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## **State Soil Erosion Control Laws, Conservation Plans and Nonpoint Pollution**

by

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# STATE SOIL EROSION CONTROL LAWS, CONSERVATION PLANS AND NONPOINT POLLUTION

JOHN H. DAVIDSON\*

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## I. INTRODUCTION

Twenty-four years after enactment of the Clean Water Act, it is generally acknowledged that runoff from agricultural and forestry activities is a major source of water pollution in interior and coastal waters of the United States. As such, it is reasonable to expect that any serious effort to protect such waters must turn, eventually, to the field and forest. Outside the common law doctrines of private nuisance, public nuisance and diffused surface water, there is little in the law to constrain a farmer or forester from land management practices which pollute water. This paper will address whether soil erosion and sediment control laws constitute a meaningful constraint on such activities.

The objectives of this article are threefold. First, it will present a brief synopsis of early initiatives to curb soil erosion and water waste on agricultural lands. Second, it will introduce and describe a category of state statutes known as a soil erosion and sediment control laws. The states of South Dakota, Illinois and Texas will serve as primary examples. The legal and

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policy implications of these laws are particularly strong for agricultural and forestry activities. Third, the subsequent discussion will expand upon both practical and policy themes implicit in such legislation.

## II. ESSENTIAL BACKGROUND

Most soil erosion and sediment control laws are premised upon the existence and viability of local conservation districts and the availability of the services of the Natural Resources Conservation Service (NRCS) of the United States Department of Agriculture (USDA). The NRCS was known formerly as the Soil Conservation Service (SCS), a more descriptive, familiar and comforting title. Although the activities of these entities are generally familiar to people in farm country, some fundamental background information for the uninitiated may assist in painting a more complete picture.

The story of the soil conservation movement in the United States, led by Hugh H. Bennett, is a significant chapter in the history of resource protection. Out of one of the Twentieth Century's great environmental crises, fittingly known as the "Dust Bowl," emerged a soil conservation establishment which is now represented by the NRCS and thousands of local conservation districts. The inceptive period of the NRCS was energetic, creative and possessed of a sense of mission. The procedures and methods it developed for dealing with soil erosion problems remain as fundamental contemporary elements of agricultural soil erosion control and nonpoint source pollution.

The soil erosion control efforts of the 1930s began with basic research that included the development of scientifically supported measurement methods and the initiation of a survey system which identified critical erosion problems. A magnificent contribution of these efforts is a little appreciated but highly valuable county-by-county national survey of soils and soil capabilities.

On the basis of this initial scientific and field research, the NRCS developed a variety of techniques for erosion control on the land. Today many of these techniques seem so familiar that they are under-appreciated for their tangible contributions to sustainable agriculture and soil conservation. Among the techniques advocated and implemented during this period were:

- *Terracing.* Terraces are ledges of varying sizes constructed in the sides of hills to capture water that would otherwise run over a hillside with sufficient force to carry off soils and nutrients.
- *Contour plowing.* Plowing and planting along a contour, like terracing, deters runoff and retains moisture.
- *Crop rotation.* Crop rotation was encouraged, with its enormous advantages of weed and pest control, nutrient conservation and water and soil protection.

- *Grass waterways.* The seeding of stable grasses on low ground over which diffuse surface waters could flow.
- *Pasture use.* More extensive use of pastures was advocated, particularly in fields where the soils were unstable or in need of rebuilding.
- *Stubble mulch.* Stubble mulch was recommended to reduce rill erosion.
- *Tree nurseries.* Public tree nurseries assured that farmers could plant wind breaks, known as shelterbelts, to achieve protection of soil from wind and to conserve water on high ground. Research also developed new species of soil conserving crops, and efforts were made to reintroduce native species.

Although these efforts at scientific and technological problem-solving were important in addressing the problem of agricultural runoff, there was a greater challenge. Then, as now, the challenge was to discern politically and socially acceptable methods of applying additional corrective measures.

The NRCS was successful in the early years and the basic structure it created remains in place today. The nascent institutional arrangement was intended, among other things, to reach and involve farmers. A model law authorizing the creation of local “soil conservation districts” as state government subdivisions was drafted and adopted in a modified form in most states. The modifications were significant and remain both relevant and instructive. The model law proposed by the USDA would give the new conservation districts land-use regulatory authority and require that they be organized along watershed lines. Both of these elements were eliminated by most state legislatures. Conservation districts today lack useful police power authority and are generally organized along county boundaries. The districts were to be the means for implementing the soil conservation program, but the program itself was federal.

From the 1940s to 1970s, the conservation districts were the primary contacts between programs originating with the NRCS and individual landowners. The conservation districts encouraged landowners to adopt state-of-the-art soil and water conservation practices. Necessary expertise was provided by the NRCS, which maintained trained personnel in every farm county. Federal appropriations provided cost-sharing incentives for private landowners. These direct subsidies offset a significant share of the capital cost of conservation practices. Untold billions of dollars went into these subsidies.

Today the infrastructure remains in place but its original vigor is severely diminished. Conservation districts are now on tight budgets, provided by state and county governments. NRCS has apparently lost its sense of mission or, at least, is now unsure of its goals. As an agency it is undergoing a significant reduction of skill level among its field personnel as well as an overall reduction in size. The federal cost-sharing programs are

being steadily reduced and no longer sufficiently entice most farmers to adopt meaningful soil conservation practices. However, the critical point is that despite these changes, state soil erosion and sediment control statutes continue to rely upon this infrastructure.

### III. THREE STATE STATUTES

#### A. SOUTH DAKOTA

South Dakota's current soil erosion and sediment damage control law was enacted in 1976<sup>1</sup> and applies only to land-disturbing activity, which is defined as:

[A]ny land alteration resulting in soil erosion from water or wind and the movement of sediments:

(1) Into any and all waters, public or private, on the surface of the ground, which are contained within, flow through or border lands in the state; or

(2) Onto lands in the state, including, but not limited to, clearing, tilling, grading, excavating and transporting and filling of land.<sup>2</sup>

A South Dakota State Conservation Commission is required to develop state erosion and sediment control guidelines. These are to consist of "recommended soil loss limits and suggested conservation practices."<sup>3</sup> The law specifies criteria upon which the guidelines are to be based. These include, among other things: (1) essential physical information about soils, water, drainage, hydrology and existing soil and water surveys, and (2) "conservation standards for various types of soils and land uses, which standards shall include criteria, techniques and methods for the control of erosion and sediment resulting from land-disturbing activities."<sup>4</sup> The guidelines lack the force and effect of law.<sup>5</sup>

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1. 1976 S.D. Laws ch. 242, 65 S.B. 394 (codified at S.D. CODIFIED LAWS ANN. § 38-8A (1996)).

In the 1990 Coastal Zone Act Reauthorization Amendments, Congress welded two existing programs - the Clean Water Act's Section 319 and the states' coastal zone programs - into a single approach to prevent and reduce runoff pollution in coastal watersheds (including the Great Lakes). The central feature is the implementation of enforceable management measures to reduce polluted runoff. Management measures are:

[E]conomically achievable measures for the control of the addition of pollutants from existing and new categories and classes of nonpoint sources of pollution, which reflect the greatest degree of pollutant reduction achievable through the application of the best available nonpoint pollution control practices, technologies, processes, siting criteria, operating networks, or other alternatives.

16 U.S.C. § 1455(g)(5) (1994). This paper does not take the Coastal Zone Management Act (CZMA) directly into account, but in coastal states the CZMA and soil erosion control laws will overlap.

There are two models for soil erosion and sediment control laws: (1) Model State Act for Soil Erosion and Sediment Control, The Council of State Governments, XXXII Suggested State Legislation (1973); (2) Nat'l Assoc. of Conservation Districts, Example of An Act That Could Function As A Bad Actor Component of A State Agricultural Nonpoint Pollution Program, (Feb. 25, 1994).

2. S.D. CODIFIED LAWS ANN. § 38-8A-2 (1996).

3. S.D. CODIFIED LAWS ANN. § 38-8A-4 (1996).

4. S.D. CODIFIED LAWS ANN. § 38-8A-5 (1996).

5. *Id.*

After the guidelines are prepared, each conservation district, cooperating with other branches of local government, "shall" propose district conservation standards and send them to the state commission for review and comment. These local standards are specifically intended to serve as "soil loss tolerance limits."<sup>6</sup> They are also specifically intended to be "consistent with the control of erosion and sediment resulting from land-disturbing activities."<sup>7</sup>

The conservation commission reviews and recommends changes, although such recommendations are not binding on local districts.<sup>8</sup> Following a public hearing, local districts have three months after the review to adopt the conservation standards.<sup>9</sup> The local conservation standards may be modified by a petition signed by ten percent of the qualified voters in a district and approved in an election.<sup>10</sup>

All activities on state-owned land must comply with the developed local standards as must any activity conducted pursuant to a contract with a state agency.<sup>11</sup> All units of state and local government are directly bound by the standards.<sup>12</sup> Furthermore, any municipality or other political subdivision that issues zoning or building permits within the district must make sure that its permit procedures assure that any permitted action complies with the standards.<sup>13</sup> This requirement applies to any "permit-issuing authority lying within the territorial limits of the conservation district." Arguably, this includes such things as county drainage permits, rural subdivisions and new street opening permits. In a 1979 opinion, the South Dakota Attorney General interpreted this requirement as having the intended effect of requiring "each entity with existing or unexercised permit-issuing authority . . . to promulgate procedures for the review of the land-disturbing activities authorized by permits issued by the permit-issuing authority, thus to ascertain whether or not the activities were in compliance with the district standards."<sup>14</sup>

Neither the state conservation commission nor local conservation districts may issue permits.<sup>15</sup> Instead, when a conservation district determines that an agricultural land-disturbing activity violates a standard, the land

6. S.D. CODIFIED LAWS ANN. § 38-8A-1(2) (1996).

7. S.D. CODIFIED LAWS ANN. § 38-8A-1 (1996). Interestingly, in 1984, the legislature added the following to the section on local district standards:

These standards may designate as 'fragile land' any area of the district which is Class IVE, VI, VII, or VIII, according to the [USDA] classification system, as described in 'Land Capability Classification,' Agricultural Handbook 210, [SCS, USDA], issued September, 1961, and in effect on January 1, 1984; and is so erosive as to cause a public hazard when converted to cropland use."

It is unclear whether this is a limitation upon or an extension of authority.

8. S.D. CODIFIED LAWS ANN. § 38-8A-10 (1996).

9. *Id.*

10. S.D. CODIFIED LAWS ANN. § 38-8A-12.2 (1996).

11. S.D. CODIFIED LAWS ANN. § 38-8A-13, -14 (1996).

12. S.D. CODIFIED LAWS ANN. § 38-8A-13 (1996).

13. S.D. CODIFIED LAWS ANN. § 38-8A-16 (1996).

14. Op. Att'y Gen. 79-46 (S.D. 1979-80).

15. S.D. CODIFIED LAWS ANN. § 38-8A-15 (1996).

disturber is required to prepare an erosion and sediment control plan within six months and have it approved by the local soil conservation district.<sup>16</sup> The disturber is allowed six months after such approval to implement the plan.<sup>17</sup>

The law does not define "erosion and sediment control plan." It may be presumed that such a plan is intended to be similar to the familiar NRCS whole-farm conservation plan with the exception that the minimum acceptable standards are found in the local district's conservation standards.

Any person "adversely affected" by a land-disturbing activity may petition the local conservation district or permit-issuing authority, alleging a violation of conservation standards.<sup>18</sup> The statute mandates that "the petitioned agency shall investigate."<sup>19</sup> If the conservation district or permit-issuing authority finds that a violation exists, it "shall . . . take appropriate action."<sup>20</sup> What is "appropriate action"? The law does not say. Whatever it is, the petitioner must be informed of it within two months.

As noted earlier, a district or permit-issuing authority may require a violating land disturber to prepare and implement an erosion and sediment control plan.<sup>21</sup> But what if the landowner refuses to cooperate? Although cautious, the statute provides that "[e]ither a permit-issuing authority, or a district may, upon petition or its own volition, in the enforcement of its orders, commence an action in circuit court for an injunction or other appropriate relief to enforce the provisions of this chapter."<sup>22</sup> The strongest remedy provided by the law is a mandated erosion and sediment control plan and state trial courts have authority to enforce that requirement by injunction.

The South Dakota Conservation Commission has adopted comprehensive state erosion and sediment control guidelines recorded in a seventy-two-page document. These pages are not filled with "rules," but consist largely of examples of appropriate conservation practices along with practical advice to local districts on how they might go about developing their distinctive rules. Thus, chapter titles include: "Examples of Practices and Their Use"; "Examples of Soil Survey Data and Interpretive Sheets"; "Examples of Forms Which May Be Utilized by Local Governments"; and "Suggested Soil Loss Limits." Of particular interest is the following statement of "Basic Conservation Principles":

Certain basic principles for using and developing land resources and controlling erosion and sedimentation are applicable to most areas and situations. These include such things as:

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16. S.D. CODIFIED LAWS ANN. § 38-8A-18 (1996).

17. *Id.*

18. S.D. CODIFIED LAWS ANN. § 38-8A-20 (1996) (emphasis added).

19. *Id.*

20. *Id.*

21. S.D. CODIFIED LAWS ANN. § 38-8A-18 (1996).

22. S.D. CODIFIED LAWS ANN. § 38-8A-21 (1996).

- A. Use each acre of land in accordance with its capabilities and treat each in accordance with its needs.
- B. Plan and utilize land and water resources giving prime consideration to their suitability and soil limitations based on soil survey and interpretations.
- C. Develop an overall plan for land use, erosion control, and water management.
- D. Conserve and utilize existing vegetative cover to fullest extent possible.
- E. Consider existing topography and natural land features in use and development plans.
- F. Control erosion and runoff.
- G. Reduce bare soil exposure time to a minimum.
- H. Limit clearing, grading, and slope modifications to that consistent with good land use.
- I. Make permanent vegetative plantings that are compatible with specific soil and site conditions.
- J. Protect surface and subsurface waters from pollution.
- K. Control dust on disturbed sites.
- L. Protect adjoining property from damage or hazard from land-disturbing operations.
- M. Reduce unnecessary burning of vegetative cover.<sup>23</sup>

Apparently all local conservation districts in South Dakota have at some time adopted the required standards although some might have difficulty locating them. It appears that districts have relied heavily on advice and counsel from the NRCS in developing such rules. The ultimate standard is the specific soil loss that will be tolerated in a given district. For this, reliance on NRCS's technical determination is almost total. Development and operation of a system of county-level erosion control standards is largely, if not altogether, dependent upon the availability of technical advice by the NRCS.

## B. ILLINOIS

Illinois, in its version of an erosion and sediment control law, describes "land disturbing activity" as "any change in land, which may result in soil erosion from water or wind and the movement of sediments into state waters or onto lands in the state, including but not limited to, the tilling, clearing, grading, excavating, rehabilitating, transporting, depositing or filling of lands . . . ."<sup>24</sup>

The regulation of such activity is assigned to a state Soil and Water Conservation Districts Advisory Board (SWCDAB or "Board")<sup>25</sup> and local conservation districts. The Board has a "consult and advise" role as to erosion and sediment control, and few, if any, substantive duties apart from

23. S.D. Conservation Commission, State Erosion and Sediment Control Guidelines.

24. ILL. ANN. STAT. ch. 70, para. 405/3.12 (Smith-Hurd 1993).

25. ILL. ANN. STAT. ch. 70, para. 405/4 (Smith-Hurd 1993).

the development of a "state erosion and sediment control program."<sup>26</sup> There is no permitting or enforcement authority of any type at the state level. Each local district is required to adopt a "program" for erosion and sediment control which is "technically feasible, economically reasonable and consistent with the state program and guidelines . . ."<sup>27</sup> "To carry out its program, a district shall establish conservation standards for various types of soils and land uses. The program shall include criteria, guidelines, techniques and methods for the control of erosion and sediment resulting from land disturbing activities. . . ."<sup>28</sup>

Subsequently, matters become considerably more vague. The statute and regulations employ artful language of enforcement procedures where in fact there are none. Any person engaging in any land-disturbing activity "shall be encouraged" to comply with established standards. When an activity does not comply with the state and district standards, the state "shall suggest" such modifications in the activity "as will enable the person engaged in the land disturbing activity to comply with the standards."<sup>29</sup>

Provisions are made for complaints from the public or from a district, notice to the landowner and investigation and determination by the district board as to whether the standards are being observed. If the landowner is found to be out of compliance with the standards, he or she is given one year in which to agree to a "schedule for compliance." If no such schedule is entered into within the year, the local district "shall hold a formal hearing . . . to determine the reason for non-compliance" and publish the results. The Board is then authorized to hold another hearing "to determine why standards are not being observed."<sup>30</sup> There is no language in the statute indicating what should happen next. Perhaps this is best characterized as a "scarlet letter" form of enforcement. Researchers in Illinois may want to inquire as to whether this is really the long sought-after answer to the management and enforcement problems of the "commons."

It is important to mention that the Illinois approach includes a cost-sharing program for conservation practices. Each local district's program is required to provide cost-sharing of such practices.<sup>31</sup> In other words, cost-sharing is implicit in the idea of conservation practices.

### C. TEXAS

A modification of the standard approach is emerging in Texas. It appears to be a response to an explosion in the size of dairy herds within the

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26. ILL. ANN. STAT. ch. 70, paras. 405/4, 6 and 36 (Smith-Hurd 1993).

27. ILL. ANN. STAT. ch. 70, para. 405/38 (Smith-Hurd 1993). Conservation districts in Illinois have the statutory authority to adopt land-use regulatory controls, but *only* after winning specific approval in a referendum of landowners.

28. ILL. ANN. STAT. ch. 70, para. 405/38 (Smith-Hurd 1993).

29. ILL. ANN. STAT. ch. 70, para. 405/39 (Smith-Hurd 1993).

30. ILL. ANN. STAT. ch. 70, para. 405/41 (Smith-Hurd 1993); ILL. ADMIN. CODE tit. 650.320-390 (1996).

31. ILL. ANN. STAT. ch. 70, para. 405/39 (Smith-Hurd 1995).

state. Building on the type of law found in South Dakota, Illinois and other midwestern states, Texas adds a unique twist. It may accurately be described as a "staged" approach; in Texas it is referred to as "planned intervention."<sup>32</sup>

The Texas approach is interesting because it is the result of a recent legislative initiative. The specified legislative target is the more contemporary nonpoint source pollution rather than the traditional and familiar land-disturbing activity.<sup>33</sup>

The administrative scheme focuses on the Texas State Soil and Water Conservation Board ("Board") which for decades readily encouraged the work of local conservation districts and in 1991, suddenly found itself "the lead agency . . . for activity relating to abating agricultural and silvicultural nonpoint source pollution." It was also required to "plan, implement, and manage programs and practices for abating agricultural and silvicultural nonpoint source pollution."<sup>34</sup>

On its own motion, or in response to the petition of a local conservation district, the Board may identify a geographical area as having the potential to develop nonpoint water pollution problems. The Board is then required to establish a "water quality management plan certification program . . . [provided] through local soil and water conservation districts, for the development, supervision, and monitoring of individual water quality management plans for agricultural and silvicultural lands."<sup>35</sup>

Landowners in a designated area may volunteer for the development of an individual plan by the local conservation district:

A water quality management plan is a site specific plan for agricultural or silvicultural lands which includes appropriate measures, technologies or combinations thereof which when implemented will achieve a level of pollution prevention or abatement determined by the State Board in consultation with the Resource Conservation Commission to be consistent with state water quality standards. To be certified, a water quality management plan must cover all lands whether contiguous or non-contiguous that constitute an operating unit for agricultural or silvicultural purposes.<sup>36</sup>

After an individual plan is developed, it is submitted to the Board for certification, with particular attention paid to compliance with state water quality standards. As an incentive to landowners, a cost-sharing program is administered by the Board which may condition aid upon a requirement that the landowner have an approved plan.<sup>37</sup>

Enforcement begins, as it does in Illinois, with forceful language.

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32. L. FRAREY, R. JONES, DIMENSIONS OF PLANNED INTERVENTION (Tex. Inst. Applied Env't'l Research, 1994).

33. TEX. AGRIC. CODE ANN. § 201.026 (West 1982 & Supp. 1995).

34. TEX. AGRIC. CODE ANN. § 201.026(a) (West 1982 & Supp. 1995).

35. TEX. AGRIC. CODE ANN. § 201.026(c) (West 1982 & Supp. 1995).

36. TEX. ADMIN. CODE tit. 31, § 523.3 and 523.6; 19 Tex. Reg. 9434 (Dec.2, 1994). (This regulatory definition closely tracks the statute).

37. TEX. AGRIC. CODE ANN. § 201.304 (West 1982 & Supp. 1995).

Steps necessary for effective and consistent follow-through are less firmly articulated. The statute seems clear enough:

Complaints concerning a violation of a water quality management plan or a violation of a law or rule relating to agricultural or silvicultural nonpoint source pollution under the jurisdiction of the state board shall be referred to the state board. The state board, in cooperation with the local soil and water conservation district, shall investigate the complaint. On completion of the investigation, the state board, in consultation with the soil and water conservation district, either shall determine that further action is not warranted or shall develop and implement a corrective action plan to address the complaint. If the person about whom the complaint has been made fails or refuses to take corrective action, the state board shall refer the complaint to the Texas Natural Resource Conservation Commission.<sup>38</sup>

The agency regulations track the statute closely but questions remain regarding the enforceability of the water quality management plan or the corrective action plan. What normal incentives, for example, exist to cause an individual landowner to seek a plan voluntarily?

The planned implementation of the Texas system requires an additional look at enforcement. After designating a water quality problem area, the local conservation districts attempt to gain the voluntary adoption by landowners of water quality management plans. Such voluntary plans are to be "certified" by the Board, which, among other things, reflects a belief on the part of the Board that the plan complies with state water quality standards. Complaints against landowners for violation of a plan may be filed with the Board by a member of the public or a conservation district. The Board will investigate and, upon finding a violation, will develop a "corrective action" plan for the individual landowner.<sup>39</sup> Alternatively, the Board may receive independent complaints relating to activities undertaken by landowners who do not have plans but who are suspected of violating "a law or rule relating to nonpoint source pollution."<sup>40</sup> In this second situation, the finding of a violation will lead to the imposition of a corrective action plan.

Can any of this lead to effective enforcement against nonpoint source polluters? The Texas law states that a refusal to take corrective action will cause the Board to "refer the complaint to the Texas Natural Resource Conservation Commission."<sup>41</sup> Whether the Commission has either the power or the inclination to take enforcement action is a valid question for which there is not a clear answer. Searching for answers in the federal Clean Water Act (CWA) and its state progeny suggests that pollution from

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38. TEX. AGRIC. CODE ANN. § 201.026(d) (West. 1982 & Supp. 1995).

39. TEX. ADMIN. CODE tit. 31, § 523.4.

40. *Id.* Do such laws exist?

41. TEX. AGRIC. CODE ANN § 201.026 (West 1982 & Supp. 1995).

field runoff, agricultural storm water and the like will be immune from action because these nonpoint sources are not regulated under the CWA.

While large and mid-sized feedlots are subject to the National Pollutant Discharge Elimination System (NPDES) permit program, a reasonable assumption can be made that the content of a certified water quality management plan and a corrective action plan can provide the substantive terms of a discharge permit. The smaller and more numerous lots are subject to the more gentle protection of the general permit, although the state and federal enforcers have the authority, rarely if ever employed, to require a specific lot to apply for an individual permit. In theory it is possible to imagine that violation of a plan and corrective action order by a smaller lot will lead to an order to apply for an individual permit.

The Texas approach leaves certain questions unanswered. Why, for example, should an individual operation apply for and adopt a certified water quality management plan, knowing that any violation will give third parties standing to file a complaint which can lead to a corrective action plan? One answer may be that this will facilitate receipt of cost-sharing for conservation efforts and improvements. This is not, however, specifically required by law and does not appear to be a regulatory requirement.<sup>42</sup> The time schedule from application to certification is certainly a long one and can be extended by negotiation. In the final analysis, a landowner need not agree to a plan.

The Texas water quality management plan is limited also by the fact that its performance is gauged by the water quality standard. The limitations of these ubiquitous pollution monitoring devices are beyond the scope of this article. In sum, they are vague, inherently unenforceable, practically impossible to link to individual sources and particularly unsuitable for either planning or enforcement.<sup>43</sup> Thus, while water quality standards may be useful in aiding the Board to identify water quality problem regions, they are not useful when applied to a particular source or, as in this case, a specific management plan. A careful review of the last thirty years of experience with water pollution law will suggest to the discerning observer that the decision to rely on water quality standards is a decision in favor of the most relaxed levels of enforcement.

#### IV. THE CONSERVATION (MANAGEMENT) PLAN AS EMERGING POLLUTION CONTROL DEVICE

##### A. INTRODUCTION

A consistent theme in the history of attempts to effectively administer

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42. The statute states that the Board "may require" that an applicant for cost-sharing have a "conservation plan," but it does not require the certified water quality management plan. *TEX. AGRIC. CODE ANN.* § 201.304 (West 1982 & Supp. 1995). State regulations require a "certified resource management plan," a phrase that does not appear in the statute or in other sections of the regulations. *TEX. ADMIN. CODE tit. 31, § 523.6; 19 Tex. Reg. 9434* (Dec. 2, 1994).

43. *WILLIAM H. RODGERS, JR., 2 ENVIRONMENTAL LAW; AIR & WATER 250* (1986).

the federal CWA, the Coastal Zone Management Act, related state environmental laws and sediment and erosion control laws is the elusiveness of controlling nonpoint sources of pollution. Although there are some local and regional exceptions, the generally accepted position is that as the CWA approaches its twenty-fifth birthday, nonpoint source pollution of water remains an unsolved problem.

Insofar as nonpoint sources are generated by agricultural production practices, the current situation bears a strong resemblance to the prevailing conditions of the 1930s and 1940s. During this period the nation addressed the problem of soil erosion for the first time. The problem, then as now, was exacerbated by the practices of private landowners that were largely responsible for creating soil erosion and water pollution. In the 1930s, there existed practical reasons to believe that a central regulatory response was not the best social or political approach. Each land unit had its own natural characteristics. The millions of owners and operators represented numerous cultures with production and social practices which varied enormously. Land tenure customs and practices varied widely — from sharecropping and cash rental to full ownership. Crops reflected the nation's diverse climate, ranging from desert to humid regions. The long shadow of lenders and creditors was cast across the patchwork of farms and ranches. There was a strong political and cultural preference for the smaller and less prosperous units, customarily referred to as "family farms."

The system which emerged to address the problem was imperfect. It did gain acceptance, however, and led to major improvements in land management. It now may be seen as having the advantage of familiarity and experience, and appears to be re-emerging as a device of some utility in water pollution control. The linchpin of that system is the "conservation plan."

#### B. EMERGENCE OF THE WHOLE-FARM CONSERVATION PLAN

The on-the-farm method developed by the NRCS in the 1930s came to be known as the "whole farm conservation plan" and was central to the program. As described by Held and Clawson:

During the Thirties, also, the idea of the whole farm conservation plan was developed and became deeply embedded in the thinking and operations of Bennett and other SCS leaders. They became convinced that separate and unrelated soil management practices on a farm could not add up to a real program of soil conservation; in fact, that unrelated practices could sometimes do more harm than good. They were convinced that the way a farmer used one piece of land depended in part upon the other land in his farm — how it could be used, and how its use affected the tract in question. They felt that a conservation plan for a farm should grow out of, and be based upon, a classification of land-use capability for that farm.<sup>44</sup>

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44. R. HELD & M. CLAWSON, *SOIL CONSERVATION IN PERSPECTIVE* 67 (1965).

An effectively executed whole farm conservation plan has great potential. It usually begins with a detailed land capability classification which seeks to identify the limitations and potential of the land. It develops land use programs for all of the different fields and soils. Special conservation measures are recommended. Significantly, the plan also considers the limitations of the farm as an economic unit, which includes the practical ability of the farm to implement the plan. This necessarily requires consideration of capital and credit.<sup>45</sup> The process was facilitated during the early days of conservation programs that offered the farm planner substantial subsidies for conservation efforts.

Today the farm conservation plan is viewed more as an ideal than a practical reality. Even at its inception, however, there were low-level controversies. For example, a farmer in pursuit of a subsidized conservation improvement might tolerate the plan, intending to ignore the parts considered unimportant, while the agency remained committed to the concept that the parts of each plan are completely interdependent. Moreover, preparation of the plans took a great deal of time and expertise. The plans themselves represented a substantial subsidy to individual farmers.

The whole farm conservation plan received particular emphasis in the Great Plains Conservation Program, established in 1956 to focus on the agricultural region which had suffered the most from soil erosion and which historically had the most unstable farm population. Under this program, when a farmer volunteered to participate, a contract was required based upon a whole farm conservation plan. The contract was for three to ten years and covered the full range of conservation practices. Unlike the standard conservation program the farmer was not free to choose which of the conservation practices would be adopted.<sup>46</sup>

The whole farm conservation plan as a concept has undoubtedly been of only limited value when the overall national effort at erosion control is viewed. Many factors have worked against it. It requires voluntarism and many farmers have not accepted the challenge. Too many farms have changed hands and the agricultural economy has been afflicted by unending economic stress and unstable land tenure. Landholdings in agriculture continue to concentrate, resulting in a change in the economic and social incentives operating upon landowners. Livestock production is also rapidly concentrating. During the 1950s and 1960s, the federal agricultural establishment favored production over conservation.

On the other hand, a substantial number of volunteer landowners have implemented whole farm conservation plans, and the success of the many individual efforts suggests that the founder of the Soil Conservation Service, now known as the NRCS, was correct in his insistence that whole farm planning was essential to meaningful reductions in soil erosion.

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45. *Id.* at 68.

46. The program is presently being ended.

### C. CONSERVATION PLANS IN THE 1985 FARM BILL

It appeared that the 1985 farm legislation had reinvigorated the Hugh Bennett farm conservation plan, but the appearance was deceiving. The bill established that any person growing agricultural commodities on fields of highly erodible lands is ineligible to receive various federal price support payments or loans during the crop year.<sup>47</sup> A farmer or rancher who actively applies a conservation plan to highly erodible fields is not, however, affected by the ineligibility. This "sodbuster" provision requires a conservation plan. But what kind of "conservation plan"?

The legislation sheds little light, if any, on the nature of the required conservation plan. A plan is described only as that which ". . . documents the decision of the person with respect to location, land use, tillage systems, and conservation treatment measures and schedule and that is based on the local Soil Conservation Service [now the NRCS] technical guide and approved by the local soil conservation district. . . ."<sup>48</sup> The legislative history does not address the question of the nature of the plan required.

As implemented by the NRCS, the legislative description of the required plan is incorporated into the regulations without further elaboration.<sup>49</sup> In fact, the plan as implemented on the ground by NRCS is narrowly defined to apply only to a "field" which has a predominance of highly erodible land. Thus, the choice of whether to cultivate a particular field and what crop to grow there is left entirely to the farmer. Having made that choice, the farmer must have a conservation plan in order to have access to government support programs. But the plan is limited to the particular field. The NRCS must then develop a plan for the field, but in doing so is bound by the farmer's original decision regardless of its soundness. Although this allows for the encouragement of some useful remedial steps, it limits the NRCS's options considerably.

By narrowly limiting and considerably reducing the scope of the required conservation plan, many of the more important conservation questions are avoided. For example, should the cost and difficulties of adequate conservation be taken into account *before* previously unfarmed land is brought into production? What if the same crop can be grown effectively on another part of the farm without disrupting farm economics? What about the many cases where the land ought not to be cultivated at all?

In sum, while the 1985 Farm Bill brought about some advances, the conservation plan is a diminished version of the plan conceived by the early proponents of conservation. Champions of "sodbuster" policies did not realize the loss when they inadvertently abandoned the whole farm conservation plan. Nonetheless, the farm bill does keep alive the idea that the better way to control runoff from farm fields is an individualized land man-

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47. 16 U.S.C. §§ 3811, 3812 (1994).

48. 16 U.S.C. § 3812(2) (1994).

49. 7 C.F.R. § 12.2(4) (1996).

agement plan. Unfortunately, it abandons the whole farm conservation plan in favor of a single field plan.

#### D. CONSERVATION PLANS AND THE CLEAN WATER ACT

The 1972 CWA contained the familiar requirement for "Section 208 planning" which was intended to provide for the development and implementation of waste treatment on a regional basis, but with a specific requirement for the identification and prescription of controls for nonpoint sources of pollution. Although "Section 208 planning" proved to have serious inherent problems, regional planning did go forward, and the results provide some insight into how the states view the issue. Professor Robert E. Beck completed a comprehensive review of 136 "Section 208 plans" and observed:

[There is a] prevailing choice of soil conservation districts as implementing agencies of agricultural nonpoint source management. The plans, with only a few exceptions, generally did not call for the creation of regulatory control programs, but rather for the expansion of current voluntary type efforts, particularly those relating to erosion and sedimentation control. The review showed also that best management practices (BMPs) for erosion and sediment control would have to be determined on a site specific basis and thus the furthest that any regulation at the state level would go would be to insist on the development of a BMP for each farm.<sup>50</sup>

In 1987 Congress amended the CWA with a new section which dealt with nonpoint source pollution. As with the Section 208 plans, the "Section 319" effort encourages planning, this time by the states. The final result of the planning stage was to be a state management program which describes how the state intends to implement nonpoint source controls. "Section 319 planning" was to develop "to the maximum extent practicable" programs on a watershed-by-watershed basis.

In 1992, the Environmental Protection Agency reported to Congress on the status of state management programs for nonpoint source pollution. The report observed that most of the states intended to continue the local and regional activities that were already in place. There were no comprehensive statewide approaches to the problem in most states. Fifteen states specifically mentioned that they intended to continue basing nonpoint programs in local conservation districts. The most frequently mentioned pollution control activity was the provision of technical advice to potential polluters.<sup>51</sup>

It is fair to infer from the 1992 report that in a majority of states there has been very little shift in policy concerning nonpoint source pollution

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50. R.E. Beck, *The Water Quality Approach*, in 5 *WATERS AND WATER RIGHTS* 353 (R.E. Beck ed., 1991). A complete description of "208" and "319" programs is found in the Beck chapter.

51. U.S. ENVIRONMENTAL PROTECTION AGENCY, OFFICE OF WATER, *MANAGING NONPOINT SOURCE POLLUTION* (January, 1992).

since the Section 208 plans. Conventional soil conservation methods and institutions, including farm conservation plans, will continue as the preferred nonpoint source tool in most states.

#### E. CAFO WASTE MANAGEMENT PLANS

In 1993, Region Six of the EPA issued a rule governing confined animal feeding operations (CAFOs) in Texas, Oklahoma, Louisiana and New Mexico. This new rule established a "general permit" for all regulatable CAFOs. The key feature of the general permit is:

A pollution prevention plan [which] shall be developed for each facility covered by this permit. Pollution prevention plans shall be prepared in accordance with good engineering practices and should include measures necessary to limit pollutants in runoff. The plan shall describe and ensure the implementation of practices which are to be used to assure compliance with the limitations and conditions of this permit.<sup>52</sup>

The Region Six regulations then go on to detail components of a CAFO pollution prevention plan. The key language states: "The Pollution Prevention Plan for each facility shall include a description of management controls appropriate for the facility, and the permittee must implement such controls."<sup>53</sup> The permit requires regular inspection of the various control structures in addition to record-keeping.

Separate from the Region Six requirement, the NRCS provides a service by preparing a Waste Management Plan for any producer who has concentrated livestock production facilities. These, of course, are voluntary, but represent a significant assistance to landowners. NRCS waste management plans take into account individual farm economics whereas it is not clear whether Region Six pollution prevention plans do so.

#### F. PLANS IN STATE SOIL EROSION LAWS

As we have observed, at least twenty-six states have enacted some form of soil erosion and sediment control law. While these laws take a variety of forms, South Dakota's are not atypical.

The South Dakota law applies to "land-disturbing activity" which includes cultivation of agricultural fields along with grading, excavating and similar activities. A land-disturbing activity is one which results in "soil erosion from water and wind and the movement of sediments . . . [i]nto any and all waters, public or private, on the surface of the ground . . . ." A state agency prepares state erosion and sediment control guidelines, which contain suggested conservation practices, and each local conservation district then prepares and adopts local conservation standards which are specifically intended to serve as "soil loss tolerance limits."

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52. 58 Fed. Reg. 7610, 7629 (Feb. 8, 1993).

53. *Id.* at 7630.

Neither the state agency nor local conservation districts may issue permits. Instead, when a conservation district determines that an agricultural land-disturbing activity violates a standard, the land disturber is given six months in which to prepare an erosion and sediment control plan and have it adopted by the local conservation district. Implementation of the plan is required within six months. The South Dakota law does not define "erosion and sediment control plan." It is usually presumed that this is intended to be a NRCS conservation plan, with the exception that the minimum acceptable standards are found in the local conservation district rules.

Any person adversely affected may petition the local conservation district alleging a violation of the rules. The district is then required to investigate and may seek enforcement of the mandated plan in court. In today's environmental protection parlance, laws such as this are sometimes referred to as "bad actor" laws. Such laws are intended to provide relief against the occasional bad actor rather than to provide a comprehensive set of rules governing landowners who, presumably, will be participating in the voluntary conservation programs.

#### G. GENERAL OBSERVATIONS

When the EPA first initiated the regulation of point sources in 1972, it looked at the thousands of farms and rural drains and took the position that it would be futile to require permits of so many sources. Most of these sources were relatively small, dispersed geographically, varied in climate and soils and difficult to monitor. The EPA decided to avoid the situation altogether and issued regulations which excluded from the permit requirement all smaller feedlots and drains from the point source definition. The decision did not survive judicial scrutiny. In 1975, a federal district court held that the CWA permit program covers each point source as defined by Congress, not just major point sources, easily controlled point sources or point sources in the traditional sense. The district court did offer the EPA some advice on the subject:

[Plaintiff] points out that, while all sources which are eventually defined as point sources would be regulated under an appropriate permit program, the Administrator would have wide latitude to rank categories and sub-categories of point sources of different importance and treat them differently within a permit program. He would also have substantial discretion to use administrative devices, such as area permits, to make EPA's burden manageable.<sup>54</sup>

The EPA had argued that it was impossible to establish uniform national effluent limitations for runoff pollution. The court responded that "when numerical effluent limitations are unfeasible, EPA may issue permits with conditions designed to reduce the level of effluent discharges to

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54. *Natural Resources Defense Council, Inc. v. Train*, 396 F. Supp. 1393 (D.D.C. 1975), *aff'd* as *Natural Resources Defense Council, Inc. v. Costle*, 568 F.2d 1369 (D.C.Cir. 1977).

acceptable levels.” This may well mean opting for a gross reduction in pollutant discharges rather than the fine tuning suggested by numerical limitations. But this ambitious statute is not hospitable to the concept that the appropriate response to a difficult pollution problem is not to try at all.<sup>55</sup>

The appellate court ratified the district court’s suggestion that the EPA consider use of an area or general permit:

[CWA] does not explicitly describe the necessary scope of an NPDES permit. The most significant requirement is that the permit be in compliance with the limitations section of the Act. . . . As a result [plaintiffs] and the District Court have suggested the use of area or general permits. The Act allows such techniques. Area-wide regulation is one well-established means of coping with administrative exigency. . . . Our approach is not fairly subject to the criticism that it elevates form over substance and that the end result will look very much like EPA’s categorical exemption.

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There is also a very practical difference between a general permit and an exemption. An exemption tends to become indefinite. . . . The problem drops out of sight, into a pool of inertia, unlikely to be recalled in the absence of crisis or a strong political protagonist. In contrast, the general or area permit approach forces the Agency to focus on the problems of specific regulations and requires that the problems of the region be reconsidered at least every five years, the maximum duration of a permit.<sup>56</sup>

It appears that little has changed since the decision in *Costle*. In most respects the EPA’s situation has also remained essentially unchanged.

There are two worlds of environmental regulation. One is located in the state capitals and the District of Columbia and is made up of specific regulations, central plans, papers, policies and complex enforcement strategies. The other world is found “on the ground” in the nation’s forestry, agricultural, mineral, recreational and other land-intensive industries. This is a geographically immense and functionally practical world, most of it far from the natural resources managers and administrators. The economy in this second world is dispersed and typified by smaller production units with small operating margins. It is a world where “getting the job done” is the most respected maxim and where any useful tool, be it a chemical or a flowing stream, is highly valued. In their efforts to deal with nonpoint source pollution, the state capitals and the District of Columbia have confronted this second world.

Assuming that the objective of any nonpoint source pollution control program is to get landowners to implement site specific best management practices, it is possible that the conservation plan is evolving into the useful tool for which EPA and others have been searching since the time of *Costle*. It is clear that the conservation plan in its many forms is widely

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55. *Costle*, 568 F.2d at 1374.

56. *Id.* at 1381.

accepted as the principal device for addressing nonpoint source pollution and soil erosion. With that in mind, it seems surprising that more attention has not been given to the form that such plans ought to take and the standards they ought to follow.

Conservation plans, as indicated, were conceived as a practical ideal by Hugh H. Bennett. His vision for a farm conservation plan insisted that pollution control planning would require careful consideration of all aspects of a production unit. Although the ideal has been largely abandoned, the notion of the conservation plan is an established device, broadly recognized in the agricultural community. After more than fifty years of use, it continues to be implemented by an agency of technical experts applying broadly recognized scientific principles of resource management.<sup>57</sup>

The plan is a flexible device. It assumes that each site will be unique, with its distinct problems and possibilities, and that therefore no two plans will be alike. It is well suited to the implementation of best management practices, a phrase which is used today to describe the practices developed by the SCS during the 1930s and 1940s. It also integrates well into a permit system governing categories of polluters for which uniform effluent limitations are inappropriate.

On the other hand, reliance on the conservation plan raises many difficulties. For example, it is difficult to identify an "acceptable" level of pollution at the farm level. If a plan is adopted, but the practices are found later to be unacceptable, it is difficult to rework the plan. The plan, at least until its use in the case of Region Six CAFOs, has always been applied as part of a voluntary system. There is no easy answer to the question of how to gain voluntary participation in the absence of subsidies. The 1985 Farm Bill provides one answer: tie it to a larger existing benefit. This will be a difficult thing in a world of fewer subsidies with fewer farmers dependent on those subsidies. Additionally, because every plan is developed individually, it is difficult to apply even regional uniform standards and issues of fairness and laxity are often implicated.

Good or bad, the conservation plan is now a widely-used and clearly favored device for control of soil erosion and nonpoint pollution control. It may be time to discuss how it can be made more useful and effective.

## V. ISSUES PRESENTED BY STATE SOIL EROSION CONTROL LAWS

### A. THE DETERIORATING INFRASTRUCTURE

The pattern among states described above premises a broad-ranging system of nonpoint source water pollution controls upon a complex governmental structure. This system was created out of the New Deal farm

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57. Observe that the Texas soil erosion control does stipulate use of a *whole* farm conservation plan.

and conservation legislation and has continued into this decade. It is worthwhile to ask whether this structure has sufficient political vitality and financial resources to take on nonpoint pollution control.

It is risky to generalize about local conservation districts because their condition and status varies from state to state and region to region. As mentioned earlier, local districts are no longer the secondary financial beneficiaries of cost-sharing programs supplied by a generous Congress. Instead, they are now typically dependant upon state and local governments for their budgets; the heavier emphasis is on the local sources. At the same time, districts must look to a time when they will receive less indirect federal support. Today, a typical local district uses offices and resources which are supplied by the NRCS. The technical skill and counsel is provided almost entirely by the NRCS. Recently, the NRCS has suffered a "reorganization"<sup>58</sup> which is currently leading to a major reduction in staff and in the skill level of staff persons deployed to the counties and districts. A consolidation of offices should be anticipated, as evidenced by pending reorganization within the USDA.<sup>59</sup> This means local conservation districts which are typically budgeted to maintain mere subsistence levels will lose their principal source of daily expertise and technical know-how and, in some cases, their subsidized offices as well.

The political resources of the local conservation districts must also be drawn into question. True, they are "local," which tends to please popular notions of political organization, but "local" doesn't translate into an ability to carry out a complex task. Local districts are controlled by a board of volunteers who may be elected but are typically appointed to fill spots for which no candidates appeared. District supervision usually employs an office worker who may or may not be full-time or trained in the technical aspects of soil erosion. To fill in these deficiencies, reliance has been placed upon the NRCS. Does such a humble member of local government have what it takes to lead the way on nonpoint source pollution control? To date, it does not appear this question has even been considered. It remains true, however, the implementation of complex laws requires skilled and credible government agencies.<sup>60</sup>

The NRCS now appears to be an agency that is staffed with talented and motivated people who are looking for a meaningful job to perform. Unfortunately, with the reduction in federal cost-sharing money for conservation practices, the agency's goals have become clouded and any sense of purpose or mission faded long ago. The deterioration of clearly-stated goals has resulted in a reluctance to lead and an institutional timidity is

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58. This word is usually employed as a euphemism for another action.

59. As this is being written, the House Agriculture Committee has indicated informally that it intends to revisit the reorganization of USDA with an eye toward folding NRCS into the farm services agency.

60. A more optimistic view is in: R. Jones, L.C. Frarey, & S.J. Pratt, *Conservation Districts As The Foundation for Watershed-Based Programs To Prevent and Abate Polluted Agricultural Run-off*, 18 *HAMLIN L. REV.* 151 (1994).

readily discernible and supported by an awareness that political leaders will not forcefully support aggressive soil erosion control efforts. The apparent conclusion is that NRCS is unlikely to be the champion that the districts need. To the contrary, its role appears to be diminishing.

Parenthetically, it should be added that if Congress in fact further withdraws NRCS from the field of action on nonpoint controls, it will be consistent with the Congress' position, from Section 208 onward, that nonpoint pollution control be carried out by the states and not the federal government. Politically consistent as it is, however, the local districts will be seriously weakened.

Most of the state erosion control laws utilize the services of some form of state level conservation agency. This raises two simple questions: (1) Where do they fit in? and (2) Do they provide some political or fiscal vitality to the districts? No general answer is available for the latter inquiry. As to the former, some form of a state conservation agency or commission was created, typically in the 1930s, to oversee, encourage and coordinate the work of the many local districts which were then coming into existence. These agencies and commissions enjoyed for years the quiet support of the agricultural bureaucracies in state governments although they existed in the shadows. With the emergence in the 1970s of strong environment and natural resources agencies in state government, the shadow role of the typical conservation agency became a role of near invisibility. Even Sections 208 and 319 programs under the CWA were directed to the new environmental control agencies rather than to the existing conservation agencies which, it could be reasonably argued, had a deeper and broader understanding of the relevant issues. Can they help the local districts today? It seems unlikely, although in the case of Texas we can observe some recognition of this issue on the part of the legislature.

Have agricultural and forestry leaders, speaking through their legislatures, intentionally created a legal system for nonpoint source controls which they know cannot possibly be implemented by the existing governmental structure?

## B. THE WATERSHED ISSUE

Just as state governments appear to be contenting themselves with reliance upon local conservation districts, a renewed emphasis on watershed management is emerging. As mentioned earlier, conservation districts are organized along political boundaries and these rarely reflect the boundaries of watersheds.<sup>61</sup> If conservation districts are to be the pivotal agency for nonpoint pollution control, some means of cooperation within the watershed will have to be achieved.

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61. See generally, W. Goldfarb, *Watershed Management: Slogan or Solution*, 21 B.C. ENVTL. AFF. L. REV. 483 (1994).

### C. THE STANDARDS

There is a question of whether the standards employed to measure nonpoint source pollution are sufficiently precise to support enforcement in specific cases. We have already observed that Texas uses the state water quality standards as the gauge of performance. However, these have long been recognized for their inadequacy as a performance test. Most other state erosion control laws use the NRCS' determination of soil loss levels that can be tolerated indefinitely without interfering with sustained crop production. These tolerance levels, known as "T-values," represent tons of soil loss per acre per year and range from a low of one to a high of five across the United States.<sup>62</sup> This is an "average" loss because it includes those years of severe storms that will cause erosion even where good conservation practices are in place. Such storms will cause severe loss of soil where good systems are lacking. "T-values" vary by soil type because some soils can tolerate higher soil losses than others. Even where soil losses can be kept within "T-values," problems other than maintaining soil productivity may still be serious. Productivity of other lands may be impacted, reservoirs and streams may be filled with sediment, and water and air quality may be impaired.<sup>63</sup>

From the point of view of the lawyer representing a defendant farm operator or an enforcing government entity, the issue presented by "T-values" is much different from the specific end-of-the-pipe effluent limitation employed under the CWA point source program.

### D. COST-SHARING

Landowner cooperation in the conservation system is voluntary. There is little hard evidence (although an abundance of hopeful rhetoric) that a voluntary system will ever come close to solving the problem of nonpoint source pollution. The historical approach of the federal conservation laws was to include a cost-sharing payment. This too, however, has motivated relatively few and has resulted in some heavily polluted streams and lakes. Many states have used cost-sharing as a stimulus. Nevertheless, to quote Professor W. H. Rodgers:

Paying half of the cleanup costs of practices not otherwise commending themselves to the users is an unlikely way to provoke a raid on the treasury. Altruism, discounted by fifty percent, has yet to win its first political campaign.<sup>64</sup>

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62. See generally, Arts & Church, *Soil Erosion - The Next Crisis*, 1982 WIS. L. REV. 535 (1982).

63. It is noted that NRCS alters its "T" value definition from time to time. A thorough critique of "T" values can be found in F.R. STEINER, *SOIL CONSERVATION IN THE UNITED STATES*, 144-148 (1987).

64. W. H. RODGERS, JR., 2 ENVIRONMENTAL LAW: AIR AND WATER 141 (1986).