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**Agriculture, Nonpoint Source Pollution, and
Regulatory Control: The Clean Water Act's
Bleak Present and Future**

by

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AGRICULTURE, NONPOINT SOURCE POLLUTION, AND REGULATORY CONTROL: THE CLEAN WATER ACT'S BLEAK PRESENT AND FUTURE

*David Zaring**

I. INTRODUCTION

Although environmental regulation in the United States has recently come under attack as being both costly and ineffective, environmental pollution continues to plague and degrade the United States' natural resources, especially the nation's waters. The most significant source of water pollution today is nonpoint source pollution. It is also the most unregulated.¹ While other water pollution discharges have decreased dramatically since the promulgation of the Clean Water Act ("CWA" or "the Act"),² nonpoint source pollution—runoff from broad sources such as fields, as opposed to effluents emitted from discrete sources such as sewage pipes—has not decreased commensurately. Given that the dangers of nonpoint source pollution are significant and well-known to legislators, what, then, has prevented the government from taking strong anti-pollution measures against emissions into water?

Agriculture represents the largest cause of nonpoint source pollution. Thus, agricultural interests who dislike the prospect of increased regulation of their discharges can subject those responsible for pollution controls to pressure and make nonpoint source pollution controls particularly lax. The agricultural interests, rooted in a discrete group that has both strong incentives to organize in order to avoid regulation and a relatively small, easily organized structure, have a particularly large influence on pollution control legislation passed by Congress. As this Note will demonstrate, these interest groups have greatly influenced the House of Repre-

* J.D., Harvard Law School, 1996; B.A., Swarthmore College, 1992. The author thanks Judith Rosenberg for her advice and criticism, Bruce Hay and Richard Revesz for their guidance. An abbreviated version of this Note appears in the Spring 1996 *Environmental Law Reporter*. See *Federal Legislative Solutions to Agricultural Nonpoint Source Pollution*, 26 ENVTL. L. REP. 10,128 (1996). All errors remain the author's.

1. See *infra* parts II, III.

2. 33 U.S.C. §§ 1251-1387 (1994). Although the Act does not define "nonpoint source," the Act and its legislative history frequently refer to the term when describing pollution with diffuse origins.

sentative's most recent nonpoint source pollution control effort. Public choice theory, which can be characterized as an economic analysis of the nonmarket decisionmaking of the public arena, describes the influential roles farmers play in the context of the pollution legislation. This Note applies this theory and economic analysis to the problems and solutions of nonpoint source pollution.

This Note takes an interdisciplinary approach—using legal, economic, and public choice analysis to explain the failure of an enterprise in regulation. First, this Note will examine the dangers of nonpoint source pollution generally and agricultural nonpoint pollution in particular. Second, this Note will analyze the provisions of the CWA that deal with the pollution problem and evaluate their effectiveness. Third, it will evaluate other possible regulatory solutions to the nonpoint source pollution problem, including one amending the CWA passed by the current House of Representatives. Finally, the Note will conclude with an explanation of why potentially effective alternative solutions—such as pollution taxes on farmers, or command and control regulation—have not yet been implemented by Congress, and why a less effective solution may indeed pass.

II. THE CONSEQUENCES OF NONPOINT SOURCE POLLUTION

Nonpoint pollution sources are not defined by the CWA, though the phrase often appears in its text. Authorities often describe them as any source of water pollution that cannot be attributed to a discrete conveyance.³ So defined, nonpoint source pollution becomes a catch-all category that includes all pollution that does not come from a point source (the CWA's definition of a discrete conveyance).⁴ Scholars have attributed an exceptionally broad ambit to the term—one that reaches a great deal of agricultural activities. Pro-

3. See, e.g., *National Wildlife Found. v. Gorsuch*, 693 F.2d 156, 166 & n.28 (D.C. Cir. 1982); WILLIAM H. RODGERS, JR., ENVIRONMENTAL LAW 292 (1994); Charles R. Cogbill, *Nonpoint Pollution Control in Virginia*, 13 U. RICH. L. REV. 539, 539 n.4 (1979) ("The term 'nonpoint source' is almost as difficult to define as it is to control. It is generally considered to be any source which is not a point source.").

4. The potentially large scope and undefined nature of nonpoint sources has made them a subject of great interest to environmental law commentators. Professor William Rodgers, for example, devotes 21 pages of his environmental law treatise to a discussion of nonpoint sources and only 14 pages to point sources, even though the latter category

fessor Daniel Mandelker has observed, for example, that any field or feedlot on which rain falls and runoff follows qualifies as a nonpoint pollution source.⁵ The definition of nonpoint sources thus includes all agricultural operations, whether they raise crops or livestock, located where either the weather or irrigation provides them with moisture.⁶

Nonpoint source pollution constitutes a substantial portion of all water pollution and significantly affects the quality of both surface water and groundwater.⁷ Nonpoint sources have been blamed for sixty-five to seventy-five percent of the pollution in the nation's most polluted waters,⁸ but all the surface waters of the country have suffered from nonpoint source problems. In thirty-three states, nonpoint source pollution is the most significant form of pollution affecting streams and rivers, and in Iowa, Missouri, Montana, Nebraska, and Wisconsin, nonpoint source pollution accounts for over ninety percent of stream and river pollution.⁹ In forty-two states, nonpoint sources are the predominant source of pollution for polluted lakes; in six states, it accounts for 100% of lake pollution.¹⁰ Nonpoint sources account for forty-three percent of the pollution in the nation's estuaries.¹¹ Similarly, the groundwater has suffered from nonpoint source pollution because of increased chemical contamination from nitrates and other carcinogens.

has been a much more strictly enforced legal provision. See RODGERS, *supra* note 3, at 292-313, 361-75.

5. See Daniel R. Mandelker, *Controlling Nonpoint Source Pollution: Can It Be Done?*, 65 CHI.-KENT L. REV. 479, 480 (1989).

6. The broad definition of nonpoint sources, and its reach over almost all agricultural operations, has made water pollution regulation very relevant to farmers. One observer believes that "water quality and related environmental considerations" are among the most significant issues facing agriculture today. Neil D. Hamilton, *The Role of the Law in Shaping the Future of American Agriculture*, 38 DRAKE L. REV. 573, 578 (1988-89).

7. See ASSOCIATION OF STATE AND INTERSTATE WATER POLLUTION CONTROL ADMINISTRATORS, AMERICA'S CLEAN WATER: THE STATES' NONPOINT SOURCE ASSESSMENT (1985), reprinted in *Impact of Nonpoint Source Pollution on Coastal Water Quality: Hearing Before the Subcomm. on Fisheries and Wildlife Conservation and the Environment and the Subcomm. on Oceanography of the House Comm. on Merchant Marine and Fisheries*, 100th Cong., 2d Sess. 84-110 (1988); Mandelker, *supra* note 5, at 480-82.

8. One-quarter of the country's waters may be characterized as degraded, using state water quality standards as benchmarks. See EPA, ACTIVITIES AND PROGRAMS IMPLEMENTED UNDER SECTION 319 OF THE CLEAN WATER ACT AS AMENDED BY THE WATER QUALITY ACT OF 1987, FISCAL YEAR 1987, A REPORT TO CONGRESS 2 (1987).

9. See EPA, NATIONAL WATER QUALITY INVENTORY: 1986 REPORT TO CONGRESS 24 (1986).

10. See *id.* at 31. The six states are Iowa, Kansas, Mississippi, New Jersey, New Mexico, and West Virginia.

11. See *id.* at 43.

A. The Significance of Agriculture's Contribution

1. Surface Water Pollution

Agriculture is the single largest nonpoint source of surface water pollution.¹² It both introduces pesticides and herbicides into the nation's waters and is the primary source of soil erosion in the country, which clogs surface waters with silt and sediment.¹³ Congress has recognized this problem since 1972. As the Senate then observed, "[a]griculture is now one of the most major contributors to the degradation of the quality of our navigable water."¹⁴ Recent statistics support the Senate's assessment. Agricultural nonpoint sources, especially eroded topsoil, contribute substantially to pollution of the country's rivers,¹⁵ and impair more than 100,000 assessed U.S. river miles.¹⁶ Agricultural runoff also impairs two million acres of lakes in the country, largely through silt and sediment runoff.¹⁷ The Conservation Foundation has estimated that cropland produces \$2.2 billion in net damages from erosion-related pollutants per year. This estimate accounts for a variety of different nonpoint source pollution damages, including the decreased recreational value of sediment-filled water, reduced water storage capacity in lakes and reservoirs, increased water treatment costs, increased flood damages, increased navigational problems, and clogged drainage ditches and irrigation canals.¹⁸ Twenty-five to forty per-

12. NATIONAL RESEARCH COUNCIL, *ALTERNATIVE AGRICULTURE* 89 (1989); EPA, *MANAGING NONPOINT SOURCE POLLUTION: FINAL REPORT TO CONGRESS OF SECTION 319 OF THE CLEAN WATER ACT* 17 (1989).

13. See EDWIN CLARK ET AL., *ERODING SOILS: THE OFF-FARM IMPACTS* 2 (1985).

14. S. REP. NO. 414, 92d Cong., 1st Sess. (1972), reprinted in 1972 U.S.C.C.A.N. 3668, 3862.

15. See EPA, *NONPOINT SOURCES: AGENDA FOR THE FUTURE* 2 (1989).

16. See ROBERT W. ADLER ET AL., *THE CLEAN WATER ACT TWENTY YEARS LATER* 173 (1993).

17. *Id.*

18. See CLARK ET AL., *supra* note 13, at xiv. However, as J.B. Braden et al., observe, the cost of cropland erosion into water, even if measured accurately by Clark and given an exact dollar figure, does not necessarily provide a gauge of the amount that should be spent on control. "At some point each dollar spent on control returns less than a dollar in benefits—so complete abatement would not be cost effective." J.B. Braden et al., *Revenue Sources for Nonpoint Source Pollution Abatement: An Economic Analysis*, in *NONPOINT POLLUTION: POLICY, ECONOMY, MANAGEMENT, AND APPROPRIATE TECHNOLOGY* 99 (Vladimir Novotny ed., 1988).

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cent of the soil that runs off a field will ultimately reach a water body, according to the EPA.¹⁹

Agricultural surface water pollution extends beyond soil runoff. Livestock raised on American ranches and farms produce approximately 1.8 billion metric tons of wet manure per year, much of which reaches surface water supplies after being applied to fields, as do fertilizers and pesticides.²⁰

2. *Groundwater Pollution*

Groundwater is a vital source of American surface waters and drinking water. Roughly thirty percent of America's stream flow is supplied by groundwater that emerges in natural springs.²¹ Approximately 117 million Americans rely on groundwater for their drinking water.²²

Unfortunately, the country's groundwater has suffered from contamination by agricultural chemicals that play a large and increasingly important role in modern farming. Pesticide use on farms has nearly tripled since 1964;²³ today, farmers apply approximately 750 million pounds of pesticides to their fields yearly.²⁴ Fertilizer application rates have also increased: between 1979 and 1981 they rose sixty-eight percent.²⁵ Nitrates attributable to fertilizers have been found in the groundwater of every agricultural region of the United States.²⁶ The prodigious and increasing use of agricultural chemicals has taken its toll in the decreased quality of groundwater. In 1986, forty-one states concluded that agricultural activities

19. See EPA, REPORT TO CONGRESS: NONPOINT SOURCE POLLUTION IN THE UNITED STATES, 2-6 to 2-7 (1984) [hereinafter EPA, REPORT TO CONGRESS].

20. See *id.* at 2-11.

21. See RUTH PATRICK ET AL., GROUNDWATER CONTAMINATION IN THE UNITED STATES 2 (2d ed. 1987).

22. See EPA, GROUND-WATER PROTECTION STRATEGY 10 (1984).

23. See ELIZABETH G. NIELSEN & LINDA K. LEE, THE MAGNITUDE AND COSTS OF GROUNDWATER CONTAMINATION FROM AGRICULTURAL CHEMICALS: AGRICULTURAL ECONOMIC REPORT NO. 576 2 (1987).

24. See Thomas W. Culliney et al., *Pesticides and National Toxicants in Food*, 41 AGRIC. ECOSYS & ENV'T 297, 304 (1992).

25. See Richard A. Smith et al., *Water Quality Trends in the Nation's Rivers*, 235 SCI. 1607, 1612 (1987). Use of nitrogen fertilizer has quadrupled between 1960 and 1980. See NIELSEN & LEE, *supra* note 23, at 2.

26. See Stephen Halberg, *From Hoes to Herbicide: Agriculture and Groundwater Quality*, 41 J. SOIL & WATER CONSERV. 356 (1986).

were a major source of groundwater contamination.²⁷ In 1985, twenty-three states reported that twenty-three pesticides, some of which are suspected carcinogens, had been detected in their groundwater.²⁸

B. The Effects of Agricultural Nonpoint Source Pollution

Agricultural chemical and manure runoff pollute the country's water by introducing carcinogens (such as nitrates) and excess nutrients (such as nitrogen and phosphorous).²⁹ Nitrogen and phosphorous contribute to the growth of aquatic plants such as algae, which can reduce the water's dissolved oxygen content, reduce aquatic animal populations, and give water an unpleasant smell and taste.³⁰ As many as 1400 American counties, covering over one-third of the continental United States, show a potential for either nitrate contamination, pesticide contamination, or both, in drinking water, much of which is drawn from groundwater.³¹ Furthermore, large amounts of the country's rivers, lakes, and estuaries have been impaired by sediment and silt from soil erosion.³²

Increased cancer levels and other disorders in humans have also been correlated with high levels of nitrates in drinking water.³³ The most serious of these disorders is associated with human consumption of nitrate-contaminated drinking water. Methemoglobinemia, or "blue baby syndrome," is a condition that reduces the ability of the blood to carry oxygen and is thought to be particularly dangerous to infants.³⁴

The disturbing effects of pollution on humans are more than matched by the plight of other species exposed to agricultural

27. See EPA, *supra* note 9, at 60-61.

28. See EPA, PESTICIDES IN GROUND WATER: BACKGROUND DOCUMENT 14 (1986).

29. See GENERAL ACCOUNTING OFFICE, ANIMAL AGRICULTURE: INFORMATION ON WASTE MANAGEMENT AND WATER QUALITY ISSUES 11 (1995).

30. See Thomas Phipps & Pierre Crosson, *Agriculture and the Environment: An Overview*, in AGRICULTURE AND THE ENVIRONMENT 6-7 (T. Phipps et al., eds. 1986).

31. See NIELSEN & LEE, *supra* note 23, at 15. Nielsen and Lee estimate that 19 million people drink from private wells and 34 million from public wells in these counties. *Id.*

32. See *supra* notes 15-17 and accompanying text.

33. AGRICULTURAL LAW & POLICY INSTITUTE, FARMING & GROUNDWATER: AN INTRODUCTION 32 (1988).

34. See FRANK P. GRAD, ENVIRONMENTAL LAW 22-23 (3d ed. 1985).

nonpoint source pollution. Approximately thirty-seven percent of the 436 species listed in the Endangered Species Information Database are endangered in part due to effects of irrigation and the use of pesticides.³⁵

III. THE CLEAN WATER ACT'S PROVISIONS COUNTERING NONPOINT AGRICULTURAL POLLUTION

While the Clean Water Act does not strictly regulate nonpoint source pollution or agricultural polluters,³⁶ it does not ignore the problem entirely. The Act has as its objective "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters."³⁷ Section 502(6) defines the term "pollutant" to include "agricultural waste discharged into water,"³⁸ and the Act's overarching goal is to reduce the discharge of pollutants into the nation's waters. Unfortunately, the CWA subjects agricultural pollution to relaxed regulation. Agricultural pollution has largely been defined by the Act as nonpoint source pollution, perhaps because much of it stems from disparate and uncollected runoff from fields; however, even agricultural pollution that does not originate from such a disparate source has avoided federal point source regulation. The CWA explicitly excludes two major sources of agricultural pollution that can manifest themselves in discrete discharges—irrigation return flows and agricultural stormwater discharges—from its definition of point sources.³⁹ Of all the feedlots in the country, only concentrated animal feeding operations ("CAFOs") currently fall under the constraints of the Act's point source regulations.

35. See ADLER ET AL., *supra* note 16, at 177.

36. See, e.g., L. Alenna Bolin, *An Ounce of Prevention: The Need for Source Reduction in Agriculture*, 8 PACE ENVTL. L. REV. 63, 76 (1990); NATIONAL RESEARCH COUNCIL, *INVESTING IN RESEARCH: A PROPOSAL TO STRENGTHEN THE AGRICULTURE, FOOD, AND ENVIRONMENTAL SYSTEM* 52 (1988).

37. 33 U.S.C. § 1251(a) (1994).

38. 33 U.S.C. § 1362(6) (1994).

39. See 33 U.S.C. § 1362(14) (1994). Irrigation return flows also introduce a number of harmful chemicals into surface and groundwater. These flows can include toxic pesticides which introduces ingredients such as selenium, boron, molybdenum, and chromium into the ecosystem. See ADLER ET AL., *supra* note 17, at 242. These sources could of course be included as point sources under a revised CWA. Indeed, the prospect of turning everything into a point source may be a potential mechanism for bringing an increasingly narrowed category of nonpoint source pollution under control.

CAFOs include only large feedlots—those containing over 1,000 “animal units.”⁴⁰ Thus, the feedlots regulated by this provision represent only a fraction of all those in the country.⁴¹ But runoff from manure and other discharges from these feedlots comprise a significant part of agricultural water pollution. Point sources are regulated under the CWA by a complex scheme of effluent limitations in the guise of a national permit system administered by both the states and the EPA.⁴²

Congress first tried to regulate nonpoint source pollution via Section 208, which was created as a mostly voluntary regime. Section 208 was amended to offer financial incentives to decrease pollution. The regime was further amended in the 1980s principally through the addition of Section 319, which requires states to assess nonpoint source pollution and propose management programs.

A. Section 208

1. The Section's Requirements

Congress first addressed nonpoint sources of pollution in 1972 in the Federal Water Pollution Control Act Amendments, which were the earliest manifestation of the federal government's strict new approach to water pollution. The Senate then observed that “it has become clearly established that the waters of the Nation cannot be restored and their quality maintained unless the very complex and difficult problem of nonpoint sources is addressed.”⁴³ Section 208⁴⁴ of the 1972 amendments instructed states to draft areawide waste treatment management plans⁴⁵ that included procedures for

40. See 40 C.F.R. § 422.10 (1994).

41. See ADLER ET AL., *supra* note 16, at 242.

42. For a general discussion of point source regulation under the Act, see RODGERS, *supra* note 3, at 361–75.

43. S. REP. NO. 414, 92d Cong., 2d Sess. (1972), reprinted in 1972 U.S.C.C.A.N. 3668, 3705.

44. 33 U.S.C. § 1288 (1994). For a general discussion of the components of § 208, see Richard J. Lazarus, *Nonpoint Source Pollution*, 2 HARV. ENVTL. L. REV. 176 (1977); Richard A. March et al., *Nonpoint Source Water Pollution and Section 208 Planning: Legal and Institutional Issues*, 1981-1982 AGRIC. L.J. 324, 349; Lawrence P. Wilkins, *The Implementation of Water Pollution Control Measures—Section 208 of the Water Pollution Control Act Amendments*, 15 LAND & WATER L. REV. 479 (1980) (giving a critical account).

45. See 33 U.S.C. § 1288(b)(1)(A) (1994).

identifying nonpoint source pollution from agriculture and other activities.⁴⁶ Each governor was required to catalogue areas that had “substantial water quality control problems”⁴⁷ and then designate an agency or other organization to develop an areawide waste treatment plan and a “continuing areawide waste management planning process” for these problem areas.⁴⁸ These plans were ultimately supposed to create

a process to identify, if appropriate, agriculturally . . . related nonpoint sources of pollution, including return flows from irrigated agriculture, and their cumulative effects, runoff from manure disposal areas, and from land used for livestock and crop production, and set forth procedures and methods (including land use requirements) to control to the extent feasible such sources.⁴⁹

Although federal funds were originally provided to assist the states with the development and implementation of Section 208 plans, the funding ceased in 1980.⁵⁰ One hundred and seventy six Section 208 plans were ultimately created, but most were abandoned in the 1980s.⁵¹

2. Section 208 in Practice

Section 208 has been described as a “planning provision” of the Act,⁵² with an ineffective system of incentives.⁵³ States had only to develop plans that would comply with the malleable “to the extent feasible” standard of Section 208(b)(2)(F) and thus engaged in very limited pollution regulation.⁵⁴ Section 208 planning agencies promote voluntary compliance rather than mandatory controls of nonpoint source pollution; the latter were too “controversial” and “politically sensitive” for agricultural interests who opposed what they envisioned could amount to command and control regu-

46. See 33 U.S.C. § 1288(b)(2)(F) (1994).

47. 33 U.S.C. § 1288(a)(2) (1994).

48. 33 U.S.C. § 1288(b)(1)(A) (1994).

49. 33 U.S.C. § 1288(b)(2)(F) (1994).

50. See J.A. Jurgens, *Agricultural Nonpoint Source Pollution: A Proposed Strategy to Regulate Adverse Impacts*, 2 J. LAND USE & ENVTL. L. 195, 201 (1986).

51. See ADLER ET AL., *supra* note 16, at 184.

52. See RODGERS, *supra* note 3, at 296–97.

53. See March et al., *supra* note 44, at 349.

54. 33 U.S.C. § 1288(b)(2)(F) (1994).

lation.⁵⁵ States were unwilling to provoke powerful agricultural constituencies with strict regulation when the Federal Government did not obligate them to do so. The resulting nonpoint source pollution control plans were totally voluntary in 41 states. An additional eight states included many voluntary provisions.⁵⁶ The permissive nonpoint pollution regulation standards of Section 208 were matched with ineffective implementation of its limited mandates. Congress blamed the EPA for managing the Section programs poorly—for failing to encourage states to develop comprehensive and significant nonpoint source pollution programs.⁵⁷

3. Section 208's Soil Erosion Amendments

Congress amended Section 208 of the CWA in 1977, providing for a Rural Clean Water Program that offered financial incentives to landowners to implement "best management practices" (BMPs) to control nonpoint source pollution from their possessions.⁵⁸ The foremost incentive allowed landowners to recoup up to fifty percent of the cost of carrying out the practices.⁵⁹ The Senate concluded:

A system of technical and financial assistance for instituting soil conservation practices for improving water quality will encourage individuals to control nonpoint source pollution voluntarily. Such an arrangement will make it easier for operators and owners to implement those soil conservation measures identified under Section 208 management plans for reducing soil erosion and improving water quality.⁶⁰

These practices were defined by the EPA to include

55. See Centaur Management Consultants, Inc., *Areawide Water Quality Management Program Survey*, Pts. I & II at 8 (March 1977 Summary), Pt. II at 20–21 (August 1976 Summary). The EPA's regulation of point sources embraces a much more highly regulated form of pollution control that authorizes the EPA to set effluent limitations dictating permissible amounts of pollution. Agricultural interests may have campaigned to avoid a similar kind of regulation of their discharges. See *infra* part IV.

56. See EPA, *supra* note 19, at 3-3 to 3-4.

57. See *Oversight of the § 208 Program: Hearings Before the House Comm. on Public Works & Transportation*, 96th Cong., 2d Sess. 19 (1980). The EPA decided shortly after the Act was passed that it would not attempt to aggressively control nonpoint source activities. See RODGERS, *supra* note 3, at 296 n.24.

58. See 33 U.S.C. § 1288(j)(1) (1994).

59. See 33 U.S.C. § 1288(j)(2) (1994).

60. S. REP. NO. 370, 95th Cong., 1st Sess. 37 (1977), *reprinted in* 1977 U.S.C.C.A.N. 4326, 4362.

methods, measures, or practices selected by an agency to meet its nonpoint source control needs. BMPs include but are not limited to structural and nonstructural controls and operation and maintenance procedures. Landowners can apply BMPs before, during, and after pollution-producing activities to reduce or eliminate the introduction of pollutants into receiving waters.⁶¹

Congress provided some funding for a program implementing these practices on a cost-share basis with voluntary contracts between landowners and the USDA.⁶² As it passed the amendments, the Senate emphasized that it “clearly intend[ed] 208 to produce specific nonpoint source abatement programs.”⁶³

B. Section 319

The amendments of 1977 ultimately did not change Congress’ dissatisfaction with the pace of nonpoint source pollution reform. In 1985, the Senate observed that “nonpoint pollution looms as a larger and larger problem. The evidence of nonpoint pollution continues to grow.”⁶⁴ By 1987, Senator David Durenberger had concluded that “it is clear that in many watersheds the goals of the Clean Water Act—fishable, swimmable water—will not be met unless we can significantly reduce farm and urban runoff and other nonpoint problems.”⁶⁵

Eventually, in 1987, the Senate and the House explicitly added nonpoint source pollution control to the goals of the Act. The Act now reads: “it is the national policy that programs for the control of nonpoint sources of pollution be developed and implemented in an expeditious manner so as to enable the goals of this [Act] to be met through the control of both point and nonpoint sources of pollution.”⁶⁶

61. 40 C.F.R. § 130.2(m) (1995).

62. See Robert D. Fentress, *Nonpoint Source Pollution, Groundwater, and the 1987 Water Quality Act: Section 208 Revisited?*, 19 ENVTL. L. 807, 817 (1989).

63. S. REP. NO. 370, 95th Cong., 1st Sess. (1977), reprinted in 1977 U.S.C.C.A.N. 4326, 4335.

64. S. REP. NO. 50, 99th Cong., 1st Sess. 7–8 (1985).

65. 132 CONG. REC. S1015 (daily ed. Jan. 21, 1987) (statement of Sen. Durenberger).

66. 33 U.S.C. § 1251(a)(7) (1994).

1. Section 319's Requirements

The amendment's most important substantive requirement was the addition of section 319 to the CWA. Section 319 requires the states to produce an assessment report and a proposed management program within 18 months of its enactment.⁶⁷ The assessment report requires identification of both navigable waters that could not maintain water quality standards without further nonpoint source pollution control and nonpoint sources that harm water quality.⁶⁸ It also mandates that the states identify processes to reduce nonpoint source pollution "to the maximum extent practicable."⁶⁹ The management program proposal must contain an identification of BMPs, programs to implement the BMPs, and a schedule of annual implementation milestones.⁷⁰ States whose management programs were approved and funded are required to report to the EPA on their progress in combating nonpoint source pollution and in their success at meeting the milestones they had set for themselves.⁷¹ The Administrator of the EPA is required to report to Congress on the success of the Section and "the progress made in reducing pollution in the navigable waters resulting from nonpoint sources and improving the quality of such waters."⁷² The section also provides for the expenditure of federal funds to assist the states in implementing programs to reduce nonpoint source pollution and to protect groundwater quality.⁷³

2. Section 319 in Practice

Unfortunately, Section 319 has failed to reduce nonpoint source pollution.⁷⁴ Its failings can be characterized as not enough carrot, not enough stick, and too much of the same planning imperatives that had characterized Section 208.

67. 33 U.S.C. § 1329(a)-(c) (1994). However, the EPA extended the deadline to August 4, 1989. See Fentress, *supra* note 62, at 821 n.62.

68. See 33 U.S.C. § 1329(a)(1)(A)-(B) (1994).

69. 33 U.S.C. § 1329(a)(1)(C) (1994).

70. See Fentress, *supra* note 62, at 821.

71. See 33 U.S.C. § 1329(h)(11) (1994).

72. 33 U.S.C. § 1329(m)(1) (1994).

73. See 33 U.S.C. § 1329(i) (1994).

74. See ADLER ET AL., *supra* note 16, at 241 ("Implementation of 319 has failed to stem the flow of polluted runoff; the majority of state programs are ineffective and unfocused.").

The failure of the carrot lies in the unwillingness of Congress to provide sufficient incentives to the states to initiate a strict pollution control program. The General Accounting Office ("GAO") has concluded that state officials believe Section 319 funding has been insufficient to pay for significant pollution control.⁷⁵ The GAO noted that "although some states have or will allocate millions of dollars to deal with the problem, they maintain that it will require billions to correct."⁷⁶ Compared to this expense, federal appropriations for Section 319 have been small, and have lagged behind the amount authorized in 1987 for appropriations in the following years.⁷⁷ Indeed, from 1987 to 1989, only \$3.8 million was appropriated for the program.⁷⁸ Between 1990 and 1993, funding never exceeded \$50 million per year, though the 1987 amendments provided for much more—as much as \$130 million per year by 1991.⁷⁹ Those appropriations do not compare favorably to the money invested in, for example, sewage treatment under the CWA—though nonpoint sources cause more pollution than ineffective sewage treatment.⁸⁰

The stick—the consequence of noncompliance with Section 319—is also not significant. Similar to Section 208, Section 319 does not require the states to implement nonpoint source pollution plans. Indeed, if states fail to submit a report, the statute merely shifts the responsibility to EPA to prepare and present a report to Congress, or provide assistance to a local public organization experienced with water pollution control.⁸¹ Although a state is faced with the specter of loss of control over its nonpoint programs if it fails to come up with a plan, maintaining such control may not be a blessing to states. Initiating a plan offers the prospect of issuing regulations that have only been partially funded by the federal government. The expense to the states, both in terms of money and the political costs of imposing burdensome regulations on powerful

75. See GENERAL ACCOUNTING OFFICE, WATER POLLUTION: GREATER EPA LEADERSHIP NEEDED TO REDUCE NONPOINT SOURCE POLLUTION, 28–29 (1990).

76. *Id.*

77. See *Hearings before the House Water Resources and Environment Subcomm.*, 1995 WL 76952 (Feb. 24, 1995) (testimony of John J. Vroom, President, American Crop Protective Association).

78. See *id.*

79. See *id.*; 33 U.S.C. § 1329(j) (1994).

80. See ADLER ET AL., *supra* note 16, at 189.

81. See 33 U.S.C. § 1329(d)(3), (e) (1994). Governmental entities are envisioned to play this role. "Public organizations" are supposed to have "expertise in, and authority to, control water pollution resulting from nonpoint source." § 1329(e).

agricultural interests, is potentially significant.⁸² One environmental group has concluded that "without a meaningful federal mandate, the states, with a few . . . exceptions have not implemented polluted runoff programs on their own."⁸³

Furthermore, the push to further develop management plans under Section 319 brings few new ideas to the Section 208 framework. Section 319 management programs must identify procedures to reduce nonpoint source pollution that the states plan to implement and include milestones against which state performance may be measured.⁸⁴ But Section 208 also required plans to treat areawide waste, to identify nonpoint sources, and to develop methods to control pollution.⁸⁵ Section 319's requirements, while somewhat more specific, do not represent a major departure from the requirements of the unsuccessful Section 208.⁸⁶ State programs have therefore largely remained voluntary.

Further, a simple economic analysis shows that farmers have little incentive to participate in voluntary pollution reduction programs. Farmers do not bear the total costs of off-farm pollution and erosion. Most costs are borne by other users of the polluted water. Therefore pollution offers an inexpensive method of waste product disposal for farmers and an opportunity to shift the costs of that waste on to others. Given these economic incentives, farmers are unlikely to voluntarily reduce erosion and chemical inputs to decrease nonpoint source pollution. Nonetheless, the programs in place to reduce nonpoint source pollution remain completely voluntary. The programs attempt to compensate for farmers' disincentives to enter voluntary programs by offering them grants. However, both Section 208 and Section 319 have been subjected to Congressional underfunding.⁸⁷ As a result, farmers have tended not to participate, and nonpoint source pollution continues unabated.

82. See John H. Davidson, *Thinking about Nonpoint Sources of Water Pollution and South Dakota Agriculture*, 34 S.D. L. REV. 20, 44 (1989).

83. See *Hearings before the House Water Resources and Environment Subcomm.*, 1995 WL 76953, 109th Cong., 2d Sess. (Feb. 24, 1995) (testimony of Steven N. Mayer, Government Affairs Director of Trout Unlimited).

84. See 33 U.S.C. § 1319(a)-(b) (1994).

85. See 33 U.S.C. § 1288(b)(2)(A)-(K) (1994).

86. See Davidson, *supra* note 82, at 43-45 (criticizing § 208 as largely unsuccessful).

87. See *supra* notes 50, 77-79 and accompanying text.

III. SOLUTIONS TO THE AGRICULTURAL NONPOINT POLLUTION PROBLEM

This section evaluates three types of regulatory responses to agricultural nonpoint source pollution: (1) traditional standard-setting; (2) economic disincentives, such as taxes; and (3) deregulation/subsidization, which is being considered by the current Congress. Unfortunately, each solution has some disadvantages—standard-setting offers the drawbacks of a bureaucratic system, economic disincentives may be difficult to implement in practice, while deregulation arguably does little to correct the pollution problem. This Part discusses each option, and its potential effectiveness, in turn.

A. *Traditional Standard-Setting Regulation*

Tightening the regulation of nonpoint source pollution by either raising the standard of pollution reduction, raising the minimum management measures required to reduce that pollution required by the states, or both, could reduce nonpoint source pollution. Congress has in fact attempted both strategies in the context of controlling runoff pollution in coastal watersheds, which affect twenty-nine states and territories.⁸⁸ The 1990 Coastal Zone Act Reauthorization Amendments (“CZARA”) require the states to adopt management measures that are

economically achievable measures for the control or 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 methods, or other alternatives.⁸⁹

88. See *Hearings on Reauthorization of the Clean Water Act Before Senate Subcommittee on Clean Water, Fisheries, and Wildlife*, 103d Cong., 1st Sess. 48 (1993) (statement of Carol M. Browner, Administrator, EPA) (“The Coastal Zone Act Reauthorization Amendments of 1990 provided a somewhat stronger approach [than § 319] for coastal areas in 29 states and territories, centering on new state programs to implement the best available management measures economically achievable for categories of nonpoint sources.”), cited in RODGERS, *supra* note 3, at 298 n.39.

89. 16 U.S.C. § 1455(g)(5) (1994).

The CZARA's "greatest degree of pollutant reduction achievable" standard is more stringent than the "maximum extent practicable" management practice standard in Section 319 or the "to the extent feasible" standard of Section 208.⁹⁰ The EPA is also required by the CZARA to issue minimum standards for state nonpoint pollution control programs.⁹¹ If a state fails to submit an approvable plan, CZARA authorizes the EPA to withhold a portion of federal Coast Environmental Assistance Funding.⁹² States are currently in the early stages of implementing plans subject to CZARA's strictures. They have until January 1999 to implement EPA approved coastal nonpoint pollution control programs.⁹³

The high goals and nationwide minimums of the CZARA could be applied under the CWA to all agricultural nonpoint source pollution. Environmentalists have long advocated adding mandatory provisions to the CWA imposing some management requirements on state nonpoint source pollution programs, and have praised the CZARA amendments.⁹⁴

The Clinton administration has agreed. One of its environmental officials advised Congress that "while the Clean Water Act Amendments do not need to duplicate CZARA, we believe that it is very important that amendments to § 319 of the Clean Water Act be comparable with these programs."⁹⁵ Some Congressmen have argued for national baselines, noting that "they protect against states and cities having to choose between protecting water quality and losing business and jobs to competitors in states which roll back water quality protection to attract industry."⁹⁶ In other words,

90. See 33 U.S.C. § 1329(a)(1)(C), § 1288(b)(2)(F) (1994).

91. The agency released its final standards in 1993. See EPA, GUIDANCE SPECIFYING MANAGEMENT MEASURES TO SOURCE OF NONPOINT POLLUTION IN COASTAL WATERS (1993).

92. 16 U.S.C. § 1455b(c)(3) (1994).

93. See Martha L. Nobel & J.W. Looney, *The Emerging Legal Framework for Animal Agricultural Waste Management in Arkansas*, 47 ARK. L. REV. 159, 180 (1994).

94. See *Water Pollution: Nonpoint Source Provisions of S. 1114 Good Basis for CWA Reform, Panel Told*, BNA NAT'L ENV'T DAILY, July 15, 1993, at d15; *Hearings before the House Water Resources and Environment Subcommittee*, 1995 WL 76953, (Feb. 24, 1995) (testimony of Steven N. Mayer, Government Affairs Director of Trout Unlimited); ADLER ET AL., *supra* note 16, at 191-93.

95. *Hearings before the Senate Clean Water, Fisheries, and Wildlife Committee*, 1993 WL 760948, (Aug. 5, 1993) (testimony of Douglas K. Hall, Assistant Secretary for Oceans and Atmosphere, NOAA).

96. CLEAN WATER AMENDMENTS OF 1995, H.R. REP. NO. 112, 104th Cong. 1st Sess. (1995) (dissenting views of Congressman Oberstar, et al).

local governments would have no incentive to reduce environmental protection as an inducement to business relocation if national baselines were adopted.⁹⁷ Business leaders already press states to roll back state environmental regulations to help them compete with industries from other states.⁹⁸ In Kentucky, for instance, businessmen have urged politicians to pass legislation prohibiting state environmental rules from regulating businesses any more stringently than the minimum required by federal laws.⁹⁹

However, the national approach could create an inflexible regulatory regime unresponsive to the heterogeneous environment of the United States. Wholesale controls may require too much pollution control in some areas, and too little in others.¹⁰⁰ The EPA concluded that in the context of nonpoint source pollution, site-specific decision-making that considers the nature of the affected watershed or waterbody, point sources, and management practices to be regulated are more effective than uniform technical controls.¹⁰¹

97. For a classic exposition of the possibility of an environmental "race to the bottom," see Richard B. Stewart, *Pryamids of Sacrifice? Problems of Federalism in Mandating State Implementation of National Environmental Policy*, 86 YALE L.J. 1196, 1212 (1977) ("Given the mobility of industry and commerce, any individual state or community may rationally decline unilaterally to adopt high environmental standards that entail substantial costs for industry and obstacles to economic development for fear that the resulting environmental gains will be more than offset by movement of capital to other areas with lower standards."). *But see* Richard L. Revesz, *Rehabilitating Interstate Competition: Rethinking the "Race to the Bottom" Rationale for Federal Environmental Regulation*, 67 N.Y.U. L. REV. 1210 (1992) (criticizing use of "race to the bottom" rationales for federal environmental regulation).

98. *See, e.g.*, Michael Abramowitz, *Race to the Bottom: Liberal Maryland Bends to the GOP Revolution*, WASH. POST., Nov. 5., 1995, at C1. For examples of the intense pressure faced by states to grant concessions to industry to prevent relocation in other states, see Fred R. Bleakley, *Many Firms Press States for Concessions*, WALL ST. J., Mar. 8, 1995, at A2.

99. *See* Andrew Melnykovich, *The Race for Governor: Candidates Don't Stress Environmental Issues*, LOUISVILLE COURIER-J., May 20, 1995, at 1A.

100. *See* Richard B. Stewart, *Controlling Environmental Risks Through Economic Incentives*, 13 COLUM. J. ENVTL. L. 153, 156 (1988).

101. *See* EPA, REPORT TO CONGRESS, *supra* note 19, at xiii. Privileging site-specific decision-making also allows the national government to ensure that the states and localities play an important role in water pollution regulation. This role, while presumably not constitutionally required, has played an important part in shaping federal policy towards nonpoint sources. As the Senate observed, "in 1972 the Congress made a clear and precise distinction between point sources, which would be subject to direct federal regulation, and nonpoint sources, control of which was specifically reserved to the state and local governments." S. REP. NO. 370, 95th Cong., 1st Sess. 3 (1977), *reprinted in* 1977 U.S.C.A.N. 4326, 4334. High national nonpoint standards are difficult to reconcile with that commitment to local control.

Regulatory minimums have static standards, and do not give farmers any incentives to further reduce pollution once they have attained the required standard. Farmers who are taxed for their pollution, on the other hand, would be encouraged to reduce their pollution as much as economically feasible. As explained below, this feature is more efficient and is a major advantage of economic incentives over inflexible regulatory mandates.

B. Regulation Through Economic Incentives

Economic incentives provide another regulatory option to reduce nonpoint source pollution. Market-based incentives can theoretically align private interests with public goals: if identified and applied correctly, such incentives could induce farmers to cut pollution because doing so would be in their financial interest. Professor Thomas McCraw describes this regulatory strategy as the "public use of private interest."¹⁰² The strategy has long been recognized: in 1979, the American Bar Association's Commission on Law and the Economy concluded that "where possible, . . . in dealing with problems of 'spillovers' (such as environmental pollution . . .), restrictive means (such as taxes, disclosure, or bargaining) should be considered as supplements to, or as partial substitutes for, classical standard-setting."¹⁰³ Incorporating economic incentives allows the development of efficient regulatory responses to agricultural nonpoint source pollution.

1. Incentives for Farmers

Farm discharges of pollutants impose the costs of pollution on other water users, who have not agreed to bear those costs. An economic solution to this well-known problem of externalities would attempt to internalize these social costs in farmers' costs of doing business.¹⁰⁴ In other words, this solution would make the polluter pay for the pollution. This "polluter pays" principle has been de-

102. THOMAS K. McCRAW, *PROPHETS OF REGULATION* 308 (1984).

103. AMERICAN BAR ASSOCIATION COMMITTEE ON LAW AND THE ECONOMY, *FEDERAL REGULATION: ROADS TO REFORM I* 43 (1979).

104. An "externality" refers to any social cost (or benefit) created by one's activity that it is not incorporated in one's costs to participate in (or paybacks received from) the activity. Pollution is often thought of as such a negative externality.

scribed as a fundamental building block of the federal environmental regulatory apparatus.¹⁰⁵ Social costs of pollution might be imposed on polluters by forcing them to pay waste disposal bills or to cover other related costs. But many Law and Economics scholars are most intrigued by a pollution tax. The tax would assess a charge per unit of pollution, and each farmer would pay based on the amount they pollute.¹⁰⁶ Taxes would efficiently permit farmers to choose how much they wish to pollute—those who find pollution reduction inexpensive will dramatically reduce their discharges, while others who cannot will pay the taxes to continue to pollute.¹⁰⁷ Thus farmers most capable of instituting pollution control measures would have incentives to reduce pollution the most—a cost-effective reallocation of control burdens that could produce significant savings.

The flexibility of a pollution tax also gives farmers more incentives to develop new agricultural techniques to limit pollution discharges. Such innovation, under a pollution tax scheme, would reduce farmers' tax bills further.¹⁰⁸ Many economists conclude that the taxing of discharges or other market-based schemes (e.g., the exchange of "pollution privileges") would lower administrative costs, permit more experimentation with pollution abatement strategies, and capitalize on the relative strengths of government and polluters. The government can outline environmental quality goals based on information that it can best assemble, while individual farmers can decide and negotiate for themselves how best to meet those goals.¹⁰⁹ A system imposing such taxes is an extremely promising and modern alternative for the future of pollution control.

But the system would not be perfect. A "polluter pays" mechanism faces its own political, efficiency, and coverage drawbacks in

105. See Gerald Torres, *Theoretical Problems with the Environmental Regulation of Agriculture*, 8 VA. ENVTL. L.J. 191, 198 (1989).

106. For example, C. Robert Taylor believes that a soil loss tax might be an efficient method of controlling erosion—the single largest contributor to agricultural nonpoint source pollution. See C. Robert Taylor, *Policy Development and the Regional Economics of Implementing NPS Controls*, in AGRICULTURAL MANAGEMENT AND WATER QUALITY, 376, 399 (Frank W. Schaller & George W. Bailey eds., 1983).

107. See Stewart, *supra* note 100, at 159.

108. *Id.* at 160.

109. For an analysis of the potential of economic incentives, see J.B. Braden, *Nonpoint Pollution Policies and Politics: the Role of Economic Incentives*, in NONPOINT POLLUTION: POLICY, ECONOMY, MANAGEMENT, AND APPROPRIATE TECHNOLOGY 57 (Vladimir Novotny ed., 1988).

an agricultural setting. Though often the values of regulation through economic incentives are praised, in a competitive environment,¹¹⁰ moving to a "polluter pays" theory is ironically problematic in the context of farming, which is a paradigmatically competitive market. Farmers may not be able to pass along the costs of pollution control, making their work less remunerative.¹¹¹ With lower profits, some farmers would be likely to go out of business. The prospect of driving some farmers out of business by imposing new environmental taxes is understandably unappetizing to politicians impressed with the political strength of farmers and their allied interests.¹¹²

Exactly how such a system would function is also unclear.¹¹³ Though the theory behind pollution taxes is compelling, implementing those taxes raises some practical problems, even apart from the political difficulties involved with raising taxes.¹¹⁴ For example, establishing who causes nonpoint source pollution is often difficult precisely because the pollution does not come from a

110. AMERICAN BAR ASSOCIATION COMMITTEE ON LAW AND THE ECONOMY, FEDERAL REGULATION: ROADS TO REFORM I 10 (1979).

111. See Pierre Crosson, *Trends in Agriculture and Possible Environmental Futures*, in AGRICULTURAL MANAGEMENT AND WATER QUALITY, 425, 447 (Frank W. Schaller & George W. Bailey eds., 1983). This assumes that differently situated farmers would be obligated to pay different pollution control costs. For example, some farmers are more at risk of weeds and therefore have to spread more herbicides, which in turn creates more groundwater contamination problems than it does for farmers in other areas. Similarly, some farmers might be situated close to streams or be endowed with especially thick topsoil, putting them more at risk for erosion and its attendant cleanup costs than other farmers who produce similar crops. Heavy polluters would pay more, meaning that some farmers would be placed at a competitive disadvantage to others.

However, disadvantaging farmers who are heavy polluters would not necessarily be bad policy. As Crosson notes, other farmers who have to farm on relatively poor land or in relatively bad weather do not expect to be compensated for their disadvantages. If they are forced to bear the full cost of their operations, perhaps polluting farmers should be obligated to do the same. *Id.* at 447.

112. See *id.* at 449.

113. Academics and policymakers have seriously considered pollution taxes. In 1990, the House Ways and Means Committee held hearings to examine the ways that federal tax policy might promote environmental objectives; the Committee then considered pollution taxes on water discharges. See Note, *Economic and Tax Incentives for a Cleaner Environment: A Survey of Marketable Pollution Permits and Pollution Taxes*, 1 DICK. L. ENVTL. L. & POL'Y 40, 47 (1991). For a recent overview of how those taxes might be implemented, see *Pollution Tax Forum*, 12 PACE ENVTL. L. REV. (1994).

114. Richard L. Ottinger (a former Member of Congress himself) and William B. Moore note that passing pollution tax laws is especially difficult given the "tremendous aversion to taxes in the United States today." Richard L. Ottinger & William B. Moore, *The Case for State Pollution Taxes*, 12 PACE ENVTL. L. REV. 103, 117 (1994). Farmers are particularly opposed to pollution taxes. A tax reduces a farmer's net return, while subsidies and restrictions may actually help her. Thus, the latter approaches are more popular in the agricultural community. See Taylor, *supra* note 106, at 387.

discrete conveyance, such as a sewage pipe, but from field and stream runoff.¹¹⁵ It can be hard to identify how much runoff from each field adjoining a polluted stream got into that stream. Combating runoff through erosion taxes also creates administrative problems. Though it would be efficient to tax farmers based on the amount of erosion they caused, measuring erosion and topsoil depletion over regular intervals would be difficult and expensive.¹¹⁶

As an alternative to an erosion tax, special purpose district property taxes could be levied on all land in areas beset by nonpoint source pollution. But although such taxes would raise money that could be used to combat the effects of pollution in those areas, they would not distinguish between the pollution control technique of varying efficiency that each landowner in the special purpose district uses—landowners would be taxed based on the amount of land they owned.¹¹⁷ The district tax would therefore fail to provide farmers with incentives to reduce the amount of pollution they created.

Taxing farmers by the amount of fertilizers and pesticides they use is a more promising, albeit limited, pollution tax. The tax could be implemented reasonably on fertilizer and pesticide sales, much like federal “sin taxes” on alcohol and tobacco. Farmers would adjust their application of pesticides according to their willingness to pay the higher price.¹¹⁸ The tax would only cover a portion of the nonpoint source pollution problem, because it would not affect other large pollution contributors, such as livestock waste runoff and soil erosion. Therefore, implementing pollution taxes, though promising, would not be a perfect solution to nonpoint pollution.

2. *Taxing Other Water Users*

The difficulties with implementing polluter pays mechanisms successfully in the agricultural context might lead one to consider other methods of utilizing economic incentives. A number of incentives exist for other users who value clean water. These water users could pay for its cleanliness through a variety of tax assess-

115. Congress and the EPA have recognized the difficulties of establishing nonpoint pollution causation. See *infra* notes 140–142 and accompanying text.

116. See Braden, et al., *supra* note 18, at 101.

117. See *id.* at 101–02.

118. See *id.* at 102.

ments. Downstream water users—such as factories—could be taxed by the amount of water they use. The proceeds could be applied to agricultural nonpoint pollution control programs.¹¹⁹ Similarly, any downstream property owners could be taxed according to the amount of riparian land they own.¹²⁰ Recreational users of water—fishers or swimmers—could be taxed or licensed as well.¹²¹ Although it might seem unfair to make non-polluters pay for the pollution of farmers, such payments to some extent reflect underlying assumptions that farmers, just like all riparian land owners, are entitled to use the water.¹²²

Whatever its drawbacks, the incentive program roughly describes the current state of the law, which emphasizes voluntary participation in nonpoint pollution control programs. That participation is encouraged by state and federal funding for pollution control measures. The 1977 amendments to Section 208, which created a Rural Clean Water Program that offered farmers up to fifty percent of the costs of soil erosion control measures, provide a clear example of this regulatory technique.¹²³

To be sure, the current regulatory apparatus does not match the downstream tax envisioned by economists. Rather than taxing only other users of water polluted by farmers, it taxes all Americans, even those with no recreational or property interest in surface waters polluted by erosion runoff. In that sense, our current system taxes non-farmers overinclusively. Nonetheless, the emphasis on subsidies to farms for nonpoint pollution control suggests that, to the extent that Congress has thought about using economic incentives to control nonpoint agricultural pollution, Congress has adopted an approach that taxes all potential water users (i.e., the general public) rather than the actual polluter.

119. *See id.* at 102-03.

120. *See id.*

121. *See id.*

122. *See id.*

123. *See supra* part III.A.3.

C. The Most Recent Proposal to Handle Nonpoint Source Pollution: H.R. 961

The proposed 1995 amendments to the CWA adopt neither a tax on farmers nor strict minimums on their effluents. Instead, H.R. 961, a bill that has passed the House but is still pending before the Senate, generally continues the combination of very lax regulation and subsidization. Indeed, the drafters of the bill “explicitly rejected proposals for broader revisions, placing greater command-and-control authority within EPA and the National Oceanic and Atmospheric Administration (“NOAA”).”¹²⁴ Instead, they grant broad power to the states to regulate nonpoint source pollution as they see fit. The bill includes a declaration that “it is the national policy to recognize, support and enhance the role of state, tribal, and local governments in carrying out the provisions of this Act.”¹²⁵

The drafters observed that

Congress has chosen to address diffuse, nonpoint source activities like land application of livestock manure and agricultural inputs, in a separate nonpoint source section, with States responsible for determining how best to work with farmers and ranchers in managing nonpoint source runoff.¹²⁶

The amendments to Section 319 accordingly declare that

the purpose of this section is to assist States in addressing nonpoint sources of pollution where necessary to achieve the goals and requirements of this Act. It is recognized that State nonpoint initiatives represent the approach mostly likely to succeed in achieving the objectives of this Act.¹²⁷

The bill requires the states to implement water pollution management practices only “to the degree necessary to provide for reasonable further progress toward the goal of obtaining water quality standards within 15 years” of submitting a nonpoint pollution report to the EPA.¹²⁸ Furthermore, “adequacy of federal funding is a

124. CLEAN WATER AMENDMENTS OF 1995, H.R. REP. NO. 112, 104th Cong., 1st Sess. (1995).

125. H.R. 961, 104th Cong., 1st Sess., § 101(b)(9) (1995).

126. CLEAN WATER AMENDMENTS OF 1995, H.R. REP. NO. 112, 104th Cong., 1st Sess. (1995).

127. H.R. 961 § 319(p).

128. H.R. § 319(b)(2)(B). The House, however, indicated its willingness to relax

factor in determining reasonable progress" towards that goal.¹²⁹ Prior to that, the EPA must issue guidelines to the states regarding preparation of a management plan that will provide for reasonable progress towards meeting water quality goals.¹³⁰ However, the EPA would not be permitted to disapprove any programs "solely because the program . . . does not include enforceable policies or mechanisms."¹³¹

Farmers thus will not suffer from government regulation under H.R. 961—indeed, they may benefit from its largesse. The bill encourages only voluntary programs and delays the timetable for implementation of any sort of regulatory plan. As Charles Roberts (R-Kan.) observed, "to the extent agriculture is responsible for nonpoint source discharges, the [bill] rightly chooses to avoid the top-down approach to regulation."¹³² It does, however, contain funding for voluntary nonpoint source pollution control under the Act. Bud Shuster (R-Pa.), the sponsor of the bill, observes that it will pay up to \$3 billion annually in grants, with as much as \$300 million going to nonpoint source pollution programs.¹³³ The National Resources Defense Council has concluded that "all this money may go directly to agribusiness . . . without any accountability."¹³⁴ H.R. 961 has been strongly criticized by environmentalists¹³⁵ and by EPA Administrator Carol Browner.¹³⁶ President Clinton has vowed

the deadline even futher. "Specific and unrealistic deadlines should not be mandated from Washington, D.C. Instead, each state should tailor its program so that reasonable further progress can be made. A rigid 15 year deadline . . . can be counterproductive." CLEAN WATER AMENDMENTS OF 1995, H.R. REP. NO. 112, 104th Cong., 1st Sess. (1995).

129. CLEAN WATER AMENDMENTS OF 1995, H.R. REP. NO. 112, 104th Cong., 1st Sess. (1995). Congress rejected a Clean Water Act amendment proposal by the Clinton administration that would have more strictly regulated agricultural nonpoint source pollution and would have imposed \$1.2 billion in compliance costs on farmers, according to an EPA estimate. *Cost of Clinton Clean Water Plan Estimated by EPA at \$70 Billion Per Year*, BNA NAT'L ENV'T DAILY, Mar. 15, 1994, at d12.

130. See Peter H. Lehner, *The Debate of Clean Water: Amendments Point to Costs of Pollution*, N.Y.L.J., June 12, 1995, at S1.

131. H.R. 961 § 319(d)(2)(B).

132. 141 CONG. REC. H4690-01, 4698 (1995).

133. Bud Shuster, *Clean Water Bill Stays True to '72 Act*, N.Y. TIMES, Apr. 5, 1995, at A24; NATIONAL RESOURCES DEFENSE COUNCIL (NRDC), SAVE OUR SUMMER: CONGRESS' ASSAULT ON CLEAN WATERS 24 (1995) [hereinafter NRDC, SAVE OUR SUMMER].

134. NRDC, SAVE OUR SUMMER, *supra* note 133, at 24.

135. Dawn Martin, a spokesman for the American Oceans Campaign, claimed that "this is the most regressive environmental bill passed for a generation. We hope that it never becomes law." Gary Lee, *House Passes Rewrite of Water Act; Measure Would Ease Industry Compliance*, WASH. POST, May 17, 1995, at A1.

136. See *Browner Blasts CWA Rewrite: Says EPA 'Will not be a Partner' to GOP Rollbacks*, BNA NAT'L ENV'T DAILY, June 14, 1995, at d14.

to veto the bill if it reaches his desk.¹³⁷ Norman Y. Mineta (D-Cal.) called the bill "a polluter's dream come true, a nightmare for the rest of us."¹³⁸ Sherwood Boehlert (R-N.Y.) and Wayne Gilchrest (R-Md.) concluded that "H.R. 961 simply does not provide the framework for effectively addressing nonpoint source pollution."¹³⁹

IV. THE INSTITUTIONAL DIFFICULTIES WITH IMPLEMENTING EFFECTIVE NONPOINT POLLUTION CONTROL LEGISLATION

Why has Congress shied away from either economic incentives or traditional command-and-control regulation? This Section surveys some of the institutional explanations for the lax regulation of agricultural nonpoint source pollution. While concern with nonpoint pollution causation is an important and prudent reason for Congressional restraint, another explanation may be due less to policy considerations and more to the political process itself.

Congress may be unwilling to engage in complicated economic incentives plans to control nonpoint source pollution because it is concerned with the ability of the law to identify nonpoint source polluters. As the EPA has recognized, "it is hard to establish a cause and effect relationship between many nonpoint sources and particular water quality problems."¹⁴⁰ A legal system developed to establish precise causation from an injurer to the injured may leave Congress uncomfortable with the regulation of nonpoint source pollution, where it is often difficult to pinpoint the farmland which is the specific source of runoff. Not only is causation difficult to trace to any individual polluter, but it also will vary as the landscape of any given watershed is altered, affecting the manner and amount of water moving through it.¹⁴¹ As Congress has observed, "nonpoint source pollution from animal wastes, fertiliz-

137. See Kimberly Music, *Clinton Vows Veto of Clean Water Legislation if Version like House Bill Comes to his Desk*, OIL DAILY, May 31, 1995, at 1.

138. Bob Benenson, *Water Bill Wins House Passage, May not Survive in Senate*, C.Q., May 20, 1995, at 1413.

139. CLEAN WATER AMENDMENTS OF 1995, H.R. REP. NO. 112, 104th Cong. 1st Sess. (1995) (Supplemental Views of Congressmen Sherwood Boehlert and Wayne Gilchrest).

140. See EPA, *supra* note 19, at 1-17.

141. See *id.*

ers, pesticides, and eroded soil is difficult to control because of the diffuse nature of the problem."¹⁴²

Even if causation could be established conclusively, however, strict nonpoint source regulation will continue to be difficult to effect because of the nature of the political groups involved. This Note's analysis of the regulatory process makes use of public choice theory, which has been defined as "the economic study of nonmarket decisionmaking"¹⁴³ and as the application of game theory and microeconomic analysis to the process of legislation.¹⁴⁴ This Note focuses on the branch of public choice theory that views the legislative process as a competition between interest groups.¹⁴⁵ As one influential economist has defined public choice, "the basic assumption is that . . . regulations and other political instruments are used to raise the welfare of more influential pressure groups."¹⁴⁶ Because the strict regulation of nonpoint sources would produce beneficiaries (other water users who get cleaner water) and losers (farmers who will have to comply with potentially expensive new rules or taxes, putting them at a competitive disadvantage), the regulatory process can be viewed as a competition between the two groups with opposing interests.¹⁴⁷

142. S. REP. NO. 370, 95th Cong., 1st Sess. (1977), reprinted in 1977 U.S.C.C.A.N. 4326, 4362.

143. DENNIS C. MUELLER, PUBLIC CHOICE II 1 (1989).

144. See Jonathan R. Macey, *Public Choice: The Theory of the Firm and the Theory of Market Exchange*, 74 CORNELL L. REV. 43, 43 (1988).

145. A large body of literature has sought to apply public choice theory to legal problems over the past two decades. While many of these applications involve interest group theory, some rely upon Kenneth Arrow's work on how legislative majorities form a pluralistic society. Both Arrowian theory and interest group theory are considered part of the literature on public choice. See Jerry L. Mashaw, *The Economics of Politics and the Understanding of Public Law*, 65 CHI.-KENT L. REV. 123, 126 (1989). For an introduction to Arrow's Theorem from a lawyer's perspective, see Daniel A. Farber, *Democracy and Distrust: Reflections on Public Choice*, 65 CHI.-KENT L. REV. 161 (1989). For an application of public choice theory to an environmental law issue, see Michael C. Bull, *Public Choice Theory and the Public Lands: Why "Multiple Use" Failed*, 18 HARV. ENVTL. L. REV. 405 (1994).

146. Gary S. Becker, *A Theory of Competition Among Pressure Groups for Political Influence*, 98 Q.J. ECON. 371, 371 (1983).

147. Characterizing the political process of promulgating various pollution control methods could also be done by applying the framework of three legislative decisionmaking processes identified by Theodore Lowi: a redistributive decision that might be characterized by ideological adherence, a regulative process characterized by bargaining and resulting in compromise, and a distributive process characterized by vote—and pork—trading. See Theodore J. Lowi, *Four Systems of Policy, Politics, and Choice*, 32 PUB. ADMIN. REV. 298 (1972). A redistributive debate might feature an ideological struggle between environmentalism and ideals of family farms and industrious use of fertile land, while a bargaining process might feature information gathering over the exact effects and efficacy

In this competition, legislators serve the interest group most likely to further their chances of reelection. As Richard Posner and William Landes have suggested, "legislation is supplied to groups or coalitions that outbid rival seekers of favorable legislation."¹⁴⁸ The willingness of an interest group to bid to win the service of a legislature depends on the cost to the group coalescing around a legislative agenda. The group that can organize for less than it costs to be regulated will be able to lobby effectively.¹⁴⁹ Conversely, the group that can only be organized at a greater expense than the cost of unfavorable regulation will lose legislative competitions against more cheaply organized interest groups pursuing that regulation.¹⁵⁰

The pursuit of sweetheart legislation by interest groups is often termed "rent seeking."¹⁵¹ Observers have long considered whether American politics can accurately be described as a competition among rent-seeking interest groups. For example, political analysts have debated the influence of lobbyists and interest groups on federal legislation for decades, with widely varying conclusions.¹⁵² However, Kay Lehman Schlozman and John T. Tierney have recently determined that some interests do play a disproportionately influential role in politics.¹⁵³ This Note suggests that, at least in the discrete issue of agricultural environmental regulation,

of reforms of water pollution, and would involve experts, as opposed to mass movements. Vote trading would encourage pollution control projects that conveyed some of the largess of the state to various districts with political clout. For a more detailed application of Lowi's choice theory to water pollution control, see Henry P. Caulfield, Jr., *The Federal Environmental Legislative Process*, in PROCEEDINGS OF THE SYMPOSIUM ON NONPOINT POLLUTION: POLICY, ECONOMY, MANAGEMENT, AND APPROPRIATE TECHNOLOGY 1 (Vladimir Novotny ed. 1988).

148. William M. Landes & Richard A. Posner, *The Independent Judiciary in an Interest Group Perspective*, 18 J. L. & ECON. 875, 877 (1977); see also Robert D. Tollison, *Public Choice and Legislation*, 74 VA. L. REV. 339, 341-42 (1988).

149. See Tollison, *supra*, note 148, at 341-42.

150. See *id.* at 343.

151. Daniel A. Farber & Phillip P. Frickey, *The Jurisprudence of Public Choice*, 65 TEX. L. REV. 873, 878 (1987).

152. See *id.* at 883-90. As an example, in 1935, a famous study by E.E. Schattschneider concluded that interest groups had exercised considerable influence over the disasterous Smoot-Hawley Tariff of 1930. ELMER E. SCHATTSCHNEIDER, *POLITICS, PRESSURES, AND THE TARIFF* (1935). But a 1950s survey of Washington lobbyists concluded instead that interest groups did not dominate the political process. LESTER W. MILBRATH, *THE WASHINGTON LOBBYISTS* 351-54 (1963).

153. See KAY LEHMAN & JOHN T. TIERNEY, *ORGANIZED INTERESTS AND AMERICAN DEMOCRACY* (1986). The authors conclude that wealthy interest groups exercised the most influence over the legislative process. They based their conclusion on interviews with 175 Washington lobbyists and on the categorization of some 7000 organizations involved in

concentrated interest groups of polluters and their lobbyists can play an important role in the legislative process—in this case going so far as to draft provisions of a bill that would dramatically reduce efforts to control nonpoint source pollution on the national level.¹⁵⁴

The competition between agricultural polluters and other water users over the extent of national nonpoint source pollution regulation is not evenly balanced. It matches a large and diverse “public” interest group of other water users who would benefit from decreased agricultural pollution against a concentrated “private” group of farmers threatened with potentially expensive pollution regulation.¹⁵⁵ Agricultural interests thus have a stronger incentive per person to fight for their concerns than the other water users, who may only receive a small prospective benefit from any lobbying efforts they undertake.

The conception of the nonpoint provisions of the CWA as essentially the outcome of a contest between unequally-situated special interests has arguably been evidenced by the development of H.R. 961. Observers noted that the wide popularity of the CWA did not save it from the “major scaleback” represented by the bill.¹⁵⁶ An editorial in the *New York Times* stated that the “bill will make it much easier for polluters to pollute. But that is no surprise. Polluters wrote the bill.”¹⁵⁷ The bill was drafted by the set of task forces, in which agricultural and other interests potentially restricted by nonpoint source pollution were invited to participate, while environmental and other “public interest” groups were not.¹⁵⁸ The Bureau of National Affairs concluded that pro-environmental groups had been “shut out” of the drafting process.¹⁵⁹ Mineta, a

politics and 3000 political action committees registered with the Federal Election Commission. *See id.* at xii–xiii.

154. Studies identifying and then decrying rent-seeking can amount to little more than democracy-bashing. *See Mashaw, supra* note 145 at 145. Nonetheless, as Mashaw observes, “we need to know who wins and who loses and by how much, when thinking about public policy. Not only is this a necessary part of strategic public management, it is crucial to a normative consideration of whether the legislation is in the public interest.” *Id.*

155. The terms “public” and “private” interest groups come from RICHARD J. PIERCE ET AL., *ADMINISTRATIVE LAW AND PROCESS* 16 (2d ed. 1992).

156. Bob Benenson, *Clean Water Law Revisions Mark Arrival of New Era*, C.Q., Apr. 8, 1995, at 1018.

157. *Bud Shuster's Dirty Water Act*, N.Y. TIMES, Apr. 2, 1995, § 4, at 14.

158. *See id.*

159. *Committee Shuts Out Environmentalists*, EPA, *From Task Forces Revising CWA*, BNA NAT'L ENV'T DAILY, Mar. 14, 1995, at d12.

former chair of the House Transportation and Infrastructure Committee that reported the bill, characterized H.R. 961 as a “polluter’s bill of rights”¹⁶⁰ written by “special interests.”¹⁶¹

Indeed, agricultural interests supported H.R. 961.¹⁶² “It is essential that top-down programs which rely on enforceable water quality goals be avoided,” John Long, first vice-president of the American Soybean Association, observed in hearings for H.R. 961, which emphasizes voluntary participation in pollution reduction programs.¹⁶³ The National Council of Farmer Cooperatives commended the sponsors of the bill for their work.¹⁶⁴ The process under which H.R. 961 was drafted, in short, suggests that public choice theory is an appropriate paradigm through which to view nonpoint source pollution.¹⁶⁵

160. Bob Benenson, *House Panel Easily Approves Revision of Clean Water Act*, C.Q., Apr. 1, 1995, at 935.

161. Bob Benenson, *Action on Clean Water Bill Certain to Provoke Fight*, C.Q., Mar. 25, 1995, at 870. Dissenters to the bill complained that “there is very little that the polluters and special interests asked for that they did not get in this bill. This is their dream come true.” CLEAN WATER AMENDMENTS OF 1995, H.R. NO. 112, 104th Cong., 1st Sess. (1995) (dissenting views of Congressman Oberstar et al.).

162. Congressmen opposed to the bill took notice of those attitudes. Clean Water Amendments of 1995, H.R. REP. NO. 112, 104th Cong., 1st Sess., at 54 (1995) (dissenting views of Congressman Oberstar, et al.). They demanded that agriculture “do its share.” *Id.*

163. *Hearings before the House Water Resources and Environment Subcomm.*, Feb. 24, 1995, 1995 WL 76950 (testimony of John Long, First Vice President of the American Soybean Association) (“H.R. 961 would allow states and local watershed authorities to design flexible, voluntary, site-specific solutions to nonpoint source problems, and we believe that this approach must be encouraged.”). For a similarly enthusiastic response to the bill, see *Hearings before the House Water Resources and Environment Subcomm.*, Feb. 24, 1995, 1995 WL 76951 (testimony of Steven Hoefler, Vice President of Agway, Inc.).

164. *Hearings before the House Water Resources and Environment Subcomm.*, 1995 WL 76951, 109th Cong., 2d Sess., (Feb. 24, 1995) (testimony of Steven Hoefler, Vice President of Agway, Inc.).

165. H.R. 961 therefore is a particularly stark example of the competition posited by public choice theory. But even Section 319 permits an interpretation under a somewhat more subtle theory of public choice. The 1987 amendments enacting the bill began with the declaration that “it is the national policy” to control nonpoint source pollution. 33 U.S.C. § 1251(a)(7) (1994). See *supra* note 66 and accompanying text. However, that policy was implemented with § 319’s ineffective and uncreative incentive structure. See *supra* part III.B. The combination of a bold pronouncement to appeal to the general public interested in environmental legislation with a regulatory scheme unlikely to upset special interests is unsurprising to public choice scholars. As Professor Edward Rubin observes in a Note otherwise critical of the theory, “public choice scholars assert that . . . [l]egislators allow the general public its apparent triumphs such as pro-environmental . . . legislation, but since they respond ultimately to the electoral power—special interest groups—they eviscerate this legislation at the implementation stage.” Edward L. Rubin, *Beyond Public Choice: Comprehensive Rationality in the Writing and Reading of Statutes*, 66 N.Y.U. L. REV. 1, 22 (1991).

V. CONCLUSION

It is unlikely that strict regulation or taxation of agricultural runoff will be imposed on farmers in the near future. Public choice theory posits that small, easily organized groups with a significant stake in potential legislation will ultimately play a strong role in the development of that legislation, and provides a theoretical explanation of the development of the new bill, H.R. 961. Professor Jonathan Macey observed that the small size of farmers concentrates the benefits of favorable legislation, spurring the group to strong involvement in the political process. Therefore, he noted, "where agriculture is a small component of a country's economy as in Japan, Israel, and the United States, it is heavily subsidized. But where agriculture is a large part of the country's economy, as in Poland, China, Thailand, or Nigeria, it is heavily taxed."¹⁶⁶

Where then, should agricultural nonpoint source pollution control efforts be concentrated? This Note will not attempt to provide a definitive answer to that complicated problem. However, it is worth observing that responses to the pollution problem could take two approaches. First, one could contest the influence of agricultural interests on the legislative process by turning to regulators more insulated from political pressures to pursue pollution goals. The EPA could, for example, pursue favorable interpretations of the CWA provision in the courts,¹⁶⁷ consider reviewing some of the regulations it promulgated pursuant to the Act,¹⁶⁸ or lobby Congress itself or in conjunction with other federal agencies for increased

166. Macey, *supra* note 144, at 48.

167. Some courts have proven willing to broaden the definition of important statutory terms like "point source." See *CARE v. Southview Farm*, 34 F.3d 114 (2d Cir. 1994) (vehicles spreading manure that reaches water are themselves point sources; dairy farm with 2200 animals is a "concentrated animal feeding operation" and therefore a point source), *cert. denied*, 115 S. Ct. 1793 (1995). For a discussion of *Southview Farm*, see Stacy K. Garnett, *Second Circuit's Holding Limits Scope of Agricultural Exemption Under the Clean Water Act*, 4 S.C. ENVTL. L.J. 67 (1995).

168. For example CAFOs qualify as point sources under the Act. See 33 U.S.C. § 1362(14) (1994). Currently, the EPA has defined CAFOs to include only the largest of livestock farms—those containing over 1000 slaughter or feeder cattle, or its equivalent. See 40 C.F.R. Pt. 122, App. B (1995). It could, however, revise downward the number of animals it takes to create a CAFO and thus subject substantially more livestock operations to pollution regulation.

funding for the voluntary nonpoint pollution control programs already in existence.¹⁶⁹

A second alternative would recognize the influence of agriculture on the legislative process and craft legislation that efficiently absorbs its biases. This approach would fully subsidize agricultural nonpoint source pollution control problems and accurately target the cost of those programs to other water users, through water use taxes, recreational licenses, and other methods. This alternative has the advantage of political feasibility, but gallingly pays farmer-polluters to stop polluting. Thus, although a new approach is needed it is unclear which one will be the most effective.

169. Section 208's Rural Clean Water Program is largely administered by the Department of Agriculture, for example. See Fentress, *supra* note 62, at 817.