the Clinton plan for the old-growth forests, for example, in which he allows local activists Tim Hermack and Jeffrey St. Clair to pretty much define what happened between the Clinton administration and mainstream environmentalists, when the reality of the story was at once more complex and a good deal less craven than they would have us suppose.

Second, he never effectively explains how there will be less need to depend on representation in Washington to pursue protective legislation and monitor federal agencies, even though the vast majority of land-based environmental problems will always be found on the 634 million acres of public land owned and administered by the federal government. And finally, what Dowie recognizes barely, when at all, is that most of the mainstream movement is already changing, and changing rapidly, as the large national groups struggle earnestly (if with varying degrees of success) to diversify their staffs and constituencies and forge a stronger working relationship with thousands of grassroots organizations.

The leaders of the mainstream groups—sometimes called "The Gang of Ten," even by themselves—although still largely white, male, and middle class, are not dolts too stupid to comprehend the future. The doors of the "club" have been open wide for some time now; there is a big room in there, and it can never get too crowded, though if the likes of Easterbrook, Mann, and Plummer never choose to come in, it probably will break no one's heart.

Superfund's insatiability

Footing the Bill for Superfund Cleanups, *by Katherine N. Probst, Don Fullerton, Robert E. Litan, and Paul R. Portney. Washington, D.C.: Brookings Institution and Resources for the Future, 1995, 176 pp.*

Richard B. Belzer

Most people are shocked to discover that a multibillion-dollar governmental program has never been subjected to a careful program evaluation or cost-benefit analysis. This book by researchers affiliated with the Brookings Institution and Resources for the Future begins to fill in one side of this information gap for the Superfund program, the federal effort to clean up abandoned hazardous waste sites. The authors estimate the costs of the current program, analyze who bears these costs, and compare their results against the cost incidence estimated under several alternative program designs. Readers interested in the politics of Superfund reform will find the book particularly useful because of this emphasis; those concerned about the larger fundamental issues posed by Superfund may go away unsatisfied.

Focusing solely on the 1,134 private sites on the National Priorities List in 1994, the authors estimate the cost of the existing program at $3,919.6 million per year. They estimate the cost of four alternative programs similar to those proposed last year at $3,775.6 million to $3,861.2 million per year, with the Clinton administration's proposal coming in at $3,795.9 million. The maximum reduction in total cost would be only four percent. Thirty-five pages of appendices explain how these estimates were made as well as revealing a large number of significant (though unavoidable) assumptions, none of which appears to have been subjected to sensitivity analysis, however. Thus, the authors' cost estimates suffer from a serious case of false precision—five significant figures!—and from the fact that they are, for all practical purposes, indistinguishable in magnitude and probably accurate only with respect to the first digit. That the authors report their results to the nearest $50,000 may be the most troubling concern about the entire book.

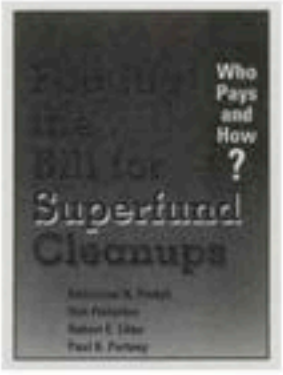
These cost estimates detract from the authors' primary message, which concerns the incidence of these costs. Under the current program, roughly one-third of total costs are borne by taxpayers, another third are cleanup costs picked up by "responsible parties," and the remaining third consists of insurer and responsible-party transactions costs, that is, lawyers and others hired to deflect cleanup costs to others when it is possible to do so and to delay Judgment Day when it is not.

Richard B. Belzer, an economist for the Office of Management and Budget, wrote this review while on leave as a senior fellow at the Cecil and Ida Green Center for the Study of Science and Society at the University of Texas at Dallas.

It is this final one-third that the players in last year's legislative drama sought to reduce, on the sensible ground that litigation contributes nothing to whatever human health and environmental benefits Superfund generates. But the authors estimate that the Clinton administration's proposal would have reduced total annual costs by less than four percent. This means that virtually all of the energy spent in trying to "reform" Superfund involved efforts to shift costs to others rather than to reduce them.

Calculating costs

Probst and her co-authors discuss only one part of the federal program to clean up hazardous waste sites. Superfund is vastly larger in fact and in influence than the summary tables in the book might suggest. First, the Environmental Protection Agency (EPA) currently estimates that before Superfund is finished, it will have cleaned up between 3,000 and 6,000 nonfederal sites. At approximately $30 million each, this implies a total commitment of $90 billion to $180 billion. At the current spending rate of $4 billion per year and with the use of interminable "pump-and-treat" schemes to remedy groundwater contamination, we will not finish paying for the current program until after the year 2100. Like craftsmen of the Middle Ages, hydrologists may be able to pass on their knowledge to their children and grandchildren, who will be cleaning up the same sites. When the lame-duck Congress of 1980 enacted Superfund, however, the program was authorized for only four years with total expenditures capped at $600 million. Ironically, most risk experts now believe that hazardous waste sites in general pose substantially less risk than was feared 15 years ago. This means that the current program commits 100 to 200 times as much money as originally promised to remedy a problem that is a small fraction of the originally perceived threat.



Second, the authors' estimates specifically exclude the cost of restoring damaged natural resources, costs for which potentially responsible parties remain liable under Superfund, independent of the costs of site remediation. Peculiarly, federal and state governments are by law the "trustees" of these resources, even when they are located on private land, and they are entitled to demand full restoration of the environment as it existed before the land was developed for industrial use. Reliable estimates of the cost of restoring damaged natural resources are not available because the number of such cases pursued to date has been small and highly variable. Nevertheless, under current law it is safe to assume that total claims for natural-resources damages will be roughly of the same magnitude as site remediation costs.

Third, there is a parallel program to Superfund that applies to all facilities requiring permits to operate under Subtitle C of the Resource Conservation and Recovery Act (RCRA). EPA's analysis supporting its 1990 proposed rule governing so-called "corrective action" cleanups placed total present value costs (using a 3 percent discount rate) at $10 billion to $770 billion. A 1993 draft revision of this estimate placed total present value costs (using a 4 percent discount rate) at $29 billion.

Finally, there are more than 100 federal facilities with Superfund problems, including about 10 mega-sites whose cleanup costs under current laws—Superfund or RCRA—are probably best described as infinite, or thereabouts.

In short, the total cost of cleaning up all but the worst federal facilities contaminated with hazardous waste is about one trillion dollars, give or take a couple hundred billion or so. This uncertainty is of no practical significance, of course, because under a strict interpretation of current law and EPA regulations, federal facility cleanup costs would devour the rest of the nation's wealth. Some civilizations build pyramids, cathedrals, or Great Walls. We dig big holes, sterilize the dirt, and fill them up again.

We have not even begun to address Superfund's indirect and unquantified costs, such as the perverse incentive effects and injustices of retroactive, strict, joint, and several liability; the acres of so-called brownfields, urban land rendered useless and undevelopable because of Superfund liability, and the human costs of lost

employment resulting from the abandonment of this land; and the destruction of the market for property and casualty insurance wherever hazardous substances may be present. Worrying about a few millions at the margin of this program seems a bit like bandaging a paper cut on a patient in cardiac arrest.

Why so much?

With costs so high that they have achieved escape velocity from Earthly orbit, one might think that this is a program that richly deserves some effort to estimate its benefits to humankind and the environment. Like others before them, however, the authors shy away from tackling this side of the ledger with the all-purpose disclaimer that it was beyond the scope of their project. No doubt it was, and the difficulties of performing a credible benefits analysis cannot be easily overstated. In fact, however, estimating benefits would be relatively straightforward if we had reliable estimates of baseline risk and the incremental risk reduction offered by alternative remedies. We do not have such estimates, however, because EPA calculates risk in systematically biased ways, such as assuming that dumps become subdivisions ("Abandoned Drum Estates"?) and treating imaginary people, such as stealth subsistence farmers and trespassing toddlers, in the same way as real folks. It is all too common to find EPA demanding remediation sufficient to permit children to safely eat dirt 245 days per year because safely eating dirt for only 70 days per year is "not protective"; never mind that the site in question is a swamp.

The broader problem here is that benefits assessment seems to be beyond the scope of everybody's Superfund research project. Yet the need for such an effort only intensifies as Superfund and its cousins insatiably consume every dollar thrown at them, or anywhere nearby, for that matter.

In several discussions (and especially in their conclusion), the authors seem bewildered as to why Superfund generates so much vigorous debate even though it claims less than 10 percent of the acknowledged annual costs of federal environmental protection legislation. Part of the answer relates, as they argue, to how these costs are distributed, because costs are always more palatable when borne by others. Another part can be attributed to inadequate cost accounting: In EPA's 1990 Cost of Clean report, cited by the authors as their source for the estimated annual costs of environmental protection, only out-of-pocket capital and operating costs are counted, and not opportunity, transactions, and indirect costs or the perverse incentive effects of Superfund liability. But the real controversy of Superfund is that, for all the huge sums we're spending on it, we haven't a clue as to what we're getting in return, although we strongly suspect that it isn't much.

An unexpected contribution to the debate on Superfund can be found in Chapter 4, where the authors solidly refute the well-established myth that the costs of this program are borne equitably based on the "polluter pays" principle. Rhetoric and demagoguery aside, this is clearly not so, for costs would have to be borne by those who consumed products produced at the time hazardous wastes were mismanaged. Instead of taxing this group, however, Superfund targets current consumers of petroleum and products made from taxed chemical feedstocks and current corporate stockholders. Few, if any, of these targets benefited from avoiding the costs of modern hazardous waste management technology in decades past. Much of the seething hatred for Superfund among those euphemistically named as potentially responsible parties may be because, in addition to having to bear an inequitable share of the cost of cleanup, they must also suffer the false accusation of having benefitted from others' past antisocial acts of pollution.

Toward sanity

This book is necessarily constrained by the domain of issues considered "hot" at the time the project was undertaken. But times change, sometimes dramatically. With the new congressional leadership, it may be easier to point out that this particular emperor is indeed buck naked and that the Superfund program deserves radical treatment rather than cosmetic surgery. For example, the most difficult issue with respect to site remediation has always been how clean is "clean," and the 104th Congress appears to be flirting with the truly radical notion that the benefits accruing from cleanup ought to exceed the costs. H.R. 1022, the House-passed bill that would require regulatory

agencies to base risk-management decisions on risk assessment and cost-benefit analysis, would extend the application of these requirements to cleanups costing $5 million or more. If it survives numerous legislative hurdles, this simple provision could have a more dramatic effect on Superfund than all of the proposals made to date. Just maybe we could spend money on protecting real people from real risks, and then the debate over who should foot the bill for Superfund would likely evaporate.

Prescribing competition

Strong Medicine, *by George Halvorson. New York: Random House, 1993, 251 pp.*

By Lucien Wulsin, Jr.

In *Strong Medicine*, George Halverson presents a lively, detailed, and easy-to-understand catalogue of what ails the U.S. health care industry and prescribes a healthy dose of competition as the cure. As the president of Health Partners, a nonprofit managed-care organization headquartered in Minneapolis, and chair-elect of the Group Health Association of America, a national association of health maintenance organizations (HMOs), Halvorson is a proponent as well as a practitioner of the managed-competition approach to cost control. His experience places him on the leading edge of health care reform. Minneapolis-St. Paul and California are the health care markets most heavily dominated by HMOs.

Managed competition encompasses an array of measures designed to reduce health care costs by introducing market forces into the health care system. Though reforms at the federal level have stalled out, there is far more agreement between Democrats and Republicans in support of managed competition than was evident in last year's debate. Meanwhile, the tenets of managed competition are being adopted by state governments and private employers at a dizzying rate. Halvorson's package of proposed reforms maps out the direction in which many progressive states, employers, and health care providers are already evolving in the absence of an organized national reform plan.

I find myself in agreement with most of Halvorson's criticisms of the current health care system, as well as his proposals for reforming it, but wish he had subjected his own industry to the same scrutiny. For example, he recommends capitation, the system used by HMOs in which providers are paid a flat rate per patient. By contrast, private insurers, Medicare, and Medicaid use a fee-for-service approach, which pays the doctor or hospital separately for each service provided. Fee-for-service gives physicians an incentive to overtreat patients and overbill insurers. But Halvorson glosses over the fact that capitation provides an incentive for providers to undertreat, arguing that HMOs and fellow providers will effectively police themselves. In fact, in states such as California, where over half of insured employees are now enrolled in HMOs, self-policing has proved inadequate, and state regulatory agencies have insufficient resources to investigate consumer complaints.

Halvorson also recommends cutting costs by giving consumers financial incentives to choose the most efficient health care delivery systems. Employees could choose between an HMO or a fee-for-service insurer, but they would have to pay out of their own pockets the extra cost of choosing the more expensive plan. (Some HMOs cost up to 30 percent less than fee-for-service insurance plans for an equivalent benefit package.)

This strategy has proven highly effective. In California, more than 75 percent of state and small-business employees that belong to purchasing pools voluntarily select HMOs. A 1995 report by the Hay Huggins benefit consulting firm credited the enrollment shift away from traditional insurance plans and toward managed care with actually driving down employers' health care costs for the first time in many decades.

Both employers and individual consumers, however, are seriously handicapped in choosing among health plans and health care providers by the absence of

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