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COMMENTARY: USING SPECIAL WATER DISTRICTS TO CONTROL NONPOINT SOURCES OF WATER POLLUTION

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Professor Mandelker's article[1] is a practical and comprehensive survey of the nonpoint source *program* that Congress has defined in its latest revisions of the Clean Water Act. The word *program* is highlighted because its use in the context of nonpoint source water pollution regulation seems somewhat misplaced; in fact, there is little in the Act that resembles a federal *program* for the control of nonpoint sources of water pollution. Instead, Congress has made a statement of nonaction. What it has done is the following: (1) created a statutory framework upon which it may build in the future; and (2) provided some hints as to the form that successful state control programs should take, for example, through the use of land use planning and following watershed boundaries. That being the case, it is apparent that for the foreseeable future, nonpoint source pollution will be controlled by state or local government, or not at all.

I plan to use this commentary to extend Mandelker's effort, and, with emphasis on agricultural sources, highlight several opportunities for control which can utilize existing water management institutions.

I. THE POINT-NONPOINT SOURCE DISTINCTION MAY BE THE PROBLEM

The distinction between point and nonpoint sources is, as Professor Rodgers has said, "one of the delightful ambiguities of modern pollution law."[2] But in relying too thoroughly on the formal and legalistic point-nonpoint distinction, we run the risk of becoming bound up in a game of categories and losing sight of the purpose of the discussion, that purpose being to control, with practical and effective methods, significant sources of water pollution. The question of whether a source is designated point or nonpoint ought to be less important than whether it is practically subject to control procedures. A major problem is that once a source of

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1. Mandelker, *Controlling Nonpoint Source Water Pollution: Can it be Done?* 65 CHI.-KENT L. REV. 479 (1989).

2. W.H. RODGERS, JR., 2 ENVIRONMENTAL LAW: AIR AND WATER 162 (1986).

pollution is designated "nonpoint," it is assumed to be beyond the regulatory reach of the Clean Water Act and not subject to practical controls. Because it does not enter surface waters at a particular point, it is not thought to be controllable.[3] Although correct in the legal sense, this assumption may be faulty in practice.

Within the vast catalog of nonpoint sources, there are some that, due to their natural circumstances and relationship to particular human enterprises or special legal status, are susceptible to ready control. Nonetheless, the control of other sources remains elusive. An example of the former is irrigation return flow, which, although a legal nonpoint source, enters surface water through discrete pipes and ditches and is subject to understood pollution control practices. An example of the latter is the runoff from unusual spring rains and snow melt. Still others, such as runoff from acid rain, require an entirely unique control strategy. Thus, not all nonpoint sources are equal, and the controls available for application to one may be entirely impractical when applied to another.[4]

States should consider setting aside the existing legalistic distinction between point and nonpoint sources and instead regulate all significant sources of pollution that are susceptible to practical control. Rodgers points out that the legislative history of the 1972 amendments to the Clean Water Act strongly supports a position that the point-nonpoint source distinction can be explained as "singling out those candidates suitable for control at the source."[5] In Rodgers's words, "[p]ermit holders should include polluters from whom behavior changes fairly can be expected."[6]

Despite its statements in support of the idea that all "controllable" sources should be point sources, Congress elected to exempt a number of "controllable" sources from regulation. These are sources of pollution that were designated nonpoint by Congress purely on policy grounds, and *not* because they fail to discharge effluent into surface waters at a particular point, nor because the polluter cannot control the discharge. Additionally, nonpoint sources are sometimes designated as such because they are subject to local variations in climate, land, soil or cultural practices. Obviously, this is also a problem in regulating some point sources. There is nothing implicit in local or regional variation that need defeat an effective national regulatory program. Many state and federal regulatory programs account for regional variability. Moreover, the control tool

3. *Id.* at 146-47.
4. *Id.* at 148-49.
5. *Id.* at 150-53.
6. *Id.* at 152.

most popular with those who discuss nonpoint source pollution—Best Management Practices—is singularly well-suited to dealing with unique circumstances. States need to take up this issue where Congress has left it and ask: "Of all the nonpoint sources which contribute significantly to water pollution, which ones are susceptible to control?" That is, states need to recognize that all sources are *not* equal and set out to regulate those that are controllable.[7]

II. THE EXAMPLE OF WATER DISTRICTS

Expanding regulation to embrace sources designated "nonpoint" has some potential to control agricultural runoff in a fair and practical manner. The popular perception is that most agricultural runoff enters surface waters after flowing across farm fields. While this simple picture applies in many cases, it is not all-encompassing. In fact, a major share of all runoff from farm fields enters surface waters only after having been collected by organized water management organizations, typically irrigation, drainage or conservancy districts. Although such districts may be private, they are usually organized as special districts under state law and are thus quasi-governmental in nature.[8]

In the western United States, over one-*half* of all water is controlled by special water districts.[9] These districts supply irrigators with water which is frequently returned to surface streams in severely polluted form. In humid regions, land drainage by special districts is often the constant feature behind agricultural production on what appears to be dry land. Agricultural regions in states such as Minnesota, Illinois, or Iowa today may appear to be naturally dry, when in fact the lands have been made productive only after construction of extensive land drainage works.[10] Here again, special districts—drainage districts—are the typical organizational form by which these improvements have been achieved.

There are at least five compelling reasons for farmers to install drainage works. First, some soils, either due to their structure or their topography, are waterlogged during part of the growing season. This

7. *Id.* at 148.

8. Corbridge, *An Overview of the Special Water District*, in SPECIAL WATER DISTRICTS: CHALLENGE FOR THE FUTURE 1 (J. Corbridge Jr. ed. 1983) [hereinafter CHALLENGE FOR THE FUTURE] (proceedings of the workshop on special water districts presented by the Natural Resources Law Center, University of Colorado School of Law, Sept. 12-13, 1983).

9. Leshy, *Special Water Districts-The Historical Background*, in CHALLENGE FOR THE FUTURE, *supra* note 8, at 13.

10. *See generally* H. W. Hannah, *History and Scope of Illinois Drainage Law*, U. ILL. L.F. 189, 194-97 (1960) (reporting that in 1959 there were over 1,500 governmental drainage districts in the State of Illinois alone).

condition interferes with the flow of oxygen to plant roots, compresses soil, and hinders crop growth.[11] Second, drainage may lengthen the crop growing season on some farms. When fields are slow to lose the moisture that builds up after the spring thaw or heavy rains, farmers must delay field work. If the land is pasture, there are delays in turning livestock in.[12] Third, drainage allows farmers to bring land into production which nature has otherwise claimed as swamp, wetland, slough, or marsh.[13] An opportunity to "make land" is an inviting prospect to landowners. Fourth, drainage is a device which allows farmers to improve the productivity of land already in production. For example, land that is naturally wet and has supported only grass may, after drainage, be brought into row-crop production.[14] Fifth, agricultural drainage pipe systems are essential to irrigated agriculture. Land under irrigation is exposed to the risk of becoming waterlogged and, as a result, having chemical salts leached into the root zone. By placing drainage pipes beneath the root zone, the flow of saline waters is downward and out of the field. Irrigation requires a drainage system to carry return flows.[15]

Agricultural drainage systems resemble municipal sewer collection systems. A large number of small pipes carry flows to larger conduits which in turn gather them for delivery to surface waters. The collection occurs on both the surface and subsurface of the land. On the surface, water passes quickly over the soil without infiltrating it. As it does, it picks up suspended and soluble material. Subsurface water moves slowly through the soil, and in so doing leaches chemicals from it.[16] Typical agricultural drainage, whether in humid or arid regions, is accomplished by a combination of field shaping and leveling, as well as surface and subsurface drains.[17] Surface ditches and pipe drains, in combination with open channels, are the most frequent methods used.[18]

A rapid expansion of agricultural drainage is now under way in the United States.[19] Excess water continues to be a "major problem" on an

11. FIELD DRAINAGE: PRINCIPLES AND PRACTICE 21 (D. Castle, J. McCunnell and L. Tring eds. 1985); DRAINAGE FOR AGRICULTURE 7 (J. Van Schilfgarde ed. 1974).

12. DRAINAGE FOR AGRICULTURE, *supra* note 11, at 55.

13. G. SCHWAB, R. FREVERT, T. EDMINSTER & K. BARNES, SOIL AND WATER CONSERVATION ENGINEERING 1 (3d ed. 1981). *See also* DRAINAGE FOR AGRICULTURE, *supra* note 11, at 19-20.

14. FIELD DRAINAGE: PRINCIPLES AND PRACTICE, *supra* note 11, at 20.

15. *See generally* Comment, *Federal Law, Irrigation and Water Pollution*, 22 S.D.L. REV. 553 (1977).

16. DRAINAGE FOR AGRICULTURE, *supra* note 11, at 93-94.

17. *Id.* at 93.

18. G. SCHWAB, *supra* note 13, at 8.

19. Luoma, *Twilight in Pothole Country*, AUDUBON, Sept. 1985, at 66, 75.

estimated twenty-five percent of all cropland.[20] Moreover, as more of this nation's productive farmland accumulates in the hands of larger operating entities, "bottom-line" demands for profit may further the expansion of agricultural land drainage. Irrigation is expanding in a comparable fashion, mostly in the Midwest.

Drainage water of all sorts is the primary carrier of pollutants from farmland and it also increases soil erosion.[21] All waters and soils contain chemical salts, which drainage water will collect and concentrate. Drainage water will also gather sediment. Especially troublesome for receiving watercourses are the accelerated flows following snowmelt or rainfall. Waters that would naturally be retained in fields, or flow quite slowly, are gathered rapidly and cast into watercourses. As these flows accumulate in open channels, the soil is scoured and sediment loads increased. When the sediment also carries fertilizers, agricultural chemicals and trace materials, agricultural drainage water presents a serious threat to water quality.[22]

By Congressional decree, irrigation and drainage districts are nonpoint sources, and the runoff just described is excused from regulation.[23] Apparently, Congress's rationale was that such farm runoff occurs over the surface of land and not at a particular point. The vision of agriculture that Congress had in mind when it enacted this exemption may be quite different from the situation which actually exists in farm country. A large share of agricultural runoff is generated by and under the control of state-created water management organizations, usually in the form of irrigation or drainage districts. The runoff moves from the land toward receiving watercourses through well-engineered artificial systems. Excluding special water district systems from point source regulation is inconsistent with the regulatory philosophy of the Clean Water Act and should be reconsidered by states which seek a practical way to control agricultural runoff.

III. THE AGRICULTURAL ANTECEDENTS TO BEST MANAGEMENT PRACTICES, LAND USE CONTROLS AND WATERSHED MANAGEMENT

Although Congress has elected not to regulate nonpoint sources, it

20. G. SCHWAB, *supra* note 13, at 5.

21. Keene, *Managing Agricultural Pollution*, 11 ECOLOGY L.Q. 135, 137 (1983); G. SCHWAB, *supra* note 13, at 387.

22. *See generally* E. CLARK, J. HAVERKAMP & W. CHAPMAN, ERODING SOILS: THE OFF-FARM IMPACTS.

23. 33 U.S.C. § 1362(14) (1988).

has correctly recognized that effective corrective measures will incorporate Best Management Practices (BMPs),[24] land use controls and watershed management. BMPs recognize that national, or even regional, technology-based effluent standards cannot work a cure. Since nonpoint sources are the result of activities as various as human activity itself, controls must take the form of land management plans that consider the unique circumstances of any given plot of land as well as the activity and the reasonable alternatives to the activity. Congress has encouraged states to develop BMPs appropriate for their geographic regions and economic activities.

Congress has also recognized the importance of land use controls in regulating nonpoint sources. In 1972, when Congress finally decided that industries and municipalities could not be enticed to curb their pollution voluntarily, it ended more than a decade of consistent attempts to convince parties responsible for water pollution to control themselves. Voluntary controls were a dream when applied to point sources; they are no different with respect to nonpoint sources. Private parties, given an opportunity to do so, will place the cost of waste disposal on the community. Only a legal sanction that will potentially cost more than the amount saved by polluting a waterway will alter the behavior of a private polluter.[25] This is consistent with human experience and there is no reason to believe that polluters through nonpoint sources are likely to be an exception. Unfortunately, nonpoint source pollution will seldom be susceptible to control by the devices used to control point sources—effluent limitations and water quality standards.[26] Nonpoint sources are less predictable than the point source pollutants generated by known industrial, commercial and waste-handling processes. Nonpoint sources do reflect the geologic and climatic conditions at a given site. An activity that generates few pollutants in one geographic area can be a major source of pollutants in a different area of the country. Control of nonpoint sources will require control of the way in which people manage land. The tool will necessarily be land use controls. Zoning, which regulates the location and densities of land use, is the familiar form of land use control and has a definite role to play in controlling nonpoint sources.[27] But in order to control nonpoint source pollution, land use controls will have to en-

24. Definitions of BMPs are found at 40 C.F.R. §§ 122.2, 130.2(1), 130.6(c)(4)(i) (1988) and 7 C.F.R. § 634.5(i) (1988).

25. Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243 (1968).

26. Note, *State and Federal Land Use Regulation: An Application to Groundwater and Nonpoint Source Pollution Control*, 95 YALE L.J. 1433, 1436 (1986).

27. *Id.* at 1437.

compass management practices in addition to use categories.[28]

Congress recognized in 1972 that land use controls had an inevitable role in nonpoint source control. In describing the Section 208 areawide waste management plan, it provided that a plan should contain procedures and methods "including land use requirements" to control nonpoint sources.[29] Consistently, in the 1987 amendments, Congress again required the states to identify enforcement methods, although it did not specifically mention land use controls.[30] In distributing grant money, however, EPA is given authority to prefer states which intend to "control" particularly difficult or serious nonpoint pollution.[31]

Watershed management, like land use controls, has an inevitable role to play. Nonpoint sources are generated by human activity on the land but are often carried to watercourses by diffused waterflows, most often in the form of rainwater or melting snow. Efforts to control the movement of the pollutants must take into account these waterflows. Flowing water recognizes no political boundaries, but rather operates within its natural jurisdiction—the watershed. Nonpoint sources will be controlled not by any one landowner, but by a majority of landowners in a watershed who cooperate to implement a common plan. Further, Congress has also recognized this need. In the 1987 amendments, it required that state management programs, "to the maximum extent practicable," be developed and implemented on a watershed-by-watershed basis.[32]

Although it is often forgotten or ignored, modern American agricultural history included a major effort at nonpoint source control which incorporated BMPs, land use controls and watershed management. That effort originated out of the great environmental crisis which today we call the Dust Bowl. In the midst of a general economic depression, persistent drought conditions struck the Great Plains. The black blizzards, denuded fields, choked waterways and demoralized human communities associated with this epic are written into the national history and need not be recounted here. What is important, however, is that the nation turned to organized soil erosion control as a remedy.[33] Although the remedial efforts did not solve the soil erosion problem, they have provided the agricultural community with some important lessons to use in

28. *Id.* at 1437-38.
29. 33 U.S.C. § 1288(b)(2)(F)(ii) (1988).
30. 33 U.S.C.A. § 1329(b)(1) (West Supp. 1988).
31. *Id.* at § 1329(h)(5)(A).
32. *Id.* at § 1329(b)(4).
33. BATIE, *Policies, Institutions and Incentives for Soil Conservation* in SOIL CONSERVATION POLICIES, INSTITUTIONS AND INCENTIVES 25-29 (H. Halcrow, E. Heady & M. Cotner eds. 1982).

addressing the current water pollution problem; the control of soil erosion *is* the control of agricultural nonpoint source pollution.

Out of the experience of the 1930s emerged a soil conservation establishment which has evolved and developed into the Soil Conservation Service (SCS) of the United States Department of Agriculture. In its early days the Service was energetic and creative and possessed with a sense of mission. The procedures and methods which it developed for dealing with serious soil erosion problems remain the fundamental methodology for controlling soil erosion and, concurrently, nonpoint source pollution.

The effort of the 1930s began with research, including the development of basic measurement methodologies and the initiation of a system of surveys which identified the most critical erosion problems.[34] The first major technique which was employed was terracing. Although not a universal cure to soil runoff, it still remains a basic tool.[35] Terraces, of course, are ledges of varying sizes constructed in the sides of hills to capture water that would otherwise carry away soils and nutrients. After terracing, the SCS stressed cropping techniques, especially plowing and cultivation on the contour which, like terracing, deters runoff and holds the water, soil and other nutrients on the hillside. The most important soil erosion control practice advocated, however, was crop rotation. With crop rotation, a farmer divides a farm into several acreages and alternates different crops among the acreages from one year to the next. Crop rotation has enormous advantages: then as now, its greatest advantage is that it substantially reduces the amount of pesticides and fertilizers that a farmer requires. By moving different crops from field to field, insect populations are less likely to accumulate around a host crop. Weeds associated with row cropping are displaced when row crops are followed by grasses, small grains or pasture. Crops such as alfalfa and soybeans, which add nitrogen to the soil, follow nitrogen-depleting crops such as corn and cotton. Nitrogen is thus reintroduced to the fields without the need for extensive artificial fertilizer. Finally, arranging fields in an appropriate contour and strip pattern controls soil and water erosion.

Other innovations of the 1930s and '40s included the use of grass waterways—seeding to stabilize grasses of low ground over which diffuse surface waters tend to flow. More extensive use of pastures was advocated, particularly in fields where the soils were unstable or in need of rebuilding. The SCS recommended stubble mulch to reduce rill erosion.

34. R. HELD & H. CLAWSON, SOIL CONSERVATION IN PERSPECTIVE 60-61 (1965).
35. *Id.* at 64.

Tree nurseries assured that farmers could plant wind breaks ("shelter belts") to protect soils from the wind and to conserve waters on high ground. Research developed new species of soil conserving crops, including the reintroduction of native species.[36]

The SCS also considered how to gain acceptance of these new methods. The cooperation of private landowners was critical and thus was encouraged by substantial federal subsidy of conservation improvements. We can now only speculate whether farmers would have cooperated in the absence of financial aid.

Soil conservation special districts were advocated by the SCS in order to organize landowners and allow them to develop common solutions to common erosion problems. The "whole farm conservation plan"—an integrated plan of soil erosion control practices for an entire farming operation—was developed and complemented by soil capability classifications.

Given the severity of today's nonpoint source and groundwater pollution problems, it appears that soil conservation measures were either unsuccessful or were abandoned. There is likely no specific answer. Perhaps conservation measures worked where they were used, but were not universally adopted or continued; why this occurred is debatable. Certainly an end to the drought followed by the agricultural prosperity associated with war and post-war economic growth affected the adoption and use of conservation measures, as did the advent of the post-war consolidation of agricultural land holdings and the trend toward grain crop specialization. It has been argued, however, and with some considerable proof, that the primary reason for agriculture's general abandonment of soil conserving practices is that the lead federal agency—the SCS—shifted its emphasis from soil erosion control to production enhancement. As Held and Clawson conclude:

> Gradually during the general period 1935 to 1950, and to some extent subconsciously, the emphasis of the whole group of soil conservationists, in both public and private programs, shifted from the control of soil erosion to the management of the land for greater productivity. This was in many respects a natural evolution, yet it greatly changed the basic purpose of the soil programs, especially when viewed from a national or social point of view.
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> The first programs were primarily for the maintenance of the existing basic productive capacity in the land, especially by preventing the loss of soil material through wind or water erosion. While such programs resulted in some increases in productive capacity, this was not their primary emphasis. But the later programs clearly indicate

36. *Id.* at 65-67.

> major concern with the building of additional productive capacity and with adding to current inputs as a means of affecting output. This shift in emphasis often made good sense to the farmer. Generally speaking, he was less interested in saving his soil, as such, than in increasing his income. Measures to reduce soil erosion to prevent loss of income at some future date were less appealing than measures to increase his output today or tomorrow. In many cases, small adaptations of erosion control programs led to substantial increases in output.
>
> Similarly, the shift in emphasis made good sense to SCS, primarily because it was a means of interesting farmers in the agency's program and in making them more favorably disposed to the agency. Since SCS was engaged in serious conflict with bureaucratic rivals . . . it needed to build popular and political support wherever and however it could. Adapting its program to what farmers were interested in was surely one effective device. Presumably, SCS advocated only programs in whose technical soundness it strongly believed; its emphasis upon planning for the whole farm, which often led to controversy with other agencies and farmers, seems proof of this. But, within the range of technically sound programs, a public agency is often wise to push popular programs; in this way, it not only assures its own health and continued existence, but obtains the means for carrying out later programs which currently seem less popular.
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> But this shift in emphasis of the SCS program is much more dubious from a national or social viewpoint. To the extent that it was effective on the lands to which it was applied—and we must assume that it was effective to a considerable degree—it surely increased total agricultural output of those lands over what it otherwise would have been. Except for the war years, these were years when the national agricultural program was concerned with limiting total agricultural output to meet effective demand at politically acceptable prices. Various expensive programs were being directed to this end. Whatever may have been the public statements of the Secretaries of Agriculture during this period, a fundamental conflict in purpose and in results of programs existed. One part of the Department of Agriculture was spending large sums of public money to control output; other parts were spending smaller, but still substantial, sums to increase it—and no small part of the rationale for the latter expenditures was the need for public support in the continued struggle of SCS for existence.[37]

With the shift to production enhancement, the SCS acquiesced in the abandonment of crop rotation and other conserving practices. The lessons of the Dust Bowl faded into the background of modern economic activity. But the experience demonstrated a workable solution to soil erosion and nonpoint source pollution. The question now is how to return to the appropriate conservation practices.

Soil conservation districts and farm soil conservation plans, in par-

37. *Id.* at 69-73. *See also* Williams, *Soil Conservation and Water Pollution Control: The Muddy Record of the United States Department of Agriculture*, 7 B.C. ENVTL. AFF. L. REV. 365 (1979).

ticular, merit careful review. In the 1930s, the SCS adopted the soil conservation district model to foster a local approach to the soil erosion problem. The idea called for SCS to provide technical service, advice and money. In exchange, each state would enact enabling legislation. The SCS published a Standard State Soil Conservation District Law. The resulting special districts were to be created by a majority of the land owners and renters in the proposed district. Among other things, the Standard Act authorized districts to carry out erosion control operations and to enact and enforce land use regulations. States did pass the enabling legislation, but only after some coercion.[38]

The boundaries of soil conservation districts were to conform to those of local watershed or other areas logically used for erosion control. Further, the districts were authorized to enact and enforce land use regulations. These two vital concepts were, however, rejected by a majority of the enacting states. Soil conservation districts were instead organized along county lines and without police power authority.[39]

The parallel between the early effort of the SCS to organize effective soil erosion controls and the present stage in the efforts of EPA and Congress to organize effective nonpoint source controls is obvious. In both cases, the lead federal agency sought to encourage local programs. And in both, efforts to attract voluntary controls produced a system of federally funded "demonstration" projects. The federal agencies tried to convince states that local control organizations would need police power to implement land use controls and would also need to be organized along watershed boundaries if they were to achieve practical effectiveness. And, in both cases, the states rejected land use controls and followed existing political boundaries in organizing districts. Finally, in each case, the amount of voluntary compliance by private landowners ran parallel to the amount of federal cost-sharing money available.

The history of the SCS program demonstrates that an erosion (nonpoint source) control program based upon free technical advice, local organization, demonstration projects and voluntary compliance by landowners will work only so long as government pays the cost. When cost-sharing dries up or cannot be used for production-enhancing practices, landowners are quick to abandon both the practices and the program. There is little, if any, precedent in our experience of government

38. Williams, *supra* note 37, at 376-78.

39. *Id.* at 378. *See also* R. Held & H. Clawson, *supra* note 34, at 47-48. In conformity with this reliance on voluntary efforts, the SCS at an early stage established a nationwide system of demonstration projects, so that farmers and ranchers could visit projects and observe soil erosion control in operation. Williams, *supra* note 37, at 375.

to suggest that the problem of erosion and nonpoint pollution can be solved by asking landowners to regulate themselves.

Despite this history (or perhaps because of it), states now show a strong preference for the soil conservation district as the agency of choice for nonpoint source pollution control. Professor Beck reports, after a review of some 136 Section 208 Areawide Waste Treatment Management Plans, that wherever agricultural water pollution control is an issue, the prevailing choice of implementing agency is the soil conservation district. Moreover, with only a few exceptions, the plans do not call for the creation of regulatory control programs but rather for the expansion of current voluntary efforts. Professor Beck also points out that these plans prefer adoption of BMPs on a site specific, case-by-case basis. Examples of preferred agricultural BMPs include minimum tillage, contour farming, critical area planting, crop rotation, terracing, grass waterways, pasture planting, and strip cropping.[40]

This preference which Section 208 plans show for soil conservation districts carries forward the defects inherent in the original districts. First, such districts are not now organized along watershed lines. Second, they are without the authority to impose land use controls. Reformulated, however, they could offer a useful option.

Another device which the SCS developed during its active erosion control period, is the whole farm soil conservation plan. This too has the potential to be reformed and refitted for the control of nonpoint source pollution. The soil conservation plan is prepared at a local SCS office with advice from regional technicians and constitutes a detailed plan for bringing a particular farming operation into compliance with erosion norms. Based on such factors as soil types, terrain, drainage, climate, crops and livestock produced, and practical farm budgets, the plan lays out a detailed methodology, usually in phases—it creates a system for the farmer to follow. Presently, compliance with a plan is voluntary.[41]

If we recognize that nonpoint source control will ultimately require imposition of land use controls, and that the controls must require land management that reflects local factors and relies on BMPs, the soil conservation plan is an established vehicle which is ready for deployment should the political will appear. Because the SCS is already situated in each county, and because the conservation plan is a format which is fa-

40. *See* Beck, *Agricultural Water Pollution Control Law* in 2 AGRICULTURAL LAW 223 n.362 (J. Davidson ed. 1985, Supp. 1988).

41. The Conservation Compliance provisions of the Food Security Act of 1985 make implementation of approved soil conservation plans a requirement for farms which have highly erodible soils.

miliar to nearly every rural landowner, it offers a unique opportunity for action.

IV. SPECIAL WATER DISTRICTS MAY PLAY AN IMPORTANT ROLE IN CONTROLLING NONPOINT POLLUTION

There is no useful general description of special water districts because they assume too many forms and pursue too many purposes.[42] There are, however, some common elements. All are political subdivisions of state government, created by state law and limited to the powers delegated to them by state legislatures.[43] They are governed by boards which are independent of traditional local governments such as cities, counties and townships.[44] They are "special" because their authority is limited to the special governmental purpose of delivering and managing water. For our purposes, the significance of special water districts is in the sheer volume of agricultural water which they manage. It is estimated that around 1000 special districts are presently involved in water delivery—principally irrigation water.[45] An unknown number exists for the purpose of organizing farm drainage.[46] Because agricultural drainage has been a precursor to the enormous productivity of agriculture in the Great Lakes states, there are thousands of drainage districts within the basin.[47]

Special water districts are well suited to the unique function that nonpoint source control requires. Organized locally and along the lines of natural watersheds, they are, by purpose and experience, the experts in local water management. Although their potential to solve runoff problems is no doubt limited and imperfect, it seems to compare well with that of most, if not all, existing governmental entities.

Districts have the capacity to bring economies of scale to nonpoint source control[48] and to mitigate the effect of the argument that farmers, being "price-takers" in the marketplace, are unable to pass the cost of pollution control regulation on to consumers. Drainage and irrigation districts can develop systematic pollution control measures for all lands within their jurisdiction and implement those plans in accordance with their corporate financial ability. The cost of pollution control can then

42. Leshy, *supra* note 9, at 12.
43. *Id.*
44. *Id.*
45. *Id.* at 12-13.
46. *See generally* Hannah, *supra* note 10.
47. *Id.*
48. *See* Leshy, *supra* note 9, at 12-13.

be spread across all the landowners in the district, with a greater share being assumed by landowners who receive a proportionally larger share of district benefits. In addition, such districts can qualify to issue tax-exempt financial instruments and receive subsidized loans from the Farmers Home Administration as well as from state government. In fact, special water districts are in large part designed to finance local land management improvements efficiently and fairly.

Another feature of special water districts that is essential to nonpoint source control is their flexibility. The notion of Best Management Practices recognizes implicitly that uniform or general control standards cannot be used to regulate land management. Instead, local controls are needed which can consider local climate, geology, and cultural practices, and develop flexible remedies. Landowner-controlled districts can be subjected to district performance standards by, for example, being asked or required to reduce the flow of sediments into a river or lake by a specific percentage. How such a result is achieved can be left to the managers who know not only the land in the district, but also its farmers and its management history. That special water districts are organized along watershed lines is obvious but basic. Political boundaries are irrelevant to flowing water, and whatever entity is ultimately assigned the task of controlling nonpoint pollution will necessarily have authority to operate throughout the relevant watershed.

By merging nonpoint source control into existing water management institutions, significant and practical governmental efficiency may be achieved. Ultimately, all water management goals and practices would be integrated. It is an artificial act to separate the function of delivering irrigation water from that of assuring that return flows do not pollute receiving watercourses. Water management is a multi-objective undertaking, and this needs to be reflected in the laws which state legislatures use to authorize special water districts to operate. Irrigation and field drainage should not be separated from other water management concerns such as recreation, wellhead protection, wildlife habitat protection, water right management, flood control, and so forth.[49] Special water districts are in the best position to merge multiple water management objectives. The alternative to the merger of purposes is a continued "layering" of governmental districts, corporations, and departments, each attempting to achieve specified water management purposes. The fairness in asking that special water districts manage for public purposes

49. UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, OFFICE OF WATER, PUB. NO. W.H.-556, NONPOINT SOURCES: AGENDA FOR THE FUTURE 13 (January 1989).

is that they have been given a preferred status—private management with governmental authority—in order to pursue the private economic advantage of their landowner-members. In exchange, they should be required to internalize the costs of the pollution which their pollution activities generate.

For technical expertise, special water districts have traditionally relied on the Agricultural Extension Service and the land grant college system, institutions normally associated only with production enhancement. If districts sought their help in developing water quality plans, these institutions could possibly be diverted to the important task of arresting agriculture's pollution.

V. THE SPECIAL WATER DISTRICT AS AN "AREA PERMIT"

Two reasons why the United States EPA has supported the continued exemption of agricultural runoff from point source regulation is that the number of permits required could be enormous and uniform standards would be difficult to apply on a case-by-case basis. In the development of nonpoint control programs, the states should consider whether this concern is legitimate when applied to most special water districts. In the first place, the techniques for controlling the flow of pollutants from agricultural land are well understood and have been agreed upon for many years.[50] Drainage and erosion control engineering is proven and predictable. There is nothing speculative about the nature of the practices that will work. Terracing, grass waterways, contour farming, strip cropping, crop rotation, water conservation, preservation of natural sloughs, and responsible use of chemicals are techniques that were known in the 1930s and they have been regularly improved upon since that time. The existence of special water districts helps to moderate the problem of a large number of small landowners. A permit or similar regulatory control need only be required at the points where the irrigation or drainage district finally empties into a watercourse. One district may combine hundreds of farm operations into one system of outlets and bring them under a single permit. How the district chooses to meet permit requirements can be addressed flexibly by the people who know the land best—the district members. By demanding performance, but leaving the solution to the district members, it may be possible to achieve a middle ground between voluntariness and coercion.

50. *See* H. BENNETT, ELEMENTS OF SOIL CONSERVATION (1947).

VI. CONCLUSION

Special water districts provide but one possible route to a practical set of controls over nonpoint source pollution. The message that I have sought to deliver in this short response is that the Clean Water Act, through its sharply defined categories and methodology, may actually be an impediment to our analysis of the nonpoint problem. We have reached a stage where we understand the source of most nonpoint sources, and we know that Congress does not intend to apply its regulatory system to them. States which intend to address the problem will have to develop and implement their own programs. In the search for the appropriate control methodology, and the institutions through which to exercise that control, states may find that the nonpoint pollution problem is not dramatically different from the catalog of resource management problems to which state and local government have responded in the past. States may also find that existing institutions such as special water districts, are well suited to implement a response. The sticking point is that these institutions operate most effectively when their mission is clear and they are dedicated to achieving the desired result. If state and local commitment to solving the nonpoint pollution problem is no greater than that of the Congress, then local institutions will fail in the task, no matter how well-suited to it they may be.