the rate of prosecution of environmental crimes increased substantially, perhaps as an unwitting byproduct of the Reagan administration's law and order policies.[82] And look at the effect of the Reagan administration's sentencing guidelines! In the Kepone case only Hundtofte and Moore were indicted as individuals. When Judge Merhige said, "[N]obody is going to jail in this case,"[83] he may have frustrated the prosecutor's attempts to induce other Allied executives to testify against the company, but he was only carrying on a long tradition of not treating environmental crimes as serious offenses. Today, however, corporate executives as individuals, both within Allied and in LSP, would clearly be actively considered for prosecution.

And here's what would happen to convicted corporate managers in a case like Kepone under the Reagan sentencing guidelines:

If the executives were shown to have mishandled hazardous or toxic substances, they would receive a base level count of eight;[84]

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82. *See* Helen J. Brunner, *Environmental Criminal Enforcement: A Retrospective View*, 22 Envtl. L. 1315-27 (1992). Federal prosecution took a major turn upward in October, 1982, with the beginning of the U.S. EPA's centralized investigation program and the creation of the U.S. Dept. of Justice's Environmental Crimes Section. Eight years later, the Pollution Prosecution Act of 1990 poured further resources into the program. Pub. L. 101-593, 104 Stat. 2962 (codified at 42 U.S.C. § 4321, notes (Supp. V 1993)). Prior to 1982, federal environmental criminal convictions were minimal. In the following ten years, a total of 675 defendants were convicted of environmental crimes, including 226 corporations and 450 individuals, with over 332 million dollars in fines imposed, and sentences on defendants totaling almost 190 years of confinement. Brunner, *supra* note 82, at 1315-27.

83. Goldfarb, *supra* note 1, at 661.

84. UNITED STATES SENTENCING COMMISSION, FEDERAL SENTENCING GUIDELINES § 2Q1. 2(a) (1994).

add to this an increase of six levels for repeated discharges;[85]

add another two levels for the fact that the executives were exercising direct leadership in the pollution activities;[86]

and you come up with an offense level of sixteen. This translates into a mandatory jail sentence of 21–27 months in jail.[87]

For Hundtofte and Moore, there would be an additional four counts because the LSP discharges knocked out a public utility, the Hopewell sewage system, bringing their punishment to a level of twenty (33–41 months in jail).[88]

At trial, Judge Merhige said, "I hope after this sentence, that every corporate official, every corporate employee that has any reason to think that pollution is going on, will think, 'If I don't do something about it now, I am apt to be out of a job tomorrow.'"[89] It does not appear that anyone lost a job at Allied because of the Kepone debacle, but what the Reagan criminal guidelines add today is a much more tangible worry that individual executives may be sent to jail. That possibility must surely tend to focus the mind of the potential externalizer.[90]

Needless to say, there are many other state and federal laws that would now come to bear in a latterday Kepone case. The Pollution Prevention Act of 1992 might help discourage waste creation in the first place.[91] The Kepone facilities' dust emissions would now come under scrutiny under the Clean Air Act, under Virginia's state implementation plan enforcement and

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85. *Id.* at § 2Q1.2(b)(1)(A).

86. *Id.* at § 3B1.1(c).

87. For a similar computation of sentencing levels under the sentencing guidelines, see United States v. Rutana, 18 F.3d 363 (6th Cir. 1994).

88. FEDERAL SENTENCING GUIDELINES, *supra* note 84 at § 2Q1.2(b)(3); *see also* chart found in ZYGMUNT J.B. PLATER ET AL., SUPPLEMENT FOR ENVIRONMENTAL LAW AND POLICY: NATURE, LAW AND SOCIETY 123 (1994).

89. Allied-Signal, Inc. v. Commissioner, 63 T.C.M. 2672, 2692 (1992), *aff'd without opinion*, 54 F.3d 767 (3d Cir. 1995) (Judge Parker quoting Judge Merhige). The judge's prediction may be directed toward corporate shutdowns as well as individual discharges caused by pollution incidents.

90. Ted Rohrlich, *Top Lawyers Get $400 an Hour as Fees*, LOS ANGELES TIMES, Sept. 18, 1989, at 1.

91. 42 U.S.C. §§ 13101-13109 (1988 & Supp. IV 1992).

under federal standards for toxic air pollutants. There are undoubtedly a dozen more such modern regulatory concerns.

What often appears to corporate managers as a bewildering array of nets and toils thrown around their operations is built up today of dozens of specific answers created by legislatures, agencies, and courts addressing each of many serious problems that we find arising from industrial facilities and other pollution sources.

This array of laws is not made up of simple-minded clones of one regulatory model. Each has developed, from a specific problem, its own specific regulatory apparatus for addressing it. Over the years since Kepone, moreover, there have been dozens of midcourse corrections, in order to solve logjams that were present in the original statutes, to fine-tune regulatory standards and to improve procedures where necessary. To observe the evolution of the Clean Air Act, for instance, is to watch it evolve from a well intentioned focus on defining actual thresholds of human harm for a wide variety of pollutants in the ambient air—an approach which turned out to be hellaciously difficult in scientific terms, never mind in terms of politics and enforcement—shifting gradually to a more enforceable regulatory platform based on available technology standards, a lesson learned from our societal experiments with water pollution control.

B. *Environmental Policy and Some Points of Consensus*

Over the past twenty-five years, there have been broad-based public policy shifts toward environmental consciousness, some of which may be viewed as points of consensus, at least in general terms. In each case, of course, even if there is consensus in principle, reactions differ widely when policies are applied to specific facts. Unanimity on policy disappears and political explosions occur when my ox is gored by your version of civic values.

But we probably have reached some useful general agreements. Few people in the 1960s at the start of the Kepone era, for example, would have considered putting poison directly into someone's property or drinking water, but dumping poisonous wastes into a tributary of a river was considered to be some-

thing else. As a general in the Army Corps of Engineers was reported to have said, rivers were "God's garbage disposal system."[92] Out of sight out of mind was then a believable operational myth. Today, it never again will be.

To that extent at least, we may be able to say that there is fundamental agreement about Coase's description of the marketplace's tendency to externalize, and Rachel Carson's perception that we live in a closed system. Instead of the willful ignorance of the early 1960s, it seems that most of us now concede that actions have consequences; externalities exist, go somewhere, and have cumulative effects; there is no such thing as a free lunch. Public policy appears to have incorporated the recognition that externalities can ultimately be destructive and must be accounted for.

Accordingly, there probably has been—at least until recently—a broadly-held acceptance of the proposition that individual actors must be induced to act in the context of public values. We cannot expect people to maximize the public good and minimize the public detriments of their activities on the basis of altruism, which is why we have law. At this level of generality, of course, few specific answers are provided, but nevertheless they are first principles from which to build.

Here is another major point of consensus: the air and water and many other environmental indicators have gotten much cleaner. The lively debate on this point today does not deny the accomplishment, but rather turns on whether we should now reduce our domestic environmental efforts and look for other priorities, or continue striving to implement comprehensive integrated environmental policies for a sustainable national future.[93]

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92. In the Appalachians the common wisdom we youngsters were taught was that water cleaned itself whenever it had flowed downhill across ten stones.

93. See GREGG EASTERBROOK, A MOMENT ON THE EARTH (1995). In a sophisticated version of the corporate mantra that was heard beginning with the first Earth Day, that 'the pendulum (of environmental regulation) has now swung too far,' Gregg Easterbrook argues that environmental protection resources now should be targeted on the Third World, not on domestic environmentalism. This position would consign domestic forests, public lands, endangered species, and similar natural resources to a sad fate, and ignores the pattern-setting quality of environmental science, policy, and law in the developed world. His arguments tend to ignore the systemic integrated nature of environmental problems and their cure, instead treating environmental

"Sustainable Development," as the fisheries example shows, is another candidate for recognition as an important policy norm, both nationally and internationally. Rather than a series of behavioral disasters sequentially degrading economic resources, the long term global public interest requires a scheme of behavior that allows maximum sustainable yields—a principle incorporated in federal laws and in the 1992 United Nations Conference on Environment and Development at Rio.[94] Human actions which lower our ability to maintain quality of life over future generations are normatively bad.

The "Precautionary Principle" is another candidate for consensus—if what you are doing may have serious consequences, but you don't know what all the consequences are, then when in doubt, hesitate. NEPA reflects this conservative policy, self-imposed upon the federal government, requiring agencies to do what individuals rationally do in their own lives—look before they leap.

And slowly, perhaps, environmental policy has evolved a nascent recognition that the purportedly inevitable choice between environmental protection and economic progress is a false trade off. From an overview perspective at a societal level, and often even at an individual level as well, good ecology is good economics. The recognition that environmental considerations are utilitarian, and that environmental warnings may be predictors of serious economic consequences, has encouraged private actors and economic entities as large as the World Bank to integrate environmental analysis into their planning, so as to avoid the disasters that they stumbled into in past decades.[95]

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protection efforts as add-on commodities. *See also*, THE TRUE STATE OF THE PLANET (Robert Bailey, ed. 1995) (arguing that deforestation and global warming are not as perilous as thought, but that the oceans are indeed in trouble).

Cf. FAYE DUCHIN AND GLENN-MARIE LANGE, THE FUTURE OF THE ENVIRONMENT: ECOLOGICAL ECONOMICS AND TECHNOLOGICAL CHANGE (1994) (arguing that we are not doing enough); and MARK DOWIE, LOSING GROUND: AMERICAN ENVIRONMENTALISM AT THE CLOSE OF THE TWENTIETH CENTURY (1995) (arguing that national environmental groups are being blunted and co-opted).

94. *United Nations Conference on Environment and Development: Rio Declaration on Environment and Development*, U.N. Doc. A/CONF.151/5, *reprinted in* 31 I.L.M. 874, 876-77 (1992) (Principle 1. Human beings are at the centre of concerns for sustainable development. Principle 4. In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it.)

95. *See* Zygmunt J.B. Plater, *Multilateral Lending Banks, Environmental*

It should also be noted that one can probably find consensus that environmental law has sometimes been stupid. Not everything has been done accurately or appropriately in these years of the evolution of environmental law. No consensus is likely about which specific issues have been mistaken, but there are a number of candidates. Can we, for example, afford the luxury of "Cadillac cleanups" of CERCLA toxic contamination sites to the point that the soil can be eaten?[96] Few doubt that most of the major statutes richly deserved some midcourse corrections and improvements.

Others are more controversial, the strictures of the Delaney Clause, for example. Risk assessment arguments over the past ten years have shown the importance of intruding some rationing of societal effort, some balance in assigning regulatory burdens. The controversy is reflected in ongoing debates about the Delaney Clause, the Food and Drug Act's absolute prohibition of carcinogens in foods—a debate between the political and administrative need for clear strict enforceability, and the dysfunctional possibilities of crude regulatory overkill.[97]

Diseconomies, and International Reform Pressures on the Lending Process: The Example of Third World Dam Building Projects, 9 B.C. THIRD WORLD L.J. 169, 195, 208-212 (1989).

96. "Cadillac cleanups" occur because, at least where toxic cleanups at someone else's expense are concerned, neighbors and government officials tend to opt for the most protective and hence most expensive cleanup standards. *See* NLS, *supra* note 1, at 896-97.

97. The Delaney Clause of the federal Food and Drug Act, 21 U.S.C. § 348(c)(3) (1988), forbids the presence in food of even the minutest amount of any substance shown to be a carcinogen, even where that effect occurs only in large doses, while tolerating statistically worse noncarcinogenic additives. *See* Les v. Reilly, 968 F.2d 985 (9th Cir. 1992). A debate reflected within the environmental community shifts between a perceived rational need for adjusting degrees of prohibitions to degrees of relative risks, on one hand, and on the other a perceived need for a bright line standard to avoid the regulatory agencies' proclivity to dilute protections under industry pressure. *Compare* Sagoff, *Choosing Sides on Pesticides*, NATURAL RESOURCES DEFENSE COUNCIL AMICUS J. 10 (1994) (arguing for a more tolerant standard that would allow flexibility but not wide-open cost-benefit balancing); *with Editorial, Truth, Justice, and the Delaney Clause*, *id.* at 6 *and* Parenteau, *supra* note 48, at 8 ("The laws that have worked best have been those that simply outlawed the offending activity: bans on DDT, leaded gasoline, cancer-causing asbestos, ozone-depleting chemicals, whaling, phosphates in detergents, billboards.")

Regulatory permit schemes, moreover, can often put great paperwork burdens on regulated entities, sometimes may in fact conflict with one another, and impose repetitive bureaucratic processing. Some suggestions have been made that it is time to follow the German example, where industrial processes negotiate a broad spectrum

Or the tone of environmental politics: are citizen groups falling prey to the Chicken Little syndrome, where they claim to see only doom ahead and rely upon hyperbolic threats to generate support and momentum?[98] Most environmentalists can probably be faulted in at least a few cases for accentuating the negative and minimizing the positive. The job of mobilizing citizens and the media on important issues, however—the two major sources of credible power in this society when one does not have a corporate base—is not facilitated by euphemism and seminar-like factual presentation styles. If nongovernmental organizations (NGOs) are to play a significant role in modern societies, there will have to be accommodation to their rhetoric and passions in order to access the real societal concerns they, and often only they, can bring to the debate.

Or environmental criminal law: Has the criminal law, for all its salutary effects in catching the serious attention of corporate players, nevertheless often been too crude and blunt a legal instrument? In the federal criminal statutes, at least, there often seems to be little difference between actions that are subject to civil liability and those that are subject to criminal liability; criminal liability potentially covers so broad a range of actions that vast discretion is left for the executive branch.[99]

As to environmental regulation generally, however, it seems that there is some consensus, not only as to goals, but also as to the continuing need for making standards as wise and effective as they can be, and we are nowhere near that yet.

III. GOVERNMENT CANNOT DO IT ALL—ACTIVE CITIZEN ENGAGEMENT

Although it need be mentioned only briefly, it is nevertheless important to acknowledge the critical role that has been played and will continue to be played by citizens actively engaged in

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master permit covering a variety of pollution regulatory concerns in one proceeding. *See* Zygmunt J.B. Plater, *Coal Law from the Old World*, 64 KY. L.J. 473 (1976).

98. *See* EASTERBROOK, *supra* note 93.

99. *See* Richard J. Lazarus, *Assimilating Environmental Protection into Legal Rules and the Problem with Environmental Crime*, 27 LOY. L.A. L. REV. 867, 879-82 (1994).

environmental law. Regulation may be necessary, but government cannot do it alone.

American environmental law was born and shaped by active citizen engagement in the governmental process, a phenomenon of active democracy that virtually did not exist anywhere else in the world. The civic responsibility of an informed and active citizenry continues to be fundamentally important to the development and implementation of environmental law, as it is to democratic governance generally.[100]

We have already referred to the critical role of the common law in the development of the environmental law system, and that of course has been almost totally a citizen-based legal development. But citizens have turned out to have a critical role in the public law as well. It is not enough that statutes and regulations are passed, and public officials are vested with the authority and duty of enforcing them. State and federal regulatory agencies by themselves have often proved unable to implement the laws on the books.

Consider the Kepone case again: Where were the government officials? They were virtually invisible. Probably the only way the local, state, and federal government regulatory agencies could have been induced to do their work would have been by confrontation, cajolery, political threats, and media coverage focused by an active citizen initiative. In the Kepone case, prior to the discovery of LSP's excesses, even citizens directly and indirectly affected by the contamination (including the watermen of the Bay) did not demonstrate such initiative, for a variety of understandable reasons.

Compare citizen initiatives in the Gulf of Alaska to see a very different model. Shortly after the Alaska pipeline began pumping oil to the terminal in Valdez for loading into the single-hulled supertankers of the West Coast fleet, commercial fishermen began to organize to protest the dangers they saw being created. The fishermen (some of whom worked for the oil companies during most of the year), collected data about chemi-

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100. *See* Zygmunt J.B. Plater, *From the Beginning, a Fundamental Shift in Paradigms: A Theory and Short History of Environmental Law*, 27 LOY. L.A. L. REV. 981, 989-93, 1004-07 (1994) (noting how in some cases, citizen enforcement litigation provides the only practicable and effective statutory implementation).

cal and oil spills at the terminal itself, noted the dangers in the industry's cutbacks on service personnel and safety officers, protested the companies' decision (acquiesced in by the Coast Guard) not to have oil spill response stations located at the entry to Prince William Sound, insufficient radar systems, and so on. Their clandestine information system within the industry revealed safety violations and equipment failures in the pipeline and the terminal which were communicated to government regulators, the media, and public education audiences in an attempt to hold the industry to the standards to which it had agreed.

The wreck of the Exxon *Valdez* made the truth painfully evident. The "official" participants in the public and corporate bureaucracies were grossly inattentive to the real dangers, had generally ignored the fishermen's criticisms of Alaska, and had no credible response plan to handle the disaster when it occurred.[101] Within twenty-four hours, Exxon had to take over command of the response operation, but Exxon had never been trained to do so; the Coast Guard and the oil companies had trusted everything to Alyeska, as had the state of Alaska.[102] For almost two days, the oil could have been caught if the official players had been prepared. In an unusual lull, for forty hours after the spill the air was calm, the oil just floated there in a vaporous pool around the stricken ship. But the chance was lost, as the strong seasonal winds began to blow westward with a vengeance.

At that point, after watching in abject disbelief as nothing had happened, the fishermen forced themselves into the matter. They went into a meeting of the official players—the Exxon Corporation, Alaska, the Coast Guard, the Alaska DEC—and found that the official industry-government emergency response center still did not know exactly what it would do. Spread out

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101. Alyeska's barge, promised always to be on station to service the skimming operations was damaged and unloaded, and there were insufficient personnel who knew how to operate the equipment. OIL SPILL COMMISSION, *supra* note 29, at 17.

102. To supervise and police all operations at the Valdez terminal, including water and air pollution, loading, pipeline storage, integrity of the tank storage facility, and other duties, the state of Alaska's department of environmental conservation had deployed exactly one-half of one full-time field person. The DEC field staff at *Valdez* has since been augmented.

on the table were charts of Prince William Sound, surrounded by worried officials. When the fishermen entered they were initially greeted with the questions "Who are you? What are you doing here? This is an official meeting." "Given the wind and the currents now, where are you going to target your response?" asked the fishermen, ignoring the cold welcome. It rapidly became clear that the officials did not have a strategy for prioritizing the response efforts. The people around the table did not even seem to know which way the currents flowed in Prince William Sound. So the fishermen—the uninvited, unofficial participants in the meeting—rolled up their sleeves, charted where the oil was likely to go, and identified the fish hatcheries, the rookeries and spawning areas, the seal pupping grounds, the most valuable vulnerable places for which protection should be attempted in an initial triage of available efforts. "Forget Knight Island, it is too late. Focus on Main Line Bay, Sawmill Bay, Esther Island. . . ." When the government and corporate officials confessed that they did not have the boats required by their emergency plans for deploying diversion booms at priority sites, the fishermen went to their radio-telephones. Starting at eight the next morning it was a flotilla of private fishing boats that began to transport and lay booms at the most threatened areas, doing the official players' work.

The lesson of this narrative seems quite clear: Who really knew and was concerned about the practical circumstances and dangers of the oil transport systems? Who knew best how to respond when disaster occurred? It was those who lived and worked nearest to the oil transport system, and who were most threatened by it. And by the same token, before and after the wreck, it was those same citizens who tended to be shut out of the official decision-making process. As the state investigation found, the official players had allowed themselves to be suborned by complacency and the huge profits to be made and had excluded the only voices that realistically could apprise them of what actually was going on in the field.

Out of the Alaska story came a legal innovation that might well be considered in the Chesapeake Bay watershed and elsewhere. First, by a negotiated contract with Alaska, then by

state law, then by the federal Oil Pollution Act of 1990,[103] several citizen oversight councils were instituted, comprised of citizens who would be actually affected by violations of the statutes and the serious environmental consequences that could follow.[104] These councils have been given their own budgets, permanent staff, and investigatory powers, so that the smug insulation of the official inside players could never again escape the active engagement of officially recognized citizen watchdogs.

This phenomenon of citizen involvement echoes a long history of citizen enforcement of major federal environmental laws. Modelled after provisions in the civil rights acts, Congress put citizen enforcement provisions into the major pollution statutes—more than twenty of them to date[105]—and the life of those statutes and others litigated under the APA has subsequently been shaped by citizen litigation. For instance, how many enforcement actions have been brought against federal agencies by Congress, the President, or the Department of Justice for violations of the National Environmental Policy Act? The answer is obvious: virtually zero. The hundreds of law suits which have made NEPA a significant environmental pro-

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103. 33 U.S.C.A. §§ 2701-2761 (1986 West & Supp. 1995).

104. The Citizen Oversight Council on Oil and Hazardous Substances, ALASKA STAT. § 24.20.600 (1992), provided for a citizens' oversight council with the duty to investigate and report findings; it was invested with subpoena powers to carry out its assigned mandate, and undertook a number of useful analytical investigations before it was repealed at the instance of a large polluter. The "regional citizen advisory councils" (RCACs) now functioning under federal OPA-'90 authority have fared somewhat better, with one successfully established in Prince William Sound, and one in Cook Inlet, although industry and bureaucratic pressures have blunted some of the councils' initiatives. (The evolution and elements of this novel experiment deserve an extended case study.)

105. *See, e.g.*, Toxic Substances Control Act §§ 19(d), 20(c)(2), 15 U.S.C. § 2618(d), § 2619 (1988); Endangered Species Act of 1973 § 11(g)(4), 16 U.S.C. § 1540(g)(4) (1988); Surface Mining Control and Reclamation Act of 1977, 30 U.S.C. § 1270(d) (1988); Deep Seabed Hard Mineral Resources Act § 117(c), 30 U.S.C. § 1427(c) (1988); Clean Water Act (Federal Water Pollution Control Act Amendments of 1972) § 505(d), 33 U.S.C. § 1365(d) (1988); Marine Protection, Research, and Sanctuaries Act, 33 U.S.C. § 1415(g)(4) (1988); Deepwater Port Act of 1974, 33 U.S.C. § 1515(d) (1988); Safe Drinking Water Act § 1449(d), 42 U.S.C. § 300j-8(d) (1988); Noise Control Act of 1972 § 12(d), 42 U.S.C. § 4911(d) (1988); Energy Sources Development Act, 42 U.S.C. § 5851(e)(2) (1988); Energy Policy and Conservation Act, 42 U.S.C. § 6305(d) (1988); Solid Waste Disposal Act, 42 U.S.C. § 6972(e) (1988); Clean Air Act § 304, 42 U.S.C. §§ 7604, 7607(f) (1988); Powerplant and Industrial Fuel Act, 42 U.S.C. § 8435(d) (1988); Ocean Thermal Energy Conservation Act, 42 U.S.C. § 9124(d) (1988); Outer Continental Shelf Lands Act, 43 U.S.C. § 1349(a)(5) (1988).

tection statute (if not a panacea) have been brought by private citizens. The Clean Air Act and the Clean Water Act have been shaped by strategic litigation from the very beginning. Citizen lawsuits were necessary to establish nondeterioration terms so that the acts could not be interpreted to allow the spread of pollution into unpolluted areas, to require statutory deadlines to be met, and to ensure that enforcement efforts would be seriously administered. Many of us who have worked with citizen groups have on occasion been asked by a federal official, "Please tell me you will sue me if I don't do what the law requires, so that I can go to my superiors and tell them that we must enforce the law."

What does this fact of the catalytic role of citizens reveal? I would argue that it shows that bureaucratic regulators have never been and can never be a sufficient public counterweight to the industrial marketplace's inclination and power. As in the Gulf of Alaska, you need people who are actually being impacted by problems to push the process to do what it was set up to do. In Lon Fuller's terms, the bipolar system—regulators balancing regulated entities in the economy—has always been too narrow a basis for rational societal governance. Instead governmental rationality requires "multipolarity"—including government, industry, and a variety of citizen outsiders who, uniquely in the American system, have been able to enter in and play a gadfly role.[106]

Environmental law, then, has been formed by civically-driven citizen litigation—not like private litigation as it had been known before, with individuals defending their own private interests, applying public laws along with the common law to reinforce their private claims. In most citizen environmental litigation based on federal statutes, plaintiffs, in effect, take on a major tactical portion of the job of enforcing societal laws. It is a very American phenomenon, only recently being picked up

106. In the fisheries setting, for example, in the absence of an aroused citizenry and media reaction, the political power clearly lies with the industry, not the regulators. The only way the log jam could be broken was by citizen litigation. In 1991 the Conservation Law Foundation's suit was the only reason the council and the Department of Commerce began to proceed toward renewed enforcement of a quota system (and by the time it was implemented, three years later, it was too late.) Conservation Law Found. v. Franklin, 989 F.2d 54 (1st Cir. 1993).

in other legal systems, primarily in Europe. It emphasizes that law enforcement is not a cynical insider game, and that citizens will be part of the legal system, which gives environmental regulation the added credibility of consumer enforcement.

IV. THE NEW UNLEARNING: COUNTER-REVOLUTION, CONSOLIDATION, AND THE FUTURE

Suddenly, over the past year, the momentum of environmental policy-making in Washington has been changing. Especially in the south wing of the Capitol building there are dramatic calls to cut back on law in general, and environmental law in particular. The attacks target the common law which has been so important for the development of environmental law, citizen litigation and law enforcement generally, and most dramatically in recent months an assault upon the fundamental idea of federal governmental regulation of environmental quality.[107]

It is probably inappropriate to label the current political climate a "backlash," which implies a broad societal rejection of what has been accomplished. Despite justified criticisms of particular features of some programs, there appears to be continuing wide popular support for the different values and programs that have been built up in the field we call environmental law. Rather it seems more like a counter-revolution, an opportunistic initiative to challenge and overturn basic principles developed over the years, on behalf of a particular agenda. That agenda appears to be built of the same people and the same forces that drive the engine we have observed, that required civic regulation in the first place and that have resisted it so strenuously.

One battlefield is the common law. Building upon numerous anecdotes of torts law excesses, an initiative has long been building to cut back on plaintiffs' access to judicial remedies.

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107. It has been the federal government that has long been the primary locus of American environmental law, in part because of the logical necessity of having uniform federal minimum baseline standards for pollution. Federal floors are necessary to avoid the invidious inter-state competition of the "race of laxity," replaying the tragedy of the commons in the federal setting. *See* NLS, *supra* note 1, at 726-27, 776-79.

Current manifestations in the federal House of Representatives, including bills filed by Representative Hyde, would cut back substantially on the ability of plaintiffs to certify class actions, to maintain product liability litigation, and to seek damages beyond straight compensation; the "loser-pays" proposal would likewise mean a chilling of litigation by low-income and public interest plaintiffs, for whom the assertion of legal rights would become a high-stakes gamble.[108] These restraints on plaintiffs are targeted far beyond the reform of excesses. They restrict the adjudicability of many externalized costs that over the years have only found practical remedy in the courts.

What would these changes mean for latter-day Kepone cases? Remember that, because of practical problems in applying other theories of Virginia common law, the workers in the LSP plant who successfully sued and settled with Allied in this case proceeded predominantly on products liability theories. It is therefore possible that the most egregious injury imposed by the Kepone incident would be substantially more difficult or impossible to litigate under the bills filed by Representative Hyde, leaving workers to the scant mercies of the workers' compensation acts, which don't pretend to compensate for nondisabling neurological injuries and loss of quality of life, not to mention reproductive disorders.[109]

The current assaults on the common law were earlier foreshadowed by attempts to undercut citizen enforcement litigation. In the field of statutory enforcement litigation, beginning during the Nixon Court, there have been ongoing efforts to cut back on the access of citizen enforcers to the federal courts and to circumscribe the terms of legislative enactments, reducing them to exercises in form rather than substance.[110] In the

108. H.R. 1075, 104th Cong., 1st Sess. (1995).

109. The quelling of common law is not only a feature of the federal political scene. In Alaska, for example, a recent statute, passed at the instance of a large polluter, provides that private nuisance actions cannot be brought against industrial polluters that are in compliance with a permit, a move that uses state-wide minimum standards to preempt plaintiffs from applying the traditional location-specific protections of common law. (If plaintiffs challenge this as a regulatory taking, the act provides that the benefited industry shall undertake and pay for the state's defense, and pay any compensation assessed.) ALASKA STAT. § 09.45.230 (1994).

110. *See* Warth v. Seldin, 422 U.S. 490 (1975); Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Found., 484 U.S. 49 (1987).

field of water pollution, as it would apply in a latter-day Kepone case, although affected citizens of the James River watershed and Chesapeake Bay probably would not be excluded from standing to enforce the Clean Water Act by the terms of Justice Scalia's restrictive *Lujan II* decision,[111] their role would be circumscribed by the Court's *Gwaltney* decision[112] which seems to give corporate polluters one free bite at the apple and makes citizen enforcement a less credible deterrent to industrial decisions to pollute.

Note that environmental law has not by any means been a symphony of pro environmental legal milestones over the past twenty-five years. Viewing the case reports, I would judge that environmentalists continue to lose more cases than they win, and in modern environmental litigation, the government is as often defending pro-industry positions as defending its protective measures against industry plaintiffs. There has been a traditional give and take between the voices for environmental protection and the voices for greater tolerance of pollution.

There has, of course, long existed an earnest institutional effort to resist and turn back environmental protections, coming from those who are forced to internalize costs previously passed wide to the commons. Over the past several years, however, the rhetoric and political counterforces against regulation have crescendoed. The visible front line of that effort until late 1994 was the so-called Wise Users. They, and subsequently their congressional anti-regulatory allies, present anecdotes of ordinary citizens—small time ranchers, logging families, small businesses—all hurt by "Kafkaesque" regulations. They call, however, not for targeted relief for small operators, but for broad corporate deregulation.

Who provides the impetus, money, and media access for this assault against environmental regulation? Like a number of the latter-day "public interest law firms,"[113] the "populist" anti-regulatory groups and their talk show rhetoric turn out to be

111. Lujan v. Defenders of Wildlife, 504 U.S. 555 (1992).

112. Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Found., 484 U.S. 49 (1987).

113. *See* Oliver A. Houck, *With Charity for All*, 93 YALE L.J. 1415 (1984) (noting how the Pacific Legal Foundation and its progeny consistently operate as tax deductible fronts for anti-governmental industry positions).

well-financed fronts for the industries whose externalities induced regulation in the first place. It's the people exploiting our public lands in the grazing industry and the timber industry, western water interests who receive federally subsidized water from porkbarrel projects at a price lower than we pay for water in Richmond or Boston, or those rugged individuals from the mining industry who are given their raw materials free from the public domain.[114] The anti-regulatory legislative initiatives, in other words, do not reflect an agenda of good government and regulatory reform, but an agenda for elimination of the public values and public protections that take account of externalities.[115]

Under various pieces of proposed legislation, the current congressional tide could become a regressive capitulation that jeopardizes our long term future.

Consider, for instance, the four major generic anti-regulatory initiatives in the current Congress—the regulatory moratorium; unfunded mandates; mandatory regulatory risk-assessment/cost benefit analysis; and the property rights compensation bill, requiring government to buy its right to regulate.

A. *The Regulatory Moratorium*

The regulatory moratorium passed in the House on March 6, 1995.[116] What is one to make of a moratorium bill that at one stroke eliminates virtually all federal regulations passed since November and extends indefinitely into the future? To be fair, it should be admitted that there is something in all of us that resents regulation. We all have a little within us of the frontier fantasy of rugged individualism living on the edge of wilderness. But in conservative terms, in the sense of the precaution-

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114. For example, People for the West and its parent organization the Western States Public Lands Coalition are reported to receive 96% of their finances from industry donors including Kennecott Copper Co., Chevron, Hecla Mining, Pegasus Gold Corp., Crown Resources, Great Western Chemical, Garber Land & Livestock, Pfizer, Inc., Montana Talc Co., Homestake Mining, and more than 30 others. MONTANA STATE AFL-CIO, FACT SHEET (Annual Convention, June 1993).

115. While targeting government regulations, the initiatives do not question government subsidies.

116. H.R. 450, 104th Cong., 1st Sess. (1995).

ary principle, it is simply astounding that the federal legislature could propose to wipe out a vast amount of sub-delegated adjectival lawmaking—authorized by statutes over the last fifty years and processed through elaborate procedures established under the Administrative Procedures Act and the Constitution—with so little intellection. This is not "conservative," it is more like a corporate *putsch*.

As an example of the effect of the moratorium on issues we have discussed, it apparently would prevent renewal of the emergency fisheries quota regulations, which will expire under the Magnuson Act[117] in June of this year, and prohibit further regulation thereafter. This would leave the resource in a regulatory position that would require citizens, scientists, and officials to watch as desperate fishing boat skippers sail off to destroy the Banks' remaining spawning stock and juvenile fish.[118]

The legislative process applied to the moratorium bill and its siblings shows indications of an intemperance that is far from conservative. Regulations were subjected to blanket suspension, subject only to generic exceptions for emergency and "routine" regulations, both of which will require agonizing judicial interpretation.[119] Among the precautionary indications is that apparently no one in the House has even attempted to prepare a list of what regulations were being suspended. No analysis introduced in the House floor debate even cataloged the names of regulations passed since November or currently pending in agency processes. The House majority would suspend these rules without even knowing what they are.

A further indicator, particularly distressing to students and teachers of governmental process, is that for the moratorium bill and a number of the other bills in the avalanche agenda,

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117. Magnuson Fishery Conservation and Management Act, 16 U.S.C. § 18d (1994).

118. During the debate, Representative Young of Alaska asserted that Alaskan fisheries regulations would not be affected because they were "routine," an argument that at the least would not apply to Atlantic fisheries rules, unless the word routine was defined so broadly as to make most environmental rules routine. 141 CONG. REC. H2087, H2088 (daily ed. Feb. 23, 1995). The courts are likely to be filled for years with the scattered definitional fallout of these bills.

119. H.R. 450, 104th Cong., 1st Sess. (1995). As another indication of the erratic legislative process, note the only specific exemption from the moratorium bill in the House, passed on February 22: the House majority allowed the duck and goose hunting season to take effect.

there have been neither legislative hearings (unless one counts Mr. Limbaugh's talk radio), "Pombo-ed" hearings, or truncated superficial hearings.[120] The Article I legislative process as we have known it over the last 100-plus years has been substantially bypassed. Industry lobbyists have openly been given the role not only of authoring legislative language, but also of supplying the congressional arguments and committee defenses for their antienvironmental bills.[121] The testimony of informed public interest analysts has been ignored. As with the corporate-populist rhetoric that accompanied its Contract, the failure of the congressional process to consider social costs has made it not only anti-intellectual, but anti-intellect.

The terms of the Contract with America implicitly treat environmental law and the bipartisan statutory initiatives that have shaped it over the last twenty-five years as a rhetorical enemy, in terms that were undoubtedly originally intended as political epigrams rather than as prescriptions for actual legislation. To the drafters' and our mutual surprise, the bromides

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120. The hearings held around the nation on Endangered Species Act reauthorization by the task force headed by ex-rancher Rep. Richard Pombo (R-Cal.) broke new legislative process ground in their orchestrated tumult and exclusion of pro-environmental witnesses. As noted in a newspaper review of the hearings, House Resources Committee chair Don Young, "a former riverboat captain who believes efforts to study the nation's flora and fauna systematically are part of a 'socialist agenda,'" wasted no time in going after the endangered Species Act when Congress convened and bypassed a subcommittee chairman who supports the law. Pombo had a "clear mission" as he led his task force across the South and West:

> find people who have been hurt by the ESA . . . and let them talk. . . . At one hearing in California, the crowds got so ornery that they booed elementary schoolchildren who spoke in support of the act. . . . A Republican member of the panel . . . said a hearing in his state was scratched because he had invited one of the world leading authorities on extinctions, Harvard biologist E.O. Wilson . . . to speak . . . .
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> The hearings scheduled for rural areas such as Boerne, Texas, and Belle Chasse, Louisiana, were quickly engulfed in controversy as environmentalists accused Pombo of deliberately avoiding regions . . . where support for the law is stronger. Others said task force members intentionally used inflammatory language at the hearings to incite the crowd.
>
> Pombo rejected these assertions . . . [calling] the field hearings 'the most comprehensive congressional investigation and review that has ever been undertaken of the Endangered Species Act.'

Scott Allen, *Speaking in Wildlife's Behalf: Gingrich Intervenes in Debate Over Endangered Species*, BOSTON GLOBE, May 29, 1995, at 1.

121. *See* Stephen Engelberg, *Conflict of Interest is Cited in Regulatory Bill Lobbying*, N.Y. TIMES, Apr. 5, 1995, at 23.

became blueprints for fast moving legislation, particularly on the House side.

Notable in the legislative agenda is the so-called "Unholy Trinity," the bills that have targeted unfunded federal mandates, required regulatory risk assessment cost benefit analysis, and required compensation for regulations that diminish property values.

B. *Unfunded Mandates*

The unfunded mandates proposals, one of which has passed the House,[122] could, in a latter-day Kepone situation, have raised substantial questions about the federal government's "cooperative federalism" strategy of making state agencies, rather than federal enforcement officials, the primary instruments for applying environmental quality standards. Pursuant to the Contract with America, unfunded mandates bills submitted in the 104th Congress included a proposed constitutional amendment and a substantive prohibition against federal regulatory requirements of states not accompanied by federal reimbursements. Under the terms of these bills, presumably the federal government would have had to pay Virginia for state government's expenses enforcing health and safety regulations within the Commonwealth of Virginia, a dramatic shift that would undermine the state-based approach of the Clean Air Act, for example, which at the insistence of the states has relied upon State Implementation Plans. The bill ultimately signed by President Clinton last March,[123] however, has installed what is essentially a new set of internal congressional procedural steps to provide for points of order that can be overridden by a simple majority to allow such requirements of states and local governments to proceed. Absent the flat prohibition of unfunded mandates, the question now will be how much additional momentum will be required to get past the new procedural requirement in order to pass or reauthorize federal statutes.

122. *See, e.g.*, H.R. 5, 104th Cong., 1st Sess. (1995).
123. Unfunded Mandates Reform Act of 1995, Pub. L. 104-4, 109 Stat. 48 (1995).

C. *Risk Assessment and Cost Benefit Analysis*

As to risk assessment and cost benefit analysis, there is of course a fundamental rationality and logic about assessing risks and analyzing benefits and costs before policies and actions are implemented. In the realities of a modern governing system, however, this process cannot be a simple exercise in digital calculations. Even some economists who specialize in risk assessment theory and benefit-cost analysis (who surely incline otherwise) conclude that it is naïve to think that they or anyone can make risk assessment and benefit cost calculations that would determine where to peg particular public health and environmental standards, or whether to pass or reject a particular regulation.[124]

Risk assessment and benefit cost analysis are important parts of the policy debate, but are not instrumental calculations. The bill proceeding in Congress, however,[125] purports to require such a positive calculation, or regulation cannot go forward. In light of the context, it appears likely that the intent of the risk assessment benefit cost analysis legislation is not to achieve a more subtle regulation but rather, as many observers have noted, to achieve regulatory "paralysis by analysis."[126]

In the Kepone example, for instance, we never developed data on the off-site poisoning effects of Kepone nor attempted any quantification of those effects, much less a comprehensive quantification of the commercial fisheries and sport fisheries losses in the economic system of the Chesapeake Bay.. Nor have we attempted a quantification of the natural resources losses that residual Kepone poisoning in the waters and sediments would cause. It is probable, given the multiplier effects of eco-

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124. *See* Paul Portney, *Chain-saw Surgery: The Killer Clauses Inside the 'Contract'*, WASH. POST, Jan. 15, 1995 at C3 and the generally skeptical articles in Symposium, *Risk Assessment in the Federal Government*, 3 N.Y.U. ENVTL. L.J. 251 (1995). For a collection of essays critically analyzing the EPA's cost-benefit regulatory proposals, presented at the 1992 Annapolis conference sponsored by the resource economics institute Resources for the Future, *see* WORST THINGS FIRST (Adam M. Finkel & Dominic Golding eds., 1994).

125. H.R. 9, 104th Cong., 1st Sess. (1995) (Title III of H.R. 9 is entitled "Risk Assessment and Cost Benefit Analysis for New Regulations").

126. *See* Peter A.A. Berle, *Safeguarding Environmental Protection*, AUDUBON May-June 1994, at 6.

nomic injuries that the number would be large indeed, but a regulation shutting down the Chesapeake Bay, especially absent data on what kinds of health affects can be expected at different degrees of contamination of seafood when eaten by humans, would mean, under the terms of the bill as originally drafted at least, that the government would bear a substantial burden of time and effort before it could act to protect consumers against contaminated food.

D. *Property Rights Compensation*

As to property rights compensation, there are a number of different forms of this legislation in the legislative process.[127] It is not clear what the effect of a regulatory compensation statute would be in the Kepone setting, but in the fisheries example its wildly dysfunctional potential effect can be seen. If, for example, a serious quota regulation or moratorium were imposed on the trawlers' catch at a point before the market forces had completely destroyed commercial fishing, the market value of fishing boats in some cases would clearly diminish by ten percent, twenty percent or more. Under some of the current bills, this would require the federal government to buy out boatowners or to compensate them for the market value diminution to their boats, if it wished to save the fisheries resource for the nation (and for the industry).

This changes the fundamental nature of government; for the first time in history it must pay to govern and to protect. From a sovereign public trustee, government becomes an involuntary market player, forced to act as a brokerage house in the sky, monetizing the benefits of public regulation[128] and paying them out to compensate those burdened by regulation or by ceasing to regulate (which presumably is the proponents' real agenda).

And there are other bills in the opportunistic tide, seizing upon the giddy ascendancy of corporate populism. The so-called

127. H.R. 9, 104th Cong., 1st Sess. (1995). Title IX of H.R. 9, which is entitled "Private Property Rights Protection and Compensation," is the vehicle that passed the House and awaits Senate action at the time of this writing.

128. Presumably by new and imaginative forms of taxation.

"Timber Salvage Act"[129] would create a clearcutting jamboree in our last remaining old growth federal forests; the private timber companies wrote a bill requiring the Forest Service to subsidize their clearcutting of more than six billion board feet without complying with environmental laws.

Facing these contemporary legislative assaults, in light of what we have learned in the years since the Kepone debacle, one can at most hazard some general predictions:

- The near future: Whatever is likely to transpire legislatively in the near future is likely to have effects; it is likely to be fairly visible what is done, by whom, on behalf of whom, with what consequences, and that will then become grist in the political process, with an opportunity for majoritarian opinion to respond. In ten years time even peremptory radical actions will be tempered by history, and systems will have adjusted.

- The basics: If the fundamental perceptions of Coase and Carson were right (and they both seem to have a handle on a basic truth), then actuality will catch up with politics and be evident. If acid precipitation continues to fall, if clearcut mountainsides erode, if climate conditions continue to react to human impositions, then the market-based attack on regulation will be proved wrong, even a disaster.

- America: The basic question is how much will be lost in a paroxysm of short term profiteering. This is not a promising national agenda for carrying us into the twenty-first century. Environmentalism is not only aimed at long term survival concerns, but also on our sustainable development as a great society, and our society's long term stature may now be at risk.

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129. The Timber Salvage Act was ultimately inserted into Title II, § 2001 of the omnibus "rescissions" bill. H.R. 1158, 104th Cong., 1st Sess. (1995) Vice President Gore strenuously argued that the bill was designed to raid public lands on behalf of loggers; it was vetoed on June 7, 1995. The text of the provision, which reappeared in the "compromise" version being pressed on the President as they go to press, not only allows for a very broad definition of "threatened" timber to be cut for the preservation of the forest overriding all environmental statutory safeguards, but also mandates that the U.S. Forest Service and BLM increase the cut given to loggers from public lands. The agencies would have to offer the timber companies 6.2 billion board feet of timber over two years, approximately doubling the current yearly yield from the national forest system. Tom Kenworthy & Dan Morgan, *Panel Would Allow Massive Logging on Federal Land*, WASH. POST, Mar. 3, 1995, at A1.

• Resilience: There is enormous resilience in humans and in natural systems; some things may be destroyed forever, but a new evolving balance will emerge. We may be poorer for the losses, but absent nuclear holocaust or a supervirus, humans will continue to be a dominant part of the mix.

• Law: For the foreseeable future, human nature is not going to be repealed, so there will remain a need for regulatory law.

• Civic instincts: Aristotle said that man is a political animal,[130] emphasizing the civic nature that characterizes human societies. These instincts toward community mean that we have some responsibility to others, and to future generations, as well as to the individual selfinterests that so powerfully drive our economic life.

• Interconnectedness: Things natural and human will continue to be interconnected, and actions will have consequences. We will not be able to separate ourselves from one another or from the consequences of our actions. We're all in this together.

V. SUMMARY

The Kepone saga revealed an inherent tendency in economic enterprises to pass-on pollution costs to the public, a tendency that makes regulation both necessary and embattled. The dramatic growth of environmental science, policy, and law over the past quarter century has forever changed what we know about the consequences of human externalization of costs into the environment, and about how we can respond to them. As the market forces that necessitated regulation now agitate stridently for its rescission, it is still clear that human nature has not been repealed; the lessons of science, law, and policy cannot be unlearned, and therefore environmental law inevitably will remain a challenging, indispensable necessity for our sustainable future.

130. ARISTOTLE, THE POLITICS 60 (Trevor J. Saunders ed. & T.A. Sinclair Trans., Penguin Books 1981).