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The States Begin to Take Charge

The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people.

—Amendment X of the U.S. Constitution

Congress and the Executive Branch have been totally paralyzed. . . . We simply can't afford to wait.
—Environmental Commissioner of the State of New York

State aid: Towns will get rules, but not money, to protect the environment.

—Cape Cod Times

A Soft Collar Protects the Chesapeake Bay

“Where are all the scientists?” I asked a colleague from the EPA. We were attending a conference in 1980 at an old Virginia hotel overlooking the mouth of the Chesapeake Bay. The purpose of the gathering was to review the progress of the EPA’s \$25 million scientific studies of the ecological condition of the Bay. I had recently assumed a new position as the manager of aquatic research within the Agency’s headquarters in Washington, and the Chesapeake Bay program was one of my responsibilities. I had expected to see mostly scientists among the 150 participants at the meeting, but we were surrounded primarily by representatives of state, county, and town governments and by environmental activists.

My EPA colleague who had followed the Chesapeake Bay program for several years reassured me that we were at the correct meeting and that the EPA had indeed emphasized science in its studies. He

noted that any major field research effort close to Washington, and particularly one targeted on a recreational mecca for Washington politicians, had immediate repercussions that transcended science. Therefore, the domination of the meeting by specialists directly involved in governmental policies at many levels was to be expected, he added. Of greater significance to me, however, were the comments of my colleague that the EPA-sponsored studies would only be successful if the findings were translated into action, and the attendees at the meeting were precisely the types of people who could bring about changes in the amount of pollutants being deposited in the Bay.

The Chesapeake Bay is one of the most bountiful estuaries in the United States. More than 50 rivers interrupt the thousands of miles of shoreline and feed into almost 5000 square miles of water. The fisheries of the Bay provide 95% of the nation's blue crabs and over 50% of its oysters.

Almost 15 million people live in the watershed of the Bay—in large areas of Virginia, Maryland, and Pennsylvania, and in the District of Columbia. The Bay is an important route for international shipping. It is known throughout the world for its sailing and other forms of recreational boating. At the same time, the Bay is the recipient of large amounts of pollutants from cities, from industrial facilities, and from agricultural areas every day.

Returning to the conference, the few scientists in attendance were trying their best to document trends in the environmental quality of the Bay during a 50-year period. They were able to show that during the previous decade fisheries and seagrasses had declined, levels of phosphorous and nitrogen from agricultural fertilizers had risen, and in many areas oxygen had become inadequate for healthy aquatic life. They could pinpoint dramatic increases in metals, pesticides, and other toxic pollutants flowing from urban and rural areas into the Bay. However, the scientists had great difficulty going back several decades with their comparative analyses since scientific data and records were far from complete.

The most persuasive evidence as to the continuing decline in the quality of the Bay came not from the scientists but from a maritime pilot who for 50 years had been guiding large ships over a 100-mile trek from the Atlantic Ocean into the port of Baltimore. A true lover of nature, he presented his observations over the years as to how the

wildlife had changed, how clear water had turned gray, and how the Bay had been repeatedly and, in his view, irreversibly scarred from chemical discharges on the land and on the sea. After his lucid and at times emotional presentation, there were no doubters in the audience that the time had long passed for aggressive steps to protect this aquatic treasure.

Protection of the Chesapeake Bay provides an excellent example of the central role which must be assumed by state governments in correcting environmental problems. The federal government can provide funding to support local efforts. The agencies in Washington also can support research that will help clarify the seriousness of the problems, and they can place limitations on certain types of polluting activities. But corrective actions of the magnitude required to preserve the Bay can only come about if the states and the local jurisdictions fully commit themselves to environmental protection. In this case, more than 100 local jurisdictions ring the Bay and its principal tributaries, and only the state governments are in a position to galvanize local actions so that all pull in the same direction.

Turning specifically to the state of Maryland, many efforts are currently under way to protect the Bay from pollution in general and from chemical contaminants in particular. The state has steadily upgraded municipal sewage treatment plants and has vigorously enforced regulations limiting chemical discharges from industrial plants into rivers and streams. It requires industry to cleanse its water before discharging it into municipal wastewater systems. Also, the state limits rural runoff into the Bay through erosion control programs. These are all standard approaches used to varying degrees to control pollution throughout the country.

An important and novel centerpiece of Maryland's efforts to protect the Bay is the direct regulation of a 1000-foot strip of land around its portion of the Bay and adjacent tidal marshes, an approach that has also been adopted by Virginia. All counties and municipalities within this protective collar must have zoning and development programs, approved by a state commission, which minimize the adverse effects of growth. Wildlife habitats, soil, endangered species, tidal and nontidal wetlands, forests, and fish-spawning areas are of special concern. This bold regulation by the state, in cooperation with local authorities, of the use of private land is both unusual and effective. While some property

owners have been apprehensive of governmental encroachment on their activities, most have accepted the approach as improving the condition of the Bay and thereby raising the value of their property in the long run.¹

Of course, many bays and lakes throughout the country are not ringed by soft environmental collars. However, every state has its own initiatives to protect environmental resources—rules on the spraying of chemicals, guidelines to improve the management of farming areas, computer mapping programs to identify environmentally sensitive areas, and many other approaches. Sometimes the federal government encourages and supports such initiatives, and sometimes officials in Washington learn about them only after they have been adopted. The remainder of this chapter discusses some of these approaches and describes how the states are increasingly taking the lead in protecting their resources. More often than not, state leaders feel that Washington is either out of touch with their real problems or is too bogged down in administrative procedures to respond to local needs in a timely manner. Central to the discussions are the issues of funding and control of programs as environmental problems test the concept of “states’ rights” as never before.

Setting the Environmental Agenda and Paying the Bill

Looking more broadly at local environmental issues, in 1989 *Newsweek* underscored the differences in approaches to environmental protection being pursued throughout the country—from the Chesapeake to the San Francisco Bay, from the Black Hills to the Everglades, and from the Sierra Nevadas to the Appalachian Mountains:

Are you sick of inhaling the gasoline fumes wafting from service stations? You’ll breathe easier in the northeast where eight states have decreed that only a new “clean” gasoline can be sold. Fed up with utility plants that spew out the ingredients of acid rain? Move to Wisconsin or Minnesota, which strictly limit such emissions. Worried about radiation leaking from a nuclear power station? You’ll sleep easier in Illinois where the nuclear monitoring program surpasses any federal effort.²

The magazine trumpets the dawning of a new age of environmental federalism, proclaiming that the states have passed more stringent

controls on pollution than the Congress ever considered. For example, every state now regulates emissions of toxic chemicals into the atmosphere. *Newsweek* concludes that the states are forging ahead on their own because Washington simply will not aggressively champion a number of environmental measures even on issues which have causes and consequences far beyond any state's borders. While this criticism of federal inaction seems excessively harsh, the perception of environmental footdragging in Washington, and particularly with regard to toxic chemicals, is certainly widespread.²

At the heart of the never-ending debates throughout the country as to the division of responsibility between federal and state environmental agencies is the question of who will provide the funds for state environmental activities. In general, the state agencies would like to have full authority to control activities within their boundaries. However, they would also like to have all of the funds for their programs come from Washington. They recognize that they can have neither, and a tug of war proceeds on many fronts.

Since the earliest days of our nation, the federal government has assumed responsibility for issues which impinge directly on interstate commerce. Now the definition of interstate commerce is becoming blurred as environmental policies sooner or later affect the prices of most goods which are produced in one state and marketed in others. Also, pollutants move in often invisible ways from one state to another. The uncertainty dividing interstate and intrastate environmental actions clouds both the regulatory and the funding responsibilities for many state environmental initiatives.

In addition, state and local politicians are sometimes uncomfortable dealing with emotionally charged environmental issues which are extraordinarily complicated in their origins and in their solutions. Frequently they would like to pass these environmental hot potatoes to Washington for resolution, and they seldom advocate the exclusion of federal involvement in any of their environmental programs.

Finally, every state recognizes the importance of research in clarifying the dimensions of environmental problems. They all want access to the huge federal research efforts, and they want scientific efforts oriented toward their specific problems.

Returning to the issue of financing, the National Governors Association has pointed out that during the next decade the costs of environmental programs administered by federal, state, and local agencies will

grow by more than \$20 billion, with the bulk of the financial burden coming to rest in the state capitals and county and local seats. According to the governors, their financial commitments for environmental protection are already growing rapidly. Most states are struggling to meet the costs of many existing environmental initiatives, they emphasize. Also, the governors note that the states are receiving a declining share of the EPA's budget. While many states have increased their appropriations from general revenues, these resources are not adequate to cover program costs, they add.³

Exemplifying the bargaining positions adopted by the states in their quest for larger federal funding with less federal control is the following summary of the declaration of the National Conference of State Legislatures in 1989 concerning activities under the Clean Water Act:

1. The Congress and the Bush Administration should provide *all* of the funds authorized in the 1987 Clean Water Act reauthorization to treat wastewater and to control pollution from runoff.
2. States must be given increased flexibility in determining the most beneficial and cost-effective use of federal funds provided for wastewater treatment.
3. The states should be given more flexibility in the use of federal funds to support their programs for cleaning up pollution spills and other emergency situations, including removal of federal limitations on the percentages of funds that can be used for administration of such programs.⁴

The funding alternatives to federal grants and general revenues which are used most widely by the states are special fees, taxes, bonds, and revolving loan funds earmarked for environmental programs. Other fund-raising approaches include fines and penalties for violations of environmental regulations, private contributions for environmental protection from wealthy state residents, and proceeds from state lotteries which are tied to environmental activities.

The variety of fees that the states have developed to pay for environmental programs is staggering. For example, in Wisconsin 32 types of fees are in place including fees on the purchase of new cars; acid rain fees for the issuance of permits for air pollution control; fees for drilling wells, for emplacing storage tanks, and for installing septic

systems; and fees for the sale of pesticides, fertilizers, and soil and plant additives.

Other states are also ingenious in finding ways to finance environmental programs. Washington has a "sin tax" on tobacco and cigarettes to finance its water quality programs. California's air pollution programs are financed partially by taxes on vehicle registrations and drivers' licenses. Many states have found that general obligation bonds and revenue bonds are lucrative ways to support environmental programs. However, bond issues require legislative or voter approval, approval which may be difficult to obtain.⁵

Financial constraints have not prevented the enactment of many types of state programs designed to curb chemical threats to the environment. New Jersey, for example, has established four programs to reduce human health risks from accidents involving toxic chemicals. The Toxic Catastrophe Prevention Act stringently regulates manufacturing and other facilities handling 11 chemicals which have been identified as extraordinarily hazardous. The state can order any of the facilities involved with these chemicals to make manufacturing design modifications if there is even a remote possibility that an accident could occur. The Worker and Community Right to Know Act covers 30,000 facilities ranging from manufacturing complexes to hospitals and auto repair shops. This act requires employers to clearly label and report to the state hazardous substances at their places of business and to provide detailed safety information to their workers. New Jersey's incident reporting law requires a company to immediately notify the state of any accidental chemical release which could cause off-site problems, including off-site odors. Finally, the state trains 3000 emergency workers each year to detect and respond to chemical hazard problems.⁶

Reflecting the regulatory bite in its environmental efforts, the state boasts that its approach allows the administrators of its hazardous waste program, for example, to take action to assess and clean up hazardous sites without waiting for recalcitrant or bankrupt dumpers to respond to state requirements. At the same time, New Jersey's enforcement arm assesses penalties and litigates for injunctive relief as necessary. All the while the responsible parties accrue broader liability under the state's Spill Compensation and Control Act, Water Pollution Control Act, or Solid Waste Management Act.⁷

Another signal of increased state sensitivity to public health and

ecological concerns is the establishment of the position of environmental advocate. Such an official is already in place in New Jersey, and a similar position is being considered in California. An advocate in Sacramento would have the authority to file lawsuits against violators of pollution regulations and would also administer a \$40 million environmental research program.⁸

Even if the federal emphasis on environmental protection intensifies, many states will continue to press forward with their increasing ecological consciousness. They will develop new programs as individual states, and increasingly we can expect to see coalitions of states emerge to coordinate their efforts for environmental reforms in Washington. The efforts of the states to maintain their fiscal and regulatory integrity are reflected in the following set of principles developed by a coalition of state legislatures:

- (1) that the federal government minimize the extent to which it mandates state laws or regulations without providing adequate funding to support the program; (2) that the federal government resist the temptation to preempt state laws; and (3) that Congress pass no legislation and the Administration adopt no regulations that violate the integrity of the intergovernmental fiscal system.⁴

In summary, the states want to be a dominant force in environmental protection activities, with Washington providing as large a portion of the needed financial support as possible. They want to establish their own regulations, and they want few strings attached to federal funds. At the same time, they realize the importance of a degree of national consistency in environmental protection regulations, consistency that can only be brought about by federal leadership and federal regulations. Further, they recognize the impressive concentrations of technical experts within the federal agencies who can be very helpful in supporting their efforts, and they want to tap these resources. Finally, they realize that sometimes local political realities thwart scientific rationality in addressing controversial issues and that interventions by the technical agencies of the federal government can be helpful in fending off politically motivated programs which could be damaging to the environment.

Now let us turn to the problems of the runoff of contaminated water and the control of pesticides to illustrate the roles which the states are playing and the struggles among federal, state, and local authorities for dominance in environmental protection.

Recognizing the Impacts of Chemical Runoff

For many years, the regulatory emphasis in Washington and in the state capitals in protecting the quality of the nation's water resources has been on mitigating pollution from industrial facilities, from municipal sewage systems, and from other easily recognizable discrete sources of contaminants. Such sources are known as "point" sources of pollution, and they have been responsible for much of the toxic loading placed on the environment. The Clean Water Act defines a point source as ". . . any discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged."⁹

While continued efforts to reduce the volume of chemicals flowing from point sources into groundwater and waterways remain of great importance, the nation needs more emphasis on controlling runoff from urban areas, from agricultural lands, from timber tracts, and from mining regions. As rainstorms wash city streets, chemical debris ends up in nearby streams and rivers. As erosion of topsoil intensifies, soil particles laden with agricultural chemicals find their way into surrounding marshlands and lakes. As melting snow drains over piles of slag from coal mines and other mineral extraction activities, the countryside becomes impregnated with toxic metals. Federal laws have set the framework for reducing such pollution—called "non-point" source pollution. Still, the major burden of the effort to contain runoff rests with state, county, and local governments.

At present, for example, almost all iron pollution in streams, lakes, and estuaries can be traced to nonpoint sources. More than one-half of the zinc and lead showing up in waterways comes from runoff from cities and mining areas. Agriculture runoff is responsible for more than one-half of the nitrate pollution in streams and lakes. While under normal conditions small amounts of these contaminants are not harmful, high levels of lead and nitrates have been tied to disorders of the nervous system and blood diseases, respectively, and iron and zinc can impart bitterness to water supplies making them unpalatable. Many more harmful materials—such as asphalt, solvents, arsenic, and mercury—also drain through complicated pathways before reaching the nation's waters. Chemical runoff can be particularly damaging to groundwater

which feeds drinking supplies, and in some areas the costs of providing clean drinking water from either surface or groundwater are directly linked to the level of water contamination from runoff.

Turning first to agriculture, governmental approaches to control runoff of pesticides, fertilizers, and other chemicals have traditionally relied on voluntary programs undertaken by farmers with the federal government sharing the costs. A number of these programs are directed to reducing soil erosion which certainly helps stem chemical runoff. However, chemicals also flow off-site through irrigation systems, and on-site they may percolate straight through the soil into groundwater.

Many state governments now believe that expanded regulations must supplement the voluntary programs of the past in limiting runoff of agricultural chemicals. Farmers frequently object to such a change. Among the regulatory approaches being advocated are prohibitions on the use of chemicals near water wells, tax codes which encourage environmentally sound farm management practices, and prohibitions on significant transfer of chemical pollutants off-site.

Since storm sewer systems and paved streets are among the major conduits for urban runoff, local governments are the ones responsible for containing nonpoint pollution in industrial areas. Unlike farmers who have become accustomed to responding to voluntary-incentive programs, most urban dwellers expect regulatory controls to limit pollution in metropolitan areas. Clearly programs to control runoff should be closely linked to local planning and zoning activities, with storm-water controls in particular intimately tied to zoning. Unfortunately, retrofitting drainage systems in areas where planning had been inadequate and where uncontrolled runoff is now a common problem is often very expensive. Occasionally, low-cost techniques such as small catchment basins can help. In any event, significant expenditures are frequently essential to avoid ecological disruptions and maintain clean water.

Local programs to control land use should encompass the water impacts of small-scale residential developments as well as the problems associated with large-scale industrial developments. While a single housing tract may not seem to pose an environmental problem, the cumulative effect of runoff from many small tracts can be a major determinant of the flow and quality of surface waters over large areas.

Tax breaks and other financial incentives can often be used by

states and localities to encourage private individuals to protect land and water resources through constrained development. Local governments can recognize and encourage the efforts of conservation groups which stimulate community actions to limit the flows of chemicals reaching parklands or preserves. Also, government agencies should consider setting aside as protected areas regions that are particularly sensitive to ecological impacts. Minnesota, for example, intends to use a portion of its revenues from the state lottery to purchase important ecological habitats as areas to be protected from economic exploitation.

Since many of the timber regions of the country are under federal or state control, large programs for preventing chemical runoff rest squarely in the hands of government agencies. The intensity of timber operations varies radically among and within states. However, in every case long-range planning which accommodates approaches such as streamside buffer zones and carefully designed access roads is critical. Such planning should take into account both short-term and cumulative environmental impacts and should provide a basis for ensuring the adequacy of water-quality and other resource protection measures.

Timber areas may be huge and exploited by many timber operators. Clear guidelines for these operators should constrain their lumbering from having adverse impacts on both surface and groundwater. Enforcement is critical since individual lumbering operations which violate established environmental guidelines can sometimes damage an entire watershed.¹⁰

Mining often creates severe water-quality problems. In some states, such as Montana and Pennsylvania, pollution from mining is a major cause of degradation of water resources. Generally the most severe mining pollution in a region is limited to a few locations near the mines, and some of the potential sources of runoff leading directly from the mining operations can be controlled as point sources. However, when mine spoils are scattered over the countryside, point source controls may be inadequate.

Also, abandoned mines often cause major problems. Ideally, plans for containing runoff from an abandoned mine should be developed before the mine is opened. Unfortunately, many abandoned mines, with no identifiable responsible parties, are currently significant pollution sources, and government agencies may be forced to establish reclamation funds to clean up abandoned mines.

Regardless of the types of programs created to control chemical runoff, the costs will be substantial, and the question of funding will be a core issue. In the agricultural sector, farmers have become used to receiving federal funds to help address their problems. Now, the environmental demands are far outweighing any increases in available funds. With regard to urban areas, the federal government sometimes provides limited funds, generally in the form of grants for planning and assessment. Some states have sizable appropriations to add to this sum, although other states spend less for nonpoint pollution control statewide than they do for a single sewage treatment plant.

In general, programs to combat chemical runoff cannot depend solely on general revenues available to the federal or state governments. The nation should move increasingly toward a principle that the polluter pays. Such a philosophy should be both a deterrent to polluters and a source of funds for prevention and cleanup. However, such a philosophy will be painful for many to accept, and as we have seen in the Superfund program, implementation will be more complicated than administration of a program of governmental loans and grants.

Underscoring previous suggestions, more attention should be given to taxes, including taxes on agricultural chemicals which will discourage excessive use of fertilizers and pesticides. For those installations that encompass large paved areas which spread rather than collect runoff, a stormwater fee might be appropriate. When land is to be transferred for development, transfer taxes which provide revenues to help cushion environmental impacts should be considered. Also, timber and mineral assessment taxes may be needed to address the problems in those sectors.

The problem of runoff is serious in some areas and is becoming more acute as industrial and agricultural development continues throughout the country. The states are clearly the key players in the transition to more aggressive control of chemical runoff. They need to build on innovative approaches of the past in developing programs which are both affordable and effective.

States Want to Get Tough on Toxics

In 1986 California voters rebelled. In a statewide referendum, they overwhelmingly decided to “get tough on toxics,” and they passed

Proposition 65, The Safe Drinking Water and Toxic Enforcement Act. Proposition 65 sent shock waves through the business community in California and in other parts of the country where similar legislation soon became a lively topic of debate in state legislatures. The new law stunned Washington as the federal agencies tried to figure out how an initiative of this magnitude to control toxic chemicals could originate in Sacramento when up until that time the federal government had considered itself to be the pacesetter in developing the ground rules for controlling toxic substances.¹¹

This vaguely worded state law prohibits businesses from discharging into groundwater and other sources of drinking water those chemicals “known to the state to cause cancer or reproductive toxicity.” Also, it requires businesses to post warning signs before exposing anyone to such chemicals. The law has a “bounty hunter” provision which permits private citizens as well as public enforcement officials to take violators of the law to court, and the vigilant citizens receive one-fourth of any fines that result from the court actions which they initiate.

To the voters of California, these provisions certainly seemed reasonable. They had been inundated with media accounts of the leakages of toxic chemicals into drinking water supplies from many hazardous waste dumps in both southern and northern California. They had learned that even though Silicon Valley was generally free of large smokestacks, the electronics industry was not as clean as advertised as leaking storage tanks of the electronics firms discharged into the groundwater solvents which were to be used in their production processes. Finally, the stories of toxic runoffs from agricultural areas impacting on residential areas and on wildlife preserves were increasing. Symbolizing environmental concerns, one-third of the population of southern California already relied on bottled water, including many who wanted to avoid possible health problems even though the tap water was judged by the health authorities to be perfectly safe.

At the same time, throughout the nation citizens had steadily lost confidence in the integrity of government. In California, voters had become particularly disenchanted over an apparent lack of determination of the federal and state agencies to adequately enforce pollution and waste regulations already on the books. The EPA scandals of the early 1980s revolved in part around several waste sites in California where the citizens had become outraged at the lack of cleanup action. The state agencies were perceived by many residents as spineless.

Thus, Californians were sympathetic to the concept of environmental vigilantes who would ensure that toxic polluters would be punished.

When the law was enacted, the scientific debates throughout the country over what types of chemical discharges cause cancer were intense. Environmental groups argued that hundreds of “probable” carcinogens should be controlled by the state. Their lists included many chemicals which were widely used in agriculture, industry, and dry cleaning establishments. They urged placing severe restrictions on the handling of these chemicals to prevent their reaching the groundwater, restrictions that would cause major economic dislocations. In 1987 the state, sensitive to these economic implications, identified only 29 chemicals for regulation, selecting those chemicals which their scientific advisers concluded had been shown to cause cancer in humans while not including the many other chemicals which were of concern because of their biological effects on laboratory animals.

Also, controversy arose immediately over the amounts of these chemicals that cause harm. Again, some groups argued that no level of discharge of these chemicals above zero was acceptable. Within several years, however, the state settled on controlling only those discharges which produced pollutants above a “threshold” level of concern. This level would be established on the basis of risk estimates that a discharge would cause less than one case of cancer in a population of 100,000 people. As we have seen in previous chapters, the uncertainties in deriving such risk factors are very large. At the same time, however, the state needed specific discharge levels as the basis for regulation and enforcement.

Turning to the threat of reproductive toxicity—or the adverse effects of chemicals on prospective mothers and their unborn children—the state, like the federal government, had considerable difficulty identifying chemicals which should be of concern let alone in determining safe discharge levels. Aided by scientific advisory groups, the state has spent considerable effort to respond to this legislative mandate. In 1990 the governor listed 200 chemicals in this category despite the lack of a solid research base to provide good guidance concerning subtle chemical threats to the process of human reproduction.

With regard to the requirement of Proposition 65 that businesses warn customers of the hazards of their products containing toxic chemicals, the initial predictions that supermarkets and retail outlets would

be plastered with warning signs have not materialized. Indeed, the state government promptly determined that drugs and food were beyond the reach of the new law, a determination which was overturned by a California court in 1990. Initially, the most widespread warnings were those placed at every outlet selling alcohol which pointed out the dangers of pregnant women consuming alcohol. Should warning signs now be required for every carcinogen and reproductive toxin found in drugs and food? Also, environmental groups are demanding that warning signs be attached to shelves displaying dozens of brands of paint removers, spot removers, and water repellants containing minute levels of widely used methylene chloride and perchloroethylene. Thus, the character of many stores could change dramatically, particularly if very small traces of naturally occurring toxic chemicals which find their way into food such as aflatoxin in peanuts are also included.

Other states were initially intrigued by California's boldness in assuming a leadership role in addressing toxic chemical problems. A few drafted their own versions of Proposition 65. However, most state legislatures have been reluctant to enact such legislation given the difficulties of translating general regulatory intentions into meaningful programs. The National Governors Association decided not to endorse Proposition 65 as "model legislation." They are wary of the ability of the states to cope with the scientific uncertainties as well as the economic ramifications in controlling large numbers of chemicals.¹²

As repeatedly noted, many states are dissatisfied with the lack of leadership in Washington in providing an adequate basis for controlling toxic chemicals. At the same time, the states recognize their limitations in going it alone, particularly in coping with the scientific uncertainties when trying to determine the details of regulatory approaches. Meanwhile, local politicians worry about how the economies of small communities may be affected by tough new laws. At the local level, there is inevitably a gap between the degree of protection demanded by many citizens and the cost they will bear to achieve this level of safety.

The federal government has the necessary legal authority to address the dangers of toxic chemicals wherever they may appear. Furthermore, the scientific resources available to the federal government are very large. The EPA and the other federal agencies simply need to give a higher priority to working together and working with the states—one by one—in addressing the problems of toxic chemicals. The states are

increasingly determined to play a greater role, and the federal government must find better ways to integrate efforts in Washington with those in the state capitals.

Keeping Pesticides Out of Groundwater

For several decades pesticides have been the toxic chemicals of greatest public health concern in rural America, and they deserve more detailed comments. Designed to kill weeds, bugs, or fungi, they also can harm farm workers who have not received proper instruction on how to apply them in the fields. They can cause health problems for children playing in areas in the wake of crop dusters and for rural inhabitants who find pesticide residues in their drinking water wells. Every state is now trying to ensure that such public health threats are minimal without disrupting farming practices.

Still the nation has a long way to go. Every summer as I play tennis in a public park in Arlington, Virginia, a helicopter sprays the immediately adjacent parkland with little regard to those of us using the nine courts. Of course, pesticide drift is far more serious in rural areas of the West. Also, complaints from migrant workers in the San Fernando Valley suggest that they are not always properly trained to handle pesticides. Finally, as analytical chemistry techniques become ever more sensitive, more and more pesticides are being detected in crop, soil, and water samples taken from agricultural areas.

Let's take Florida as an example of a state which has made impressive progress in capping pesticide problems that have threatened water supplies. Agriculture is a \$5 billion per year business in the state. Very permeable soils expose a high groundwater table to chemicals percolating downward from the surface. This is particularly important since 90% of the population relies on groundwater as its source of drinking water. In 1982, discovery of the pesticide ethylene dibromide—a carcinogen—in groundwater and in foods in retail outlets galvanized state agencies into action. State officials were determined to reduce groundwater contamination and prevent further degradation of this critical resource.

Limitations on pesticides cut across the interests of several Florida

state agencies and affect many economic interests. The three agencies most concerned—those responsible for agriculture, health, and environmental protection—agreed to consolidate their efforts. They began by classifying groundwater areas according to their uses and susceptibility to chemical contamination from the surface. They then expanded monitoring of groundwater across the 67 counties of the state. The state also provided financing for a special fund for cleaning up emergency pesticide situations.

The state established regulations for use of certain pesticides. Some cannot be used within 300 feet of drinking water wells and 1000 feet of other wells in particularly permeable areas. The agencies have tightened procedures for approving pesticide use in the state, and particularly for granting exceptions to general prohibitions on using particularly toxic chemicals. Finally, the number of enforcement inspections has increased dramatically.

Florida officials concede that some groundwater degradation is unavoidable and must be tolerated. The state has been characterized as a “sand bar connected to Georgia” because of its permeable soils. As long as agriculture remains a backbone of the state’s economy, some low levels of pesticides will find their way into the aquifers although aggressive management prevention strategies can reduce the severity of this problem. About 20 pesticides are commonly present at trace levels in samples from water wells in a number of areas. Now the task is to prevent the degradation of groundwater to levels of potential health concern. During the past several years, discoveries of samples that are contaminated above the safe levels prescribed in Washington for drinking water have been rare.¹³

As discussed in the previous chapter, a highly detailed national plan for protecting groundwater is not appropriate given the variations in subsurface geology, land uses, and agricultural and industrial uses. Rather, individual state-specific plans are in order. However, aquifers do not respect state borders, and states must learn to work together. Also pesticides can be bought in one state and used in another. Therefore, state limitations on the sale of certain pesticides may not be effective. The EPA can play an important role both in encouraging cooperation among states and in ensuring a “level playing field” for businesses by establishing minimum standards for all states. States which are lax

in their protection of groundwater should not reap an economic advantage over more diligent states whose farmers compete in the same markets.

Thus, the EPA should ensure that all states have at least minimal plans for protecting groundwater resources from pesticide contamination. Of course the states must have programs to translate the plans into action and to enforce compliance. In those states which do not respond in this area, the EPA should conduct its own assessments of groundwater problems and undertake the necessary steps to ensure proper management of pesticides. In such states, the EPA might very well cancel the use of certain pesticides throughout the state or in specific counties. Though such actions may raise local protests of federal meddling in state affairs, the environmental message will come through.

In 1988, the EPA Administrator asked:

We have been questioned about whether this change, shifting pesticide management from primarily a federal function to one more dependent on an increasing management role by the states, is appropriate. Is it realistic? What requirements from the EPA will be needed to assure state action, yet not interfere unduly with each state's ability to tailor its program to its groundwater conditions?¹⁴

The EPA is on the right track in challenging the states to exert leadership in protecting their water resources. The states need encouragement and support. Then if some states do not respond, a return to federal intervention in those states may be necessary.

The Importance of an Informed Public

In 1980–1982 and again in 1989–1990 infestations of the Mediterranean fruit fly, or medfly, threatened the multibillion dollar fruit and vegetable industries of California. Helicopters sprayed the pesticide malathion widely to help check the spread of this destructive insect. Such spraying had to be targeted directly over urban as well as rural areas in order to be effective. This episode illustrates the central role played by state agencies not only in designing programs for local uses of chemical pesticides but also in informing the public about the levels of hazard associated with exposure to chemicals.

Prior to the 1980s, Malathion had been frequently used for 35

years in farming regions and in residential areas to combat insects throughout the country, apparently without harmful side effects. Still apprehensions among the populations in the helicopter flight paths were understandable. In 1981, my daughter was living directly under one of the helicopter routes in Palo Alto, and I, like many others, quickly reviewed the toxicity information concerning malathion.

At that time, the California Department of Food and Agriculture went to extraordinary lengths to reassure the population that the spraying would be deadly for the insects but harmless for humans. In special leaflets and through the media, California state officials widely announced the location and timing of the helicopter sorties into urban areas. The department pointed out that the spray would be about as toxic as laundry detergent. The message seemed clear. Stay indoors so you don't breath the new type of "detergent," but don't worry about touching it.

The department was quite thorough in its consideration of possible problems and in the information it provided to California residents. It noted that there was little danger to humans including children who played in sprayed areas. However, cats and fish and even automobiles could be at some risk. The mixture sticks to fur. Since cats groom themselves, they are more likely to ingest malathion. Fish in very small ponds could be at risk since a small amount of malathion concentrated in a very limited area might have a disruptive effect on their biological balance. As for automobiles, the chemical can be tough on paint and should be promptly washed off.

Of course the spraying took place late at night when most people were inside. Hospitals were avoided to the extent possible. Follow-up studies from the 1981–1982 sprayings, including one study of 6000 pregnant women in the flight paths, revealed no short-term or long-term effects from their limited exposure, if any, to malathion.

Then, in 1990 the spraying was extended to Los Angeles where anxieties and emotions of the public run even higher. Some scientists, environmental groups, and public critics of the program challenged the safety assertions of the state, pointing to new research reports of the breakdown of chromosomes associated with malathion exposures. While the state continued to champion the safety of malathion, it became sensitive to these concerns and convened additional scientific panels to examine the program once again. Scientific judgments may

differ concerning the potential public health problems associated with the program, but the state must be given high marks for its efforts to inform the public of the basis for its decisions and precautions that should be taken in this controversial area.¹⁵

Another example from California illustrates the growing importance of state and local governments in convincing the public of environmental costs and environmental benefits from actions or inactions. In this case the objective was to encourage the public to accept its responsibility to clean up toxic wastes. In 1986 and again in 1989 Marin County north of San Francisco sponsored Household Hazardous Waste Collection Days. In four hours about 1200 cars deposited enough toxic waste outside the convention center to fill several large trailer trucks. The bulk of the waste was paint. Also large quantities of pesticides, paint thinners, and other solvents were included. Some brought waste oil, remnants of asbestos, old furniture polish, caked bathroom cleaner, and unwanted insect repellants.¹⁶

While 1200 households are but a small fraction of the total population of the county, a start has been made, and the widespread publicity has certainly raised toxic awareness. Meanwhile, the county has provided every household with easily understood guidelines on handling household toxics. Printed on a chart which can hang in the garage, the guidelines advise how to handle hazardous materials at home—how to store them, how to dispose of them, and how to find less toxic, alternative products.

In the same educational vein, Wisconsin has completed an important project to acquaint its citizens with the concept of “risk.” In cooperation with the University of Wisconsin, the Department of Natural Resources has produced an excellent brochure discussing in laymen’s terms most of the factors commonly debated when considering environmental problems. Under the heading “You can learn a lot from a rat,” the authors quickly add, “but not everything.” They proceed to explore the complexities of toxicology in a way that develops realistic perspectives of the role of science in making risk decisions. The brochure identifies 25 of the most common chemical risks encountered in the home and outside the home, with tips on how to avoid these risks and telephone numbers to obtain more information.¹⁷

Many other states are also launching major programs to help the public better understand the chemical environment they live in. Ari-

zona has videotapes, films, and slide shows available on environmental issues. They provide handouts and teaching materials upon request. They even suggest tours of facilities engaged in chemical activities and guest speakers to address common problems encountered throughout the state. Louisiana is preparing course materials on 100 environmental topics and has published a three-volume teaching guide. Ohio requires their school curriculum to include the concept of conserving natural resources. Its Department of Natural Resources has established an Adopt-a-School program for which it provides extensive course material to the participating schools. Virginia has a Chesapeake Bay teacher project which provides opportunities for teachers and students to visit the Bay. The state also sponsors environmental courses for teachers at four universities during the summer.

Clearly, education is a principal key to better approaches to environmental protection in the years and decades ahead. The states are gradually accepting their responsibilities in environmental education, and the federal government should strongly support such efforts—with both encouragement and financial resources.

The States Prepare for the Long Haul

State governments have come a long way since the first Earth Day 20 years ago. They have established environmental agencies, adopted wide-ranging policies and programs to curb the spread of environmental chemicals, and supported educational programs which sensitize the public to environmental risks. Environmental issues are now central in the platforms of almost every state politician, and environmental lobbyists are firmly entrenched in every state capital. The governors recognize that “when the people have a hazardous dump in their backyard, they don’t call the White House, they call the statehouse.” Meanwhile, the states continue to battle in Washington for larger shares of federal funds appropriated for environmental protection. Counties and cities have entered the fray in the state capitals for greater control over both federal and state funds.

From industries which must obtain state air and water discharge permits to households that must segregate toxic trash, regulated parties have no choice but to pay greater attention to the environmental pro-

grams of the statehouses. As California prepares to require new cars to have computerized devices that warn drivers of malfunctions in exhaust systems emitting air pollutants and as Tennessee strips local communities of their right to veto hazardous waste storage and treatment facilities in their neighborhoods, the role of state environmental agencies is growing steadily.

In the early 1970s, I visited senior environmental officials in Sacramento, Madison, Annapolis, and Columbus, seeking their support for stronger action in Washington and in the states to control toxic chemicals. At that time they had little incentive to worry about trace levels of chemicals, toxicity, or exposure—topics which were on center stage in Washington. Instead, they were preoccupied with smoke hovering in dirty skies, lakes and rivers choked by inadequately treated sewage, and rat-infested garbage dumps. They were glad that the federal government was handling the problem of trace chemicals in the environment since they had neither the time nor the manpower to devote to these secondary problems.

In the late 1980s, I visited senior environmental officials in St. Paul, Hartford, Annapolis, and Denver. What a difference! Priorities had changed as much of the highly visible pollution had been curbed and as public sensitivity over toxicity had emerged. The states were responding to the toxic challenge. Highly trained specialists were in place. They had an excellent appreciation of the spread of chemicals in the environment—the sources and the sinks. They were glad that the federal government was also taking steps to check the spread of toxic substances, insofar as these efforts were designed to support the efforts at the state level. Meanwhile, they repeatedly complained that Washington was so bogged down in developing theoretical concepts and vague strategies that the federal government simply was not keeping up with the real problems of chemical contamination confronting the states.

Speaking for his state, the governor of Colorado recently said: “We seek neither benign neglect nor federal tutelage. What we seek is a pragmatic partnership with the federal government . . . understanding this nation’s diversity will be the key to environmental progress.” Noting that while the states must play a lead role in resolving their own problems, he emphasized that the states cannot do it alone. As a specific example, he added, “Federal deadlines are useful because they pres-

sure us to take action to improve the air. But they mean nothing if we are not given the tools to succeed.”¹⁸

A continuing tug-of-war between Washington and the states as to who will set environmental policies, who will design and control action programs, and who will distribute public funds is inevitable. In many ways this tension which keeps all parties on their toes reflects a healthy relationship. At the same time, the regulatory muscle for controlling toxic chemicals, which used to be concentrated almost exclusively in Washington, is rapidly shifting to the state capitals. The EPA and other federal agencies must now recognize that the states intend to take their environmental responsibilities more seriously than ever before as described in the mission statement of the Minnesota Pollution Control Agency:

. . . to serve the public in the protection and improvement of Minnesota's air, water, and land resources by: assessing the state's environmental status; regulating the quality of these resources; assisting local government, industry, and individuals in meeting their environmental responsibilities; and implementing strategies that will protect and enhance public health and the state's environment.¹⁹

The federal government should welcome this hardening of the environmental muscles of the states, for they are on the firing line. They need and they deserve support from Washington—support that reinforces the saying, “Think nationally, but act locally.” Protecting a community's environmental resources is synonymous with protecting the resources of the nation.

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