

THE CLEAN WATER ACT AND THE CHALLENGE OF AGRICULTURAL POLLUTION

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I. INTRODUCTION

One of the last great intractable problems of environmental law is the pollution of America's waterways caused by agriculture. There are many sources of agricultural pollution, including fertilizers and pesticides applied to row fields, animal waste from livestock operations, and sediment loading from tree farms.¹ These pollutants can devastate downstream watercourses by adding ammonium, nitrates, nitrites, and phosphorous to ambient water quality. Downstream lakes and reservoirs can experience eutrophication, algae blooms, and depleted oxygen, while rivers can be impacted by excessive salinity, turbidity (from sediment), and toxicity, resulting in forever-altered marine ecosystems.

Although the Clean Water Act² was intended to “restore and maintain the chemical, physical, and biological integrity of the Nation's waters[,]”³ this goal can never be achieved if agricultural pollution continues to contaminate America's “waters.”⁴ Perversely, the Clean Water Act itself is in part responsible for agricultural sources remaining outside the scope of the Act's reach. The Clean Water Act requires the Environmental Protection Agency (EPA) to issue pollution-limiting, technology-based permits for “the discharge of any pollutant,”⁵ but then:

1. explicitly exempts all “return flows from irrigated agriculture” from the federal permitting system;⁶ and
2. narrowly defines a “discharge of a pollutant” as an “addition” of a pollutant from a “point source,”⁷ which in practice excludes most

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1. *See, e.g.*, *Barnum Timber Co. v. EPA*, 835 F. Supp. 2d 773 (N.D. Cal. 2011) (discussing how harvesting timberlands contributes to downstream water being both sediment and temperature impaired, adversely affecting cold water fisheries) (quoting CAL. REG'L WATER QUALITY CONTROL BD., N. COAST REGION, 303(D) LIST UPDATE RECOMMENDATIONS (Nov. 16, 2001)).

2. 33 U.S.C. §§ 1251–1387 (2006).

3. 33 U.S.C. § 1251(a).

4. Lara D. Guercio, *The Struggle Between Man and Nature—Agriculture, Nonpoint Source Pollution, and Clean Water: How to Implement the State of Vermont's Phosphorous TMDL Within the Lake Champlain Basin*, 12 VT. J. ENVTL. L. 455, 457 (2011).

5. 33 U.S.C. § 1342(a)(1).

6. 33 U.S.C. § 1342(l)(1).

7. *Id.* § 1362(12).

agricultural operations, which tend not to discharge into point sources like “pipes” and “tunnels.”⁸

To further underscore the extent to which this special class of water pollution is exempt from federal regulation, the Clean Water Act labels “agricultural and silvicultural activities, including runoff from fields and crop and forest lands,”⁹ as “nonpoint sources of pollution.”¹⁰ For such nonpoint sources, the Act in effect removes these sources from federal oversight and instead delegates regulation and control of these sources to each state.¹¹ The states are directed—but not required—to consider the establishment of vaguely defined “best management practices” (BMPs) for controlling nonpoint sources, such as from agriculture.¹² States may simply turn over to counties and other local governments the task of BMP implementation, in the often forlorn hope that such local governments—whose commissioners are themselves often agricultural operators—will self-regulate.

This Article considers the challenges of addressing water pollution from agricultural sources in light of the limited scope of the Clean Water Act, which seems to have marginalized federal controls over the damage caused to waterways by agriculture. Part II explains how agricultural sources affect water quality, while Part III summarizes the failure of state and local BMPs to adequately regulate nonpoint agricultural activities. Part IV considers two promising approaches under the Clean Water Act: (1) the Act’s requirement that states identify all waters within their boundaries that remain “impaired” by any source, including pollutants originating from nonpoint agricultural operations;¹³ and (2) the possibility that some agricultural activities might still be labeled as “point sources,” and as a result, be subject to federal effluent permit requirements.¹⁴ Part V briefly considers a non-statutory common law approach to regulating agricultural pollution as a nuisance. Part VI concludes by suggesting more innovative approaches, ranging from a more aggressive interpretation of the Act’s impaired water provisions, to a purely state-driven scheme that seeks to

8. *Id.* § 1362 (14). The Clean Water Act does, however, define as a point source all “concentrated animal feeding operations.” *Id.* See also *infra*. Part IV. B. 1.

9. 33 U.S.C. § 1314(f)(A) (2000).

10. 33 U.S.C. § 1314(f).

11. Jocelyn B. Garovoy, “A Breathtaking Assertion of Power”? *Not Quite*. Pronsolino v. Natri and the Still Limited Role of Federal Regulation of Nonpoint Source Pollution, 30 *ECOLOGICAL L.Q.* 543, 547 (2003).

12. 33 U.S.C. § 1329(a)(1)(C)–(D).

13. 33 U.S.C. § 1313(d)(1). For bodies of water so identified as impaired, states may establish a total of maximum daily load for each pollutant impairing the water. *Id.*; 40 C.F.R. § 130.7 (2003).

14. See 33 U.S.C. § 1342(a)(1).

impose land use controls on upstream agricultural sources in order to protect downstream waters from agricultural pollutants.

II. THE PROBLEM OF WATER POLLUTION FROM AGRICULTURE

The Clean Water Act (CWA) assumes that those responsible for water pollution may be divided into two categories: point and nonpoint sources.¹⁵ While the CWA mandates that point source pollution be regulated pursuant to federally-imposed, technology-based controls, nonpoint sources are not subject to federal oversight or EPA-set standards. Instead, nonpoint source pollution is controlled by “the ‘threat and promise’ of federal grants to states to accomplish this task[,] . . . recogniz[ing], preserv[ing], and protect[ing] the primary responsibilities and rights of states to prevent, reduce, and eliminate pollution, [and] to plan the development and use . . . of land and water resources.”¹⁶

A. *Agricultural Water Pollution as an Unregulated Nonpoint Source*

The Clean Water Act excludes from federal regulation most agricultural sources by declaring that an otherwise regulated point source “does not include agricultural stormwater discharges and return flows from irrigated agriculture.”¹⁷ Since agriculture is exempt from most CWA controls, including permitting requirements under the National Pollutant Discharge Elimination System (NPDES), pollution-causing agricultural activities are classified as unregulated *nonpoint* sources.¹⁸ A regulatory gap is thereby created: The CWA specifies technology-based solutions to industrial discharges and sewage effluent from discrete point source conveyances, but it provides no direct mechanism to control the agriculture-based nonpoint source pollution entering “waters of the United States.”¹⁹

1. The Extent of Agricultural Water Pollution

The EPA defines several activities that originate in the agriculture sector as otherwise unregulated nonpoint source pollution: “[e]xcess

15. *See id.* § 1362 (12) (defining “discharge of a pollutant” as an addition from a point source); 33 U.S.C. §1314 (f).

16. *Pronsolino v. Nastro*, 291 F.3d 1123, 1126–27 (9th Cir. 2002) (quoting *Or. Natural Desert Ass’n v. Dombek*, 172 F. 3d 1092, 1097 (9th Cir. 1998)).

17. 33 U.S.C. § 1362(14).

18. *Id.* §§ 1342(l)(1)–(2), 1362(14) (providing that permits are not required for certain nonpoint source pollutants, such as “return flows from irrigated agriculture” and “stormwater runoff from mining operations or oil and gas exploration”).

19. *Pronsolino*, 291 F.3d at 1126.

fertilizers . . . from agricultural lands and residential areas[;] . . . [o]il, grease, and toxic chemicals from urban runoff and energy production[;] . . . [s]ediment from improperly managed construction sites, crop and forest lands, and eroding streambanks[;]. . . [b]acteria and nutrients from livestock[;] [and] pet wastes.”²⁰ These agricultural based pollutants combine with water runoff—often from rain or snowmelt—to cause this class of nonpoint source water pollution to be so pervasive.²¹ Water travels over land surfaces and picks up pollutants from these sources, creating a water-polluted mix that then enters the nation’s waterways.

The agriculture industry, consisting of farming, timber harvesting, and grazing, contributes significantly to nonpoint source polluted runoff.²² In Western states including Montana, Arizona, California, Nevada, New Mexico, Colorado, Utah, and Wyoming, agricultural runoff is the leading cause of water impairment.²³ If agricultural pollution is largely unregulated, then the nation’s waters will continue to be impaired.

2. The Harm to Water Bodies Caused by Agricultural Water Pollution

Unfortunately, farmers have generally not been good stewards of our nation’s water resources. Excessive or inappropriate use of fertilizers, pesticides, and irrigation practices have resulted in soil erosion, habitat alteration, soil salinization, animal waste contamination, and rates of water usage that have dewatered aquatic ecosystems.²⁴ Serious water quality problems have emerged throughout the country that originate in agricultural activities outside the scope of the CWA because they have been classified as nonpoint sources. The harsh reality of water degradation in America is

20. *What is Nonpoint Source (NPS) Pollution? Questions and Answers*, U.S. ENVTL. PROT. AGENCY, <http://water.epa.gov/polwaste/nps/qa.cfm> (last updated Mar. 6, 2012).

21. Robert W. Adler, *Water Quality and Agriculture: Assessing Alternative Futures*, 25 ENVIRONS ENVTL. L. & POL’Y J. 77, 82–83 (2002) (quoting U.S. DEP’T OF THE INTERIOR, U.S. GEOLOGICAL SURVEY CIRCULAR 1225, *THE QUALITY OF OUR NATION’S WATERS, NUTRIENTS AND PESTICIDES* 2 (1999)); *See also*, David Zaring, *Agriculture, Nonpoint Source Pollution, and Regulatory Control: The Clean Water Act’s Bleak and Present Future*, 20 HARV. ENVTL. L. REV. 515, 520 (1996) (explaining various types of agricultural byproducts that pollute water sources and their detrimental effects on humans and the environment).

22. *See* U.S. GEN. ACCOUNTING OFFICE, *WATER QUALITY: FEDERAL ROLE IN ADDRESSING—AND CONTRIBUTING TO—NONPOINT SOURCE POLLUTION* 18 (February 1999), *available at* <http://www.gao.gov/assets/160/156522.pdf> (summarizing EPA’s approach to managing nonpoint source pollution and identifying the federal government as a potential contributor to nonpoint source pollution).

23. Erin Tobin, *Pronsolino v. Natri: Are TMDLs for Nonpoint Sources the Key to Controlling the “Unregulated” Half of Water Pollution?*, 33 ENVTL. L. 807, 812 (2003).

24. Douglas R. Williams, *When Voluntary, Incentive-Based Controls Fail: Structuring a Regulatory Response to Agricultural Nonpoint Source Water Pollution*, 9 WASH. U. J. L. & POL’Y 21, 22 (2002).

that nonpoint sources account for approximately half of the country's water pollution, where most of that pollution is from agricultural sources.²⁵

B. Sources of Agricultural Water Pollution

The most pervasive nonpoint agricultural pollutants are nutrients and sediment; other common nonpoint source pollutants include pesticides, pathogens, salts, oil, grease, toxic chemicals, and heavy metals.²⁶ The threat of agricultural pollution to water bodies often depends upon a combination of how the pollutants are applied, their location, and their nature.

1. Nutrients

Although nutrients are found naturally in soil, farmers often apply additional nutrients to meet crop production needs.²⁷ Added nutrients typically include phosphorus, nitrogen, and potassium, in the form of chemical fertilizers, manure, and sludge. When farmers apply nutrient sources in amounts that exceed plant needs, or apply nutrients just before it rains, the nutrients can wash into aquatic ecosystems. Excessive nutrients in water bodies can cause algae blooms, which can ruin swimming and boating opportunities, create foul taste and odor in drinking water, and kill fish by removing oxygen from the water. High concentrations of nitrate in drinking water can cause methemoglobinemia, a potentially fatal disease in infants.²⁸

2. Pesticides

Agricultural operations use insecticides, herbicides, and fungicides to kill agricultural pests. These chemicals can enter and contaminate downstream water bodies through direct application, runoff, and atmospheric deposition. Contamination from pesticide chemicals can

25. Claudia Copeland, Environment and Natural Resources Policy Division, *Clean Water Act: A Summary of the Law*, Cong. Research Serv. Rep. RL 30030.

26. U.S. ENVTL. PROT. AGENCY, PUB. NO. EPA841-F-96-004A, *NONPOINT SOURCE POLLUTION: THE NATION'S LARGEST WATER QUALITY PROBLEM* (1996), available at <http://water.epa.gov/polwaste/nps/outreach/point1.cfm>.

27. *Agricultural Nonpoint Source Fact Sheet*, U.S. ENVTL. PROT. AGENCY, http://water.epa.gov/polwaste/nps/agriculture_facts.cfm (last visited Jan. 24, 2012).

28. U.S. GEOLOGICAL SURVEY, *SELECTED FINDINGS AND CURRENT PERSPECTIVES ON URBAN AND AGRICULTURAL WATER QUALITY BY THE NATIONAL WATER-QUALITY ASSESSMENT PROGRAM*, 1 (Apr. 2001), available at <http://pubs.usgs.gov/fs/fs-047-01/>.

poison fish and wildlife, contaminate food sources, and destroy the habitat that animals use for protective cover.²⁹

3. Animal Feeding Operations

Farmers and ranchers efficiently feed and maintain livestock by confining the animals in small areas or lots; however, these confined areas become major sources of animal waste, and this waste can wind up in the nation's rivers and lakes. In the United States an estimated 238,000 working farms and ranches are considered "CAFOs"—concentrated animal feeding operations.³⁰ These operations generate about 500 million tons of manure each year. Such runoff from poorly managed facilities can carry pathogens such as bacteria and viruses, nutrients, and oxygen-demanding organics and solids that contaminate water bodies.³¹ Improper lining of feed areas can also cause seepage to contaminate groundwater.

CAFO wastes are generally collected, stored and minimally treated before being spread or sprayed onto farmland as fertilizer.³² This process, known as "land application," introduces exogenous nutrients into the soil, including: nitrogen and phosphorus, pathogens, antibiotics, and other pollutants.³³ If applied incorrectly or in excessive amounts, these animal waste byproducts seep through the soil, impacting groundwater, or runoff from the property, adversely affecting surrounding downstream surface water bodies and the environment.³⁴

Overgrazing by livestock also impacts water quality, especially in sensitive riparian areas.³⁵ Intensive livestock grazing exposes underground

29. See generally *Agricultural Nonpoint Source Fact Sheet*, *supra* note 27.

30. *Id.*; See, e.g., Mark Peters & David Kesmodel, *Livestock Waste Lands Iowa in Hot Water: With Runoff From Farms Blamed for Fouling Drinking Water*, WALL STREET JOURNAL, March 15, 2013, at A3.

31. *U.S. Geological Survey*, *supra* note 28.

32. U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-08-944, *CONCENTRATED ANIMAL FEEDING OPERATION: EPA NEEDS MORE INFORMATION AND A CLEARLY DEFINED STRATEGY TO PROTECT AIR AND WATER QUALITY FROM POLLUTANTS OF CONCERN 1* [hereinafter GAO] (2008).

33. See National Pollution Discharge Elimination System Permit Regulations and Effluent Limitation Guidelines and Standards for Concentrated Animal Feeding Operations (CAFOs), 40 C.F.R. pts. 9, 122, 123, 412 (2003) ("The primary pollutants associated with animal waste are nutrients [particularly nitrogen and phosphorus], organic matter, solids, pathogens, and odorous/volatile compounds. Animal waste is also a source of salts and trace elements and, to a lesser extent, antibiotics, pesticides, and hormones.").

34. See GAO, *supra* note 32, at 6 ("[W]ater studies [have] found that nutrients or hormones released from animal feeding operations were causing environmental harm, such as reproductive disorders in fish and degraded water quality. . . . [P]athogens such as *E. coli* [were contaminating] drinking water, which were then causing gastrointestinal illnesses in humans. . . . EPA . . . has long recognized the potential impacts that water pollutants from CAFOs can have on human health and the environment . . .").

35. *Agricultural Nonpoint Source Fact Sheet*, *supra* note 27.

soils, increases erosion, and encourages invasion by undesirable plants. Livestock destruction of stream banks and floodplain vegetation prevents the water quality filtration necessary for fish habitat. Overgrazed, eroded banks also cause high turbidity, a clouding of water that can disorient fish and compromise the quality of drinking water.³⁶

4. Irrigation

Agricultural production requires supplemental water in addition to natural precipitation. Farmers apply irrigation water to satisfy plant needs and to protect crops against freezing or wilting; however, inefficient irrigation can cause water quality problems.³⁷ In arid areas, salt becomes concentrated when irrigation water evaporates because rainwater does not carry minerals deep into the soil. In the alternative, excessive irrigation can affect water quality by causing erosion. Such irrigation transports nutrients, pesticides, and heavy metals downstream to larger lakes and rivers, while simultaneously diminishing the natural flow levels in streams and rivers. Over-irrigation can also cause a buildup of selenium, a toxic metal that can harm waterfowl reproduction.

5. Roads & Road Construction

Agricultural roads and road construction sites are a nonpoint source of pollution because stormwater can wash pollutants off roads and into nearby water bodies.³⁸ Natural groundwater tends to disperse or absorb rainwater and snowmelt. In contrast, roads intercept, concentrate, and redirect water during storm and snowmelt events.³⁹ This accelerated runoff increases erosion on the road and adjacent slopes, changes the location and structure of drainage channels, and reroutes runoff to paths it would not otherwise follow.⁴⁰

Rainwater delivers fine sediment streams at an increased rate. Runoff controls are essential to prevent polluted waters flowing off agricultural roads from reaching water systems. Erosion during construction of such

36. *What is Turbidity and Why is it Important?*, U.S. ENVTL. PROT. AGENCY, <http://water.epa.gov/type/rs/monitoring/vms55.cfm> (last visited Jan. 29, 2013).

37. *See id.* (explaining that runoff from agricultural activities can lead to high turbidity).

38. U.S. ENVTL. PROT. AGENCY, EPA-841-F-95-008d, EROSION, SEDIMENT AND RUNOFF CONTROL FOR ROADS AND HIGHWAYS (July 25, 2012), http://water.epa.gov/polwaste/nps/road_runoff.cfm.

39. *Id.*

40. *See* Nat'l Council For Air & Stream Improvement Watershed Task Grp., *Forest Roads and Aquatic Ecosystems: A Review of Causes, Effects, and Management Practices* 8 (2003), available at <http://www.ncasi.org/Publications/Detail.aspx?id=2610> (discussing the effects of accelerated runoff).

roads can also contribute large amounts of sediment and silt to runoff waters, which can deteriorate water quality and lead to fish kills and other ecological problems. Other pollutants, including heavy metals, oils, toxic substances, and debris from construction traffic and spillage, can be absorbed by soil at road construction sites and carried with runoff water to lakes, rivers, and bays.⁴¹ Farmers can pollute surface water and groundwater when pesticides and fertilizers applied along roadway rights-of-way and adjoining land filter into the soil or are blown by wind.

6. Sedimentation

Sedimentation is yet another prevalent water quality problem stemming from agricultural practices.⁴² Rainwater carries soil particles—sediment—from agricultural fields, feeding operations, and irrigation systems, and dumps them into nearby lakes or streams. Too much sediment can cloud the water, reducing the amount of sunlight that reaches aquatic plants. Sediment also can clog the gills of fish or smother fish larvae. Other pollutants like fertilizers, pesticides, and heavy metals attach to soil particles and wash into the water bodies, causing algal blooms and depleted oxygen, which is deadly to most aquatic life.

III. WHAT TO DO ABOUT AGRICULTURAL NONPOINT SOURCE POLLUTION UNDER THE CWA

The CWA gives states the primary authority to regulate agricultural nonpoint sources of water pollution. Sections 208 and 319 of the CWA guide the states' management programs, which are instructed to impose BMPs to control agricultural pollution.⁴³ To support the state development of nonpoint source controls, Congress has made federal funding available, while leaving enforcement and implementation to the states. Continued high pollution levels from agricultural sources reflect the states' failure to effectively regulate agricultural nonpoint source (NPS) pollution. Unfortunately, federal efforts to encourage effective state and local action have not been successful.⁴⁴

41. See Erosion, Sediment and Runoff, *supra* note 38.

42. *Agricultural Nonpoint Source Fact Sheet*, *supra* note 27.

43. 33 U.S.C. § 1329 (2006).

44. See Peter M. Lacy, *Addressing Water Pollution From Livestock Grazing After ONDA v. Dombeck: Legal Strategies Under the Clean Water Act*, 30 ENVTL. L. 617, 623–24 (2000) (explaining that provisions of the CWA dealing with nonpoint source pollution, sections 319 and 208, have failed because they are largely driven by federal grants and do not provide EPA with enforcement authority).

A. CWA Nonpoint Source Pollution Controls

Sections 208 and 319 assume that states, not the EPA, have responsibility for addressing water pollution from agricultural sources. Much of that responsibility consists of planning duties, not cleanup action.

1. Planning for Nonpoint Sources Under Section 208

In the original 1972 version of the CWA, Congress included comprehensive planning provisions to ensure that “[t]o the extent practicable, waste treatment management shall be on an areawide basis and provide control or treatment of all . . . nonpoint sources of pollution, including in place or accumulated pollution sources.”⁴⁵ Section 208 of the CWA further required that the states identify and designate areas having substantial water quality control problems,⁴⁶ and for these areas, develop twenty-year plans. Such “areawide treatment plans” must first identify and then address all land-use-based pollution sources; states must submit these plans to the EPA.⁴⁷ Section 208 provides that comprehensive statewide programs must address water quality problems in all parts of the state, not just those designated as having water quality problems.⁴⁸ These Section 208 plans must also identify agricultural nonpoint sources of water pollution and their cumulative effects, including manure disposal area runoff, land used for livestock and crop production, and methods to control such sources.⁴⁹

Although the CWA largely leaves the precise contents of the areawide treatment plans to the states’ discretion and does not directly require that the states draft these plans, Section 208 provides two incentives for states to develop comprehensive areawide plans. First, Section 208 requires the federal government to share the costs of developing and implementing the plans through EPA grants.⁵⁰ Second, once a plan is approved, the state may participate in a program administered by the Department of Agriculture, where the Department enters into cost-sharing contracts with agricultural property owners “for the purpose of installing and maintaining measures incorporating best management practices to control nonpoint source

45. 33 U.S.C. § 1281(c).

46. *Id.* § 1288(a)(2).

47. *Id.* § 1288(a)(1), (b)(2)(A), (b)(2)(F).

48. *Natural Res. Def. Council v. Costle*, 564 F.2d 573, 577–579 (D.C. Cir. 1977).

49. 33 U.S.C. § 1288(b)(2)(F).

50. *Id.* § 1288(f). EPA also provides technical assistance “without reimbursement” to the states in developing plans. *Id.* § 1288(g).

pollution for improved water quality”⁵¹ The Congressional hope behind these Section 208 plans is that the states would be better able to make decisions on how best to allocate cleanup responsibilities among different sources of point and nonpoint source pollution, particularly the otherwise unregulated nonpoint sources.

While the CWA does provide states with incentives to draft the plans, it fails to provide authority for the EPA to determine whether an areawide treatment plan is adequate. As a result, the content of these plans is largely determined by the states, creating what has been termed a “mandatory-voluntary” problem.⁵² Nothing in the CWA allows the EPA to produce a substitute plan for a disapproved state plan. The consequence is that the EPA lacks authority to impose or even offer an alternative enforceable areawide management plan, when a state provides one that is inadequate, or when a state fails to develop an adequate plan. The EPA’s remedy is limited to withholding or conditioning grants on a state adopting various water pollution control measures, including a Section 208 plan.

Because Section 208 proved to be such an unreliable and ineffective tool to influence state activity addressing NPS pollution, including from agricultural sources, the EPA and Congress largely abandoned Section 208 in the 1980s. Although Section 208 remains “on the books,” all federal funding for the program ended in 1981.⁵³

The stated intention of Section 208 was to help states address NPS pollution, and to assist farmers in implementing BMPs to control runoff. Unfortunately, the water quality planning process in CWA Section 208 has been “widely viewed as a failure.”⁵⁴ The failure was due to a lack of administrative support within states, the absence of a link between planning and implementation of BMPs, and a gap between statutory authorizations and subsequent appropriations. But by far the most significant explanation for Section 208’s failure lies in “the basic resistance of local governments to federal efforts to dictate planning structures and results, however flexibly those programs are designed.”⁵⁵

51. *Id.* § 1288(j).

52. Robert W. Adler, *Addressing Barriers to Watershed Protection*, 25 ENVTL. L. 973, 1042 (1995).

53. *See Shanty Town Associates. Ltd. P’ship v. EPA*, 843 F.2d 782, 791 (4th Cir. 1988) (concluding that while section 208 “provides no direct mechanism by which EPA can force the states to adopt adequate nonpoint source pollution control programs Congress anticipated that EPA would use the threat and promise of federal financial assistance to accomplish this task”).

54. *Addressing Barriers to Watershed Protection*, *supra* note 52 at 1043–44.

55. *Id.* at 1044

2. Management Plans Under Section 319

Six years after discontinuing funding for Section 208, Congress made another attempt to influence state water quality planning in order to reduce polluted runoff from nonpoint sources. In its 1987 Amendments, Congress subjected urban and industrial stormwater discharges to the requirements of the NPDES,⁵⁶ but took a different approach to agricultural pollution. For farm runoff, Congress enacted Section 319. Like Section 208, Section 319 is a NPS management program that relies on state and local initiatives to manage and control agricultural water pollution.⁵⁷

Section 319, entitled “nonpoint source management programs,” calls for states to submit “state assessment reports” to the EPA, which identify “those navigable waters within the State which . . . cannot reasonably be expected to attain or maintain applicable water quality standards or the [CWA’s] goals and requirements.”⁵⁸ In addition to identifying waters impaired by NPS, including sources from agriculture, states are also expected to develop “state management programs” that address how state and local government expect to control NPS water pollution.⁵⁹ State NPS plans under Section 319 must include the following features designed to reduce water pollution: identification of BMPs to reduce NPS pollution loading, identification of programs to achieve implementation of BMPs, a schedule with milestones for program implementation, certification by the state’s attorney general that the laws of the state provide adequate authority to implement the NPS management plan, and identification of assistance and funding sources.⁶⁰

The 1987 Amendments’ Section 319 authorized \$400 million in federal grants for state programs. However, as was the case with Section 208, Congress never fully appropriated the total amount of funds. The primary incentive for states to comply with Section 319’s reporting and programmatic requirements is a cost-sharing grant program.⁶¹ Under Section 319, states, territories, and tribes receive grant money that supports a wide variety of pollution-reducing activities, including technical assistance, financial assistance, education, training, technology transfer, demonstration projects, and monitoring to assess the success of specific

56. *See* 33 U.S.C. § 1342(p).

57. *Id.* § 1329.

58. 33 U.S.C. § 1329(a)(1)(A).

59. *Id.* at § 1329(b)(1).

60. *Id.* at § 1329(b)(2)(A)–(E).

61. *Id.* at § 1329(h).

nonpoint source implementation projects.⁶² Continued participation in the grant program is conditioned on a performance standard: states must make “satisfactory progress” in meeting their respective programs’ milestones. States may also be induced to participate in the Section 319 program in order to benefit from the program’s “consistency” provision,⁶³ which allows states to block federally funded projects that interfere with state established agricultural nonpoint source pollution controls.⁶⁴

Similar to the Section 208 planning provisions, the Section 319 program remains largely optional for the states.⁶⁵ The EPA has little oversight responsibility for ensuring that states submit the required Section 319 reports and management plans. Nor can the EPA step in if a state chooses not to prepare and implement a management plan. Section 319 allows local agencies to assume the state’s role in such circumstances,⁶⁶ but cities and counties will rarely assume responsibility for NPS pollution controls in rural localities where farmers and ranchers are often elected to city councils and county commissions. In the case of waters affected by out-of-state nonpoint source pollution, the EPA may “convene . . . a management conference of all states which contribute significant pollution resulting from nonpoint sources.”⁶⁷ However, the EPA has no authority to develop or implement a plan to correct such interstate pollution problems if the management conference fails to develop an adequate plan.⁶⁸

Even if a state adopts agricultural nonpoint source management plans, Section 319 does not require that the plans contain enforceable measures. If a Section 319 plan identifies BMPs or other controls that might reduce agricultural pollution, these need not be enforced by the state or the EPA. Instead, Section 319 has continued to rely on an ineffective voluntary

62. *Polluted Runoff (Nonpoint Source Pollution)*, U.S. ENVTL. PROT. AGENCY, <http://www.epa.gov/owow/NPS/Section319/qa.html> (last updated Jan. 21, 2010).

63. Section 319 provides, in part:

[E]ach Federal department and agency shall modify existing regulations to allow States to review individual development projects and assistance applications under . . . Federal assistance programs [identified by each State] and shall accommodate, according to the requirements and definitions of Executive Order 12372 . . . the concerns of the State regarding the consistency of such applications or projects with the State nonpoint source pollution management program.

33 U.S.C. § 1329(k).

64. *See generally* *Ctr. for Native Ecosystems v. Cables*, 509 F.3d 1310 (10th Cir. 2007) (affirming that federal agencies must comply with state requirements under the Clean Water Act respecting control and abatement of water pollution).

65. Williams, *supra* note 24, at 75.

66. 33 U.S.C. § 1329(e).

67. 33 U.S.C. § 1329(g)(1).

68. *Id.*

approach to agricultural nonpoint source pollution that has failed to reduce pollution levels.⁶⁹

Federal funding remains a concern for the Section 319 management program, since it provides little economic support to states. Even with increased funding, however, the performance standards don't exist. The EPA struggles to ensure that states use Section 319 funds effectively because the statutory "satisfactory progress" condition for a state's continuing participation in the program has proven to be a hopelessly vague standard. Nor do EPA's administrative regulations clarify this requirement,⁷⁰ although the agency has issued guidance providing more specificity about the anticipated outcomes.⁷¹

Even the EPA has acknowledged that "[w]ithout a clear understanding of how to minimize pollution from . . . nonpoint sources, state and local organizations will be unable to develop strategies to protect their water resources."⁷² In an attempt to understand which BMPs for nonpoint sources are successful, the EPA established a Section 319 nonpoint source "National Monitoring Program."⁷³ The program's stated purpose is to evaluate the effectiveness of different NPS management measures to gain a better understanding of nonpoint source pollution, especially from agricultural sources.

C. Has the CWA Been Successful in Controlling Nonpoint Sources?

Both Section 208 and 319 programs have failed to reduce pollution from NPS runoff. Indeed, even the EPA concedes that runoff from agricultural activities is the primary culprit for 48% of the "impaired" waters in the United States.⁷⁴ The EPA has considered various options to make Section 319 more effective, but the likelihood of Section 319 inducing agricultural pollution control is low. Section 319 contains within it the seeds of its own destruction: It relies on states, most of which have very weak management programs and even less will to impose harsh BMPs on

69. Williams, *supra* note 24, at 75; ROBERT V. PERCIVAL ET AL., ENVIRONMENTAL REGULATION: LAW, SCIENCE, AND POLICY 703–05 (5th ed. 2006).

70. 40 C.F.R. § 35.268(d)(3) (2011).

71. The guidance modifies the states' reporting requirements under the section 319 grants program. *Modifications to Nonpoint Source Reporting Requirements for Section 319 Grants*, U.S. ENVTL. PROT. AGENCY (Sept. 27, 2001), <http://water.epa.gov/polwaste/nps/success319/grts.cfm>.

72. Laura A. Lombardo et al., *Section 319 Nonpoint Source National Monitoring Program: Successes and Recommendations*, U.S. ENVTL. PROT. AGENCY 9 (2000), available at http://www.bae.ncsu.edu/programs/extension/wqg/319monitoring/doc/nmp_successes.pdf.

73. *Id.*

74. U.S. ENVTL. PROT. AGENCY, EPA-841-F-02-003, NATIONAL WATER QUALITY INVENTORY 2000 REPORT 15 (2002), available at http://water.epa.gov/lawsregs/guidance/cwa/305b/2000report_index.cfm.

the agricultural sector.⁷⁵ Moreover, Congress is unlikely to significantly increase funding.

BMPs can, if implemented, begin to control the extent and gravity of the water pollution problem caused by agricultural nonpoint sources.⁷⁶ But, if BMPs continue to be optional and voluntary practices, agricultural sources likely will not install them.⁷⁷ The EPA's influence is problematic when it comes to addressing this unregulated pollution source. Compared to point source controls, the EPA does not wield any significant statutory authority to compel states to develop adequate NPS control measures. Both Sections 208 and 319 only *ask* that states attempt to control NPS pollution, but neither section induces nor compels states to adopt such NPS regulatory programs. Since money is the primary incentive for states to adopt an effective BMP program for agricultural sources, and since federal funds have been absent or limited, neither the Section 208 nor 319 programs has made progress in reducing NPS pollution. Agricultural nonpoint source pollution remains one of the last great contributors to America's water pollution problem.

IV. INNOVATIVE CWA SOLUTIONS TO THE PROBLEM OF AGRICULTURAL NONPOINT SOURCES

Both Section 208 and Section 309 lack compulsive authority for the EPA to step in when state efforts are inadequate. The absence of a meaningful EPA "stick" prevents the states from being sufficiently motivated to effectively control agricultural nonpoint source pollution. Despite the obvious deficiency in the CWA's Section 208 and 319 programs, there is still hope that other provisions of the CWA might be utilized to address and control agricultural NPS pollution. First, Part IV.A suggests that Section 303 holds the promise of *state water quality standards* becoming a receiving water requirement that could force upstream improvements to, and cleanup of, polluted agricultural runoff. Second, Part IV.B argues that Section 402's EPA-driven point source controls could be imposed on certain agricultural operations, similar to how certain CAFOs have become subject to EPA point source effluent standards.

75. See ENVTL. LAW INST., ENFORCEABLE STATE MECHANISMS FOR CONTROL OF NONPOINT SOURCE WATER POLLUTION III (1997) ("Agriculture is the most problematic area for enforceable mechanisms. Many laws of general applicability . . . have exceptions for agriculture. Where state laws exist, they often defer to incentives, cost-sharing, and voluntary programs.")

76. Robert W. Adler, *Resilience, Restoration, and Sustainability: Reversing the Fundamental Principles of the Clean Water Act*, 32 WASH. U. J.L. & POL'Y 139, 154–56 (2010).

77. Williams, *supra* note 24, at 75.

A. Section 303

Under Section 303, states are to establish water quality standards (WQS) for all receiving waters.⁷⁸ These WQS define “the water quality goals of a water body, or portion thereof, by designating the use or uses to be made of the water and by setting criteria necessary to protect the uses.”⁷⁹ States must set WQS for individual lakes, rivers and streams, or portions thereof, for all intrastate waters. Each waterbody’s standard has two elements: the designated use(s) of the waterbody, and the “water quality criteria for such waters based upon such uses.”⁸⁰

In establishing WQS, each state must consider, for each segment of each state waterbody, “[its] use and value for public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, and other purposes,” including navigation of its waterbodies.⁸¹ At a minimum, WQS must protect the existing uses of a waterbody.⁸² The EPA provides guidance to the states on water quality criteria that will protect designated uses,⁸³ but states can modify these criteria to reflect site-specific conditions, or establish their own criteria based on “[o]ther scientifically defensible methods.”⁸⁴ States’ WQS must also include an “antidegradation policy,”⁸⁵ which precludes existing water quality from being degraded by any new activity, such as a changed agricultural process or an enlarged agricultural use.⁸⁶

At least every three years, the states must submit their proposed WQS to the EPA, which must decide whether the standards are adequate for approval.⁸⁷ If the Agency determines that the proposed WQS are “not consistent with the applicable requirements” of the CWA, it must notify the state of this finding and specify any necessary changes.⁸⁸ If a state does not

78. 33 U.S.C. § 1313(c)(2)(A) (2000).

79. 40 C.F.R. § 130.3 (2003).

80. 33 U.S.C. § 1313(c)(2)(A) (2000).

81. *Id.* Under EPA regulations, WQSs serve the purposes of the Act if they are established in consideration of a waterbody’s uses and values, and if they provide, wherever attainable, “water quality for the protection and propagation of fish, shellfish and wildlife and for recreation in and on the water.” 40 C.F.R. § 130.3 (2003). As such, WQSs further the CWA’s broad goal of ensuring that all waters of the United States are fishable and swimmable. 33 U.S.C. § 1251(a)(2).

82. *See* 40 C.F.R. § 131.10(g) (2003) (An existing use is identified by showing that fishing, swimming, and other water uses have occurred and are suitable for that segment).

83. 33 U.S.C. § 1314(a)(7) (2000).

84. 40 C.F.R. § 131.11(b) (2003).

85. *PUD No. 1 v. Wash. Dep’t of Ecology*, 511 U.S. 700, 718–19 (1994) (Supreme Court recognition that a state’s antidegradation policy is part of its WQSs).

86. 40 C.F.R. § 131.12 (2003). Under EPA’s antidegradation rules, states must ensure adequate water quality to protect its existing uses. *Id.* § 131.12(a)(2).

87. 33 U.S.C. §§ 1313(c)(1), (c)(2)(A) (2000).

88. *Id.* § 1313(c)(3).

submit adequate standards, including the EPA's changes, the EPA must promulgate the relevant WQS itself. Unlike Sections 208 and 319, if a state fails to comply with Section 303, the EPA will take over the state's standard-setting function for receiving waters.

Section 303 is an important component of the CWA because it offers states the opportunity to control the water quality that must be maintained or achieved to carry out various designated uses. When the water quality of receiving waters is adversely affected by a particular source, such as an agricultural source, Section 303 permits the states to play a critical role in controlling such sources by requiring that the WQS be achieved, and not degraded. In other words, while states do not directly control effluent limits at the mouth of pipes, they indirectly influence what dischargers must do by establishing what the ultimate result must be under Section 303. Under the CWA, the sum of those discharges is not to exceed a state WQS. If an agricultural operation is discharging NPS runoff, it risks violating the WQS.

1. Requirements for "Impaired Waters" under Section 303(d)

Sections 303(a)–(c) address the establishment and approval of water quality standards. Section 303(d) controls what must be done for those waters that fail to meet state-established standards. Section 303(d) calls on states to identify these "impaired" waters,⁸⁹ then to take steps to bring them into compliance with the WQS, a possible a route to agricultural NPS pollution control.

a. The "303(d) List"

The CWA mandates that states identify waters where "effluent limitations"—such as those only applicable to point source pollution⁹⁰—are inadequate for states to implement relevant water quality standards. This state-by-state list of impaired waters is known as the "303(d) list." EPA regulations require states to assemble and evaluate "all existing and readily available water quality-related data and information" to develop its impaired water list.⁹¹ After identifying the waters that fail to meet established WQS,⁹² the state must establish a priority ranking for the 303(d) list. In forming the ranking, states take "into account the severity of the pollution and the uses to be made of such waters."⁹³ Section 303(d) requires

89. 40 C.F.R. § 130.2(j) (2003).

90. 33 U.S.C. §§ 1311(b)(1)(A)–(B) (2006).

91. 40 C.F.R. § 130.7(b)(5) (2003).

92. *Id.* §§ 130.2(j), 130.7(b)(5)(i).

93. *Id.* § 130.7(b)(4).

states to submit their lists of impaired waters to the EPA every two years.⁹⁴ The CWA then requires the EPA to either approve or disapprove each list within thirty days of submission, and, if it disapproves, to establish its own list within another thirty days.⁹⁵

The 303(d) list may include waters that are impaired because NPS pollution is preventing the achievement of state WQS. Some of this NPS pollution may be from agriculture, otherwise exempt from Section 402 because 402 effluent controls are limited to point sources. If agriculture is responsible for impaired waters on a state 303(d) list, those agricultural sources are then statutorily connected to the state WQS, and the CWA permits the states to impose a modicum of responsibility for abating pollution from agricultural sources.

b. Total Maximum Daily Loads (TMDLs) for Pollutants Entering 303(d) Waters

For each of the waters on its 303(d) list, the CWA requires each state to establish “the total maximum daily load . . . for those pollutants which the [EPA] Administrator identifies . . . as suitable for such calculation.”⁹⁶ Such “loads”—the amount of pollution permitted to enter receiving waters—shall be established at a level necessary to implement the applicable state water quality standards, with seasonal variations and a margin of safety that takes into account any lack of knowledge concerning the relationship between NPDES effluent limitations for any given pollutant and water quality. The state’s WQS drive the level of each TMDL.

EPA regulations only vaguely explain the substantive requirements for TMDLs. The regulations simply require TMDLs to be developed for all waterway segments where effluent limitations, or other pollution control requirements—such as BMPs under Section 319—are not stringent enough to attain relevant WQS.⁹⁷ Put another way, TMDLs are triggered when WQS are exceeded despite EPA effluent limits and state or county BMPs for NPS pollution under Section 319. Relevant WQS include: “numeric criteria, narrative criteria, waterbody uses, and antidegradation requirements.”⁹⁸ Additionally, EPA regulations require states to establish TMDLs “for all pollutants preventing or expected to prevent attainment” of

94. 40 C.F.R. § 130.7(d)(1) (2003).

95. 33 U.S.C. § 1313(d)(2) (2000).

96. *Id.* § 1313(d)(1)(C).

97. 40 C.F.R. § 130.7(b)(1) (2003).

98. *Id.* § 130.7(b)(3).

WQS.⁹⁹ The phrase “all pollutants” is sufficiently broad to encompass agricultural NPS pollution.

As described by the EPA, a TMDL is “a quantitative assessment of pollutants that cause water quality impairments. A TMDL specifies the amount of a particular pollutant that may be present in a waterbody, allocates allowable pollutant loads among sources, and provides the basis for attaining or maintaining water quality standards.”¹⁰⁰ Any portion of the waterbody’s pollutant load that is allocated to a current or future *point* source is called a “wasteload allocation” (WLA),¹⁰¹ and any portion allocated to a *nonpoint* source is called a “load allocation” (LA).¹⁰² A TMDL is the “sum of the individual WLAs for point sources and LAs for nonpoint sources.”¹⁰³

A TMDL in effect constitutes a pollution budget for a particular waterbody, divided among all nonpoint and point sources of the pollutant. In establishing TMDLs, the EPA has clarified that states are free to make trade-offs in pollution reduction between nonpoint and point sources. For example, “[a] TMDL provides the opportunity to compare relative contributions of pollutants from all sources and consider technical and economic trade-offs between point and nonpoint sources.”¹⁰⁴ To prevent any further degradation of water quality, Section 303(d) mandates states to adopt and implement an “antidegradation” policy after TMDLs are in place.¹⁰⁵

As with the 303(d) list, states must propose TMDLs to the EPA every two years, and the EPA is required by statute to approve or disapprove them within thirty days.¹⁰⁶ If the EPA disapproves a TMDL submitted by a state, the EPA itself must establish one within thirty days.¹⁰⁷ The EPA’s regional administrators are charged with the development of such TMDLs after providing public notice and an opportunity for comment.¹⁰⁸ States cannot escape Section 303(d) simply by proposing flawed TMDLs or by failing to

99. *Id.* § 130.7(c)(1)(ii).

100. Revisions to the Water Quality Planning and Management Regulation and Revisions to the National Pollutant Discharge Elimination System Program in Support of Revisions to the Water Quality Planning and Management Regulation, 65 Fed. Reg. 43,586, 43,588 (July 13, 2000) (to be codified at 40 C.F.R. pts. 9, 122, 123, 124, 130) [hereinafter Revisions].

101. 40 C.F.R. § 130.2(h) (2003).

102. *Id.* § 130.2(g).

103. *Id.* § 130.2(i).

104. 40 C.F.R. § 130.32(a) (2001); *see also id.* § 130.2(g) (“For waterbodies impaired by both point and nonpoint sources, wasteload allocations may reflect anticipated or expected reductions of pollutants from other sources if those anticipated or expected reductions are supported by reasonable assurance that they will occur.”).

105. 40 C.F.R. § 131.12 (2003).

106. 33 U.S.C. § 1313(d)(2) (2000); 40 C.F.R. § 130.7(d) (2003).

107. 33 U.S.C. § 1313(d)(2).

108. 40 C.F.R. § 130.7(d)(2) (2003).

establish TMDLs for impaired waters. For states, Section 303(d) responsibility extends to agricultural sources.

While the CWA is straightforward regarding the requirements for TMDL development, submission, and approval, the statute remains oddly silent regarding how states should distribute the pollutant allocations in a TMDL across individual sources. Disagreement over whether the EPA has authority to affirmatively require states to submit TMDL implementation plans¹⁰⁹ has resulted in agency rules that call for, but do not compel, submission of such plans. The EPA has declared that where a TMDL indicates cuts in pollutant loading from nonpoint sources, “such reductions maybe [sic] implemented only under state law” because the EPA lacks “authority to enforce TMDL pollutant-loading reductions against nonpoint sources or to require a State to do so.”¹¹⁰ Although the EPA has recognized that “[w]ithout implementation, TMDLs are merely paper plans to attain [WQS],” it nonetheless believes that the CWA does *not* grant the EPA sufficient authority to ensure that states improve TMDLs that actually result in pollution reductions from nonpoint sources.¹¹¹

c. Agricultural Nonpoint Source Pollution and TMDLs

One of the principal controversies surrounding the CWA is whether states may use Section 303(d) not just to control nonpoint sources, but also to limit *agricultural* sources of “nonpoint” pollution. States can use Section 303(d) to list impaired waters that do not meet WQS, even though point source controls are in place. But if a state places a water segment on a 303(d) list, and seeks to impose a TMDL for a particular pollutant exceeding a WQS, may that TMDL extend to agricultural, “nonpoint” sources? This question is critical because, unlike classic point source pollution from municipal and industrial pipes,¹¹² the CWA does not explicitly regulate NPS pollution, and agricultural NPS pollution is otherwise exempt from direct EPA effluent limits.¹¹³ As a result, one class

109. Revisions, *supra* note 100, at 43, 625.

110. Diane Regas, *Guidance for 2004 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d) and 305(b) of the Clean Water Act; TMDL-01-03*, U.S. ENVTL. PROT. AGENCY 6 (July 21, 2003), http://www.epa.gov/owow/tmdl/tmdl0103/2004rpt_guidance.pdf.

111. Revisions, *supra* note 100, at 43, 625.

112. 33 U.S.C. § 1362(14) (2006).

113. Robert W. Adler, *Fresh Water—Toward a Sustainable Future*, 32 ENVTL. L. REP. 10167, 10184 (2002).

of NPS pollution—agricultural runoff—constitutes and remains one of the worst sources of water pollution problems in the nation.¹¹⁴

The EPA and agricultural industries releasing NPS runoff disagree on whether Section 303(d) applies to waters impaired *solely* by NPS pollution—including agriculture. Based on the language of the CWA, the agricultural industry argues that Congress exhibited no intent to require listing of waters impaired only by nonpoint source pollution. To agricultural supporters, the phrase “effluent limitations” in the opening sentence of Section 303(d) means that only point sources can be subject to TMDLs.¹¹⁵

Conversely, the EPA has maintained that, despite the fact that Section 303(d) does not refer to NPS pollution, 303(d) waters may be impaired entirely by NPS pollution. The EPA also believes that the TMDL requirements of Section 303(d) may also apply to waters impaired only by nonpoint pollution.¹¹⁶ As a result, the EPA does not distinguish between agricultural or non-agricultural NPS pollution. In its regulations, the EPA provides that all states must “assemble and evaluate all existing and readily available water quality-related data and information to develop the [303(d)] list,” including those “identified by the State as impaired or threatened in a nonpoint assessment . . . under section 319 . . . or in any updates of the assessment.”¹¹⁷

If the agricultural community must reduce pollution from runoff to satisfy a TMDL, then changes in current farming and ranching practices will be necessary. Farmers will have to incorporate buffer strips around streams to comply with pollution runoff limits set by TMDLs. Farmers and ranchers fear the resultant costs, and therefore strongly oppose such TMDL regulations. Moreover, the agricultural industry has long been exempt from many of the costs of water pollution abatement, and will not willingly acquiesce to a new level of regulation that seems only to benefit downstream interests.¹¹⁸ Furthermore, due to the difficulty of pinpointing the exact source and amount of contribution of pollution from diffuse surface water runoff, farmers and ranchers are wary of the potential of

114. U.S. ENVTL. PROT. AGENCY, EPA-841-F-02-003, NATIONAL WATER QUALITY INVENTORY 2000 REPORT 15 (2002), available at http://water.epa.gov/lawsregs/guidance/cwa/305b/2000report_index.cfm.

115. See 33 U.S.C. § 1313(d)(1)(A) (2000) (requiring each state to “identify those waters within its boundaries for which the effluent limitations required by [section 301(b)] are not stringent enough to implement any water quality standard applicable to such waters”).

116. Oliver A. Houck, *TMDLs, Are We There Yet?: The Long Road Toward Quality-Based Regulation Under the Clean Water Act*, 27 ENVTL. L. REP. 10,391, 10,399–400 (1997).

117. 40 C.F.R. § 130.7(b)(5)(iv) (2003).

118. See Susan Bruninga, *Battle Lines Drawn as Interest Groups File Motions to Support, Challenge TMDL Rule*, 31 ENV'T REP. (BNP) No. 36, at 61 (Sept. 15, 2000) (discussing various agricultural interest groups that challenged the TMDL rule).

arbitrary enforcement of TMDLs against individuals in the agriculture business who own land abutting bodies of water.¹¹⁹ The agricultural community believes that the application of a TMDL management system will necessarily lead to unfairness, because any NPS management program lacks the ability to precisely identify specific sources of water contamination.¹²⁰

While the agricultural community's fear of TMDLs may be logical, exempting those most responsible for the degradation of water quality from responsibility for cleanup seems unreasonable. In order to achieve any significant reduction in water pollution, all nonpoint source dischargers, especially farmers, must be subject to some mandatory regulatory regime. The voluntary Section 319 approach did not solve the agricultural NPS pollution problem. Some measure of regulatory oversight, administered by the states, seems preferable to the status quo.

2. Courts and the Applicability of 303(d) to Nonpoint Sources

Agricultural and timber industries have attempted to limit the applicability of TMDLs to waters impaired only by point sources. However, courts have consistently held that the CWA unambiguously permits the establishment of TMDLs for all waters failing to achieve applicable water quality standards, even waters whose failure to achieve WQS is due to nonpoint sources.¹²¹ These courts have also concluded that: (1) the EPA has a mandatory duty to develop TMDLs if states fail to do so,¹²² and (2) the EPA cannot issue a NPDES permit for a point source discharge into waters listed under Section 303(d) where no plans or schedules are in place to bring waters into compliance with water quality standards.¹²³

In 2002, the Ninth Circuit Court of Appeals supported the EPA's position by upholding the Agency's application of TMDLs to nonpoint sources in *Pronsolino v. Nastri*.¹²⁴ The *Pronsolino* court concluded that

119. See S. REP. NO. 95-370, at 37 (1977), reprinted in 1977 U.S.C.C.A.N. 4326, 4362 (“[N]onpoint source pollution from animal wastes, fertilizers, pesticides, and eroded soil is difficult to control because of the diffuse nature of the problem . . .”).

120. See Zaring, *supra* note 21, at 521–28 (explaining the shortcomings of CWA provisions aimed at addressing NPS pollution, including failure to identify precise pollution sources).

121. *Friends of the Earth v. EPA*, 446 F.3d 140, 144–45 (D.C. Cir. 2006).

122. *S.F. BayKeeper v. Whitman*, 297 F.3d 877, 881–82 (9th Cir. 2002); *Sierra Club v. Hankinson*, 939 F. Supp. 865, 868 (N.D. Ga. 1996).

123. *Friends of Pinto Creek v. EPA*, 504 F.3d 1007, 1014–15 (9th Cir. 2007).

124. *Pronsolino v. Nastri*, 291 F.3d 1123, 1125 (9th Cir. 2002); see also *San Joaquin River Exch. Contractors Water Auth. v. State Water Res. Control Bd.*, 183 Cal. App. 4th 1110, 1122 (2010) (finding that evidence of nonpoint agriculture-based salt discharge salinity was sufficient to place the river on Clean Water Act's “section 303(d) list”).

neither the text of the statute nor federalism concerns¹²⁵ prevent the EPA from applying the Section 303(d) listing and TMDL requirements to waters impaired *solely by nonpoint sources*. What was important to the *Pronsolino* court was that the CWA does not always treat point sources differently from nonpoint sources, and “there is no such distinction with regard to the basic purpose for which the § 303(d) list and TMDLs are compiled, the eventual attainment of state-defined water quality standards. Water quality standards reflect a state’s designated uses for a water body”¹²⁶ *Pronsolino* concluded that the WQS should be met without consideration of the source of pollution, including NPS agricultural flows.

Although *Pronsolino* held that the EPA can demand the calculation of a TMDL for waters impaired solely by NPS runoff,¹²⁷ other courts have clarified that the EPA is not required, and likely was not delegated authority under the CWA, to approve or disapprove state water quality regulations or policies directly addressing NPS pollution.¹²⁸ For example, in *American Wildlands v. Browner*,¹²⁹ the Tenth Circuit agreed with the district court’s holding that nothing in the CWA demands that a state adopt a regulatory system for nonpoint sources. The Tenth Circuit flatly stated that, “[i]n the Act, Congress has chosen *not* to give the EPA the authority to regulate nonpoint source pollution.”¹³⁰ In the Tenth Circuit, then, states cannot be compelled to establish a program for agricultural nonpoint sources, and the EPA cannot step in to impose its own NPS regulation.

Even within the Ninth Circuit, post-*Pronsolino* lower courts have softened the promise of the 2002 case. In *Barnum Timber Co. v. EPA*,¹³¹ a plaintiff timber company challenged the EPA’s approval of California’s Section 303(d) list of impaired waters, claiming that the EPA’s decision to retain a creek on the list for temperature and sedimentation impairments was arbitrary and capricious. Barnum Timber operated on property it owned along the creek. The Timber Company argued that, as a result of the EPA’s decision to allow retention of this creek on the State’s 303(d) list, it had suffered from additional operational and management costs necessary to satisfy state-imposed land use regulations. The district court found that the EPA’s challenged Section 303(d) decision, alone, imposed no restrictions or

125. *Pronsolino*, 291 F.3d at 1140.

126. *Id.* at 1137 (emphasis omitted) (citing 33 U.S.C. § 1313(a)–(c)(2000)).

127. *Id.* at 1141.

128. *See Am. Wildlands v. Browner*, 260 F.3d 1192, 1197 (10th Cir. 2001) (explaining that EPA does not have delegated authority to regulate nonpoint source pollution).

129. *Id.* (challenging the EPA’s approval under the CWA of Montana’s water quality standards that provided a statutory exemption from anti-degradation review of nonpoint sources of pollution).

130. *Id.* (emphasis added).

131. 835 F. Supp. 2d 773, 777 (N.D. Cal. 2011).

obligations on the plaintiff. The court concluded that the EPA's approval of the state's 303(d) list is nothing other than a necessary *planning step* under the CWA.¹³²

The *Pronsolino* case offered the possibility that Section 303(d), and the threat of TMDLs, could have an effect on nonpoint sources responsible for "loading" a state's receiving waters with pollutants that cause the waters to fail WQS established by states. Politically powerful agricultural interests and their lawyers have opposed such an expanded role for TMDLs, leading to litigation and lobbying of the EPA.¹³³ Ultimately, unless the CWA is amended and clarified, only the courts can decide whether Section 303(d) state controls over impaired waters and TMDLs can address issues that arise with agricultural NPS pollution affecting the nation's waters.¹³⁴ To date, courts have not been receptive to arguments that either give real power to TMDLs, or expand the oversight role of the EPA.

3. The Impeded Potential of Section 303(d)'s Application to Nonpoint Sources

If a successfully completed TMDL primarily serves as an "informational tool,"¹³⁵ and if the EPA has no duty to ensure the clean up of impaired waters under Section 303(d), then waters impaired by agricultural nonpoint sources will likely remain impaired. Nor will downstream users of impaired waters be able to seek redress. Courts have found that citizen plaintiffs cannot compel the EPA to implement TMDLs; nor can citizen plaintiffs require states or the EPA to develop and execute TMDL implementation plans addressing specific load allocations for nonpoint sources, even when such flows come from agricultural operations.¹³⁶ The limited application of Section 303(d) to waters impaired by agricultural

132. *Id.* at 781.

133. See Jocelyn B. Garovoy, "A Breathtaking Assertion of Power"? Not Quite. *Pronsolino v. Nastri and the Still Limited Role of Federal Regulation of Nonpoint Source Pollution*, 30 *ECOLOGY L.Q.* 543, 557 (2003).

134. Tobin, *supra* note 23, at 838.

135. *Pronsolino v. Nastri*, 291 F.3d 1123, 1129 (9th Cir. 2002) (citing *Alaska Ctr. for the Env't v. Browner*, 20 F.3d 981, 984–85 (9th Cir.1994)) ("TMDLs are primarily informational tools that allow the states to proceed from the identification of waters requiring additional planning to the required plans.").

136. See *Sierra Club v. Meiburg*, 296 F.3d 1021 (11th Cir. 2002) (stating that consent decrees between litigating parties do not require TMDL implementation); *Amigos Bravos v. Green*, 306 F. Supp. 2d 48, 56–58 (D.D.C. 2004) (discussing that TMDL planning is not final agency action that citizen plaintiffs can challenge); *City of Arcadia v. EPA*, 265 F. Supp. 2d 1142, 1144 (N.D. Cal. 2003) (explaining that TMDLs set goals for states to achieve but do not require EPA implementation); *Idaho Sportsmen's Coal. v. Browner*, 951 F. Supp. 962, 966 (W.D. Wash. 1996) ("TMDL development in itself does not reduce pollution . . . TMDLs inform the design and implementation of pollution control measures.").

nonpoint sources handicaps the potential of Section 303(d)'s ability to clean up the nation's waters.¹³⁷ Without further guidance or statutory compulsion from Congress, the EPA's role in TMDL plans remains limited.

Reviewing courts have confirmed the EPA's role to be very limited, hence this bleak outlook. The EPA may engage in the development, review, and approval of TMDL calculations, but it may not directly force the regulation of nonpoint source pollution.¹³⁸ While the EPA may promulgate TMDLs for waters that suffer from agricultural NPS pollution if a state fails to do so, and may allocate cleanup responsibilities to nonpoint sources based on such TMDLs, that federal action has no direct regulatory effect. A state may, in its discretion, choose to adopt the allocations and enforce them under state law, but the EPA cannot compel that result; nor may it enforce the allocations once they have been made by a state. As a result, the success of any regulatory program for controlling agricultural runoff under the CWA's TMDL program depends entirely on whether a state, exercising its own discretion, wishes to use Section 303(d) to address agricultural NPS pollution.

a. The Limited Legal Status of a TMDL

In *City of Arcadia v. EPA*,¹³⁹ affected cities challenged the EPA's promulgation of a TMDL for NPS pollution, as well as the EPA's subsequent approval of all of California's TMDLs. The U.S. District Court for the Northern District of California stated that, "TMDLs established under Section 303(d)(1) of the CWA function primarily as planning devices and are not self-executing."¹⁴⁰ The court further found that a "TMDL does not, by itself, prohibit any conduct or require any actions. Instead, each TMDL represents a goal that may be implemented by adjusting pollutant discharge requirements in individual NPDES permits or establishing nonpoint source controls."¹⁴¹ The *City of Arcadia's* pinched view of TMDLs suggests that Section 303(d) may *not* be a useful tool to address

137. *But see* *Friends of Pinto Creek v. EPA*, 504 F.3d 1007, 1014–15 (9th Cir. 2007) (explaining that the EPA itself or states implementing the CWA deny the issuance of NPDES permits in waters impaired primarily by nonpoint sources, if adequate plans or compliance schedules are not in place to bring the impaired waters into compliance with applicable state WQSs).

138. Robert W. Adler, *The Two Lost Books in the Water Quality Trilogy: The Elusive Objectives of Physical and Biological Integrity*, 33 ENVTL. L. 29, 42–43 (2003).

139. 265 F. Supp. 2d at 1149–50.

140. *Id.* at 1144 ("TMDLs are primarily informational tools that allow the states to proceed from the identification of waters requiring additional planning to the required plans." (quoting *Pronsolino*, 291 F.3d at 1129)).

141. *Id.* at 1144–45 (citing *Idaho Sportsmen's Coal*, 951 F. Supp. at 966).

NPS pollution, and instead that state and local-based BMPs under Section 319 might be a preferred approach to agricultural runoff.

b. The Limited Legal Power of the EPA Under Section 303(d)

In *Sierra Club v. Meiburg*,¹⁴² the Eleventh Circuit found that the district court had abused its discretion when it modified the terms of a consent decree to require that the EPA develop TMDL implementation plans on behalf of the state. The Eleventh Circuit observed that “[t]he Act generally leaves regulation of non-point source discharges through the implementation of TMDLs to the states[,]” and the state “has the primary authority and responsibility for issuing permits and controlling nonpoint source pollution in that state[;]” by contrast, the “EPA, for its part, only has supervisory authority over various reports and plans which the state is required by the Act to produce.”¹⁴³ Because the objective of the consent decree was to establish TMDLs, the agreement left “attainment of the Act’s ultimate goal of cleaning up the water to the statutory and regulatory scheme”¹⁴⁴ Pursuant to this scheme, the EPA’s role is limited; states are ultimately responsible for establishing and enforcing TMDLs. Even if the consent decree intended the cleanup of NPS pollution, including agricultural runoff, the EPA can only agree to maintain a supervisory role with respect to implementation-related processes. Indeed, the EPA cannot agree to take over the implementation process in furtherance of the stated CWA goal to clean up the nation’s waters because it lacks statutory authority to do so.

In 2004, the *Amigos Bravos v. Green* court cited *Meiburg* in support of its distinction between: (1) the EPA’s approval of TMDLs for impaired waters submitted by the state; and (2) the EPA’s approval of the state’s implementation plan.¹⁴⁵ The court concluded that, “there is no statutory language requiring submission to or approval of a State’s implementation plan by the EPA; rather, the statute only requires that the EPA approve or disapprove a State’s TMDL.”¹⁴⁶ Both *Meiburg* and *Amigos Bravos* establish that after TMDL approval for impaired receiving waters, the EPA is left to rely on states to implement plans to reduce NPS agricultural pollution. If states choose not to do so, the EPA may not compel a contrary result.

142. 296 F.3d at 1034.

143. *Id.* at 1025–27.

144. *Id.* at 1034.

145. *Amigos Bravos*, 306 F. Supp. 2d 48, 56 (D.D.C. 2004) (citing 33 U.S.C. § 1313(d)(2)).

146. *Id.* at 57.

B. The Regulation of Agricultural Operations as Point Sources Under Section 402

Section 303(d) appeared promising, but unfortunately, it has met with little real success in regulating agricultural sources. Another water pollution section within the CWA that might be applicable to agricultural water pollution is Section 402, which is triggered by the presence of point sources.

CWA Section 402 establishes the National Pollution Discharge Elimination System (NPDES) permitting program, which requires an NPDES permit for all point sources of water pollution.¹⁴⁷ The CWA defines a point source as “any discernible, confined and discrete conveyance . . . from which pollutants are or may be discharged.”¹⁴⁸ Most agricultural practices have escaped the NPDES program’s regulatory net because the assumption has been that agricultural pollution is typically not from a “point,” but instead is a classic example of NPS pollution. The diffuse nature of agricultural pollution makes it difficult to characterize farming runoff as discharge from a “discernible, confined and discrete conveyance.” Moreover, the CWA expressly excludes “agricultural stormwater discharges and return flows from irrigated agriculture”¹⁴⁹ from the CWA’s definition of a point source, thereby permitting most agricultural sources to escape Section 402 regulation. Nonetheless, despite statutory and definitional obstacles limiting the availability of Section 402, some agricultural operations may still be characterized as discharging polluted water through a point source, and as such are subject to Section 402 rules.

1. Animal Operations as Point Sources: The Evolution of CAFO Regulations

There is one major category of agricultural sources that impacts water quality but which has not escaped CWA regulation—animal feeding operations (AFOs).¹⁵⁰ Facilities that can be considered AFOs include livestock farms, feedlots, pens, corrals, wintering operations, dairies, stockyards, poultry operations, stables, racetracks, and rodeos.¹⁵¹ Large

147. See 33 U.S.C. § 1342(a) (2006) (requiring permits for point source pollution).

148. *Id.* § 1362(14).

149. *Id.*

150. Unified National Strategy for Animal Feeding Operations, 63 Fed. Reg. 50,192, 50,193 (Sept. 21, 1998) (The AFO industry is quite large, and accounts for half of all agriculture sales in U.S.).

151. National Pollutant Discharge Elimination System Permit Regulation and Effluent Limitations Guidelines and Standards for Concentrated Animal Feeding Operations, 66 Fed. Reg. 2960, 3005 (Jan. 12, 2001).

industrial AFOs have become subject to direct CWA regulation under the NPDES program as “concentrated animal feeding operations” (CAFOs).¹⁵² CAFOs are the only agricultural source expressly included in the CWA’s definition of point sources, and as a result CAFOs are by definition *not* considered nonpoint sources.

Before 1989, the CWA’s CAFO standards had not faced any substantive judicial review or EPA revision. CAFOs were in principle subject to the language of the CWA, but CAFO-specific regulations had not been put into practice.¹⁵³ The long and tortured history of EPA CAFO rulemaking and regulation began in October 1989. In that year, the Natural Resources Defense Council brought a lawsuit against the EPA for failure to comply with the CWA’s mandatory duty to address CAFOs. The resulting case, *Natural Resources Defense Council v. Reilly*,¹⁵⁴ mandated that the EPA update and enforce its CAFO regulations.

In February 2003, in response to the *Reilly* case, the EPA issued its first revised permitting requirements and effluent limitations for CAFOs. The 2003 regulations expanded the number of discharging AFOs required to seek NPDES permit coverage as CAFOs, and added requirements applicable to land application of manure. Under the 2003 rule, an AFO is designated a CAFO for purposes of the CWA if it discharges pollutants into waterways of the United States through a man-made conveyance such as a road, ditch, or pipe. The 2003 rule also included new agricultural policies addressing Agricultural Stormwater Discharges, the Duty to Apply for an NPDES Permit, Nutrient Management Plans (NMPs) and Effluent Limitation Guidelines (ELGs) for CAFOs.¹⁵⁵

Much of the 2003 final rule was challenged in court, eventually resulting in further clarification by the Second Circuit Court of Appeals in *Waterkeeper Alliance, Inc. v. EPA*.¹⁵⁶ In *Waterkeeper Alliance*, the court directed the EPA to remove the requirement that *all* CAFOs apply for NPDES permits. The court also concluded that any runoff resulting from

152. 33 U.S.C. § 1362(14).

153. See, e.g., U.S. GOV’T ACCOUNTABILITY OFFICE, GAO-03-285, LIVESTOCK AGRICULTURE: INCREASED EPA OVERSIGHT WILL IMPROVE ENVIRONMENTAL PROGRAM FOR CONCENTRATED ANIMAL FEEDING OPERATIONS intropage-3 (2003), available at <http://www.gao.gov/new.items/d03285.pdf> (“Until the mid-1990s, EPA placed little emphasis on and had directed few resources to its animal feeding operations permit program because it gave higher priority to other sources of water pollution.”).

154. *Natural Res. Def. Council v. Reilly*, 983 F.2d 259, 261 (D.C. Cir. 1993); see also *Concerned Area Residents for the Env’t v. Southview Farm*, 34 F.3d 114, 115 (2d Cir. 1994) (holding that owners of “industrial farms” classified as CAFOs must operate their farms in a manner consistent with the objectives of the Clean Water Act).

155. National Pollutant Discharge Elimination System Permit Regulation and Effluent Limitation Guidelines and Standards for Concentrated Animal Feeding Operations (CAFOs), 68 Fed. Reg. 7176, 7176 (Feb. 12, 2003) (to be codified at 40 C.F.R. pts. 9; 122; 123; 412).

156. *Waterkeeper Alliance v. EPA*, 399 F.3d 486, 524 (2d Cir. 2005).

manure applied in accordance with agronomic rates would be exempt from the CWA permitting requirements as “agricultural stormwater.” The EPA subsequently interpreted the *Waterkeeper Alliance* decision to mean that when agronomic rates are not used, then the resulting runoff from a land application is *not* “agricultural stormwater” and is therefore subject to the CWA as a discharge from a point source—the CAFO.

The EPA issued a final 2008 CAFO rule that included two key changes that address the *Waterkeeper* decision. First, it revised the requirement for all CAFOs to apply for NPDES permits, and instead required permits only for those CAFOs that *discharge or propose to discharge into waters of the U.S.* Second, the 2008 rule clarified that water quality-based effluent limitations may be required in any CAFO permit with respect to pollutant discharges from production areas and from land application areas that do not fall under the agricultural stormwater exemption.¹⁵⁷

The 2008 final rule was challenged in yet another case—*National Pork Producers Council v. EPA*.¹⁵⁸ This ongoing litigation required the EPA to revisit, once again, its CAFO regulations. The eventual 2012 final rule revises portions of the 2008 CAFO permit regulation to address the Fifth Circuit’s *National Pork Producers* concerns. The EPA’s 2012 final rule provides that only an owner or operator of a CAFO that *actually discharges* into waters of the U.S. must apply for a NPDES permit.¹⁵⁹ Those that only “propose” to discharge are not yet subject to CAFO regulations or CWA point source requirements.

Federal regulation of CAFO-produced pollutants under the CWA reveals that agricultural sources may be subject to Section 404 demands if, like CAFOs, they are categorized as point sources under the CWA.¹⁶⁰ Because they are considered point sources, CAFOs must obtain a valid NPDES permit to discharge any pollutants into waters of the United States.¹⁶¹ Although CAFOs are agricultural operations normally exempt from point source controls,¹⁶² they are assumed to be point sources because they have the following characteristics: (1) they are industrialized; (2) they tend to discharge from discrete conveyances; and (3) they are a significant source of water pollution flowing into the waters of the United States. To

157. Revised National Pollutant Discharge Elimination System Permit Regulation and Effluent Limitations Guidelines for Concentrated Animal Feeding Operations in Response to the *Waterkeeper* Decision, 73 Fed. Reg. 70,418 (Nov. 20, 2008) (to be codified at 40 C.F.R. pts. 9; 122; and 412).

158. 635 F.3d 738, 741 (5th Cir. 2011).

159. National Pollutant Discharge Elimination System Permit Regulation for Concentrated Animal Feeding Operations: Removal of Vacated Elements in Response to 2011 Court Decision, 77 Fed. Reg. 44,494, 44,497 (July 30, 2012) (to be codified at 40 C.F.R. pt. 122).

160. 33 U.S.C. § 1362(14) (2006).

161. *Id.* §§ 1311(a); 1342; 1362(14).

162. *See id.* § 1362(14) (excluding various agricultural activities from point source definition).

exclude CAFOs from point source controls would be contrary to the plain language of the Act, and inconsistent with the Act's goal of "restor[ing] and maintain[ing] the chemical, physical, and biological integrity of the Nation's waters."¹⁶³

2. Tree Farms as Point Sources?

An argument has been raised that large tree farms could have timber operations, such as logging roads, that might qualify as an "industrial activity" warranting CWA point source regulation.¹⁶⁴ If so, the EPA might be able to require NPDES permits for timber harvesting stormwater discharges.¹⁶⁵ Collected road runoff commonly contains sediment, nutrients, and heavy metals¹⁶⁶—three of the nation's ten most common causes of water quality impairment.¹⁶⁷ The extensive road building and heavy traffic that accompanies industrial activities, like logging, exacerbates the negative impacts of stormwater runoff.¹⁶⁸ The effects of road-accumulated runoff are numerous. Such runoff increases erosion on the road surface and the bare slopes adjacent to it; changes the shape, structure, and location of drainage channels; and reroutes runoff to overland paths it would not otherwise naturally follow.¹⁶⁹

The question that would then arise is whether the flows from logging roads that eventually discharge into waters of the United States should be exempt from the NPDES permitting process by the EPA's Silvicultural Rule.¹⁷⁰ If these flows are *not* exempted, then the collected runoff could be classified as a point source discharge associated with an industrial activity under the CWA.¹⁷¹ Section 301 of the Act prohibits "the discharge of any

163. *Id.* § 1251(a).

164. *Nw. Env'tl. Def. Ctr. v. Brown*, 640 F.3d 1063, 1087 (9th Cir. 2011), *rev'd Decker v. Northwest Environmental Defense Center*, 2013 WL 1131708 (U.S.).

165. *Id.* at 1067.

166. OFFICE OF WATER, U.S. ENVTL. PROT. AGENCY, EPA-841-F-95-008D, EROSION, SEDIMENT AND RUNOFF CONTROL FOR ROADS AND HIGHWAYS (1995), *available at* http://water.epa.gov/polwaste/nps/road_runoff.cfm.

167. U.S. ENVTL. PROT. AGENCY, EPA 841-R-08-001, NATIONAL WATER QUALITY INVENTORY: REPORT TO CONGRESS 2004 REPORTING CYCLE 11-12 (2009), *available at* http://water.epa.gov/lawsregs/guidance/cwa/305b/upload/2009_01_22_305b_2004report_2004_305Breport.pdf

168. U.S. FOREST SERV., PAC. NW. RESEARCH STATION, FOREST ROADS: A SYNTHESIS OF SCIENTIFIC INFORMATION 1,14 (Herman Gucinski et al. eds., May 2001), *available at* <http://www.fs.fed.us/pnw/pubs/gtr509.pdf>.

169. *Id.* at 12, 16.

170. 40 C.F.R. § 122.27 (2012) (Silvicultural activities exempt from the NPDES permit program include: "nursery operations, site preparation, reforestation and subsequent cultural treatment, thinning, prescribed burning, pest and fire control, harvesting operations, surface drainage, or road construction and maintenance from which there is natural runoff.").

171. *See* 33 U.S.C. § 1342(p); 33 U.S.C. § 1362(14) (2006) (broadly defining "point source").

pollutant by any person.”¹⁷² Sediment flowing down a road from a logging operation is a “pollutant,”¹⁷³ and “any addition of any pollutant to navigable waters from any point source,” such as flows from such logging roads, seemingly constitutes a “discharge.”¹⁷⁴ Congress added Section 402(p) to the CWA in 1987 to specifically address point sources that become stormwater discharges.¹⁷⁵ Section 402(p) identifies five classes of major stormwater discharges—including stormwater “discharge[s] associated with [an] industrial activity”—to be addressed by the EPA’s Phase I regulations.¹⁷⁶ The 1987 amendment directed the EPA to study all other stormwater discharges and regulate them under Phase II rules to “protect water quality.”¹⁷⁷ Phase I sources must obtain NPDES permits to continue legally discharging, whereas the EPA has discretion to determine which stormwater sources must be regulated under Phase II “to protect water quality.”¹⁷⁸

Two legal questions arise when tree farms are so large that they have become, in effect, industrial agriculture operations. First, are the road drainage systems from such tree farms “point sources” when they collect, convey, and discharge stormwater carrying pollutants into waters of the United States? Second, are such discharges associated with the drainage of an “industrial” activity and therefore subject to Section 402 limits?

In the 2013 case of *Decker v. Northwest Environmental Defense Center*,¹⁷⁹ the United States Supreme Court answered “no” to both questions. First, the Court concluded that only certain logging operations (not logging roads) should be defined as point sources.¹⁸⁰ Second, the CWA requires NPDES permits for the discharge of channeled stormwater runoff only if the discharges are “associated with industrial activity.”¹⁸¹ The Court in *Decker* interpreted those words to be limited to an “economic activity concerned with the processing of raw materials and manufacture of goods

172. 33 U.S.C. § 1311(a).

173. *See id.* § 1362(6) (listing as pollutants “rock,” “sand,” and “biological materials,” all of which are components of sediment).

174. *Id.* § 1362(12) (emphasis added); *see also id.* § 1362(7) (defining “navigable waters” as “waters of the United States”); 40 C.F.R. § 122.2 (2011) (defining “[w]aters of the United States” as waters that are navigable in fact, as well as their non-navigable tributaries); *see also* Rapanos v. United States, 547 U.S. 715, 739 (2006) (holding that “waters of the United States” include not only waters that are navigable in fact, but also their relatively permanent tributaries).

175. Water Quality Act of 1987, Pub. L. No. 100-4, sec. 405, § 402(p), 101 Stat. 7 (1987).

176. 33 U.S.C. §§ 1342(p)(1)–(2).

177. *Id.* §§ 1342(p)(5)–(6).

178. *Id.* §§ 1342(p)(2); (6).

179. *Decker v. Northwest Environmental Defense Center*, 2013 WL 1131708 (U.S.).

180. *Id.* at 7.

181. 33 U.S.C. § 1342 (p)(2)(B).

in factories,” not outdoor timber harvesting.¹⁸² The Court also chose to defer to the express instructions Congress gave to the EPA to work “in consultation with State and local officials” to alleviate stormwater pollution from logging roads by developing BMPs.¹⁸³

3. When May Agricultural Sources be Considered Point Sources?

Timber roads and CAFOs are regulated under the CWA because they share three common characteristics. First, the operation produces runoff that is collected in a *discrete conveyance*. Second, the collected runoff is *discharged into waters of the United States*.¹⁸⁴ Finally, the runoff is associated with some large *industrial activity*, not a small mom-and-pop operation. The runoff from CAFOs is expressly classified as a point source under the CWA, while the *NEDC* Court assumes that runoff from tree farms can be considered stormwater runoff that is not exempt from point source controls because it has characteristics similar to CAFO runoff.

If a non-tree farm, non-CAFO agricultural operation is classified as a point source because its runoff becomes “stormwater runoff” like tree farm runoff, then what kind of agricultural operations risk a NPDES? A two-part inquiry is necessary to determine whether a NPDES permit is required for a given stormwater source. Only “stormwater discharges” are subject to Section 402(p), so the first question is whether the source fits that statutory definition.¹⁸⁵ The EPA’s implementing regulations define stormwater as “stormwater runoff, snow melt runoff, and surface runoff and drainage.”¹⁸⁶ Stormwater comes from diffuse runoff, which is generally considered nonpoint,¹⁸⁷ unless it becomes a “discharge.”¹⁸⁸ It becomes a “discharge” if the runoff and drainage from some activity (such as an agricultural operation): (a) picks up any “pollutant,” which then (b) flows into any discrete conveyance (e.g., roadside ditches and culverts), and (c) eventually becomes “added to” waters of the United States—converting the runoff to a CWA-regulated “point source.”¹⁸⁹

182. *Decker*, 2013 WL 1131708 (U.S.) at 10.

183. *Id.* at 11; 33 U.S.C. §1342 (p)(6).

184. Point sources that drain onto a slope and then spread broadly across a field without reaching waters of the United States would not require permits. *See* 33 U.S.C. §§ 1342(a)(1), 1362(12) (requiring NPDES permit only for the discharge of a pollutant, which is defined as adding a pollutant to waters of the United States).

185. *See id.* § 1342(p).

186. 40 C.F.R. § 122.26(b)(13) (2011).

187. *Or. Natural Desert Ass’n v. Dombeck*, 172 F.3d 1092, 1095 (9th Cir. 1998) (citing 33 U.S.C. § 1341 (2006)); *Or. Natural Res. Council v. U.S. Forest Serv.*, 834 F.2d 842, 849 n. 9 (9th Cir. 1987).

188. 33 U.S.C. §§ 1362(12), (16) (2006).

189. 33 U.S.C. §§ 1311, 1362(7), (12), (14).

The second question involves the nature of the activity that meets these conditions. A Section 402(p) point source permit may only be required if the agricultural operation is classified as Phase I industrial. The distinction between Phases I and II is critical, because only Phase I *industrial* activities fit within the class of discharging operations that by regulation require a NPDES permit just by falling within that classification. If a discharge is not associated with an industrial activity, or one of the other five Phase I categories, then the need for a point source permit depends entirely on whether the EPA has decided, in its discretion, to regulate the discharge under Phase II.¹⁹⁰ For example, the Phase II regulations require NPDES permits to control stormwater runoff from construction sites,¹⁹¹ but agricultural fields that discharge sediment eroded from denuded areas are not currently regulated under Phase II.¹⁹² However, the EPA may yet regulate forest roads and other agricultural operations under Phase II, because the Agency retains authority to require permits for additional source categories when necessary to protect water quality.¹⁹³ But before an agricultural operation is subject to a NPDES permit, it must satisfy statutory and regulatory conditions that call for the operation to be discharging into a “discrete conveyance”¹⁹⁴ and from an activity deemed to be “industrial.”¹⁹⁵

V. COMMON LAW REMEDIES FOR AGRICULTURAL WATER POLLUTION?

The CWA has successfully cleaned up some of our nation’s waters.¹⁹⁶ Nonetheless, a portion of America’s waterways remain polluted.¹⁹⁷ These waters are still impaired since NPS pollution, especially from agricultural sources, is not directly regulated by the statute; instead, it is exempt from the CWA and delegated to the states to regulate.¹⁹⁸ Because the CWA

190. *Env’tl. Def. Ctr. v. EPA*, 344 F.3d 832, 875 (9th Cir. 2003) (reviewing the EPA’s 1999 Phase II rule).

191. 40 C.F.R. § 122.26(a)(9)(i)(B) (2012).

192. *Env’tl. Def. Ctr.*, 344 F.2d at 860–63.

193. *Id.* at 873.

194. *Fishermen Against Destruction of Env’t, Inc. v. Closter Farms, Inc.*, 300 F.3d 1294, 1296–98 (11th Cir. 2002) (holding the canals used to irrigate the farm’s sugar cane through the process of “flood irrigation” were exempt from permitting requirements under the CWA in the same manner as traditional irrigation).

195. *See Reynolds v. Rick’s Mushroom Serv., Inc.*, 246 F. Supp. 2d 449, 454–58 (E.D. Pa. 2003) (finding that the water from a mushroom-waste operation flowed after stormwater events onto uncovered waste piles, that this discharge from an “industrial” operation was a pollutant, and that such pollution was discharged into waters of the U.S., which would make the operation a point source); *But see Decker v. Northwest Environmental Defense Center*, 2013 WL 1131708 (U.S.), at 10.

196. *The Clean Water Act at 25 is Clearly a Success*, U.S. WATER NEWS ONLINE (Nov. 1997), <http://www.uswaternews.com/archives/arcpolicy/7clewat11.html>.

197. DUKE K. MCCALL, III, *Clean Water Act*, ENVIRONMENTAL LAW HANDBOOK, 357 (Thomas F.P. Sullivan ed., 20th ed. 2009).

198. *See supra*, Parts I & III.

regulatory scheme permits waters to be polluted from agriculture without having to face a NPDES permit, perhaps those wishing to address agricultural pollution should seek relief outside the statutory limits of the CWA. A party seeking relief from agricultural runoff might explore the possibility of using the common law of public nuisance to combat agricultural pollution.

One example of how nuisance law might apply is where CAFOs do not comply with federal regulatory limits. Under the CWA, CAFOs are point sources of pollution, and with a permit, CAFOs are allowed to have regulated agricultural stormwater discharges.¹⁹⁹ Courts have required CAFO agricultural stormwater discharges of manure to be based on site-specific nutrient management practices that ensure appropriate agricultural use of the nutrients.²⁰⁰ CAFO permittees must show, in site-specific management plans enumerating effluent limitations, how their applications of manure achieve production goals while minimizing nutrient movement to surface waters.²⁰¹ CAFO regulations preclude discharges that over-apply manure, suggesting that failure to follow the permitted nutrient management plan when applying manure to fields is unreasonable.

As property owners, agricultural operators have the right to apply manure from CAFOs onto nearby lands for crop production. This right to apply manure, however, is limited. Property owners do not have the right to apply manure in excess of nutrients needed for crop growth. When too much manure is applied, the unabsorbed nutrients impair the downstream waters and pose a potential health threat to the community—contrary to public interest.²⁰² Nor does over-application of nutrients conform to acceptable agronomic practices. The unreasonableness of this practice and its contribution to water pollution may cause it to be a nuisance.²⁰³

Under nuisance law, unreasonable interferences with the enjoyment of the use of property enable courts to grant equitable relief, such as damages or injunctive orders. An unreasonable over-application of manure and its contribution to water pollution may cause it to be a nuisance.²⁰⁴ Indeed,

199. *See supra*, Part IV B(1).

200. *See, e.g., Waterkeeper, supra* note 156, at 507–11 (evaluating permitted stormwater discharges as allowed under the 2003 CAFO regulations).

201. 40 C.F.R. §§ 122.42(e)(1)(viii); 412.4(c)(1) (2009). Permittees who fail to follow nutrient management plans incur liability for violating the federal CAFO regulations.

202. The EPA has noted that excess nutrients from CAFOs may become an environmental concern. Preamble to the 2003 CAFO Regulations; 40 CFR §§ 122; 123; 412.

203. Tory H. Lewis, *Managing Manure: Using Good Neighbor Agreements to Regulate Pollution from Agricultural Production*, 61 VAND. L. REV. 1555, 1569–71 (2008) (noting the difficulty of distinguishing between reasonable practices and those that are a nuisance).

204. *See, e.g., Ark. Code Ann. § 15-20-1106(a)* (2009) (Violators of poultry litter rules may be fined under Arkansas law.).

nonpoint source agricultural water pollution that impairs the quality of waters, negatively affects human health, and adversely affects the property rights of others, may be abatable under state nuisance laws.²⁰⁵ Two types of nuisances from agricultural activities may be triggered by state statutes: (1) state provisions declaring water pollution to be a nuisance; and (2) state provisions that provide for the abatement of conditions dangerous to public health or otherwise noxious or offensive to the senses.

Despite the theoretical promise of common law nuisance doctrine, plaintiffs have not been successful in the courts when the source of the nuisance is agricultural. In *Rancho Viejo, LLC v. Tres Amigos Viejos, LLC*,²⁰⁶ a private landowner sued an avocado farming company for damages after water imported by the farming company for irrigation flowed onto and damaged the landowner's adjoining property. The trial court granted summary judgment in favor of the farming company on the ground the landowner's causes of action were barred by California law, which exempted certain agricultural activities from nuisance liability. The appellate court concurred. It rejected the private landowner's argument that the exemption was not intended to apply where the adjoining properties were originally a single parcel that was subdivided by the original owner. The exemption for agriculture controlled, much like the CWA's exemption of agriculture from point source controls.

In *City of Tulsa v. Tyson Foods, Inc.*,²⁰⁷ plaintiffs lost because of an inability to prove a causative link between agricultural waste and human harm. Plaintiffs alleged that the defendant grower's application of poultry litter to the land resulted in a nuisance in the form of pollution to the municipal water supply. The court found that while the plaintiff was able to prove hazardous phosphorus loading was released into municipal waters, it was unable to prove that this loading had created some harm to the public. The court rejected the plaintiff's argument that violation of the state statute created a nuisance per se.

Agricultural landowners are stewards of property, and private land ownership should include a duty to safeguard the public's interest in the future of land resources.²⁰⁸ Private land ownership should bring about social utility, which means that if society places a high value on pollution-free water, nuisance law should be able to restrict an agricultural operation's ability to freely pollute the nation's waters. The over-application of manure

205. *But see* *Milwaukee v. Illinois*, 451 U.S. 304, 317 (1981) (concluding that the CWA has effectively preempted Illinois' federal common law nuisance claims).

206. 100 Cal. App. 4th 550, 555 (Cal. Ct. App. 2002).

207. 258 F. Supp. 2d 1263, 1290-92 (N.D. Okla. 2003).

208. ERIC T. FREYFOGLE, ON PRIVATE PROPERTY: FINDING COMMON GROUND ON THE OWNERSHIP OF LAND 137, 141 (2007) (discussing the importance of *clean* water as a resource).

by animal producers and farm operations interferes with water quality, but the common law of nuisance has proven to be an ineffective deterrent to agricultural practices that pollute the water.

VI. LOCAL SOLUTIONS TO THE PROBLEM OF AGRICULTURAL NON-POINT POLLUTION

One obstacle to achieving the water quality goals of the CWA is the absence of federal authority to directly oversee local and regional land use planning and zoning rules that have proven to be ineffective in restricting NPS agricultural pollution. Local-level land use planning has the potential to effectively reduce NPS agricultural water pollution, yet few states have asserted their broad police powers to address persistent water quality impairments stemming from such nonpoint sources.²⁰⁹ County governments have been reluctant to assert these local powers, in large part because of the political power of rural agricultural interests.²¹⁰

CWA strategies used to control point sources—effluent limitations and water quality standards—are not effective in controlling less predictable NPS pollution.²¹¹ Nonpoint sources reflect the geologic and climatic conditions in a given region, and these conditions vary widely. Control of nonpoint sources will ultimately require that local governments manage land and agricultural practices near sources of agricultural pollution. Local government land use planning efforts can play a definite role in abating agricultural runoff. Density controls are an example of land use rules that can reduce agricultural NPS pollution as a supplement to the CWA's BMPs.²¹² A regional watershed approach may also permit cities and counties to improve the quality of specific water bodies within local jurisdictions.

A. State and Local Land Use Planning and Zoning

Local planning identifies community goals and comprehensive guidelines regarding conservation and pollution cleanup of natural resources within a given government's jurisdiction. These plans can provide

209. See Adler, *supra* note 138, at 54–56; Victor B. Flatt, *Spare the Rod and Spoil the Child: Why the Clean Water Act Has Never Grown Up*, 55 ALA. L. REV. 595, 599 (2004).

210. See Part III B, *supra*.

211. See generally William H. Rodgers, Jr., *Water Quality Standards—State Law (Judicial Review)*, in 2 ENVIRONMENTAL LAW: AIR AND WATER § 4.17 at 262–67 (1986).

212. See P. THOMPSON, POISON RUNOFF: A GUIDE TO STATE AND LOCAL CONTROL OF NONPOINT SOURCE WATER POLLUTION 128 (Robert Adler & Jessica Landman eds., 1989) (explaining how controlling the rate, location, and type of development can reduce water pollution).

a basis for water quality protection strategies by identifying where agricultural areas should be encouraged, and where other land uses should be permitted, such as those promoting land conservation and preservation. Land use plans that incorporate local agricultural and conservation objectives often include two principal local zoning measures—cluster zoning and transfer of development rights (TDRs).²¹³

1. Cluster Zoning

Municipalities and counties use cluster zoning to promote the design of spatially condensed residential, commercial, and agricultural development. Such zoning may also conserve identified land-based resources, including floodplains, wetlands, and riparian corridors.²¹⁴ This zoning can help to mitigate the adverse environmental effects of croplands or timberlands.²¹⁵ Cluster zoning ordinances group certain developments together, with the aim of reducing agricultural pollution and protecting open land and associated natural resources. If agricultural operations are clustered together *away from* water sources, the polluted runoff produced by farming practices will have a lesser effect on important local water bodies.

2. Transfer of Development Rights

Transfer of development rights programs allow landowners to transfer their rights to develop from one parcel of land—based on local zoning applicable to that property—to a different parcel of land.²¹⁶ Because TDRs rely on market forces, sufficient demand for local real estate must exist before developers will buy transferable rights to increase their proposed development density above that already permitted by the zoning designation of the receiving area.²¹⁷ TDRs may be useful to protect key natural

213. See AM. FARMLAND TRUST, FACT SHEET: THE FARMLAND PROTECTION TOOLBOX (February 2008), available at http://www.farmlandinfo.org/documents/27761/fp_toolbox_02-2008.pdf (describing a variety of zoning and conservation methods to protect local farmlands).

214. See AM. FARMLAND TRUST AND CONN. CONFERENCE OF MUNICIPALITIES, PLANNING FOR AGRICULTURE: A GUIDE FOR CONNECTICUT MUNICIPALITIES 21–22 (2008), available at http://ctplanningforagriculture.com/guide/AFT_guide_web9-29.pdf (suggesting a variety of zoning, development, and conservation tools to protect local farmlands).

215. See PROTECTING WATER QUALITY FROM URBAN RUNOFF, U.S. ENVTL. PROT. AGENCY 1 (February 2003), available at http://www.epa.gov/npdes/pubs/nps_urban-facts_final.pdf.

216. See David L. Callies, Robert H. Freilich & Thomas E. Roberts, LAND USE 766–67 (Thompson West, 4th ed. 2004).

217. See J.B. Ruhl, *Agriculture and Ecosystem Services: Strategies for State and Local Governments*, 17 N.Y.U. ENVTL. L.J. 424, 448 (2008) (discussing the challenge of generating a supply of and demand for TDRs); see also *see also* A. Dan Tarlock, *The Potential Role of Local Governments in Watershed Management*, 20 PACE ENVTL. L. REV. 149, 174 (2002) (noting that TDRs “have long

resources and threatened waterbodies by shifting development pressure from areas rich in natural resources to areas designated for growth. Well-planned TDRs incentivize agricultural operations to protect open space near watersheds by increasing agricultural density in an area that is distant from the area to be protected.

Land use controls are primarily a local responsibility.²¹⁸ However, local governments where agricultural nonpoint sources are located do not have much of an incentive to regulate such water pollution created within their jurisdiction because the nonpoint sources generally affect water quality elsewhere, far downstream. Further, because agriculture is economically important to local economies, county and municipal governments hesitate to place restrictions on the farming operations. Local government officials are sensitive to the fact that pollution controls can be expensive, and farmers may be unable to pass the costs of these land management controls onto consumers in the highly competitive agricultural industry.

The hesitation of many local governments to implement effective NPS pollution programs suggests that federal leadership may be necessary to encourage implementation of successful cluster zoning and TDR programs. Without federal guidance and financial incentives, towns and counties are unlikely to adopt land use controls to protect downstream watersheds from agricultural runoff.²¹⁹

B. A Regional Watershed Approach

Another opportunity for water quality improvement involves a regional approach to agricultural NPS water pollution. A regional scheme would create a local-level administrative agency responsible for: (1) ensuring regional compliance with ambient water quality standards; (2) allocating a regional allowable pollution load among its member districts; and (3) administering a system of tradable discharge permits.²²⁰ The resulting

been promoted as a substitute for direct compensation, but it is not clear that they will fulfill their potential because it is often difficult to anchor those units on another tract”).

218. DANIEL P. SELMI, ET AL., *LAND USE REGULATION: CASES AND MATERIALS* 33 (3d ed. 2008).

219. James C. Buresh, *State and Federal Land Use Regulation: An Application to Groundwater and Nonpoint Source Pollution Control*, 95 *YALE L.J.* 1433, 1440 (1986).

220. Nathan Gardner-Andrews, *Water Quality and Land Use Planning: Emerging Legal and Regulatory Considerations*, 65 *PLANNING & ENVIRONMENTAL LAW* 4 (Mar. 2013) (EPA has finalized a TMDL for the entire Chesapeake bay Watershed); Chelsea H. Congdon et al., *Economic Incentives and Nonpoint Source Pollution: A Case Study of California's Grasslands Region*, 2 *HASTINGS W.-NW. J. ENVTL. L. & POL'Y* 185, 235 (1995).

trading system would provide regional farmers with flexibility to adjust allocations and to react to changing farming conditions.²²¹

By creating accountability for pollution control among nonpoint source polluters, a regionalized approach avoids reliance on BMP initiatives that have proven to be unsuccessful under the CWA scheme. Indeed, the locally-driven, regionally-based approach, where pollution loads are established for watersheds, may offer the most promise for addressing agriculturally-based NPS pollution. The major obstacle for the regional watershed approach is the farming community, which will need encouragement to bring about collaboration with farmers, and to have a mindset that takes responsibility for watersheds. Perhaps the otherwise intractable problem of agricultural pollution might then be successfully addressed.

VII. CONCLUSION

The problem of agricultural pollution from nonpoint sources appears to be almost intractable. The Clean Water Act seems to be ineffective, because its strongest provisions require the presence of a “point” source to be triggered. Congress seems content in delegating this issue to state and local officials, who have proven to be unwilling to take tough measures that might address the water pollution problems that stem from farms and CAFOs. And the courts (with the possible exception of the Ninth Circuit Court of Appeals) seem unable to go beyond the express limiting language of the Clean Water Act when cases arise that seek to stretch the Act to encompass agricultural nonpoint pollution. Perhaps the Environmental Protection Agency is the last hope for an effective response to this longstanding environmental problem. The EPA has begun to take a more regional approach to water pollution in some areas, like the Chesapeake Bay watershed, where there is now a single TMDL for the entire area that encompasses both point and nonpoint source dischargers.²²² The single TMDL idea for an area impacted by nonpoint agricultural sources may be the best way to put farms and CAFOs on a water pollution diet. Otherwise, agriculture-based water pollution might simply continue indefinitely if reliance remained with state and local “best management practices” that too often become “no” management practices.

221. See ENVIRONMENTAL DEFENSE FUND, *Nonpoint Source Pollution Control: Breaking the Regulatory Stalemate* (2000), available at <http://www.envtn.org/uploads/GTLP-PNG.PDF>.

222. *Gardner-Andrews*, *supra* note 220, at 4-6.