

Toward Better Bubbles and Future Lives: A Progressive Response to the Conservative Agenda for Reforming Environmental Law

Rena I. Steinzor

The author is a Professor of Law, University of Maryland School of Law. I spent my sabbatical year, 2001-2002, at the Natural Resources Defense Council (NRDC). Although I accept full responsibility for the views expressed here, I must acknowledge my debt to my colleagues who participated in a May 2001, workshop sponsored by the NRDC in order to define a progressive agenda for environmental law reform and a subsequent meeting with NRDC staff convened to discuss trading policy. I am especially thankful to NRDC staff members Sharon Buccino, Jon Devine, Linda Greer, David Hawkins, Erik Olson, Nancy Stoner, John Walke, and Wesley Warren for several productive discussions on the issues addressed here. Many of the academic participants in the May 2001, workshop recently formed the Center for Progressive Regulation, and I am also grateful to them, especially Eileen Gauna, Thomas McGarity, and Clifford Rechtschaffen, who read and commented on this piece, and to Frank Ackerman, John Applegate, Lisa Heinzerling, Christopher Schroeder, and Sid Shapiro for helping me to develop these ideas. Finally, a portion of the title of this piece was inspired by an article presenting the opposite point of view: E. Donald Elliott & Gail Charnley, *Toward Bigger Bubbles*, F. FOR APPLIED RESEARCH & PUB. POL'Y, Winter 1998, at 45.

[32 ELR 11421]

Gridlock and Its Implications

In the aftermath of September 11, 2001, most of the nation's domestic agenda has receded into the background of the public's attention, eclipsed by news of the war on terrorism, the war's effect on the economy, and—in fits and starts—the corporate scandals typified by the collapse of Enron, Global Crossing, and WorldCom. Environmental policymaking, in its routine form difficult for the popular media to master, sits in the last row of side-lined issues. Only such spectacles as polar bears running from oil rigs nudge these problems into the foreground, and then only temporarily.¹

Out of sight, of course, does not mean out of mind. Below the "waterline" of politically visible debate, mid-level bureaucrats, and regulated industries are actively engaged in efforts to change the rules of law and economics that determine whether the government intervenes in pollution-producing commerce. Talk of enacting so-called second generation legislation has subsided to a murmur. But at the administrative level, the debate over how best to streamline the system and eliminate distasteful regulatory requirements proceeds with unchecked vigor and enthusiasm.

Remarkable as it may seem for a set of initiatives with such profound implications, there is no readily accessible anthology of principles that respond to the conservative agenda from a progressive perspective. This Article is intended to fill that gap. To set the stage, the Article explains the state of play in federal and state policymaking, although readers should not expect a comprehensive summary of pertinent developments. Its footnotes suggest a bibliography of additional sources for those who wish to pursue these ideas.

The most prevalent trend in reinvented environmental regulation is the adoption of "market-based" trading systems for air and water emissions. Federal and state trading regimes are multiplying rapidly regardless of the possibility that some need new statutory authority to be legal.² The U.S. Environmental Protection Agency (EPA) and its state counterparts lead the development of these programs.

Other major conservative initiatives fall into three broad categories: (1) "sound" science and its implications for risk assessment; (2) the quality of the data used to support regulatory decisions; and (3) the role of cost/benefit analysis in shaping environmental programs.

The Office of Management and Budget (OMB) leads the development of such "cross-cutting" policies, seeking to apply them governmentwide, although EPA is clearly the agency everyone has in mind as most in need of rehabilitation. A final, very important area of reform, devolving additional authority to poorly funded and unevenly competent state and local governments, will not be addressed here for space reasons and because I have already written about it extensively.³

Why should anyone care to listen to these ideas? After all, from a conservative perspective, environmental activism is what spawned the existing generation of economically inefficient laws. Conservatives undoubtedly believe that it is time for different constituencies to dominate the debate over statutory and administrative design.

Or, to put the matter in crass political terms, at times it appears that the American people have all but forgotten those tense days in Florida in the winter of 2000. In the wishful thinking of conservative commentators, President George W. Bush's extraordinarily high public approval ratings post-September 11 ratify the quiet revolution his senior political appointees are pursuing, making marginal—at best—those who fight a losing battle to preserve existing law.⁴

Embedded in this disdain for the progressive perspective is a conviction that, despite the myriad of polls finding [\[32 ELR 11422\]](#) broad support for environmental protection,⁵ the public does not really understand the scope or magnitude of the risks we face and supports stronger regulation on the basis of irrational phobias and ignorance of the true costs of environmental protection. Some conservatives have even gone so far as to characterize a clean environment as a "luxury good" that should be affordable only by the affluent.⁶ When this disdain for average citizens is taken to its logical extreme, reforms accomplished out of public view are absolutely justified lest public hysteria block achievement of a more rational and economically efficient system.

Such arguments rise to the level of dogmatic belief for those that espouse them, yet are so patently elitist that they are rarely articulated by politicians of any ideology. But it is crucial to recognize their importance as the foundation of other, apparently less offensive, conservative pronouncements. For example, the conservative argument that costly regulation deprives low-income people of the money they need to spend on life's essentials (food, clothing, housing, or medical care) is based on the dual assumptions that consumer purchasing power is fixed and that environmental quality is something people must decide whether to buy. A clear alternative, espoused by progressives, is to place other expenditures (the military) and economic policies (corporate subsidies, the tax rate imposed on America's wealthiest people) on a par with safeguarding the natural environment.

Of course, progressives reject not just the notion that environmental protection is a luxury good, but the underlying assumption that this notion has any viability in America's pluralistic and democratic society. Justifying the sale of this "commodity" only to those who can afford it conflicts with the core American value that all human lives are equally valuable and worth saving. Far from an expendable enhancement of the enjoyment of life at the margins, pollution threatens public health at the most basic level, literally making it difficult for inner city children to breathe. The problem at the moment is not that the concept of environmental quality as a luxury good is compelling, but rather that the best antidote to this elitist view is the light of day. In the aftermath of September 11, which provoked the reemergence of America's preoccupation with foreign enemies to levels not seen since the disintegration of the Soviet Republic, leveraging public outrage in support of health, safety, and environmental regulation is far more difficult.

Three additional realities threaten conservatives' urge to marginalize progressive views. The first is the fact that the backlash predicted by progressives has followed every similar period of stealth reform, beginning with President Ronald Reagan's appointment of Anne Gorsuch Burford and James Watt to his Administration's leading environmental posts. As Republican pollsters have reminded their clients on previous occasions, environmental policy is a "third rail" and only the foolish tamper with it regularly.⁷ The 104th Congress led by Newt Gingrich (R-Ga.) was forced to back off similar reforms. The chief difference today is that, for the moment, regulatory rollbacks are being pursued out of the public view, forestalling the backlash that defeated similar proposals in the Contract With America.

Second, in a larger sense, environmental policy is in "equilibrium" at the moment with neither the right nor the left able to vanquish the other side. By equilibrium, I mean that, despite strong differences among affected constituencies, and a string of important executive decisions, the statutory framework of environmental law remains the same, and the right has failed to accomplish its stated goal of fundamental reform. So long as statutes constructed by environmental activists in the 1980s remain on the books, the U.S. Congress remains gridlocked,⁸ and conservatives dominate the administrative process, lasting and profound change will prove very difficult to accomplish without finding some measure of common ground with progressives. For anyone actually committed to permanent reform, efforts to tune out the opposition can only prove self-defeating, precisely because it is so much more difficult to rewrite the law than it is to undermine implementation.

Finally, if something goes visibly wrong—for example, air pollution in America's largest cities gets significantly worse, nutrient

loading of surface waters causes intense [\[32 ELR 11423\]](#) "red tides" and fish kills, or the weather persuades the public that the climate has already changed irrevocably for the worse—the Bush Administration will be held politically accountable, putting environmentalists back in the game in a way that even the most committed conservatives cannot ignore.

The Article begins with a short explication of unifying beliefs that shape the progressive attitude toward environmental law reform. It applies those principles to emissions trading, the premier market-based remedy, and then turns to the cross-cutting initiatives launched by OMB, explaining the progressive view on sound science, data quality, and cost/benefit analysis.

Unifying Principles

Obviously, I was already in trouble when I began with the goal of describing a "progressive" agenda, without defining what views or positions might qualify as "progressive," a controversial undertaking in and of itself. In a fit of what undoubtedly boils down to *hubris*, I will forge ahead, suggesting the threshold principles that are embraced by those I mean to cover with this simplistic label. (You know who you are.) I intend for these ideas to be applied in a flexible manner, as opposed to hardening into a precise "litmus test" for screening worthy adherents to a fixed political ideology.

A progressive agenda rests on the premise that the public's health—regardless of class, race, ethnicity, gender, or age—must be protected from the consequences of industrial and agricultural activity. A clean environment is in the nature of a birth right and not a luxury good affordable only by the wealthy, as postulated by some conservatives. Further, this birth right extends to the natural world, whether or not the human activity at issue compromises public health, because those resources belong to future generations as much as they do to those of us fortunate to inhabit the earth at present.

Government is the institution best suited to protect and restore this birth right because the "tragedy of the commons" is so powerful.⁹ Corporations and other institutions are organized around different values and should not be expected to counteract the damaging effects of their activities without some compulsion from government. Progressives reject the newly chic notion that the government must entice industry to cooperate voluntarily to protect the environment, as opposed to prohibiting bad behavior. We do not see convincing evidence that voluntary measures have ever worked as well as enforceable mandates.

In the same vein, progressives believe that polluters should be required to internalize the costs of their pollution to the maximum extent practicable, an idea that is consistent with free market theory even if reasonable people could disagree about whether this outcome will happen on its own, without government intervention. Paradoxically, "polluter-pays" is among the most embattled maxims of environmentalism these days. Conservatives are making significant progress with the argument that the left harbors a deep, nearly psychotic hatred of corporations. Thus, they charge, much of our motivation is to punish rather than to protect. If progressives wish to be more effective, we must be wary of enhancing these allegations with poorly chosen rhetoric.

Although progressives favor government action that results in the internalization of costs by the entities that cause harm to public health and the environment, progressives firmly reject the related notion that all other effects of regulation can and should be translated into numerical terms, or "monetized" in the lexicon of cost/benefit analysis. Of course, costs and benefits are very important considerations, and people have an irresistible temptation to express them in mathematical terms. The fatal mistake is to step across the line between asking decisionmakers to weigh those factors and requiring them to achieve the bogus goal of ensuring that benefits, to the dollar, always outweigh costs, with this artificial equation the sum total of what determines the final decision.

As just one example of cost/benefit analysis taken to a ludicrous extreme, consider the latest device conceived by the Administration's chief prosecutor of economically inefficient regulation. John Graham, former head of the Harvard Center for Risk Analysis and now the director of the OMB's Office of Information and Regulatory Affairs (OIRA), has mounted a concerted campaign to expand the use of monetized cost/benefit analysis, including the use of the concept of quality-adjusted life years (QALYs) saved.¹⁰ This approach considers the quality of life experienced by the human being who is exposed to the risk—generally toxic chemical exposure, downgrading the benefits of sparing them those risks in terms of whether their quality of life is otherwise good or bad from a supposedly objective perspective. Or, in other words, a year in the life of a grandmother with asthma, arthritis, or cerebral palsy is worth significantly less than a year in the life of a healthy, 20-something investment banker who attends aerobic class daily. Thus, QALYs empower bureaucrats to engage in an elaborate, pseudo-scientific triage of various sub-populations.

A final notable anomaly in the spectrum of today's political debate is the agreement of both sides that reliable information is an important component of wise policymaking. Conservatives and progressives approach this fundamental truth from different directions, reaching diametrically opposed conclusions about what should be done when this information is missing.

In general, progressives believe we should take regulatory action in the face of such uncertainty when failing to act poses a risk to the environment and, especially, public health. Commonly referred to as the "precautionary principle," this preference for protective action is grounded at least in part in our cynicism about the government's ability—and industry's will—to close the knowledge gaps that plague us. We are disturbed by the weakness of our scientific understanding of the consequences of exposure to common pollutants, both with respect to people and as experienced by complex ecosystems, but we do not believe we can **[32 ELR 11424]** afford to wait until these data gaps are filled to take protective action.

Conservatives dispute this principle, arguing that it is a transparent excuse for regulating without meeting even a minimal "burden of proof." They maintain that unimpeded "free" markets should be the presumptive norm and contend that government intervention is inappropriate for so long as information remains incomplete and uncertain, citing—again—the costs to the individual citizen of wasting money on excessive regulation.

Progressives believe that public health and natural resources are endangered by inaction to control pollution, especially in such areas as climate change, unhealthy air quality, and nutrient and toxic loadings in surface water. We reject the argument that the bureaucracy has run amok, overregulating to the point that costs dwarf benefits.

Progressives are extremely reluctant to embrace any of the new "silver bullets" advanced by conservatives for addressing what we think is a dramatically exaggerated problem of overregulation. Whether couched as ensuring the use of sounder science, enhancing the quality of the data used by government, or expanding the application of cost/benefit analysis, we are convinced that these initiatives represent a thinly veiled effort to stifle even the scant activity we see from health and safety regulatory agencies.

Progressives recognize that the regulatory process is a chaotic, time-consuming, ossified blend of policy, power politics, science, popular imagery, misguided perception, anxiety, fact, and common sense, but doubt that we will be able to drastically speed the process without sacrificing its democratic foundation. By the time a rule crawls, belly down, across the finish line, those responsible for writing it have heard every fact, opinion, and threat that a large army of outside, especially industrial, constituencies can think to make. The sheer messiness of this process is inefficient, to be sure, but is also unlikely to lead to precipitous, unwarranted action.

Too often, our argument that government is not doing enough is characterized as a blanket endorsement of everything government has done. Well aware of the body blow this allegation administers to progressives' credibility, I hasten to add that we can see many examples of silly rules on the books. My personal favorite is the endlessly complex regulatory regime established to control hazardous waste that, cumulatively, applies to only a small fraction of the truly dangerous wastes that the nation generates. But to concede that there are silly rules—and even to agree to work on repealing them—gets us nowhere in an atmosphere where the ills of the system are overstated so harshly. Rather, the best way to demonstrate that we are willing to engage in the debate over reform is to apply the principles articulated above to four central ideas of the conservative agenda.

Toward Better Bubbles

A Taxonomy of Trading Systems

In theory, trading systems enable sources with high compliance costs to pay those with lower costs to accomplish required reductions, thereby achieving the most economically efficient pollution control. Panacea to their proponents and anathema to their critics, trading systems share a few central characteristics. Covered sources receive an initial allocation of "credits" or "allowances" that constitute mini-licenses to emit a specified amount of pollution over a specified period; for example, one ton over a single year. Sources with "surplus" or "excess" allowances—that is, more tons of paper "permission slips" than they need to cover the emissions or discharges produced by their normal operations—may sell those allowances to sources with too few.

The legal status of allowances was considered when they were first introduced at the national level. Title IV of the 1990 Clean Air Act (CAA) Amendments states explicitly that allowances to emit sulfur dioxide (SO₂) from plants do not constitute a "property right" vested in the entity that receives them initially or purchases them on the open market.¹¹ This approach has evolved into an assumption that trading, including the award of allowances, is a regulatory approach that the government may cancel at will. To the extent that federal and state legislatures omit such language, and establish trading as a corporate entitlement program, they run the risk that failing trading systems will become inordinately expensive to cancel.

Although allowances do not constitute property rights as a legal matter, the ground rules for allocating them can have major economic implications. The aggregate number of allowances allocated to all covered sources is referred to as a "cap," and defines the

environmental benefits of the trading regime. Caps are typically designed to decline, achieving continuous improvements in environmental quality.

Caps are generally viewed as an indispensable feature of trading systems. However, some industry representatives and state regulators have advocated so-called "open market" trading systems that do not impose a cap on total emissions, but instead rely on *allowable* limits in individual permits to allocate allowances. These systems authorize unrestricted trading of emission reductions that have already been accomplished.¹² Under the Clinton Administration, EPA abandoned efforts to issue a federal regulation that would facilitate such programs.¹³ But the Agency recognized the validity of the approach in its 2001 *Guidance for Improving Air Quality Using Economic Incentive Programs*.¹⁴ Environmentalists have called for a moratorium on such programs,¹⁵ and have strenuously opposed EPA proposals to approve open market programs in Illinois, Michigan, New Hampshire, and New Jersey, asserting that such initiatives are a "polluter's dream."¹⁶ As this Article goes to press, EPA had not yet made decisions on those approvals.

[32 ELR 11425]

The initial distribution of allowances is the focus of intense jockeying among participants. This allocation process is known as establishing a "baseline." Sources receive allowances according to the amount of emissions or discharges they produced in a given baseline period (usually a year). Because production and resulting pollution fluctuates for both marketwide and facility-specific reasons, defining baselines in relationship to a single "representative" year may impose hardship on sources with abnormally low levels of production during the period or on sources planning to expand production. Baseline anomalies can also create barriers to market entry for new sources. Inevitably, covered sources attempt to negotiate exceptions to the baseline chosen, increasing their initial allocations.¹⁷ This process can be quite useful politically, giving legislators and regulators currency to buy support for the overall scheme.

Another, related allocation issue is whether allowances should be based on the "actual" emissions or discharges produced in a given period, as opposed to the "allowable" emissions or discharges authorized in the participant's facility-specific permit or the applicable CAA state implementation plan.¹⁸ Regulated entities offered an opportunity to either add a trading scheme to their compliance options or to substitute trading for regulatory requirements are likely to argue that permit limits represent "acceptable" levels of pollution and that baselines should be set on the basis of allowable—not actual—emissions or discharges. Because state air and water permitting systems are underfunded and erratic, producing requirements that are outdated and overly lenient, allowable permit levels are often considerably higher than what sources have actually achieved in practice. Basing allocations on allowable permit levels, or on levels of emissions or discharges that occurred several years ago, at a time of extraordinarily high production, can result in allocations that introduce significant increases in both overall and localized emissions.

Industry representatives might respond to this concern by pointing out that the leeway provided by using allowable permit levels enables future expansion of facilities and economic development. Yet it makes no difference from a public health perspective whether those additional pollution loadings result under a traditional regulatory system or a trading regime. Embedding the decision to allow them in the relatively obscure question of how many allowances to allocate initially can have the result of avoiding an important debate over whether new sources should be sited at that location or whether the cumulative pollution burden is already too high.

Last but not least, no taxonomy of trading would be complete without an explanation of the traditional forms of regulation that provide a backdrop, safety net, or alternative to such regimes.¹⁹ Traditional regulation may be employed as a "floor" for trading regimes that promise additional environmental benefits. Trading may be used as a substitute for traditional regulation that is already in place. Or trading may be applied to pollution problems that are not yet regulated, in lieu of traditional regulation.

The first category of traditional regulation is the establishment of "health-based standards" that define levels of ambient pollution that will not impose intolerable adverse effects on the public health. It is hard to imagine a politically viable proposal to allow trading with a cap set deliberately higher than health-based levels. Rather, the problem is that there is a dearth of such standards because EPA and the states have had such grave difficulties in developing them. EPA has only promulgated six, health-based national ambient air quality standards (NAAQS), for example, covering carbon monoxide, nitrogen dioxide, ozone, lead, SO₂, and particulates.²⁰

The clearest alternative to health-based rules is the application of "technology-based standards," which have been the remedy of choice under the Clean Water Act (CWA) for three decades. Technology-based standards select the most effective pollution control devices that are available at a reasonable price, calculate the levels of emissions that are achieved by sources using such equipment, and require that all sources install them. In essence, this approach rests on the rationale that we must do the best we can to protect the environment, as opposed to doing what is necessary to achieve "safe" ambient levels of pollution.

Technology-based standards are much maligned by conservative scholars because they require all sources to install the same controls even though some sources could reduce emissions or discharges for a significantly lower cost and regardless of the absorption capacity of the receiving media. Thus, these commentators argue, it is far more efficient to allow such sources to assume the burden of reducing for everyone.²¹ Because trading allows sources with the lowest compliance costs to achieve reductions on behalf of everyone else, it is typically offered as a far preferable, economically efficient alternative to technology-based regulation. Or, in other words, trading in theory achieves the same improvements without forcing the sources confronting the highest retrofit costs to waste their money.

The fly in this particular ointment, however, is the real world problem of imperfect information that once again confounds what supposedly is an easy choice. The beauty of technology-based standards is that, unlike the implementation of health-based standards, they do not require extensive analysis of complete data about ambient conditions. Ordering sources to install the best available control technologies is relatively easy from a regulators' perspective because the only questions in a subsequent enforcement action are whether the equipment was in fact installed and has operated correctly, sparing regulators the complex task of determining whether ambient conditions are acceptable. In contrast, establishing declining caps without reference to reductions achieved by specific control devices involves considerably more guesswork.

[32 ELR 11426]

Conservatives would respond that trading creates incentives for technological innovation that are smothered by mindless technology-based standards. Again, this observation is theoretically true, provided that allowances are scarce or, in other words, that caps are set low enough. In those circumstances, the dirtiest sources among regulated industries cannot escape the system's demands by buying plentiful and cheap allowances, and all sources have adequate incentives to develop ways to reduce their emissions. In the absence of the right design, trading is not any more likely to produce more innovation than a traditional technology-based system and both their advocates and their opponents should recognize that threshold fact.

The Ethics of Trading

Despite their settled legal status, from an ethical perspective, there is a difference between having the government award sources a legally sanctioned opportunity to pollute and having the government use its authority to impose limits on pollution. Trading conflicts with the moral precept that environmental quality belongs to the public at large and is not for sale. Whether or not allowances rise to the level of a preexisting "right," they are traded for money. Therefore, they are premised on the notion that the government not only is entitled to place an economic value on the public interest in natural resources, but remains free to sanction the buying and selling of those resources.

For the same reasons, trading confounds the idea that we hold the earth in trust for our children.²² Activists, particularly those attuned to the environmental justice implications of trading, often protest such schemes on moral grounds, asserting that trading is a significantly worse approach to controlling pollution than traditional regulation.²³ From this perspective, the government controlled by today's adults has no moral authority to sanction economic transactions involving compromises in environmental quality over a period beyond our expected life-span.

Advocates of trading might well respond that these arguments are as sentimental as they are theoretical. In fact, they would argue, such lofty moral principles represent a distinction without a difference when it comes to evaluating the actual impact of either form of intervention in the real world. Both traditional regulation and trading schemes result in more or less pollution depending on how they are implemented. Because trading schemes are more palatable to regulated industries, as well as more efficient, they may achieve greater reductions than traditional regulatory approaches. Fretting over abstract ethical distinctions is an enterprise for underemployed law professors, and should matter little to anyone else.

Arguing that trading is a more economically efficient way to achieve better environmental quality is reasonable. However, going so far as to suggest that regulated entities are entitled to be governed by less expensive systems is problematic for the same reasons that it is difficult to reject an appropriately structured, well-run trading system solely on ethical grounds. Trading may well be a reasonable solution in some circumstances. But regulated industries do not have any ethically principled reason to insist on the establishment of trading. Rather, the full spectrum of affected constituencies must make a judgment whether trading is a "good deal" in any particular context.

In the end, a study of actual experiences with trading to date makes it very clear why activists couch their objections in moral terms. Trading schemes have proved so vulnerable to abuse that they have resulted in absolutely unacceptable concentrations of life-

threatening pollutants in areas where large numbers of people of color live. Activists are undoubtedly right to wonder whether they can ever hope to be successful in achieving a trading scheme that has sufficient safeguards and, even if they can, whether trading advocates will nevertheless manage to avoid these specific design prerequisites.²⁴ As long as trading has such a mixed reputation, and conservatives pursue it with such zeal, the perception that it is immoral on some fundamental level will persist.

Field Tests of Trading

As the two most prominent field tests illustrate, trading systems have been most successful when a single pollutant is involved; the pollutant does not pose a risk to public health except at extraordinarily high levels but does have a cumulative, long-term impact on the environment; sufficient methodologies exist to document actual emissions and therefore to count allowances accurately; and the market for trading is large enough—and the cap on total emissions low enough—to achieve adequate incentives for a critical mass of sources to reduce their emissions voluntarily. Trading is especially useful in solving environmental problems like greenhouse gases and acid rain because it sets up a situation where industry's enthusiasm for "compliance flexibility" is leveraged to break political deadlocks that forestall any other kind of regulatory action.

For the most part, the acid rain program has worked as expected, achieving expected reductions in SO₂ emissions. One can certainly question whether the cap was low enough. But no one has stepped forward with credible evidence that these reductions have not occurred. Even more important, the use of trading produced a political miracle, moving a comprehensive reauthorization of the CAA forward after 13 years of gridlock. Affected parties fought over how to cut up the pie, rather than whether to bake one in the first place.

On the other hand, trading has failed catastrophically when caps are set too high to motivate pollution reductions; there are no effective mechanisms to count allowances, track trades, and prevent fraud; and trading is applied to toxic substances without effective limits on localized concentrations of emissions, or "hot spots." Two efforts by California's South Coast Air Quality Management District (SCAQMD) to reduce smog in Los Angeles exemplify such [\[32 ELR 11427\]](#) fiascos, setting back progress in achieving environmental quality and awarding an unjustifiable windfall to industry.²⁵

In the mid-1990s, the SCAQMD launched the RECLAIM program, which allowed utilities and other major stationary sources to trade SO₂ and nitrogen oxide (NO_x) credits under a cap on total emissions,²⁶ and the Rule 1610 "Car Scrapping" program, which allowed operators of large stationary sources to buy their way out of compliance with CAA controls by paying owners of old, dirty cars about \$ 600 per vehicle to take them off the road.²⁷ Both programs were fundamentally flawed in their design.

The RECLAIM program's cap was set too high, in part because it based initial allocations of credits on *historically higher* levels of pollution for covered sources, as opposed to the *lower* levels of *actual* emissions occurring at the time the program began.²⁸ Compounding this error, the program *supplanted*, as opposed to *supplementing* existing technology-based requirements, leaving no "safety net" to prevent excessive emissions from individual sources.²⁹ As a result of these threshold mistakes, in the first three years of its operation, the program resulted in a decrease in *actual* emissions that was very modest—about 3%.³⁰

Because the initial cap did not create a sufficient scarcity of allowances to motivate covered plants to install pollution controls, few sources installed pollution controls that would enable them to generate additional allowances as the cap declined. Apparently, most owners and operators concluded that they could purchase credits later, as the cap declined. In fact, at one point, NO_x allowances were so plentiful that sources gave 85% of them away for free.³¹ Eventually, SCAQMD was forced to admit that the "cross-over point" when the demand for allowances would exceed the supply allocated to sources would not occur until 1999 for NO_x (six years after the program began) and 2001 for SO₂ (eight years later).³²

The ultimate calamity for the system came in the spring of 2001, when the cross-over point was reached and a sudden shortfall of NO_x allowances pushed the price as high as \$ 45,000/ton.³³ In the midst of the hysteria provoked by the California energy crisis, the SCAQMD hastily pulled utilities from the system, giving them a three-year grace period to return to compliance with traditional regulatory requirements. The SCAQMD insists that the peaks in emissions produced by these developments will be short-lived, and it is forcing the utilities to pay \$ 7.50 per ton of excess emissions into a "mitigation fund" to be used to fund air quality improvements.

Because RECLAIM cratered in the midst of the California energy crisis, trading enthusiasts generally ignore the experience, wrongly attributing its failure to those unusual circumstances. But the program's demise was predictable from the day the cap was set, and would have happened regardless of the energy crisis, which involved problems with pricing and supply, as opposed to a sudden spike in demand that would have required significantly increased production levels.

The SCAQMD car scrapping program contained similarly fundamental flaws in design, placing no limits on the amount of allowances stationary sources were able to purchase and failing to supervise the retirement of the cars that supposedly generated emissions reductions.³⁴ The predictable result was the creation of extreme toxic hot spots containing intolerably high levels of pollution in the vicinity of four marine terminals owned by Unocal, Chevron, Ultramar, and GATX. Exposure to these hot spots resulted in a cancer risk greater than 150 in 1,000,000 for the "maximum exposed individual."³⁵ The neighborhoods around the terminals range from 75% to 90% people of color, compared to an overall people of color population of 36% throughout the South Coast district covered by the car scrapping rule, making the program one of the most egregious examples of environmental injustice in memory.³⁶

Compounding these problems, the SCAQMD auditors found rampant fraud in the program because owners of old vehicles were paid to retire their vehicles, the bodies of the cars were scrapped, but the engines were transferred into other vehicles that kept on running.³⁷ Further, stationary sources appear to have underreported their emissions significantly, in order to save money by purchasing fewer allowances.³⁸ Sham trading not only deprives the public of the immediate benefits promised by such programs, but illustrates how difficult *and* expensive it can be for the government to run properly administered trading programs. To use a term popularized by conservative commentators, there is "no free lunch" here, just as there is not in the arena of traditional regulation.

No thoughtful observer of the existing regulatory system could deny that the gap between paper rules and practical applications is increasing exponentially as states fall further and further behind in their struggle to implement the law. Most states cannot even manage to keep stationary source permits current, much less take the systematic enforcement actions necessary to serve as a deterrent for further violations.³⁹ Industry has a point in arguing that environmentalists too seldom acknowledge that the existing system is crippled in many places.

On the other hand, one of the most disconcerting aspects of the growing popularity of trading these days is the absence of any acknowledgment that the California experiments were such spectacular failures. Acid rain is invoked as a kind of mantra to prove that trading will work in virtually any context. Trading enthusiasts make concerted efforts to sideline environmentalists and other public interest representatives who might raise these important issues.⁴⁰ The up-shot [**32 ELR 11428**] is an important, lost opportunity to learn from the mistakes of the immediate past, so that trading is advanced cautiously, not as a miracle cure but as a system, like any other, that fails when it is designed improperly.

Progressive principles for the design of trading regimes address four discrete issues: (1) whether trading produces results that are at least equivalent to other regulatory alternatives; (2) whether trading produces continuous, enforceable improvement of environmental quality; (3) prevention of the formation of hot spots posing a threat to human health and the environment; and (4) the elimination of "sham" trading and other forms of waste, fraud, and abuse.

First and Foremost: Do No Harm

At the threshold, trading systems should do no harm, either with respect to the overall condition of the ambient environment or with respect to localized concentrations of pollution. Such a straightforward statement is likely to be greeted with impatience by many trading advocates, who are convinced that trading will always produce cleaner, and not just cheaper, results. Yet achievement of these worthy goals turns out to be far easier said than done.

In order to verify the absence of harm we must understand—and continue to monitor—the conditions of the ambient environment that will be affected by trading. To prevent sham trading, we must also have a reliable method for counting—and continuing to track—the emissions or discharges produced by covered sources. If we cannot gauge the impact of trading through both of these methods, the system flies blind and is likely not only to make things worse from an environmental perspective but to award an unjustifiable windfall to at least one party in the trade. Unfortunately, in most situations, we lack either requisite. When federal and state regulators adopt trading regimes in the face of such ignorance, they run the risk not only that trading will fail, but that it will cause worsening environmental degradation.

For some sense of the deficit we face with respect to information about the condition of the ambient environment, consider EPA's 1998 *Report to Congress* entitled *The Quality of Our Nation's Waters* reporting that states, territories, tribes, and interstate commissions have assessed only 23% of the nation's 3.6 million miles of rivers and streams, rating 55% "good," 10% "good but threatened"; and 35% "impaired."⁴¹ States and other jurisdictions assessed only 42% of the nation's 41.6 million acres of lakes, reservoirs, and ponds, reporting that 46% are rated "good"; 9% "good but threatened"; and 45% "impaired."⁴² According to the Agency, the scope of monitoring had increased only "slightly" since the previous 1996 report.⁴³

Equally as discouraging, the U.S. General Accounting Office (GAO) studied state sampling programs and discovered that such programs fail to follow consistent procedures that would make sampling statistically valid.⁴⁴ In other words, states and other local authorities assess a minority of water bodies without giving us any reason for confidence that the sampling accurately reflects the existing conditions of those bodies of water, much less the large majority that are never assessed.

The status of air quality monitoring is better, at least with respect to the six "criteria" pollutants covered by NAAQS, which are monitored to ascertain whether areas are "attainment" or "nonattainment" under the CAA.⁴⁵ But the regulation of toxic emissions only began in earnest in 1990, and we have many years to go before we can claim any real progress in characterizing ambient conditions with respect to those pollutants.

As for the thorny problem of counting emissions or discharges accurately, the acid rain program represents one end of the spectrum of such methodologies, and the prospect of trading allowances for nonpoint sources of water discharges represents the other. Acid rain "counting" is based on a relatively simple and relatively reliable methodology that calculates SO₂ emissions on the basis of the sulfur content of the fuel and the temperature at which it is burned. Those figures can be confirmed by continuous emissions monitoring that is required for most power plants.

In contrast, counting the amount of the varied pollutants that are washed into nearby surface water when rain washes over a parking lot, pesticide-laden field, or lagoon storing animal waste is, as yet, both complex and difficult. Counting methodologies in this arena are sufficiently unreliable that some have argued for the imposition of "trading ratios" that would award fewer allowances for unreliable reductions. Thus, nonpoint sources claiming to reduce runoff by using buffer zones, for example, would receive only one-half as many allowances to trade as publicly owned treatment works employing tried and true treatment technologies.⁴⁶

The difficulty and expense of improving the monitoring of ambient environmental conditions and developing adequate methodologies for quantifying emissions or discharges cannot be underestimated. The quality of these particular data sets must be a threshold and preeminent concern for regulators, industry, and public interest representatives.

Who should pay to improve such information is another crucial question. The approach that seems the fairest, and is also the one most likely to produce results, is to impose these costs on those who will benefit from the adoption of a trading scheme. Whether through fees paid to the government to support research and monitoring, or through requirements that individual sources enhance their own monitoring, development of data to ensure the efficacy of the system must be a condition precedent.

A do-no-harm rule is indispensable when trading *supplants* existing, more traditional regulation. Obviously, we would not want to take one step forward for the sake of reducing compliance costs, only to take two steps back in achieving environmental quality.

[32 ELR 11429]

A do-no-harm rule is also important where trading is used to *supplement* the reductions achieved by an underlying regulatory scheme that continues to apply to individual sources because trading can produce local hot spots. Even though the existing scheme is based on compliance with so-called health-based standards, or standards that define levels of pollution that are safe, evaluations of compliance with those requirements too often occur with respect to a larger area than the local neighborhoods afflicted by hot spots.

As for situations where trading is used to make the first reductions of previously unregulated emissions or discharges, the do-no-harm principle should set up a direct comparison between what we would expect to achieve through traditional regulation and what advantages trading promises in our pollution reduction efforts.

Continuous Improvement: Setting the Cap

Open market or "cap-less" trading, by definition, does not allow continuous improvement of the environment, as anticipated by all the major environmental statutes, until and unless regulators modify the individual permit limits upon which such systems rely.⁴⁷ Consequently, such systems are no more than a convenience for regulated entities. While it is conceivable that trading without caps—known as "open market" systems—could be designed with sufficient safe-guards to avoid sham trading and prevent the formation of hot spots, progressives believe that the resources required to avoid such risks proposals are not worth spending, especially in comparison to the resources required to take advantage of other opportunities for environmental improvement through more tightly controlled trading regimes. This position is unlikely to change unless industry proponents of such approaches volunteer to assume all the expenses of operating a reliable trading regime that does no harm to the environment, and has some mechanism for lowering

emissions gradually.

Fortunately, trading programs that incorporate declining caps are far more prevalent than open market proposals. The task of setting the initial and declining levels of applicable caps becomes relatively straightforward assuming that we have a reliable count of existing emissions and discharges or sufficient monitoring to characterize ambient environmental conditions. If we are lucky enough to have in place a comprehensive regulatory regime—especially one based on health-based standards—establishing such levels becomes even easier.

In the end, all such decisions are likely to evolve into subjective policy judgments, mixed with a heavy dose of politics, rather than a conclusion based on definitive science. Presumably, if we had definitive science, we would already have used it to impose health-based standards, a situation that is rare, as discussed above. But acknowledging the subjectivity of such judgments should not lessen their importance. Ultimately, they depend on the answers to three questions. First, what are our goals for improving environmental quality and how low must we set the cap to meet them, both initially and over time, since we should have as an ultimate value continuous environmental improvement? Second, how many reductions can we achieve without imposing a ruinous compliance burden on important industries? Third, what initial levels and rates of decline will create sufficient scarcity to enable the market to operate? Progressives would push the envelope toward lower numbers from all three vantage points.

Needless to say, the process of answering the three questions can provoke intense confrontations. To cite the most prominent example of the day, the clash between environmentalists and their allies in Congress over President Bush's "Clear Skies" initiative boils down to a tense disagreement over the appropriate level of the caps needed to address climate change, as well as whether to include carbon dioxide in the universe of pollutants addressed by a new system.⁴⁸ However vicious, such disputes are preferable to other arguments over trading design because they are more transparent, and therefore understandable, to policymakers and the public. More esoteric issues, such as the formation of hot spots and the danger of sham trading, are more difficult to document and to understand.

Before leaving the subject of setting a trading system's overall caps, we should consider the issue of whether trading needs to deliver results that are superior to traditional regulation, as consistently urged by the environmental community. Environmentalists take this position for two related reasons. The conservative assault on environmental regulation that reached great intensity after Republicans achieved control of the House of Representatives in 1994 has left the public interest community little choice but to establish a defensive perimeter around traditional regulatory programs. Conservatives appear so relentless that environmentalists believe they cannot acknowledge the flaws in traditional regulation without creating gaping holes in that perimeter. Because they still have considerable power to stop affirmative conservative initiatives, environmental groups have little incentive to give away something for nothing, which is how they perceive the substitution of "flexible" trading schemes for traditional regulation.

In the last two or three years, it has become clear that there is a fundamental problem with this reasoning. Conservatives are no longer trying to overcome the environmentalists' defenses, but rather have begun to walk around them, heading right for the state agencies that dominate the implementation of environmental laws. By resisting trading systems as the tool of the devil, as opposed to a regulatory approach that can either be effective or subverted depending on their structure and ground rules, environmentalists may do a better job of side-lining themselves than their opponents could ever hope to achieve.

Further, unnecessary compliance costs presumably are a problem for the entire economy, hurting consumers as well as captains of industry. Environmentalists who go to extremes in dismissing society's interest in minimizing such costs play into the hands of those who seek to discredit them as a marginal, anti-corporate elite.

From a purely pragmatic perspective, the resources that public interest representatives must commit to working through the issues raised by trading schemes are greater than [\[32 ELR 11430\]](#) the resources they must commit to participation in more familiar, traditional regulatory processes. Further, regulators must commit significant resources to developing and policing the system. Both may well need the incentive of superior performance to undertake the negotiations that produce a trading scheme.

Preventing Hot Spots

Under normal conditions, pollution is distributed over a broad geographical area based on admittedly erratic and environmentally insensitive land use decisions. Trading redistributes pollution and, if trading systems are poorly designed, can do so on a grand scale. This phenomenon, sometimes referred to as "localized concentrations of emissions" in the sanitized language preferred by trading advocates, is a central problem with trading from a progressive perspective.

The academic literature on environmental justice has sponsored a vigorous debate between those who believe stationary sources gravitate to certain urban and rural neighborhoods because people of color live there and those who insist that the migration itself begins as a racially neutral decision, but that these undesirable facilities run down the neighborhoods, making them magnets for low income people who are disproportionately people of color.⁴⁹ Whichever version of this "chicken versus egg" story one finds more credible, the irrefutable fact remains that industrial facilities are overwhelmingly located in places inhabited by people who cannot afford to move to cleaner surroundings. Allowing these sources to purchase allowances in a market-based system in order to avoid the cost of retrofitting their plants with pollution control devices will cause spikes in the levels of pollution in the vicinity of the plant. The neighborhoods affected by those spikes typically contain a disproportionate number of people who cannot afford health care or the best diets, compounding the adverse health effects caused by such pollution. This unacceptable outcome has already occurred during California's noteworthy experiments with trading,⁵⁰ and is bound to recur given EPA's phlegmatic approach to the issue and the states' apparent inability to come to grips with it.

When considered in this context, the provocative declaration that a clean environment is a luxury good affordable only by the wealthy⁵¹ takes on a sinister tone, and trading assumes the identity of an efficient vehicle for redistributing pollution loading on the grounds of race, ethnicity, and class. The exacerbation of environmental injustice need not be deliberate, or even understood by trading advocates. It is enough that they do not acknowledge the possibility that hot spots will form as a crucial, threshold problem that must be addressed when trading schemes are designed.

The easiest and most direct way to reduce, and even eliminate, hot spot problems is to limit trading to pollutants that do not pose an acute or chronic risk to public health. Barring trading of toxics, as defined either by law or common sense, means excluding large and powerful point sources from such regimes. Discretion in this case may well be the better part of valor, however, given the arduous efforts that must be made to prevent hot spots when trading encompasses such sources.

To the extent that trading schemes include pollutants that cause chronic adverse health effects, the progressive agenda for market-based remedies would require analysis of the demographics of the trading "zone" during the first phase of designing the system. The zone should include the entire area where allowances are to be used. Once such problematic areas are identified, a range of solutions are available to prevent the formation of hot spots.

Trading schemes that allow trading of toxics must also employ comprehensive *ambient* monitoring to ensure that pollution is not pooling around specific facilities located near population centers, especially where there is no underlying health-based standard that is incorporated in a site-specific permit that remains in effect. If monitoring detects a problem, regulators must have authority to stop trading immediately until the hot spot is eliminated. Continuous monitoring is especially important in situations where emissions involve persistent substances, e.g., lead, mercury, dioxin, and sources are capable of producing short-term spikes that have lasting consequences.

Trading schemes that are susceptible to hot spot formation should sharply limit the periods during which sources can "bank" allowances for sale or use in subsequent years. Banking produces unpredictable levels of pollution unless the system also imposes elaborate controls on who may bank what, when.

Sanctioning "cross-pollutant" and "cross-media" trades, as was done in the context of the Clinton Administration's Project XL (for "eXcellence in Leadership"), also has potential to cause and exacerbate hot spot problems. "Cross-pollutant" trading involves exchanges of allowances covering chemicals within broad categories, e.g., one ton of one type of volatile organic compound (VOC) for one ton of another type of VOC. Cross-media trades involve exchanges of air emission allowances for water discharge allowances. These expansions of traditional trading can result in exchanges of markedly more benign chemicals for their far more toxic cousins, as well as the substitution of poorly characterized pollution in one medium for pollution in another medium whose potential adverse effects are better understood. Cross-pollutant and cross-media exchanges should not be included in a trading program involving toxics, unless there is definitive evidence that the exchanges are neutral in terms of adverse environmental and public health impacts.

If trading is permitted with respect to toxic pollutants within areas designated as communities at risk, even if monitoring is also employed to determine whether hot spots have formed, regulators should adopt an offset policy that would create reductions to serve as a kind of safety net for unanticipated hot spot formation, or hot spot formation that cannot be remedied immediately. This concept is analogous to the idea of establishing ratios for trades involving allowances that are counted with less-than-ideal methodologies. For example, as mentioned earlier, environmentalists have suggested requiring twice as many allowances to cover trades involving runoff from nonpoint sources because it is so difficult to be sure that claimed reductions have actually occurred. Obviously, ratios must be high enough to have the [\[32 ELR 11431\]](#) desired result, and should not be employed as a form of window dressing for clearly dubious trading schemes.

Preventing Waste, Fraud, and Abuse

As explained earlier, inspectors assigned to verify compliance with the California Rule 1610 trading program discovered that "licensed car scrappers" had sold old, polluting car engines for re-use, rather than taking them off the road and eliminating their emissions.⁵² This type of fraud is obvious, and arguably should have been anticipated by those who designed the program. It is also the kind of abuse that requires significant resources to detect and eliminate.

More subtle, even more problematic, examples of sham trading involve mistaken or deliberately falsified counting of allowances that remain undetected by the system. These miscounts could occur as a result of flawed methodologies for quantifying the emission or discharge reductions achieved by certain pollution controls. Or they could result from deliberate or inadvertent distortion of baseline allocations. If allowances are worth significant sums of money—and this outcome, after all, is an indispensable foundation of trading schemes, failure to verify allocations and track trades not only discredits trading but directly rewards those guilty of the fraud. The importance of an enforcement component is rarely mentioned by trading advocates who are prone to exaggerated claims that trading has very low costs for the government.⁵³

Because big money is at stake in the choice of a baseline, the struggle over the selection of appropriate ground rules can set up virulent competitive tensions among industrial sectors that magnify the incentives to cheat the systems. In addition to enforcement, solutions to this dilemma might include: (1) giving facilities an opportunity to apply for a different baseline rate periodically, beginning only *after* a cap-and-trade system is adopted; (2) setting a slower decline in the allocations that are awarded to deeply cyclical industries; or (3) awarding additional credits that are offset by steeper declines in the out-years.

Bunk Science

As the debate over trading indicates, among the most important themes dividing progressives and conservatives is whether we have enough information to make decisions, what we should do when we do not have information, and who should have the burden of generating it. Despite the overriding importance of the information question to both ends of the political spectrum, anyone seeking pristine consistency in the ebbs and flows of this debate is likely to search in vain. Thus, in the context of emissions trading, progressives insist on waiting for better information, including monitoring to detect hot spots and reliable methodologies for counting and tracking emissions or discharges. Conservatives insist that trading can and should proceed without such data. On the other hand, on issues like the appropriate levels for ambient air quality standards, conservatives resist taking action until "sound science" is developed, a term that typically means something pretty close to scientific certainty, while progressives accept uncertainty as a fact of life and advocate application of the precautionary principle to prompt regulatory action.

Are there principles that underlie what seem like positions crafted to use the ends to justify the means? Or is dearth of information invoked opportunistically to justify whatever outcome either side desires?

Industry Capture

Within the arena of health and safety regulation in general, and EPA in particular, progressives view scientific information as a commodity controlled primarily by those who produce, use, or manage chemicals and other potentially hazardous substances. Clearly, the law—in either its regulatory or civil liability formats—has failed to give the private sector adequate incentives to generate even basic information about the risks posed by its products. The gaps in our basic knowledge about the toxicological effects of common chemicals are shocking. In the context of this almost unimaginable ignorance, and the completely inadequate efforts to address the gaps in our knowledge, demands by industry and others that regulatory action stop until scientific certainty is achieved sounds like a recipe for interminable gridlock in the absence of a large influx of government money for scientific research, a development that is highly unlikely to occur.

For example, in a report covering 2,863 organic chemicals produced or imported in amount above one million pounds annually, EPA concluded that there is no toxicity information available for 43% of such chemicals and that a full set of basic toxicity information is available for only 7%.⁵⁴ The American Chemistry Council (ACC) finds this situation sufficiently troubling that it volunteered in 1999 to conduct tests of some of those chemicals. The total budget for this testing program is \$ 67 million, with annual spending reaching a peak of \$ 25 million.⁵⁵ To put that commitment in perspective, however, it is worth noting that in June 2002, the ACC announced that it had decided to launch a new advertising campaign to improve the public image of the chemical industry. The price tag of that effort will reach \$ 50 million during the peak year of the campaign, and a total of \$ 86 million will be spent overall.⁵⁶

Meanwhile, there is little compelling evidence that the problem with EPA science is that it is developed by misguided and incompetent bureaucrats who are not only independent from but oblivious to regulated entities, as implied by the conservative allegation that EPA does not use [\[32 ELR 11432\]](#) "sound" science.⁵⁷ Industry may believe that EPA acts without enough information, but industry has strong, even overwhelming, influence over what information is available, as well as the Agency's scientific processes for considering it.

As documented in a piece written by Linda Greer and I and published by the *Environmental Law Reporter's (ELR's)* sister journal, *Environmental Forum*, industry scientists and technical experts are powerful enough to have achieved the following in just the last couple of years: (1) persuaded EPA to downgrade the toxicity of the notorious chemical vinyl chloride by twentyfold; (2) stifled the release of a 10-year study showing that dioxin is even more dangerous to public health than originally thought; and (3) until pre-September 11 media exposes inspired a change of course, successfully badgered EPA Administrator Christine Todd Whitman to withhold a rule toughening standards for arsenic in drinking water despite extraordinarily persuasive scientific evidence that existing, 50-year-old standards were far too weak.⁵⁸ In a similar vein, the GAO concluded in June 2001 that the Science Advisory Board (SAB) routinely neglected to obtain information from candidates for peer review panels that would enable screening for conflicts of interest and bias.⁵⁹ As just one example of the implications of this negligence, GAO found that two of the panelists who participated in a decision *not* to upgrade butadiene to a "known" human carcinogen in fact owned stock in companies that marketed the chemical.⁶⁰

Putting aside for the moment how much information is enough to trigger action, these outcomes are possible because the Agency's process for considering science generated by the private sector (or anyone else for that matter) is not sufficiently transparent; peer review by its SAB is frequently biased; and it staggers under its workload to such a great extent that it feels it has no choice but to contract with industry-sponsored scientific outfits to get fundamental work done. In sum, while the problem may well be science that is unsound, the solution cannot be to generate more unsound science, a result that is inevitable without procedural reforms.

Transparency

To restore its credibility, EPA must adopt a threshold rule that it will not, under any circumstances, rely upon studies or other scientific information when the sponsor of the study refuses to turn over all of the underlying data justifying the conclusions the study has reached, except when confidentiality of portions of the data is necessary to protect the privacy of individual participants in the study. This principle is so basic to both law and science that it would be remarkable if anyone had the temerity to challenge it. Consider the tremendous weight of the administrative law precedents requiring disclosure on the record of all information used by agencies or departments in order to guarantee final agency decisions that are both fair and wise. And then consider the fundamental scientific principle that the methodology and data generated by experiments must be disclosed so that other scientists can try to replicate the work. To argue otherwise is to suggest that EPA should delegate its authority to review data to sponsors of the study, an outcome that should be unacceptable no matter what the sponsor's identity.

Bias

Transparency in the consideration of outside studies will go a long way toward stabilizing EPA science, but must be accompanied by fundamental changes in the methods for accomplishing peer review by the SAB. Two distinct problems are manifest here—conflict of interest and bias. Often, these discrete issues are lumped together, confusing the discussion and making it easier to reach "quick fix" solutions that do not get to the heart of the threat to objective and incisive peer review.

Conflict of interest is a relatively small subset of bias, and generally much easier to resolve. A conflict arises when there is a possibility that a participant in a peer review panel will achieve personal, financial benefit as a direct result of a pending decision by, for example, holding stock in a company that manufactures the chemical under scrutiny, as opposed to merely working for the company that might benefit as an institution as a result of the decision. Conflicts of interest should disqualify scientists from serving on panels in all but extremely unusual circumstances, such as the inability to find anyone else with comparable expertise. Even then, the conflict should be waived only in a separate, thorough process to determine that the waiver is absolutely necessary. Once again, it is difficult to imagine anyone disagreeing with this straightforward rule, which is similar to the rules we apply to judges and other officials responsible for making important decisions.

Despite its importance and obvious application, the SAB has had difficulty executing conflict of interest rules, although its problems in this area are probably more attributable to negligence than any confusion about the rule's content. Hopefully, it will not risk another embarrassing report from the GAO or another auditor and will not only collect, but also study, routine financial disclosure forms before panelists are appointed.

In comparison, defining bias is a far more challenging task. By bias, I mean possessing a strong opinion about the nature and scope of a problem under study. Most scientists are biased or, to put the problem another way, scientists who are absolutely neutral in the area of their expertise are either inexperienced or very difficult to find. In fact, by definition, if one gathers a group of well-known and well-informed scientific experts together, one should expect a heated exchange of very strong views. Being biased does not necessarily mean one is closed-minded, nor does it necessarily mean that one will refuse to modulate one's views. At its best, peer review should involve convening a lively group of well-informed and opinionated people and having them quarrel with each other until they manage to develop a middle ground with respect to the question they have been asked to address. Even if no consensus forms, the statement of their common views, as well as their divergent opinions, [32 ELR 11433] would be useful to decisionmakers. The indispensable cornerstone of this process is to ensure that a full range of opinions are offered. Without balance, the entire process not only lacks the appearance of being credible, but is unlikely to be an effective search for the best scientific result.

Achieving genuine balance requires more than simply adding a token scientist from a national environmental organization to a panel, setting up a situation in which the person must endure relentless pressure to drop valid objections from her industry-oriented colleagues. Rather, balance must mean adequate representation of a wide range of views, with no single block of experts having the capacity to impose its will on the others.

Bias in SAB peer review arises from four circumstances. First, industry scientists do not acknowledge that bias is a problem for peer review, reacting with rote sensitivity to the charge that they have captured the scientific process at EPA and that its scientific output is therefore suspect. Each time the issue of bias is raised, industry representatives on the SAB insist that just because a scientist earns her living working for a company or trade association does not mean she is a bad scientist. I would be the first to concede that this statement may be true, depending on the qualifications and skills of any given, individual scientist. It is also besides the point. Presumably, scientists who work for chemical manufacturers are going to have bias that is consistent with their employers' central mission—whether that be to develop new chemicals or advocate on behalf of a given product's safety and efficacy. Qualified industry scientists, with those biases, should sit on peer review panels but their views must be balanced by people of other perspectives.

In fact, if industry scientists are right that affiliation or employment does not produce bias, and that people can be perfectly credible experts entrusted with making balanced judgments regardless of such connections, there would be no problem in delegating peer review to panels comprised entirely of scientists employed by environmental organizations. Since it is difficult to imagine any industry group accepting such an outcome, it is past time for industry to reconsider its efforts to obfuscate the debate over bias—and balance—in peer review.

Second, until recently, EPA staff supporting the work of the SAB did not investigate prospective members of review panels to discover information that might demonstrate the content of their bias, and therefore were not in the position to balance panels with members of opposing points of view.⁶¹ Such groundwork is especially necessary in the case of people who list academic affiliations. The vast majority of academic scientists must obtain grants to support their work, and knowing who the grantors are and what inquiries they are funding is essential in evaluating bias.

Third, compounding these errors, the SAB has refused to require the disclosure of information about panel members' biases to the public, eliminating a form of accountability that is crucial in keeping the system honest. At times, EPA staff have cited the federal Privacy Act, which admittedly bars the government from releasing information contained in certain individual disclosure forms without obtaining the applicant's consent.⁶² This rationale is inappropriate, however, because EPA could simply condition service on a peer review panel on the candidate's consent to the disclosure. If the Agency distinguished appropriately between bias and conflict of interest, it could maintain the confidentiality of personal financial information but disclose professional affiliations, including privately sponsored research that should be a matter of public record. In fact, confusing the two may be a convenient way for some SAB members to avoid the explicit consideration of bias, using the Privacy Act as an excuse.

Fourth, EPA staff and members of the SAB have failed to recruit prospective panel members who do not have an industry bias. As mentioned earlier, people serve on the SAB for honor, not money, unless the time they spend is part of the job description crafted by their employers. At the moment, honor is compromised given the bad press the SAB has received as a result of the GAO report. Anecdotal evidence suggests that independent academics who do not receive funding from industry are persuaded to serve on the SAB once, but are extremely reluctant to repeat the experience, finding that their views are given short shrift in an ad hoc and chaotic process dominated by panel chairs with industry-oriented biases.⁶³ Clearly, the SAB must clean house procedurally as a component of making service on its panels more attractive.

Workload

Last but not least, there is the problem of workload. Embarrassed by the slow pace of its review of toxicological profiles generated under the EPA Integrated Risk Information System (IRIS), EPA has crossed another line—between the nuances of detecting and balancing bias to tolerating outright capture of its basic functions. These assessments are used to formulate environmental policy nationally and internationally because they summarize available information on a chemical's toxicity. The assessments proceed in four stages: (1) compiling toxicological and epidemiological studies; (2) analyzing the studies in order to identify adverse health effects and estimate unsafe exposure levels; (3) setting quantitative "potency factors" that indicate the degree the chemical's toxicity and crafting a statement describing the scientific "consensus" that justifies the numbers; and (4) subjecting the draft assessment to peer review.

In recent years, EPA has entered into agreements with industry groups to conduct these reviews and submit draft reports—stages one through three of the process. Although EPA also accepts other information as part of a general request for data, industry-funded scientists hold the pen right up until peer review.⁶⁴ For instance, a Chemical Manufacturers Association (CMA) (since renamed the ACC) committee oversaw and paid for the toxicological reviews for vinyl chloride and ethylene oxide and the Styrene Information and Research Center did the same for styrene.⁶⁵ In the review of ethylene oxide, EPA proposed the creation of a "joint steering committee" composed of EPA personnel [[32 ELR 11434](#)] and members of CMA's Ethylene Oxide Industry Council to oversee the toxicological review that CMA proposed to fund.

These kinds of arrangements go far beyond insensitivity to bias, and cannot help but create the impression that the capture of EPA science is complete. It is worth noting that a dozen internationally renowned medical journals recently issued a series of policies designed to forestall exactly this kind of capture and undisclosed bias with respect to the articles they publish. This development, when compared to EPA's tepid and ineffectual efforts to deal with the bias issue, demonstrates how far EPA has strayed from the mainstream ethics of the larger scientific community.

Burden Shifting and the Precautionary Principle

To return to the question posed at the outset of this analysis, is it possible to find a principled rationale for the apparently inconsistent positions espoused by progressives and conservatives on how the government should react to situations where it lacks reliable information? However unsatisfying, this fault line is grounded in the harm that each end of the political spectrum believes will flow from acting or failing to act. Progressives believe that potentially harmful action should not proceed without adequate information, but that action that may protect public health and the environment must proceed despite imperfect information. Conservatives believe that economically productive action should be allowed to proceed in the absence of adequate information proving harm is likely to result.

Some of the information at stake is attainable immediately, but would require a significant investment of resources. For example, we can test chemicals to discover their toxicity. We do not have the results of such testing because government research has been defunded to an alarming degree and industry lacks adequate incentives to build the case against its own products.

Remedies such as California's Proposition 65 seek to resolve this dilemma by reversing the burden of producing information.⁶⁶ That program, which progressives regard as highly successful, presented an ultimatum to manufacturers of potentially toxic products: attach a warning label or disprove the chemical's toxicity. The progressive agenda for environmental reform would adopt this approach wherever we *could* know more about chemicals if only we did more testing.

Not all information is immediately knowable, however, even given a larger influx of resources. Scientists have tried to understand the biological mechanisms that cause cancer for decades, and have yet to eke out the truth. The sciences that inform environmental decisionmaking are also complex and unresolved. To list just a few examples, we do not know enough about: (1) the fate and transport of chemicals through the environment; (2) the adverse health and environmental effects produced by synergistic interactions between common pollutants; or (3) how cumulative exposures affect living organisms. These questions may be answerable at some point, but depend on the resolution of larger scientific questions that are likely to take many years to achieve.

Because virtually any specific regulatory decision depends on a complex brew of the known, the knowable, and the unknowable, progressives believe that, at bottom, choices must be informed by science but ultimately made on the basis of policy judgments. Those judgments should give great weight to the possibility that if we do not act, irrevocable harm may occur and that our short-term economic interests are likely to conflict with our long-term obligations to preserve natural resources for future generations. We must honor those longer term obligations, which provide a compelling rationale for precaution over risking harm.

From this perspective, it is as impossible to give a non-contextual answer to the question "how much information is enough?" as it is to reduce choices to objective, scientific bottom lines. Decisions that apply precaution must be made with respect to specific bodies of

information, by technical experts who are informed by democratically enacted laws, preferably under the watchful eye of well-informed representatives of *all* the affected constituencies, including the public at large. What makes the current situation so dangerous from a progressive point of view is that this system of checks and balances has broken down in many respects. The statutes are ignored without being amended; decisions made on the basis of flawed and imperfect information are characterized as objective products of scientific truth; and the process for conferring that facade of precision and certainty is opaque precisely because it would not survive public scrutiny if its substantive content were explained more clearly.

To put the matter, once again, in crass political terms, it is one thing for conservatives to argue that they won the White House and are not about to break stride in implementing their view of the world. It is quite another for the system to be changed in the name of objective science, out of the public view. President Bush will face the voters regarding his decision to walk away from the Kyoto Treaty.⁶⁷ But the reforms accomplished by OIRA chief John Graham have yet to reach the light of day. The first area of those reforms—safeguarding the "quality" of data used in regulatory decisions—advances the mistaken impression that the conservative agenda is about nothing more than ensuring objective decisionmaking, while the second area—drastically expanded cost/benefit analysis—seeks to reduce controversial and unpopular policy judgments to misleadingly irrefutable numerical calculations.

Data Quality

The Data Quality Act exemplifies potentially radical policy change made out of public view. Beginning from the non-controversial premises that government should not disseminate information that is unreliable and, conversely, should only use reliable data when making important decisions, the statute was enacted as a brief amendment to a piece of appropriations legislation and appears merely hortatory on its face.⁶⁸ It does not specify what agencies must do to implement this vague guidance and it omits the judicial review provisions contained in other pieces of legislation [[32 ELR 11435](#)] that were enacted to advance similar, "good government" principles.⁶⁹

Undaunted by these statutory shortcomings, industry lobbyists, led by the Center for Regulatory Effectiveness, have since explained to anyone who will listen that, in fact, Congress intended the Act's sparse language to provoke a revolution in how decisions get made, forcing agencies and departments into court at any stage in the rulemaking process if potentially affected entities believe unreliable information has come into play.⁷⁰ One way to view such litigation is as an enforcement program for the conservative position that action must not proceed until harm is documented with scientific certainty.

It is mildly amusing to imagine how the proverbial men and women in the black robes are likely to react when confronted with a series of lawsuits arguing in the most arcane terms over the soundness of various pieces of highly technical information. One early indication is the U.S. Court of Appeals for the District of Columbia Circuit's opinion in *Tozzi v. U.S. Department of Health & Human Services*,⁷¹ in which Judge David Tatel, writing for a panel that included Judges Stephen F. Williams and Lawrence H. Silberman, refused to second-guess a decision by the National Toxicology Program to upgrade the toxicity rating of dioxin from a "reasonably anticipated" to a "known" human carcinogen. The Center for Regulatory Effectiveness was the plaintiff in that case but, with apparently senseless cheerfulness, it claims to have snatched victory from the jaws of defeat because it at least persuaded the court to consider its case, supposedly forging a path for similar litigation.⁷²

Unfortunately, it may not matter in the long run whether judges refuse to second-guess agencies on information policy if the agencies think that judges might do so and engage in preemptive self-censorship. The danger posed by the Data Quality Act is that agencies will become even more timid and rulemaking even more congealed, exacerbating the deep-seated problem that the statutes mandate action but the bureaucracy finds itself unable to act.

As this Article goes to press, the OMB is reviewing the guidelines published by relevant federal agencies and departments to determine their consistency with the OMB's own interpretation of the Act. The OMB has not taken an official position on the judicial review question, although Graham has opined that he thinks it inevitable that the courts will get into the business of policing data disputes.⁷³ The OMB's tacit endorsement of this interpretation of the Act, partnered with its failure to advise agencies that they should not overreact to the litigation threat, will probably fuel some agency overreactions, although, as previous administrations have learned, it is very difficult to force a diverse bureaucracy to march in lockstep toward a goal that would undercut its core mission so fundamentally.

As the battle lines are drawn, progressives are likely to have two strategic reactions to the Act. First, we will argue in all appropriate fora that this relatively benign congressional enactment cannot possibly be read in the extreme way advocated by conservatives. Second, if and when industry information cases proceed to court, we will search for our own challenges to decisions that are based on bad data generated by regulated industries, demonstrating the "double-edged sword" created by the Act.

Future wars over data quality will waste considerable time and money and slow regulatory action, perhaps to a standstill in some agencies. But they are unlikely to disturb the equilibrium we face in the larger arena of environmental policymaking. Regardless of such disputes, Congress will remain gridlocked, refusing to tamper with laws written in an era when public outrage over the poor condition of the environment was palpable for fear of re-awakening the voters' anxiety and sense of vengeance.

The same cannot be said about the next and last topic on both the conservative and progressive agendas, which seeks to change the fundamental premises upon which decisions are based, rendering many statutory mandates dead letters over the short term.

Monetizing Regulatory Benefits and the Quality of Human Life

The final step in the effort to disguise controversial policy judgments as objective, scientifically determined outcomes is the rampant spread of cost/benefit analysis. The OMB has announced that regardless of the content of statutory mandates, such analyses must accompany major rules.⁷⁴ Combined with other OMB policies—for example, the reinstatement and repeated use of the "return letter" for regulations it does not like⁷⁵ and the open invitation asking the private sector to nominate existing regulations for reevaluation⁷⁶—the expanding influence of cost/benefit analyses has reinstated the domination of health and safety regulatory policy by conservative economic assumptions without [\[32 ELR 11436\]](#) the balance that an activist Congress contributed in the Reagan years.

Contrary to what many conservatives believe, progressives do not object to this state of affairs because we believe costs are irrelevant to regulatory decisions but are too embarrassed to confess to our extreme and dogmatic views. We accept that costs must be a major factor, both because we are realists and because we have faith in the use of government resources for other pressing needs on the domestic agenda, from rehabilitation of inner cities to the extension of Medicaid coverage to millions of uninsured children.⁷⁷

Rather, what deeply troubles us is the notion that instead of a complex weighing of a variety of factors in an extended, at times messy, hopefully transparent, and always pluralistic decisionmaking process, we end up with a pseudo-precise monetization not just of costs, but also of benefits. The irresistible upshot of this sanitized analysis is that one set of unreliable numbers is offset against another, making the ultimate policy decision deceptively easy.

It is by now old news that progressives fear that the benefits of reducing pollution are understated, for the same reasons that we decry the data gaps that undermine our understanding of pollution's effects. If we do not know about the toxicity of the *majority* of chemicals circulated in high volumes in commerce, and we do not understand their cumulative and synergistic effects, how can we possibly reduce to a simple number the advantages of reducing the opportunities for exposure of people and the environment? We also believe that what scientific research does exist myopically focuses on cancer, and has yet to discover a wide range of equally devastating health effects, from neurotoxicity to mutagenicity to teratogenicity. Lastly, we are deeply concerned that chronic ailments that sharply diminish the quality of life—for example, the epidemic in asthma among certain populations⁷⁸—are grossly down-played in assessing benefits, and ignored in monetizing them. So, at the threshold, progressives oppose the way benefits are catalogued. When this incomplete catalogue is assigned a monetary value, our objections are amplified and compounded.

Apart from the complaint that benefits are omitted or understated, do we object to assigning a dollar value to human life? After all, many of us come from a legal tradition that accepts this approach as a necessary prerequisite to compensating people for injuries caused by another's negligence. How can we suddenly turn squeamish about saying that a life is worth \$ 6 million, or even \$ 500,000 or \$ 20 million, when we so readily accept that approach in the context of tort cases?

Tort damages are a relatively crude effort to achieve justice in the near term. They typically involve transfers of money between, at most, three generations of human beings. Without monetizing the value of life, the injured would probably receive less, and might well receive nothing. Accepting the concept in that limited context is very different from accepting its rigid application in the far larger and long-lived context of taking steps that affect the status of the natural world. For these reasons, progressives oppose assigning a specific dollar value to a human life when making such profound decisions because we believe that the very act of monetizing a short-term benefit by definition allows policymakers to avoid the long-term consequences of their decisions. Numbers must come into play, as a surrogate for the severity of the problem and the cost of the remedy, but they should never be assigned on a per capita basis.

Having staked out this moral high ground, however, progressives realize that, for the foreseeable future, monetization is here to stay. We will not get far refusing to engage on the issue, however repugnant we believe the practice is as a whole. Three aspects of monetization policy exemplify the reasons why we think the current OMB approach is so severely misguided: (1) the crippling flaws in the methodologies used for evaluating people's willingness-to-pay to avoid risks; (2) subsequent "discounting" of the aggregate value extrapolated from these garbled and unreliable willingness-to-pay figures; and (3) the recent effort to develop figures reflecting the

QALYs saved.

When economists monetize the value of a life in the context of health and safety regulation, they operate on an aggregate scale, dealing with a diverse population composed of people from all walks of life and economic circumstances. Therefore, they cannot hope to be as precise as a plaintiff's lawyer in an individual damage action, projecting what a specific person would have contributed to the world had she lived or remained uninjured. Instead, economists begin by quantifying how much people would be "willing to pay" to avoid a risk.

As documented by Profs. Lisa Heinzerling and Frank Ackerman, these figures are derived from studies that are ludicrously out-of-date, depend on distorted assumptions, and have little relevance to people's response to present environmental risks. Thus, for example, many willingness-to-pay studies involve how much extra workers were paid to do higher risk jobs—such as working with hazardous chemicals—20 years ago.⁷⁹ Economists assume that this "premium" reflects what people would ordinarily pay to avoid the risk of chemical exposure.

Let us put aside for the moment the flood of questions that this approach raises about the original studies (were the workers really aware of the risks? what were the risks? what other jobs were available with lower risk? did the workers know about those other jobs?). Even accepting that these 20-year-old numbers say something that is still valid about the way *able-bodied adults* view the world, would any rational person accept such a cold-blooded analytic approach to the evaluation of the value of the lives of his children? What about his grandchildren? From its inception, then, the initial valuation of life depends on the supposed free choice exercised many years ago by workers under many economic pressures, as opposed to what people who are thoroughly informed about costs and benefits (assuming that outcome was even possible to achieve) would react when asked how much should be spent to avoid risk to their children.

[32 ELR 11437]

Compounding the grossly erroneous "flat" value of life produced by these threshold assumptions, economists then apply a "discount rate" to determine how much it is worth to save the life, not now, but two or three decades in the future. The going rate is between 6% and 7%. Discounting is ostensibly necessary because people generally do not die right away as a result of environmental exposures, but rather contract long-latency diseases that take many years to manifest themselves. The question becomes how much one would have to invest today to arrive at the aggregate figure assigned to the value of life some 20 or 30 years hence? As one can intuit without doing the math, the numbers that result are sharply deflated. For example, using a discount rate of 5%, which is similar to the rate now used by the OMB, the death of one person today would be worth as much as the death of one billion people 500 years from today.⁸⁰

Progressives oppose this particular aspect of monetization policy because it rests on the erroneous assumption that from the moment of exposure, until the moment one discovers the disease, no harm occurs. Even assuming that the value of life can be quantified; we can assign a dollar value to what we should pay to avoid illness in the *current* population; and we are willing to ignore the effects of pollution on future generations, we disagree with the embedded assumption that nothing bad happens until the person learns she has cancer.

But we are not done yet. The final phase of monetization recently introduced by the economists at the OMB involves parsing the value of life even more finely, or—from a progressive perspective—in effect building a turret on a sand castle that reaches to the sky. Under this approach, rather than aggregate the value of life, economists examine on an *annual* basis whether various segments of the population have a quality of life worth saving. Under this QALYs approach, the annual existence of a bed-ridden grandmother would be worth significantly less than the value of a healthy young adult.

QALYs are justified as a crude method for enhancing the value of life when the harm is a long-latency disease. Or, in other words, exposing a grandmother to a toxic chemical is less upsetting than exposing a child because the grandmother has only a short time to live and probably is not enjoying life much anyway. To put it most charitably, having created the anomaly of ignoring the impact of pollution on future generations, conservative economists now attempt to dig themselves out of the hole by stacking an already loaded deck with modest special treatment for today's children.

I would be willing to bet that many of the people who read this analysis will not only have difficulty believing that my description of the state of affairs is accurate, but will be very surprised when they are persuaded that I am right. Of course, there is an extensive body of literature documenting everything I have said, and adding greatly to the elegance of the analysis.⁸¹ The real point is that these fevered calculations, the assumptions on which they are based, and the energy with which they are pursued are so obscure that even many of the relatively well-informed readers of a specialty journal like *ELR* cannot help but find them bizarre and alienating.

Prospects for Reform

Prof. Laurence Tribe of Harvard Law School is widely perceived as an intellectual icon of what I have dubbed the "progressive" school of thought. Ironically, to the immense frustration of those of us who share his larger views but have spent our professional lives focusing on environmental policy, he has appeared on the conservative side of at least two prominent environmental disputes recently, coauthoring a brief urging the U.S. Supreme Court to overturn EPA's ozone and particulate rules⁸² and appearing as counsel in a challenge to the constitutionality of Superfund.⁸³ In the Supreme Court case particularly, he argued that delegating broad rulemaking authority to the EPA bureaucracy was anti-democratic. His arguments fell on deaf ears across the spectrum of Justices, who issued a unanimous opinion dismissing those nondelegation doctrine arguments.

In an ostensibly different context, Professor Tribe has presented to us a lengthy retrospective on the trauma of the 2000 election, arguing, in essence, that the Court's interference in that situation reflected an elitist discomfort with the procedures used in a democracy to resolve such disputes.⁸⁴ His condemnation of the Court's majority was merciless, amounting to an accusation that it had undermined the fundamental tenets of the American system of government by interfering with the political process on the grounds that the Justices know what is best for the people and must save us from ourselves.

In essence, I have argued here that the same anti-democratic tendencies that Professor Tribe invokes in castigating the Supreme Court have emerged in the formulation of environmental policy under the Bush Administration. Rather than step into the political arena and have a fair and public fight, conservatives have decided that they too know what is best for the people and must save us from ourselves. If progressives are right, the implications of the growing "technocratization" of environmental policy reach far beyond the impact of any given decision, and could put us on a road that threatens democratic process itself.

However Professor Tribe rationalizes his own intervention in industry challenges to EPA's decisions on ozone and particulates, those decisions, as they evolved at the administrative level and in the courts, at least exemplify a public and therefore "fair" fight. Former EPA Administrator Carol Browner did not have the luxury of making those decisions in a public relations vacuum. Instead, she was assaulted in the media for proposing to deprive people of their backyard [32 ELR 11438] barbecues and worse.⁸⁵ Even assuming Administrator Whitman could muster the will to make a similar proposal, by the time it had emerged from arcane disputes over the soundness of the science that supported it, data quality, and whether its monetized benefits outweigh its costs, the public would be mystified at best about the decision's true implications.

History teaches us that however muddy the waters get, in the end the system returns to pluralism, whether in response to an immediate crisis, e.g., the Cuyahoga River on fire and the Enron et al. scandals, or the voters' intuitive sense that it is best to divide power between the parties. Genuine reform will be possible when that balance is restored, and it is no longer possible to hide the implications of complex policy changes from a distracted populace.

¹ In a development that made front-page news, the U.S. Senate voted, 54 to 46, to defeat an effort to allow drilling for oil in the Arctic National Wildlife Refuge. See Karen Hosler, *Senate Rejects Drilling in Refuge, Long, Heated Debate Pitted Need for Fuel Supply Versus Protection of Alaska Area*, BALT. SUN, Apr. 19, 2002, at 1A.

² For example, see the *Draft 2002 Watershed Trading Policy* issued by EPA's Office of Water, available at <http://www.epa.gov/owow/watershed/trading/trading.policy.html> (last visited on July 15, 2002). The Clean Water Act (CWA) does not recognize trading as a legal alternative to compliance by point sources with effluent discharge limits.

³ See, e.g., Rena I. Steinzor, *Devolution and the Public Health*, 24 HARV. ENVTL. L. REV. 351 (2000); Rena I. Steinzor, *EPA and Its Sisters at 30: Devolution, Revolution, or Reform?*, 31 ELR 11068 (Sept. 2001) [hereinafter *EPA and the States at 30*].

⁴ There are already signs that this approval rating does not extend to domestic controversies and may not be as lasting as some hope. See, e.g., David L. Greene, *President Warns Firms Against and Goes on Defensive About His Past; Seen as Potential Election Issue*, BALT. SUN, July 14, 2002, at 1A.

⁵ Just a few recent examples of polling results indicating unwavering public support for environmental protection, even if it costs more, include: Pamela Najor, *Energy, Senate Proposal to Combat Crisis Finds Compromise on GOP, Democratic Interests*, 32 Env't Rep. (BNA) 874 (May 4, 2001) (reporting that the Sierra Club and the Melman Group had released a public opinion poll on April 26, 2002, finding that "by a 2 to 1 margin Americans prefer to solve our energy shortages by reducing demand rather than increasing supply"); Steve Cook, *General Policy, Groups Launch TV Ad Campaign Against Bush Environmental Policies*, 32 Env't Rep. (BNA)

768 (Apr. 20, 2001) (reporting that a CBS survey of 660 adults, with a margin of error of 4%, found that "Americans, by a 59% to 29% margin oppose [President] Bush's decision not to seek carbon dioxide emissions reductions from power plants," although a second poll conducted by Gallup found that only 34% of respondents thought President Bush would weaken environmental protection. The Gallup poll, which involved 1,025 adults and has a 3% margin of error, also found that "81 percent support setting high emissions standards on industry" and "79 percent support strong enforcement of federal environmental regulations"); Pamela Najor, *General Policy, Coalition Blasts Nomination of Norton, Warns Senate of Danger to Public Lands*, 32 Env't Rep. (BNA) 137 (Jan. 19, 2001) (reporting that a poll by bipartisan polling firms conducted shortly after the 2000 national elections found that "71 percent of voters said that issues involving clean air, clean water, and open spaces were primary factors in their voting decisions"); and *Mobile Sources, U.S. Motorists Willing to Pay More for Cleaner Gasoline, ALA Survey Says*, 29 Env't Rep. (BNA) 12 (Jan. 15, 1999) ("a survey of 1,000 people found 69 percent willing to pay" up to five cents extra per gallon to reduce air pollution).

6. The belief that a clean environment is a luxury good has been articulated by several prominent conservative commentators. See, e.g., P.J. O'ROURKE, *ALL THE TROUBLE IN THE WORLD* 201 (1994) ("Neither is a 'clean environment' a political right of humans. Rights must be free You have the right to bear arms. You don't have the right to take a gun without paying for it. Pollution control is not free. . . . The environment turns out to be the luxury good that Cato Institute's Jerry Taylor said it was."). See also *Making the Poor Pay for Pollution*, WASH. TIMES, Sept. 20, 1993, at A22 ("A squeaky-clean environment is something of a luxury, one that is hard for the poor and minorities to afford."); Michael Kinsley, *Twilight Zones*, NEW REPUBLIC, May 25, 1992, at 6 ("There is actually a serious argument that protections for health, safety, and the environment are luxury goods that poor people should have less of.").

7. See, e.g., Gary Lee, *GOP Is Warned of Backlash on Environment, Rolling Back Legal Safeguards, Cutting Funds Could Cost the Party Votes, National Poll Indicates*, WASH. POST, Jan. 24, 1996, at A6 ("Attacking the [EPA] is a non-starter," concluded a report by leading GOP pollster Linda DiVall.").

8. Congress appears to be gridlocked on every piece of environmental legislation that does not enjoy such broad support as to be politically failsafe. The only two major environmental laws reauthorized in the last decade were the Federal Insecticide, Fungicide, and Rodenticide Act, 7 U.S.C. §§ 136-136y, ELR STAT. FIFRA §§ 2-34, *as amended by* Pub. L. No. 104-170, 110 Stat. 1489 (1996), and the Safe Drinking Water Act, 42 U.S.C. §§ 300f to 300j-26, ELR STAT. SDWA §§ 1401-1465 (1994) *as amended by* Pub. L. No. 104-182, 110 Stat. 888 (1996). Both were passed only after the negotiation of bipartisan compromises.

9. The theory of the "tragedy of the commons" posits that each individual citizen has such a small stake in the health of the environment that these common resources will be squandered unless extraordinary steps are taken to preserve them. Garrett Hardin, *The Tragedy of the Commons*, 168 SCIENCE 1243 (1968).

10. For explanations and critiques of QALYs, see Comments submitted by the Center for Progressive Regulation on the Draft 2002 Report to Congress on the Costs and Benefits of Federal Regulations, May 28, 2002, at 11-12, at <http://www.ombwatch.org/regs/2002/cprcomments> (last visited July 17, 2002) [hereinafter CPR Comments]; Statement of Alan Krupnik, at <http://www.rff.org/news/newsarticles/keyeconomisturges.htm> (last visited May 13, 2002); ERIK NORD, *COST-VALUE ANALYSIS IN HEALTH CARE: MAKING SENSE OUT OF QALYs* (1999).

11. 42 U.S.C. § 7651b(f), ELR STAT. CAA § 403(f).

12. *Air Pollution: Advantages of Open-Market Trading Touted in Report by Trading Demonstration Project*, 27 Env't Rep. (BNA) 907 (Aug. 23, 1996).

13. Alec Zaccaroli, *Emissions Trading: House Commerce Chair Seeks Answers on Fate of EPA Open Market Trading Rule*, 28 Env't Rep. (BNA) 2290 (Feb. 27, 1998).

14. U.S. EPA, 2001 GUIDANCE FOR IMPROVING AIR QUALITY USING ECONOMIC INCENTIVE PROGRAMS (2002), available at <http://www.epa.gov/ttn/oarpg/tlmain.html> (last visited July 15, 2002).

15. Steve Cook, *Emission Trading: Coalition Calls for EPA Moratorium on Open-Market Emissions Trading*, 32 Env't Rep. (BNA) 1125 (2001).

16. Steve Cook, *Implementation Plans, Environmental Groups Attack EPA Approval of New Jersey Open-Market Emission Trading*, 32 *Env't Rep.* (BNA) 529 (2001) (reporting on the controversy surrounding proposals in Illinois, Michigan, New Hampshire, and New Jersey).
17. The acid rain title of the 1990 CAA Amendments was the product of years of such maneuvering and represented the best in old-fashioned political log-rolling and compromise, as the baseline was modified for the constituents of particularly powerful utilities. *See* 42 U.S.C. § 7651(c), ELR STAT. CAA § 404(c) (allocating allowances to individual facilities and on the basis of a series of complicated rules).
18. The CAA requires states to develop budgets for specific categories of emissions in order to meet national ambient air quality standards (NAAQS). 42 U.S.C. § 7410, ELR STAT. CAA § 110.
19. There are other forms of regulation, e.g., the imposition of liability or information disclosure requirements, that are not considered alternatives to trading regimes.
20. For an insightful discussion of why EPA has found it so difficult to set NAAQS, see ROBERT V. PERCIVAL ET AL., *ENVIRONMENTAL REGULATION: LAW, SCIENCE, AND POLICY* 551-70 (3d ed. 2000) [hereinafter PERCIVAL].
21. *See, e.g.*, Bruce A. Ackerman & Richard B. Stewart, *Reforming Environmental Law*, 37 *STAN. L. REV.* 1333 (1985).
22. As Lester Brown, founder of Worldwatch, once wrote: "We have not inherited the earth from our fathers, we are borrowing it from our children." LESTER BROWN, *BUILDING A SUSTAINABLE SOCIETY* (1982).
23. *See, e.g.*, Richard T. Drury et al., *Pollution Trading and Environmental Injustice: Los Angeles' Failed Experiment in Air Quality Policy*, 9 *DUKE ENVTL. L. & POL'Y F.* 231, 268-72 (1999) [hereinafter Drury et al.] (quoting Chief Seattle: "What is it that the white man wishes to buy, my people ask me? The idea is strange to us. How can you buy or sell the sky, the warmth of the land, the swiftness of the antelope? How can we sell these things to you and how can you buy them?").
24. For a thoughtful discussion of the concerns of environmental justice advocates, see Eileen Gauna, *EPA at 30: Fairness in Environmental Protection*, [31 ELR 10528](#) (May 2001).
25. For an excellent explanation of all these developments and their implications, see Drury et al., *supra* note 23.
26. *Id.* at 247-50 (describing RECLAIM).
27. *Id.* at 246-47 (describing the Rule 1610 program).
28. *Id.* at 263-64.
29. *Id.*
30. *Id.*
31. *Id.* at 266.
32. *Id.* at 267.
33. Carolyn Whetzel, *California: South Coast District Air Regulators Change NO_x Program Due to Energy Crisis*, 32 *Env't Rep.* (BNA) 985 (May 18, 2001).
34. Drury et al., *supra* note 23, at 258-63.

[35.](#) *Id.* at 253.

[36.](#) *Id.* at 254.

[37.](#) *Id.* at 261.

[38.](#) *Id.* at 260.

[39.](#) For a fuller discussion of these issues, see *EPA and the States at 30*, *supra* note 3.

[40.](#) One concrete example of this disturbing phenomenon is that on June 13, 2002, I was invited to testify before the U.S. House of Representatives' Subcommittee on Water Resources and the Environment at a hearing entitled "Water Quality Trading: an Innovative Approach to Achieving Water Quality Goals on a Watershed Basis." Out of seven witnesses, I was the only one who could be described as anything but an enthusiastic booster of trading, in general and in this specific context.

[41.](#) U.S. EPA, THE QUALITY OF OUR NATION'S WATERS, A SUMMARY OF THE NATIONAL WATER QUALITY INVENTORY: 1998 REPORT TO CONGRESS 6 (2000) (EPA 841-S-00-001).

[42.](#) *Id.* at 7.

[43.](#) *Id.* at 3.

[44.](#) U.S. GAO, WATER QUALITY, KEY EPA AND STATE DECISIONS LIMITED BY INCONSISTENT AND INCOMPLETE DATA (2000) (GAO/RCED-00-54).

[45.](#) 42 U.S.C. §§ 7470-7479, ELR STAT. CAA §§ 160-169 (attainment), §§ 7501-7515, ELR STAT. CAA §§ 171-193 (nonattainment).

[46.](#) Letter from the Chesapeake Bay Foundation, Clean Water Action, Coast Alliance, Natural Resources Defense Council, Ocean Conservancy, and Sierra Club, to G. Tracy Mehan III, Ass't Administrator for Water, U.S. EPA 6 (Apr. 18, 2002) (copy on file with author).

[47.](#) For a description of open market trading systems, see *supra* notes 13-16 and accompanying text.

[48.](#) For a flavor of this debate, compare Press Release, U.S. EPA. New EPA Data Shows Dramatic Air Quality Improvements from Clear Skies Initiative (July 1, 2002), *available at* http://www.epa.gov/epahome/headline_070102.htm (last visited July 2, 2002) with Testimony presented before the U.S. Senate Committee on Environment and Public Works by David Hawkins, Director of NRDC's Climate Center, *at* <http://www.nrdc.org/globalwarming/tdh0602.asp> (last visited July 2, 2002).

[49.](#) For a concise description of these different views, see PERCIVAL, *supra* note 20, at 21-24.

[50.](#) For an explanation of what happened in California, see *supra* notes 26-38 and accompanying text.

[51.](#) See *supra* note 6 for quotations from prominent conservative commentators making precisely this point.

[52.](#) See Drury et al., *supra* note 23, at 260-61.

[53.](#) See, e.g., E. Donald Elliott & Gail Charnley. *Toward Bigger Bubbles*, F. FOR APPLIED RESEARCH & PUB. POL'Y, Winter 1998, at 45, 48 ("It is not generally as well understood that bubbling—at least when it works properly—also radically decreases the administrative burdens of regulating. It is much more efficient for the government to set up a market and police its operation than to plan and administer each individual exchange."). As the California car scrapping program demonstrates, however, policing the actual buying and selling of allowances is only the tip of the iceberg in making sure that trading programs are not subject to fraud. See *supra* notes 37-38 and accompanying text.

[54.](#) *EPA Analysis of Test Data Availability for HPV Chemicals*, 22 Chem. Reg. Rep. (BNA) 261 (1998).

[55.](#) Bert McMeen, *Chemical Safety: Manufacturers to Pay \$ 67 Million to Fund Research on Health, Environmental Effects*, 29 Env't Rep. (BNA) 2058 (Feb. 12, 1999).

[56.](#) *American Chemistry Council's New Initiative*, 80 CHEM. & ENG'G NEWS, June 17, 2002, at 18.

[57.](#) David P. Clarke, *Let's Ensure Science Conflicts Are Over Facts, Not Factions*, RISK POL'Y REP., Aug. 20, 2001.

[58.](#) Linda Greer & Rena Steinzor, *Bad Science*, ENVTL. F., Jan./Feb. 2002, at 28. For a second, incisive presentation of the progressive view on these issues, see Jon P. Devine Jr., *Has There Been a Corporate Takeover of EPA Science?*, RISK POL'Y REP., Nov. 12, 2001, at 35.

[59.](#) U.S. GAO, EPA'S SCIENCE ADVISORY BOARD PANELS, IMPROVED POLICIES AND PROCEDURES NEEDED TO ENSURE INDEPENDENCE AND BALANCE (2001) (GAO-01-536) [hereinafter GAO SCIENCE REPORT].

[60.](#) *Id.* at 29.

[61.](#) *Id.*

[62.](#) 5 U.S.C. § 552A(b), *available in* ELR STAT. ADMIN. PROC. ("No agency shall disclose any record . . . except pursuant to a written request by, or with the prior written consent of, the individual to whom the record pertains.").

[63.](#) Personal Communication with Dr. Linda Greer, senior scientist at NRDC and member of the SAB Executive Committee (July 10, 2002).

[64.](#) *See, e.g.*, 66 Fed. Reg. 11165 (Feb. 22, 2001)

[65.](#) Devine, *supra* note 58, at 35-36.

[66.](#) *See, e.g.*, David Roe, *Toxic Chemical Control Policy: Three Unabsorbed Facts*, [32 ELR 10232](#) (Feb. 2002).

[67.](#) *See, e.g.*, Mimi Hall, *Green Backlash Hits White House; Anger Over Environment Worries Some Republicans*, USA TODAY, Apr. 5, 2001, at 3A.

[68.](#) Andrew C. Revkin, *Law Revises Standards for Scientific Study, Agencies to Face Challenges on Health and Environment Research*, N.Y. TIMES, Mar. 21, 2002, at A30.

[69.](#) *See, e.g.*, the Unfunded Mandate Reform Act, 2 U.S.C. § 1571 (judicial review provision).

[70.](#) *See* Revkin, *supra* note 68. For a flavor of what the center is and does, a visit to its website is also instructive: <http://www.thecre.com>.

[71.](#) 271 F.3d 30, 32 ELR 20335 (D.C. Cir. 2001).

[72.](#) *See, e.g.*, John T. Stam & Linda Roeder, *Toxic Substances, Federal Court Affirms HHS Classification of Dioxin as "Known" Human Carcinogen*, Daily Env't Rep. (BNA), Nov. 26, 2001, at A-1 (quoting Mr. Tozzi as saying he was "disappointed with the court's decision on the merits" but believes the case is a "very positive precedent for the Data Quality Act").

[73.](#) Graham made these remarks during a workshop on the Act's implementation held at the National Academy of Sciences on March 21, 2002:

Lawsuits against agencies are certainly another possibility and, quite frankly, there are as many legal theories about how these issues can be litigated as there are lawyers. My personal hope is that the courts will stay out of the picture except in cases of egregious agency mismanagement.

National Academy of Sciences, Transcript of Workshop # 1, *Ensuring the Quality of Data Disseminated by the Federal Government*, March 21, 2002, at 22. Dr. Graham is a Ph.D. political scientist, not a lawyer, but as head of the OMB's Office of Information and Regulatory Affairs, has influence over how the law is interpreted.

74. See, e.g., Memorandum for the President's Management Council, from John D. Graham, Administrator, regarding Presidential Review of Agency Rulemakings by OIRA, Sept. 20, 2001, at http://www.whitehouse.gov/omb/inforeg/oira_review-process.html (last visited July 19, 2002).

75. For more information about the return letter policy and how it has been implemented, see http://www.whitehouse.gov/omb/inforeg/return_letter.html (last visited July 19, 2002).

76. This invitation was issued most recently in the OMB's draft *Making Sense of Regulation: 2001 Report to Congress on the Costs and Benefits of Regulations and Unfunded Mandates on State, Local, and Tribal Entities (2001)*, at http://www.whitehouse.gov/omb/regpol-reports_congress.html (last visited July 19, 2002).

77. For more extensive and thoughtful explanations of the progressive position on these issues, see CPR Comments, *supra* note 10; LISA HEINZERLING & FRANK ACKERMAN, *PRICING THE PRICELESS: COST-BENEFIT ANALYSIS OF ENVIRONMENTAL PROTECTION* (Georgetown Env'tl. L. & Pol'y Inst. 2002)

78. Asthma afflicts 15 million Americans, including 5 million children; 5,000 people die from the disease each year. *Epidemiology: U.S. Said Asthma Cases Up 75 Percent Since 1980*, HEALTH LETTER ON THE CDC, May 4, 1998, at 1. Five million asthmatic children means that 7% of Americans between the ages of 5 and 14 suffer from the disease.

79. HEINZERLING & ACKERMAN, *supra* note 77, at 11-26 (discussing issues related to worker studies, willingness-to-pay, and ability to pay, as they affect monetization of benefits).

80. *Id.* at 21.

81. In addition to HEINZERLING & ACKERMAN, *supra* note 77; see Lisa Heinzerling & Frank Ackerman, *The Humbugs of the Anti-Regulatory Movement*, 87 CORNELL L. REV. 648 (2002); Lisa Heinzerling, *The Temporal Dimension in Environmental Law*, [31 ELR 11055](#) (Sept. 2001); Lisa Heinzerling, *The Rights of Statistical People*, 24 HARV. ENVTL. L. REV. 189 (2000); Lisa Heinzerling, *Discounting Life*, 108 YALE L.J. 1911 (1999); Lisa Heinzerling, *Environmental Law and the Present Future*, 87 GEO. L.J. 2205 (1999); Lisa Heinzerling, *The Perils of Precision*, ENVTL. F., Sept./Oct. 1998, at 38; Lisa Heinzerling, *Regulatory Costs of Mythic Proportions*, 107 YALE L.J. 1981 (1998).

82. In *Browner v. American Trucking Ass'n*, Brief of Amicus Curiae the General Electric Company in Support of Respondents, No. 99-1257 (Sept. 11, 2000) (copy on file with author).

83. *General Elec. Co. v. Whitman*, Plaintiff General Electric Company's Memorandum in Opposition to Defendants' Motion to Dismiss the Amended Complaint or, in the Alternative, Motion for Summary Judgment, Civ. No. 1:00CV02855 (RWR) (June 29, 2001) (copy on file with author).

84. Laurence Tribe, *eroG v. hsuB and Its Disguises: Freeing Bush v. Gore From Its Hall of Mirrors*, 115 HARV. L. REV. 170 (2001).

85. Joby Warrick, *Clean Air Standards Opponents Circle the Bockyard Barbecue: Both Sides Escalate Debate as Hill Fight Looms*, WASH. POST, Jan. 24, 1997, at A1.

