

After Backyard Environmentalism:

Toward a Performance-Based Regime of Environmental Regulation

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## **I. Introduction: The New Performance-based Environmental Regulation**

The United States is in the midst of a fundamental reorientation of environmental regulation toward a new performance-based architecture. The emergent regime promises to be at once more effective and flexible than current arrangements, yet also more democratic, combining the virtues of localism, decentralization, and direct citizen participation with the discipline of national coordination.

The practical core of this regime is monitored local experimentation. Local units--firms, local governments, local representatives of federal agencies, or composites of all of these

--are granted discretionary authority to set environmental performance targets within broad policy areas (management of a watershed or habitat, reduction in toxics), and to experiment with means to achieve them. Local units organize participation by relevant actors, devise measures for monitoring and assessing their own performance, and adjust their practice in light of actual performance. In return for this autonomy, local units report on their performance, plans, and metrics. Pooling the information generated by these reports, a central monitoring entity, in consultation with local actors, periodically reformulates and progressively refines minimum allowable performance standards, desirable targets, and preferred migration paths from the former to the latter, as well as recommended methods for organizing participation, monitoring performance, and assessing progress.

Interim standards, targets, and measures become benchmarks, which local units use to re-evaluate their own performance. Local criticism and national scrutiny discipline laggards. Local actors are accountable to each other, within any one locality, and to the nation as a whole, while national institutions are exposed to the informed gaze of the collectivity of localities. The next round of experimentation is informed by this feedback, and leads, though further comparisons, to revisions in standards, targets, and measures, and so on. In this *rolling-rule regime*, information flows richly and continuously from

localities to center and back again, forcing continuous improvements in both regulatory rules and environmental performance, while heightening the accountability of the actors to each other and the larger public. Because the emphasis throughout is on measurement, evaluation, and improvement of performance, we call this new architecture *performance-based*.

We see elements of this new regime in areas ranging from toxics reduction to habitat regulation. Some leading examples are discussed in Part III.

This approach grows out of two decades of backyard environmentalism in which ordinary residents organized to reclaim a measure of local control over their lived environment. In doing so, they often had to fight certified experts in corporations, government, and even big environmental organizations. Yet the new approach goes well beyond the pioneering generation of NIMBY (Not In My Backyard) activism whose goal was to keep harmful activity out of local communities. Citizen participants now face the daunting challenge of determining what kinds of activity are productive yet acceptably sustainable, given local conditions. To do so, they must remake the relationship between citizen and expert into a mutually respectful and symbiotic partnership for environmental protection, fusing the broad expertise of the professional to the contextual intelligence that only citizens possess.

This emergent regime owes its success to a counterintuitive but durable form of *practical deliberation* between ordinarily antagonistic parties--community residents, environmentalists, developers, farmers, industrialists, and officials from distinct, perhaps competing divisions of government. In this problem-solving process, disciplined consideration of alternatives leads protagonists to discover unanticipated solutions provisionally acceptable to all. Further deliberation leads to successive re-definitions of self-interest that permit robust collaborative exploration, including revision of institutional boundaries, procedures, and even ideas of what is feasible. Avoiding the notorious inflexibility of centralized command rules and the problems of information that impede market-based reforms, the rolling-rule regime achieves levels of cooperation and environmental performance beyond the reach of either, suggesting the possibility of a directly deliberative form of participatory democracy in environmental regulation. Plainly, such an ambitious construct invites questions as to its practical feasibility, which we address in Part IV.

The new regulatory architecture is not mere *voluntarism*, understood as the abdication of public authority and responsibility to the volitional acts of private actors. Nor is it mere *devolution* of authority from the federal government to states or localities. While it expands the bounds of local autonomy and

demands deep participation by private actors as well as public, it also stipulates a compulsory discipline of accountability. The center retains a vital role as coordinator, monitor, information pooler, reflective guide, and whip hand ensuring that localities fulfill their commitments. But unlike conventional, hierarchical forms in which subordinate parts answer to the center's authoritative command, the ligature of the new structure is a collaborative and mutual accountability of center to localities, localities to center and to each other, and all to the whole enterprise, and to the public generally.

## **II. Command, Market, Information, and Participation**

Centralized command regulation characteristically claims a modest omniscience. Though regulators renounce the possibility of complete knowledge of a complex world, they nonetheless self-confidently presume to craft enduring solutions to well-specified problems through focused scientific inquiry and applied expertise. The result is regulation that, piece by piece, attempts both too little and too much, and aggregates into a disjointed, incoherent whole.

There is too little regulation because rule makers must isolate discrete problems, creating sharp boundaries between what is regulated, and what is not. (Otherwise, rule making would require full-scale omniscience.) But problems just outside the regulated zone frequently turn out to be just as significant as those within it. Thus the Endangered Species Act (ESA) applies only to species nearing extinction, ignoring those merely in decline. The result is stringent protection for a few species in the end-stages of extinction, within a broad secular trend toward habitat degradation and biodiversity decline.

But where it does aim for definitive solutions, centralized regulation often regulates too much. The best currently available solution may have long-term, unintended consequences that outweigh early gains, or hinder the search for even better possibilities. For example, rules prescribing specified "best" technologies to trap pollutants before they are released into air or water typically ignore local variations in costs and conditions, and foreclose further technological gains or process innovations that might prevent pollution in the first place.

The 1980s brought new, market-inspired reform proposals that promised to cure these defects by leaving crucial choices to decentralized actors. The most familiar version is pollution permit trading. A central regulator establishes an overall cap on emissions of a specified pollutant, assigns initial permit allotments to current polluters, creates trading rules and a compliance

monitoring system, and lets the magic of the market do the rest. Armed with self-interest and local knowledge, polluters will cut emissions if their own abatement costs are low, and sell the excess permits to those who find purchases cheaper than abatement. Pollution control costs quickly stabilize at a market price, and society painlessly achieves efficient allocation of the resources spent on pollution reduction--a goal beyond the dreams of the central command regulator.

But despite their professed epistemological modesty, permit-trading schemes share with other forms of central planning an unquenchable thirst for information. Markets are complex social institutions that ordinarily grow organically, through the accumulated actions of self-interested local actors, without panoptic knowledge on anyone's part. But to create artificial markets by central command, the regulator must acquire (or specify) vast quantities of precise, detailed information. Before capping emissions and allocating permits, the regulator must know aggregate and individual emission levels, how much harm results from various levels of emissions, and what reductions are feasible. More confounding still, the market's demand for secure ownership rights limits post-hoc program corrections and thus demands inhuman foresight from all-too-human regulators. Its theoretical elegance trumped by the constraints of information, market-simulating regulation remains a rarity in practice.

The new architecture discounts the possibility of central, panoramic knowledge more steeply than either centralized command or market-simulating regulation. It establishes collaborative processes that allow central and local actors to learn from one another and from their experience, using these discoveries to revise the rules that frame collaboration, then seeking further experimental innovation under guidance of the more capable frame, and so on. Like American pragmatism more generally, this architecture rejects the possibility of grounding itself on immutable principles, while nonetheless professing faith that we can always institutionalize better ways of learning from the inevitable surprises that experience offers us.

Acknowledging the continuing importance of local knowledge, the new architecture also requires broader and deeper local participation than earlier regimes contemplated. Indeed, its predecessors fail in part because they ignore the knowledge diffused among the broader public. Its own success will depend on organizing participation that systematically taps this information even as it places additional demands and confers new powers on the citizen-participant. Already, work teams within firms are beginning to engage in pollution-reduction efforts linked to the reorganization of production. Similarly, with growing attention to non-point source pollution, small farms and households

whose run-off influences local tributaries are being asked to engage in (and authorized to implement) the kind of self-assessment and pollution-reduction planning once presumed to be within the reach only of large firms.

Participation in the new performance-based regimes must also be deeper than traditional forms. Citizens are called on not merely to express opinions--through voting, letter-writing, comment in public hearings, or participation in environmental organizations--but to help formulate and implement solutions. Their proposals will always be colored by deep convictions about the world that give rise to and are reflected in political views. Yet the testing of proposals in practice will often yield surprising results that nudge participants into unfamiliar zones where conventional dispositions have little to say, offering expanded horizons for collaboration. In this process, the new institutions may transform the identities of the users themselves.

### **III. Examples of the New Regulatory Regime**

A diverse set of recent innovations in environmental regulation shows how crucial components of this architecture are feasible and robust. At the same time, this ensemble of cases suggests the incompleteness of the reform project as much as its general feasibility. Each program exhibits certain components of the overall architecture, but also lacks others. None, despite its particular strengths, approximates the new regime in its entirety. Vulnerability lies on one side this incompleteness: each of these programs must eventually address its unanswered questions. On the other side, however, the fact that these experiments have been able to substitute novel components for the traditional ones in piecemeal fashion displays the adaptability of the overall architecture. They illustrate how this new regime can be built, by bits as exigencies demand, from many starting points. We group the five cases below by policy area: TRI, TURA, and Responsible Care control industrial pollutants, while the Chesapeake Bay Program and HCP aim to regulate watersheds and other ecosystems.

#### *The Toxics Release Inventory and TURA: Information Matters*

The Toxics Release Inventory (TRI) is a "right-to-know" measure that forces some 30,000 US facilities to publicly report their releases of toxic chemicals. The law was the proximate response to a disastrous 1984 Union Carbide chemical plant explosion that killed thousands in Bhopal, India through the release of methyl isocyanate gas. Its deeper roots, however, lie in a broad domestic movement against environmental hazards that dates to the 1978 discovery at Love Canal that large amounts of toxic industrial chemicals had

been buried where a local elementary school was later built. The resulting anger and activism connected the battle for information--what chemicals were present, in what quantities, and at what risk--to defense of home, family, and neighborhood. In a new style of local, lunch-pail environmentalism, hundreds of communities organized to demand clean-ups of toxic waste disposal sites and access to information under the banner of their "right-to-know." Activists at workplaces had been seeking the "right-to-know" about job-related toxic exposures since the early 1970s. By the mid 1980s, locally based movements had won right-to-know laws in at least 30 states and 65 cities and counties. Popular participation thus created a political atmosphere in which Congress had to react swiftly, and with little regard for the niceties of conventional administrative architecture, to the fears crystallized by the Bhopal catastrophe.

TRI requires only that facilities meeting statutory size requirements report estimates of the amounts of some 650 chemicals transferred off-site, or routinely or accidentally released. Since passage of the Pollution Prevention Act of 1990, facilities must also report transfers of listed chemicals within the plant and efforts at pollution reduction and recycling. The data are publicly available via print and Internet in both raw form and as tables comparing amounts released by substance, facility, industry, and location. Though failure to file a required report may result in penalties, reporting inaccuracies do not. While the EPA does little to verify the accuracy of emissions reports, citizens may sue firms for failure to comply with TRI's disclosure provisions.

TRI is thus environmental "regulation" in the minimal sense of formally requiring disclosure of a body of comparative information from which environmental rules and standards, fixed or rolling, might eventually be fashioned or enforced. Its operation therefore constitutes a rough test of whether benchmarking in general--and benchmarking of "alarming" information in particular--can play the central role that we have attributed to it in synchronizing performance-improving efforts.

The effects of TRI strongly suggest that it can. First, the collection and publication of TRI data immediately disciplines polluting private actors. Public comparisons of polluters compiled by journalists or community activists from TRI data also lead to significant declines in the share value of publicly traded firms that show poorly.<sup>(1)</sup> These reputational and financial market penalties give managers strong incentives to either reduce their toxics emissions or shade their reporting estimates to appear cleaner than they are. Commentators agree that "public release of information about discharge of toxic chemicals has by itself

spurred competition to reduce releases, quite independently of government regulation."<sup>(2)</sup>

States such as Massachusetts, Oregon, New Jersey, Washington, and Minnesota have moved beyond TRI by establishing programs that pool information not just about emissions, but about firm techniques to control and reduce toxics use. The most comprehensive, established and influential of these was created by the Massachusetts Toxics Use Reduction Act (TURA) of 1989.<sup>(3)</sup> TURA broadens TRI by requiring firms to report not only toxic releases, but also use or generation of toxics in any stage of production. TURA further requires that firms produce biannual Toxics Use Reduction Plans centered on "a comprehensive economic and technical evaluation of appropriate technologies, procedures and training programs for potentially achieving toxics use reduction for each covered toxic or hazardous substance." On the basis of this benchmarking survey of possibilities, firms specify particular measures to be adopted, an implementation schedule, and two- and five-year reduction targets. Although TURA establishes the general goal of reducing use of toxics in Massachusetts by fifty percent by 1997, and penalizes "willful" violations of the reporting and planning requirements, the Act sets no more specific performance standards nor does it penalize failure to act on reduction plans. Thus, rather than fix objectives and compel their attainment, TURA furthers the TRI strategy of using the obligation for self-monitoring to induce firms and citizens to acquire information that reveals problems and possibilities for their solution.

At the same time, TURA extends and helps formalize industry efforts at improved environmental performance by creating a peer inspectorate to review the usage reduction plans and by providing technical consulting services. The Act has created a cadre of toxics use planners located at individual firms but connected to one another by establishing the Toxics Use Reduction Institute (TURI) at the University of Massachusetts at Lowell. TURI develops planner certification courses, informs industry or the public of developments in this area, and conducts research necessary to these activities. The Act also establishes an Office of Technical Assistance (OTA) to assist firms (particularly small, first-time filers) in meeting their TURA obligations, and to help coordinate the provision of relevant services by the public and private sectors. Taken together, plans, planners, TURI, and OTA create an inspection regime in which current conditions in individual firms or industrial segments can be compared with each other and with academic understanding of best practices, even as that understanding improves through exposure to innovative firms. Finally, applying the pragmatist principles of adjustment of means and

ends to the institutions created by the Act itself, TURA provides a high-level governance structure that periodically suggests modifications of the new state services and reporting requirements in the light of its evaluation of progress towards the Act's original reduction target.

Substantial evidence suggests that this apparatus works. From 1990 to 1995, the production-adjusted use of toxic chemicals fell by twenty percent in Massachusetts and the generation of toxic byproducts by thirty percent. Furthermore, the toxics use planning requirement has enabled firms to discover significant net benefits of pollution prevention and increase their support for the public institutions that facilitate this process. Of all the services provided, the responding firms were most enthusiastic about toxics use planner training, followed by site visits from the OTA. Furthermore, eighty-six percent of respondents said they would continue to plan even without legal requirements.

### *Responsible Care and INPO: The Need for a Public Role*

Responsible Care is the Chemical Manufacturers' Association's (CMA) program to control and reduce pollution through disciplined error detection and elimination by its member firms. The program effectively accepts the key assumptions of what we have called rolling-rule regulatory architectures. Departing from the other examples, however, the CMA attempts to implement these mechanisms solely through private parties, with no government coordination in information pooling and no public access to data. This is a vast undertaking: the CMA's roughly 200 members account for about 95 percent of domestic production of basic chemicals, and the chemical sector as a whole accounts for half of the six billion pounds of toxics generated each year in the US. The results of Responsible Care are so far inconclusive. But if the new architecture we have outlined is right, then Responsible Care would benefit from public involvement. The experience of a strikingly similar attempt at private regulation in the nuclear power generating industry suggests that success indeed depends upon the aegis of public institutions and authority.

Like Responsible Care, the system of benchmarking regulation housed in the Institute of Nuclear Power Operations (INPO) grew out of a public relations crisis; it was formed in 1979, nine months after the Three Mile Island disaster.<sup>(4)</sup> Like Responsible Care too, INPO began as a private effort. The Institute was financed by the utilities and beholden, at first, only to them. INPO's chief activities consisted of pooling the industry's operating experience, establishing benchmarks to distill the lessons there, and then evaluating individual power plants according to their ability to meet those benchmarks.

Operating information is gathered initially through the Significant Event Evaluation-Information Network, or SEE-IN. This is "an industry-wide effort to systematically collect, analyze, and share the industry's experience with safety-related problems." INPO officials then circulate analyses of the causes of dangerous disruptions and ways to prevent them in Significant Operating Experience Reports, or SOERs. Industry Operating Experience Reviews are then conducted periodically to assess the ability of particular plants to make effective use of the information provided by SOERs. This collection and dissemination of information to the immediate actors--the operating officers and their teams in generating plants--failed to discipline them and so did not produce large performance improvements. By the mid-1980s, it became clear that the effectiveness of INPO as a new center depended crucially on its ability to divulge what it learned about the industry and individual firms to broader circles of participants.

The broader diffusion began in late 1984, when INPO began ranking plants, and then making the results available to CEOs nuclear utilities, their boards of directors, and ultimately the responsible public service commissions and the NRC. The NRC, in effect, retains the formal authority to promulgate regulations, but in practice either adopts the standards in training, maintenance, and other matters elaborated by INPO, or simply acknowledges best practices defined by the Institute without further formalizing them. Beyond peer discipline and close NRC coordination, INPO can suspend uncooperative member utilities. Thus, although there are no civil or criminal penalties for noncompliance with INPO standards, the institute found means to resolve the problems that now plague Responsible Care and thereby achieve notable safety improvements.<sup>(5)</sup>

### *Chesapeake Bay Program: Diffuse Problems*

The Chesapeake Bay Program, broadly responsible for protecting and restoring the largest estuarine system in the US, is at once the most extensive, mature, institutionally complex, and successful of the ecosystem regimes emerging in the new regulatory framework. The Program grew up along side of the nascent EPA: while the Clean Water Act (CWA) regulated point-source polluters such as factories and power plants, it did not regulate pollution--more threatening to the Bay--from non-point sources such as farms, construction sites, lawns, landfills, septic tanks, and city streets. Addressing this diffuse problem amidst radically changing understandings of the nature of the threat and appropriate ecological responses has been the Program's exemplary accomplishment. Noticing this success, the EPA is currently modeling new programs on the

Chesapeake's experience with the apparent intent of applying these lessons to reconfigure the CWA-regime.

Like the TRI, the Program grew out of a broad citizen movement, concerned here with the degradation of a beautiful but fragile ecosystem that to this day evokes widespread pride and vigilance from residents, farmers, and businesspeople alike. In 1966-- four years before Earth Day and six years before the passage of the Clean Water Act--these citizens formed the Chesapeake Bay Foundation as an advocacy organization to "Save the Bay." At the behest of this group among others, congressional leaders funded a major six-year EPA study to determine the ecosystem's status and causes of its decline. The report revealed a complex web of inter-related causes and alarming symptoms--such as declining fish and shellfish stocks--that spanned several states in the Bay region.

In response to this report and continuing investigations, the first multi-state, inter-agency Chesapeake Bay Agreement was signed in 1983 "to improve and protect water quality and living resources in the Chesapeake Bay ecosystem."<sup>(6)</sup> The Agreement-- whose signatories included U.S. EPA, the governors of Maryland, Virginia, and Pennsylvania, and the mayor of the District of Columbia--established a durable core institutional framework: an Executive Council and an implementation committee that would develop ecosystem restoration plans in conjunction with state and federal environmental agencies.

A second Chesapeake Bay Agreement, signed in 1987, marked the next evolutionary phase of the program by establishing biological monitoring as the bedrock of future management efforts. It identified the "productivity, diversity, and abundance" of the Bay's living resources as "the best ultimate measures of the Chesapeake Bay's condition" and set ambitious performance targets, including reduction of nutrient loadings by 40% by the year 2000. When further studies revealed that loadings in various tributaries had differential impacts on water quality in the Bay, parties revised their system-wide goals and codified them in a 1992 commitment to develop tributary-specific nutrient reduction targets, strategies, and implementation tools. The 1992 amendments also established a specific, quantifiable biological monitoring regime, naming the prevalence of submerged aquatic vegetation (SAV) as "an initial measure" of overall "progress in the restoration of living resources and water quality." Executive Council directives have added progressively more detailed commitments in such areas as basin-wide toxic reduction, habitat restoration,

riparian forest buffers, wetlands protection, agricultural non-point source reduction, and removal of stream blockages of to improve fish passage.

All these arrangements and rearrangements are, however, the public face of deeper, less visible changes in protagonists' understanding of environmental regulation and of program strategies. First, they have come to see that the more they learn about the Bay's ecology--and they have learned much--the more surprising new findings will be. Part of grasping the complex interconnection between the Bay as a whole and its pieces has been the realization that any single belief and the policies associated with it, may be overturned by new contextual intelligence. The program has come to expect surprises and learned to grapple with the political and distributive fallout often entailed in unforeseen developments.

The second change concerns governance. The various Agreements and the entities that they establish constitute an institutional chassis for forming and reforming governance mechanisms as changing conditions warrant. In practice, the Chesapeake Bay Program has employed a grab bag of regulatory techniques, legal instruments, and voluntary measures to build concerted policy packages from disparate measures in segregated arenas such as "land use", "air pollution", "water pollution," "public lands management," "fisheries management", or "wildlife conservation." Frequently, Chesapeake Executive Council advances such packets through joint executive decrees called "Directives." Though they have dubious legal pedigree and status, they are regarded, at minimum, as morally binding commitments on the part of each executive to use all available powers and authorities to carry out the stated aims. Though this *ad hoc* practice works well enough for adjustments within broadly agreed boundaries, more traditional forces come to the fore in larger re-definitions of purpose. In such moments, the very fluidity of the internal governance of the program becomes a liability as external interlocutors seek, in vain, to determine "the" authoritative voice of an institutional ensemble that adjusts precisely by not having one.

Finally, the understanding of citizen involvement has also evolved cumulatively. As program activity established the importance of contextual intelligence and with it the need for both local and central institutional experimentation, citizen participation naturally broadened and deepened. Through the 1960s and early 70s, participation in the program meant conventional public education: the use of publications, public meetings, hearings, and mass media to increase public awareness of environmental

problems, build support for clean-up and restoration efforts, and inspire voluntary efforts to curb destructive behaviors.

When it became clear in the 1980s that management of the Bay system would require levels of monitoring that exceeded the capacities of government alone, the Program looked to citizens. Large numbers of volunteers were taught to mimic the scientific monitoring and reporting protocols and thus become quasi-experts who would produce a larger volume of reasonably reliable environmental data; participation was equated with the emulation of expert knowledge.

The recent emergence of a "tributary strategy" that emphasizes the need for stream-specific goals and measures marks the third re-conceptualization of citizens' roles. The increasing intricacy of restoration measures has the program to devolve ecosystem management responsibilities to semi-autonomous "tributary teams" composed of government officials, scientific experts, agricultural and industry representatives, and citizen volunteers that become experts on the problems and solutions to their own tributaries. Maryland's portion of the watershed is divided, for example, into 10 tributary basins, each employing its own mix of implementation measures to achieve tributary-specific performance targets. Because measures can be tailored to the local circumstances of each watershed part, the tributary teams are more effective and equitable than uniform statewide measures. In these changes can be discerned the beginnings of a TURA-style planning regime at the level of household and farm. Together they lend plausibility to the idea of broad, continuing, and deeply informed citizen participation in environmental affairs that, unlike the first wave of backyard environmentalism, constructs as much as it obstructs.

### *Habitat Conservation Plans (HCPs)*

Among the most dynamic and supple prototypes of the new regulatory architecture is the Habitat Conservation Plan (HCP), which ironically emerged out of one of the most rigid of all environmental laws: the Endangered Species Act (ESA). Section 9 of the ESA prohibits the "taking" of listed wildlife species. "Take" includes both direct injury and habitat modification that "kills or injures wildlife by significantly impairing essential behavior patterns, including breeding, feeding or sheltering."<sup>(7)</sup> In application, this simple language becomes a sweeping, inflexible rule with the potential to bar a broad range of development and resource extraction activities wherever endangered species have been identified. Not surprisingly, landowners, industries, and

communities complain that they are unfairly singled out under a harsh and arbitrary rule that provides dubious species protection benefits.

In 1982, Congress responded by authorizing the issuance of permits to "take" listed species when taking is "incidental to, and not the purpose of" an otherwise lawful activity. To secure a permit, the applicant must produce an HCP, and demonstrate that take will not appreciably reduce the likelihood of the species' survival and recovery. By April 1999, 254 Plans--regulating more than 11 million acres--had been approved and 200 more were in various stages of development.<sup>(8)</sup>

Bruce Babbitt, appointed Secretary of the Interior in 1993, and his staff favored the HCP process as an opportunity to bring landowners and environmentalists together to hammer out ambitious, landscape-scale, and multi-species conservation plans in which development *and* ecosystem protection could become complementary forces rather than rivals in zero-sum competition. Opportunities to demonstrate the workability of this approach arose in San Diego and Orange Counties. Tract housing, shopping malls, office parks, and other dimensions of urban sprawl there threatened species like the California gnatcatcher songbird by reducing and fragmenting its coastal sage scrub ecosystem. Yet when the gnatcatcher was proposed for listing under the Endangered Species Act, Section 9's prohibition against "taking" threatened to bring lucrative development in fast-growing San Diego and Orange Counties to an abrupt halt. Almost any alternative to ESA listing seemed reasonable to those interested in development. Under the auspices of the California Natural Communities Conservation Planning Act (NCCCP) and Federal HCP provisions, landowners, state and local officials, conservationists, and other parties negotiated the first of a new generation of participatory and performance-based integrated, multi-species, regional HCPs in San Diego, Orange, and Riverside Counties.

The Plans obligate landowners to dedicate large blocs of land for exclusive use as habitat reserves for unlisted as well as listed species and restrict development in adjacent buffer zones. They also specify biological and environmental monitoring regimes, governance institutions, and funding mechanisms as well as a range of "adaptive management" measures that allow adjustments based on the results of monitoring, new scientific information, and changes in conditions. In return, landowners receive "incidental take" permits to develop remaining lands in accordance with the overall plan. The agreements are controversial among environmentalists,<sup>(9)</sup> some of whom prefer strict application of Section 9, and among landowners and developers, some of

whom see the HCP process as legalized extortion. But many leading environmentalists, landowners, public officials, and scientists contend that, on the whole, these agreements produce more, better, and more sophisticated ecosystem management regimes than would emerge from even the strictest application of Section 9.

The inclusiveness and sophistication of these Southern California HCPs illuminate the promise of the new regulatory regime and offer a scalable example for the almost 500 plans that are in development or have already been approved. While many of these are quite limited in scope, others are far more ambitious in their measures and goals and innovative in their internal architecture. Increasingly, HCPs are formulated by diverse affected parties and move beyond basic land use planning approaches to embrace water quality and stream flow measures, ecosystem restoration projects, forestry and agricultural "best management practices," and a variety of other implementation measures.<sup>(10)</sup>

But these Southern California successes are slow to diffuse to all HCPs because the emergent nationwide HCP regime is by and large unable to pool the information generated by local projects or to systematically learn from innovative developments, trends, successes, and errors. Such pooling as does occur is done mainly by the Fish and Wildlife Service,<sup>(11)</sup> whose highly decentralized internal structure has so far proved far better at dispersing authority to local decision makers than at reviewing the ensuing decisions. The result is nearly unsupervised local autonomy with correspondingly wide variations in the performance of HCPs from one place to another. Thus local circumstance, seldom corrected by national discipline, determines whether an HCP monitors its progress well or poorly,<sup>(12)</sup> or whether its decision-making is accessible not only to local deal-makers, but also to independent scientists, conservationists, and generally informed citizens. Often (?), in fact, HCPs amount to an agreement between a permit seeker and a Service field agent. Where the experience of the Chesapeake tributary teams shows that open participation and good science may be mutually reinforcing, this kind of involution--especially in the absence of rigorous monitoring -- can lead to self-deluding celebrations of expert powers and so to under-estimation of the combined political, scientific, and practical complexity of large-scale ecosystem management.<sup>(13)</sup> At the worst it can undermine the democratic legitimacy of HCPs by transforming them into unprincipled backroom deals between regulators and the regulated.<sup>(14)</sup>

In response to such concerns two measures--a Fish and Wildlife Service guidance and Endangered Species Recovery Act of 1999 (HR960, or the Miller Bill)--have been proposed to create a minimal informational infrastructure for the coordination of the HCPs, and thereby to improve performance of individual plans with respect to monitoring and accessibility. As concerns monitoring, the guidance directs the Service to create a database that tracks basic plan features such permit duration, acreage covered, species and habitat details, authorized take, and permitted activity. It may also record monitoring programs, actual take, operational adjustments, and field visit reports.<sup>(15)</sup> Similarly, the Miller Bill directs bi-lateral monitoring of the implementation of HCPs and their biological outcomes; permit holders would be required to report publicly on actions taken in accordance with the plan, status of jeopardized species, and progress toward objective, measurable biological goals, while the Secretary would be required to report on the implementation and quantitative biological progress of each plan every three years.

As concerns accessibility, the Fish and Wildlife Service guidance responds tepidly by extending the Administrative Procedure Act's after-the-fact "notice and comment" period from 30 to 60 days and offering the only slightly more ambitious proposal to add advisory and informational committees in cases of large-scale HCPs. The Miller Bill goes further, instructing the Department to take steps to ensure balanced public participation in the development of large scale, multiple landowner, and multi-species plans. Without better institutionalizing the distinctive contributions that the public can make to ecosystem governance--information, monitoring capacity, oversight, and democratic legitimacy--reformers risk losing elements critical to a successful process. On an optimistic reading these measures, or something like them, will lay the groundwork for a TRI-style, information-based pooling system whose own initial shortcomings will be incrementally corrected even as the emergent infrastructure makes it possible to begin overcoming, locale by locale, the defects of disjointed decentralized of ecosystem management.

#### **IV. A Worry about Legitimacy**

These concerns about the public accountability of HCPs shade into a broader concern about the legitimacy of problem-solving by direct deliberation in relation to the familiar institutions of representative democracy. Put bluntly, the worry is about the possibility of parallel government: HCPs, the Chesapeake Bay Commission, and TURA are sufficiently lodged inside current institutions to be protected by the nimbus of their legitimacy. Yet because each is

continuously reinterpreting ends in the light of new experience with means, and vice versa, they all combine legislative, administrative and judicial functions so as to soften those familiar rivalries between branches of government which, in our constitutional tradition, are thought to prevent abuses of public power. Nor is any of the experimentalist institutions subject to regular, sharply focused legislative review. From this standpoint, the rapid diffusion of backyard environmentalism under the mantle but at the expense of the forms of environmental regulation integral to the traditional administrative state force upon us a bitter choice between efficacy and democratic legitimacy. This concern is pressing; and it is finding, we will see, an immediate and practical response. But it raises general questions regarding democratic accountability lying at the intersection of political theory and constitutional doctrine, and we will, in concluding, broach these as well.

The conflict between directly deliberative, problem-solving regimes and the institutions of pluralist democracy is most visible from just outside the circle of immediate participants in experimentalist regulation. To a municipal or county official accustomed to a free hand in matters of zoning and land-use planning; to the officer of national environmental association, habituated to the idea that the best way to protect endangered species is from a seat in a hearing in the capitol; to a legislator with independent ideas of what counts as too much or too little regulation--to all of these, the directly deliberative decision-making will sooner or later seem a circumvention of rights and prerogatives owed them by the administrative state. From their perspective, the advocates of backyard experimentalism will look suspiciously like a league of mutually protective reforms, willing to gloss over one another's overreaching on the charitable grounds that all experiments entail mistakes or out of the cynical expectation that in case of difficulties one hand will wash the other

We have already encountered two innovations--one modest, the other potentially far reaching--that go some ways towards establishing official accountability. The first is the assimilation of INPO to the NRC, by which the former becomes in some sense a regulatory instrument of, and responsible to, the latter. But this is, of course, a two-edged solution. On the one side it gives the public and their representatives an address for complaints or fears about nuclear safety. But it leaves open the question of whether the resident watchdog, the NRC, is in fact capable of the vigilance required of it. The reason that the NRC came to depend on INPO for fine-grained performance information is that the Commission could not gather this information itself. Evaluating the information once it is provided plainly demands different capacities from providing it in the first place. But the requisite capabilities are

not wholly distinct; and without much more knowledge of the facts than we have, we can not know if stimulates INPO to reflect on its own routines by the same experimentalist principles that INPO uses to stimulate self-reflection among nuclear power generators, or whether it tends to dampen self examination by effectively shielding the Institute from public scrutiny behind the screen of its legitimacy.

The second, more radical solution faces this ambiguity squarely by making reform of administrative agencies on experimentalist lines one of the condition for the legitimate decentralization of authority to local actors. The Miller Bill suggests the elegant simplicity with which this can be done: In requiring that the Secretary of the Interior review each HCP triennially, recommend such adjustments as be necessary to ensure species recovery, and publish an annual report on the status of all HCPs, Congress can see how well the Department is observing the HCPs even as it observes how well the latter are monitoring themselves, and whether they are benefiting from national information pooling.

Notice that Congress, if it passed the Miller Bill, would subtly modify both its own legislative role and that of the administrative agency. Congress's role would shift from the familiar one of setting some relatively circumscribed public goal--protecting endangered species--and delegating responsibility for achieving it to a federal rule maker, to authorizing and conferring pluralist political legitimacy on the constitutive framework under which citizens as local agents can experimentally determine how to pursue a presumptively broad and changing project--protecting and restoring habitats. The role of the Department of the Interior would shift from relying on its own expertise and judgment to help craft the agreements and determine their acceptability, to rigorously policing a framework within which a broad and open circle of participants, local and national, can determine for themselves whether particular HCPs, and the institution taken whole, are meeting the goals it sets for itself. Familiar fights will of course continue, but the rules for adjudicating them will change. By way of conclusion we argue that such changes would be broadly consistent with our frame of democratic government.

## **V. Experimentalism as Neo-Madisonianism**

That frame of government is famously Madisonian. Power is carefully parceled among separate branches of government. Deliberation - preference-changing reflection in the service of the public interest - is the province of a senatorial elite buffered from the immediacies of everyday concerns. By blurring the division of labor among the branches of government and tying the ultimate

resolution of large questions of policies to daily problem solving, experimentalism seems to repudiate this Madisonian legacy, perhaps putting our liberties at risk.

And yet the experimentalist accountability established by problem-defining legislation and the broad grant of problem-solving authority to local entities could nonetheless be considered *neo-Madisonian* for two reasons. First, it harnesses competition among institutions to ensure that they all act in the public interest. Where the design of the 1787 Constitution relies on the rivalries among the branches and levels of government, the emerging "constitution" of experimentalist institutions like HCPs relies on the pooled experience of diverse, and in some sense competing jurisdictions as the engine of accountability. Second, in place of deliberation at a distance, it emphasizes the capacity of practical problem-solving activity to reveal new possibilities and thus to open the way for solutions that are as different from the vector sum of current interests as those achieved by senatorial deliberation but--arguably unlike these--practicable under modern conditions.

## FADEOUT

<sup>1</sup> James T. Hamilton, "Pollution as news: media and stock market reactions to the toxics released inventory data.," *Journal of Environmental Economics and Management* Vol. 28, no. 1 (Jan 1995): 98-113.

<sup>2</sup> Richard H. Pildes and Cass R. Sunstein, *Reinventing the Regulatory State*, 62 U. Chi. L. Rev. 1, 106 (1995). The year-to-year comparisons show substantial decreases in most categories. See 1995 Toxics Release Inventory Public Data Release, ch. 5.

<sup>3</sup> Massachusetts Toxics Use Reduction Program, *Evaluating Progress: A Report on the Findings of the Massachusetts Toxics Use Reduction Program and Evaluation* (Lowell, MA: Toxics Use Reduction Institute, March 1997).

<sup>4</sup> Joseph Rees. "The Development of Communitarian Regulation in the Chemical Industry" (Manuscript, 1998)

<sup>5</sup> As measured by two broad substantive indicators, INPO is an unqualified success story. The two measures are the number of "scrams," or rapid reactor shutdowns, and the number of safety system actuations. Both represent a gauge of the frequency of emergencies and are therefore inversely correlated with overall reactor safety. Between 1980 and 1990, the number of scrams per unit decreased by eighty percent, and the number of safety system actuations decreased by sixty percent between 1985 (the first year such measures were taken) and 1990.

<sup>6</sup>The Chesapeake Bay Agreement of 1983 (signed by the U.S. EPA, the governors of Maryland, Virginia, and Pennsylvania, and the mayor of the District of Columbia).

<sup>7</sup> 50 C.F.R. 17.3. The Supreme Court has upheld this regulation as a valid interpretation of the statutory prohibition against "taking" of listed wildlife. See *Babbitt v. Sweet Home Chapter of Communities for a Great Oregon*, 115 S.Ct. 2407 (1995).

<sup>8</sup> U.S. Fish and Wildlife Service, Division of Endangered Species. "Status of Habitat Conservation Plans" (April 23, 1999). An electronic version of this document can be obtained at <<http://www.fws.gov/r9endspp/hcp/hcptable.pdf>>.

<sup>9</sup> John Kostyack. "Habitat Conservation Planning: Time to Give Conservationists and Other Concerned Citizens a Seat at the Table," *Endangered Species UPDATE*. School of Natural Resources and Environment. University of Michigan. Vol. 14, Nos. 7 & 8, July-August 1997: 51-55.

<sup>10</sup> An effective system must be an adaptive one because even the best science gets better; "There is never enough information" to allow timeless determinations of fixed rules, and "[n]o key ecosystem management decision ever gets made in a setting of adequate information." George Frampton, *Ecosystem Management in the Clinton Administration*, 7 *Duke Env'tl. L. & Pol'y F.* 39 (1996). Frampton was, at the time he wrote these words, Assistant Secretary for Fish, Wildlife and Parks in the Department of the Interior, overseeing the Fish and Wildlife Service and its endangered species program.

<sup>11</sup> In interviewing FWS and Interior officials in July, 1998, the authors learned that no one in Washington had even collected the HCPs that had already been negotiated up until that point--much less read them, or attempted to absorb any generally-applicable lessons that might be learned from them.

<sup>12</sup> Peter Kareiva et. al. *Using Science in Habitat Conservation Plans* (University of California, Santa Barbara: National Center for Ecological Analysis and Synthesis, 1998).

<sup>13</sup> Cf. Frampton, *supra* note , at (describing how FWS' traditional emphasis on purely science-based decisionmaking stands at odds with the inherently political nature of ecosystem management).

<sup>14</sup> For a thoughtful and textured environmentalist critique of the shortcomings of public participation in HCP planning, see Kostyack, *op. cit.*

<sup>15</sup> Federal Register, Vol. 64, No. 45 (March 9, 1999): 11488. A first draft of this database can be obtained on the Internet at: <<http://www.fws.gov/r9endspp/hcp/hcptable.pdf>>.