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## Comments

# The Future of Agricultural Pollution Following USDA and EPA Drafting of a Unified National Strategy for Animal Feeding Operations

## I. Introduction

Over the past quarter century, the United States has made tremendous progress in cleaning up its rivers, lakes, coastal waters, and other water sources.<sup>1</sup> Primarily this progress is attributable to the dramatic decrease in pollution from factories and sewage treatment plants.<sup>2</sup> Despite these improvements, forty percent of the rivers and streams in America are still too polluted to use for activities such as swimming or fishing.<sup>3</sup> The majority of this pollution originates from runoff from city streets, agricultural activities, and other indistinguishable sources.<sup>4</sup> These widely unregulated activities continue to pollute the waterways of the United States. Thus the reduction in the pollution from highly regulated activities has not been matched by a reduction in pollution from unregulated activities.<sup>5</sup>

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1. See U.S. Department of Agriculture & U.S. Environmental Protection Agency Draft-Unified National Strategy for Animal Feeding Operations, 63 Fed. Reg. 50192, 50193 (1998) (hereinafter "Unified Strategy").

2. See *id.*

3. See *id.*

4. See *id.*

5. See *id.*

The 1972 Federal Water Pollution Control Act,<sup>6</sup> commonly known as the Clean Water Act, has divided water pollution into two categories. These types of pollution are those that originate from either point sources or nonpoint sources.<sup>7</sup> The most significant source of water pollution today is nonpoint source pollution, but nonpoint source water pollution remains the most unregulated source of pollution.<sup>8</sup> A point source is defined as any discernible, confined and discrete conveyance, including but not limited to any concentrated animal feeding operation.<sup>9</sup> Although nonpoint pollution is not defined in the Clean Water Act, it can be described as any source of water pollution that cannot be attributed to a discrete conveyance.<sup>10</sup> The promulgation of the Clean Water Act has dramatically decreased the discharges of point source pollution, but nonpoint source pollution has not decreased commensurately.<sup>11</sup> Nonpoint sources have been blamed for sixty-five to seventy-five percent of the pollution in the most polluted waters in the nation.<sup>12</sup>

This comment will address the differences between point source and nonpoint source pollution, as well as the history of nonpoint source pollution and the effects of agricultural activities on the environment. It will also dissect the leading case on the issue of regulating pollution emanating from agricultural activities. The final section of this comment will address proposed strategies, specifically the Unified Plan between the Environmental Protection Agency (hereinafter "EPA") and the United States Department of Agriculture (hereinafter "USDA"), which have been adopted to reduce the effects on agricultural waste on water pollution, and other possible future actions to alleviate agricultural pollution will be discussed.

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6. 33 U.S.C. §§ 1251-1387 (1994).

7. *See id.*

8. *See* David Zaring, *Agriculture, Nonpoint Source Pollution, and Regulatory Control: The Clean Water Act's Bleak Present and Future*, 20 HARV. ENVTL. L. REV. 515 (1996).

9. *See* 33 U.S.C. § 1362(14) (1994).

10. *See* Zaring, *supra* note 8, at note 3. "The term 'nonpoint' source is almost as difficult to define as it is to control. It is generally considered to be any source which is not a point source." *Id.*

11. *See id.* at 515.

12. *See id.* at 517. The author continues to state that in thirty-three states, nonpoint source pollution is the most significant form of pollution affecting streams and rivers, and in five states, nonpoint source pollution accounts for over ninety percent of the stream and river pollution. *See id.* (citing EPA, NATIONAL WATER QUALITY INVENTORY: 1986 REPORT TO CONGRESS 24 (1986)).

## II. Background of Agricultural Water Pollution

Even though many diverse sources contribute to water pollution, it is reported that agricultural activities are the most widespread source of pollution to the nation's surveyed rivers.<sup>13</sup> Agricultural activities pollute the nation's waterways by introducing pesticides and herbicides into water systems.<sup>14</sup> Also, the majority of the soil erosion in the country, which clogs surface water with silt and sediment, is contributed by agricultural activities.<sup>15</sup> Collectively, agricultural activities impair more than 100,000 miles of U.S. rivers and two million acres of lakes through soil erosion.<sup>16</sup>

In 1990 and 1991, each state assessed the condition of its surface water and reported this information to the EPA as required by the Clean Water Act.<sup>17</sup> About eighteen percent of the nation's river and stream mileage, forty-six percent of its lake acreage, and seventy-four percent of its estuary square mileage were assessed.<sup>18</sup> Results show that thirty-eight percent of the assessed river mileage, forty-four percent of the assessed lake acreage, and thirty-two percent of the assessed estuary areas were impaired.<sup>19</sup>

Agricultural activities were responsible for many of these impairments.<sup>20</sup> In fact, crop and animal agriculture pollution

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13. See American Political Network, *Air and Water Pollution Ag Waste: Farms are Biggest Polluter of Waterways*, GREENWIRE, May 14, 1998, Vol. 7 at 10.

14. See Zaring, *supra* note 8, at 518.

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

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

17. See U.S. General Accounting Office, *Water Quality Concerns Related To Animal Agriculture Production*, ANIMAL AGRICULTURE: INFORMATION ON WASTE MANAGEMENT AND WATER QUALITY ISSUES, June 1995, at 8-9. (citing EPA, *NATIONAL WATER QUALITY INVENTORY: 1992 REPORT TO CONGRESS*, (Washington, D.C., Mar. 1994). Though these assessments are regarded as the best available information on water quality in the nation, there are several limitations in the data. For instance the water quality assessment methodologies were not consistent across states, not all surface waters were assessed, and those surface waters that were assessed were not a representative sample for projection purposes. See *id.*

18. See *id.* An estuary is the part of the mouth or lower course of a river flowing into the sea which is subject to tide, and the enlargement of a river channel toward its mouth in which the movement of the tide is very prominent. BLACK'S LAW DICTIONARY 552 (6th ed. 1990).

19. See U.S. General Accounting Office, *supra* note 17 at 8-9. (citing EPA, *NATIONAL WATER QUALITY INVENTORY: 1992 REPORT TO CONGRESS*, (Washington, D.C., Mar. 1994). Impairment is defined as meaning that a water area does not fully support its designated uses. *Id.*

20. See *id.*

affected about seventy-two percent of impaired rivers and streams, fifty-six percent of impaired lake acres, and forty-three percent of impaired estuary square miles.<sup>21</sup> Though soil erosion and other agricultural activities contribute greatly to the nation's water pollution problem, agricultural pollution through the storage and application of manure to farmlands is the largest environmental concern and will be the focus of this comment.

Manure is a by-product of livestock production and is an environmental liability because feedlots contribute to water pollution through manure runoff.<sup>22</sup> The manure runoff has nutrients that have the potential to contaminate both ground and surface water resources.<sup>23</sup> Some of the nutrients that pose an environmental threat are nitrogen,<sup>24</sup> phosphorus,<sup>25</sup> sodium,<sup>26</sup> potassium,<sup>27</sup> copper,<sup>28</sup> and zinc.<sup>29</sup> Along with the excess nutri-

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21. *See id.*

22. Manure is defined as any excrement of animals or other natural or artificial refuse that is used as a fertilizer for soil. WEBSTER'S ENCYCLOPEDIA UN-ABRIDGED DICTIONARY OF THE ENGLISH LANGUAGE, 1172 (1996).

23. Charles Fulhage, *Manure Reduction and Utilization Strategies for Confined Livestock*, AMERICAN BAR ASSOCIATION SECTION OF NATURAL RESOURCES, ENERGY, AND ENVIRONMENTAL LAW, November 18, 1997, at 2.

24. *See* Scott Carter, *Use Of Nutritional Strategies To Reduce Nutrient Excretion And Odor From Livestock Systems*, AMERICAN BAR ASSOCIATION SECTION OF NATURAL RESOURCES, ENERGY, AND ENVIRONMENTAL LAW, November 18, 1997, at 1-3. Although nitrogen is most commonly known as a pollutant to water sources, nitrogen also causes other concerns for the environment. For example, nitrogen introduces excess emissions of ammonia into the air, and an excess amount of nitrogen from manure application serves as a substrate for microorganisms. These microorganisms convert nitrogen to ammonia ions and are further oxidized to nitrate and nitrate ions which leach through the soil and contaminate ground water. *Id.*

25. *See id.* Phosphorus introduced into the environment is a major concern for surface water pollution, but phosphorus, unlike nitrogen, does not leach into ground water. Phosphorus is the limiting nutrient for aquatic plant growth which in turn diminishes the oxygen in the water, making the environment unsuitable for fish and other wildlife. *Id.*

26. *See id.* Application of manure, which is rich in sodium, to land can cause a problem with the salinity of the soil. The increase in soil salinity will eventually decrease crop yields. *Id.*

27. *See* Carter, *supra* note 24, at 2. When manure is applied as fertilizer, the amount of potassium that is discharged can be greater than that needed by plants. Though the impact of potassium on the environment is not yet understood, environmentalists believe that this element may have a harmful effect. *Id.*

28. *See id.* Copper is an element that farmers often add to weanling pig diets to stimulate growth rate and feed intake. *Id.*

29. *See id.* Similar to copper, zinc is an element that may be added at high levels to starter diets to improve growth rate and feed intake, and is later excreted in the manure. Though it is uncertain what effects this element has on the environment, even environmentalists are skeptical that there is a potential pollution

ents, manure runoff pollutes the country's water by introducing carcinogens, such as nitrates, which have been associated with increased cancer levels and other disorders in humans.<sup>30</sup> Another manure pollution related illness is methomoglobinemia, a disorder carried in nitrate-contaminated water which causes a reduction in the blood's ability to carry oxygen.<sup>31</sup>

Pollution of the country's waterways continues to increase with the rise in the number of farming operations and in particular the number of concentrated animal feeding operations (hereinafter "CAFO"). An animal feeding operation (hereinafter "AFO") is a lot or facility where animals have been, or will be, stabled or confined and fed or maintained for a total of forty-five days or more in a twelve-month period and crops, vegetation, forage growth, or post-harvest residues cannot be sustained in the normal growing season over any portion of the lot or facility.<sup>32</sup> According to the EPA, a CAFO does not include areas of the facility where crops or forage crops are maintained throughout the growing season.<sup>33</sup>

Concentrating animals in a small area with little or no pasture space for the animals to graze causes a greater potential for water pollution due to the agricultural activities and animal waste in the areas surrounding the farming operation. Consequently, the rise in the number of animals raised in concentrated environments causes the amount of animal waste to grow proportionately. In fact, an average dairy cow produces approximately eighty-two pounds of manure per day,<sup>34</sup> more than 160 million tons of dry weight manure is produced annually in the United States.<sup>35</sup> This equates to approximately 6.5 million tons of nitrogen and two million tons of phosphorus excreted annually by livestock.<sup>36</sup> Livestock waste

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problem associated with zinc. *Id.*

30. See Zaring, *supra* note 8, at 520. (citing AGRICULTURAL LAW & POLICY INSTITUTE, FARMING & GROUNDWATER: AN INTRODUCTION 32 (1988)).

31. See *id.* Methomoglobinemia, which is also known as "blue baby syndrome," is particularly dangerous to infants because nitrates in drinking water are mixed with the baby's formula and reduces the blood's ability to carry oxygen. (citing FRANK P. GRAD, ENVIRONMENTAL LAW 22-23 (3d ed. 1985)).

32. 40 C.F.R. § 122.23(b)(1) (1999).

33. See National Pollutant Discharge Elimination System General Permit and Reporting Requirements for Discharges From Concentrated Animal Feeding Operations, 58 Fed. Reg. 7610, 7616 (1993).

34. See Kristen E. Mollnow, Concerned Area Residents for the Environment v. Southview Farm: *Just What is a Concerned Animal Feeding Operation Under the Clean Water Act*, 60 ALB. L. REV. 239, 240 (1996).

35. See Carter, *supra* note 24, at 2.

36. See *id.*

is now recognized as one of the major contributors to water quality problems across the nation.<sup>37</sup> The ground can absorb only a limited amount of the nutrients; the excess remain on the Earth's surface and eventually runoff into the nearby rivers, streams, lakes, and other waterways as a result of wind, rain, snow, and other precipitation.<sup>38</sup> These nutrients are gathered by surface runoff which constitutes much of this nation's nonpoint source water pollution. The problem has increased to a level where there has been debate over defining runoff from agricultural animal feeding operations as point source pollution.

### III. Differences Between Point and Nonpoint Sources

Agriculture<sup>39</sup> is America's largest industry<sup>40</sup> and has been identified as the primary contributor of nonpoint source pollution to American waters.<sup>41</sup> Due to the widespread effects of agricultural pollution, there are debates whether agricultural pollution should continue to be regarded as a nonpoint source. Environmentalists argue that agriculture's harmful effects should cause feedlots to be regarded as a point source of pollution, which would subject feedlots to the National Pollutant Discharge Elimination System<sup>42</sup> (hereinafter "NPDES").

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37. See 58 Fed. Reg. at 7612.

38. See *Natural Resources Defense Council, Inc. v. Costle*, 568 F.2d 1369, 1377 (D.C. Cir. 1977). The EPA has defined runoff as wastewaters generated by rainfall that drain over terrain into navigable waters, which pick up some pollutants along the way.

39. Agriculture is defined as the science, art, or occupation concerned with cultivating land, raising crops, and feeding, breeding, and raising livestock. WEBSTER'S ENCYCLOPEDIA UNABRIDGED DICTIONARY OF THE ENGLISH LANGUAGE 41 (1996).

40. See Karen R. Hansen, *Agricultural Nonpoint Source Pollution: The Need For An American Farm Policy Based On An Integrated Systems Approach Recoupled To Ecological Stewardship*, 15 HAMLINE J. PUB. L. & POL'Y 303, 303 (1994).

41. Agriculture is regarded as the biggest polluter of waterways in the United States. In fact, officials for the EPA have reported to the House Agriculture Committee that agricultural activities have polluted more than 173,000 miles of streams and rivers with chemicals, erosion, and animal waste runoff. See American Political Network, *supra* note 13, at 10.

42. See 33 U.S.C. § 1342. The Clean Water Act provides that absent a permit issued by the NPDES the discharge of any pollutant by any person shall be unlawful. The Act defines pollutant as "dredged spoil, solid waste, sewage, sewage sludge, chemical wastes, biological materials, and agricultural waste discharged into water." *Id.* at § 1362(6). A NPDES permit sets maximum discharge levels for various pollutants based on technology-based, uniform national effluent limitations. 33 U.S.C. § 1311(b). The permit also establishes monitoring and reporting requirements and delineates the permittee's obligations. 33 U.S.C. § 1342(a).

Once again, a point source is defined as "any discernible and discrete conveyance including any confined animal feeding operation from which pollutants are or may be discharged."<sup>43</sup> This term does not include agricultural stormwater discharges and return flows from irrigation discharge. Two common examples of point source pollution are factories and wastewater treatment plants.

Point sources are controlled by a two-tiered regulatory program.<sup>44</sup> The first tier consists of technology-based controls, which are uniform standards of treatment established by the EPA.<sup>45</sup> These controls are set irrespective of the quality of the receiving waters and are implemented through a discharge permit system.<sup>46</sup> The second tier consists of water quality based controls which invoke water quality standards for the receiving waters established by the states.<sup>47</sup> This second tier of controls is rarely invoked and, therefore, most point sources are regulated under centralized technology-based standards.<sup>48</sup> The states are permitted to operate their own point source programs, but the EPA has established such strict guidelines that the overall control remains highly centralized.<sup>49</sup>

Although the 1972 Federal Clean Water Act does not define nonpoint source water pollution,<sup>50</sup> the significance of nonpoint source pollution, which can be interpreted as the diffused pollution

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43. 33 U.S.C. § 1362(14).

44. See Marc O. Ribaud, *Managing Agricultural Nonpoint Source Pollution: Are States Doing The Job?* 5 (June 5, 1997) (unpublished manuscript on file with the *Dickinson Journal of Environmental Law and Policy*).

45. See *id.*

46. See *id.*

47. See *id.*

48. See *id.*

49. See Ribaud, *supra* note 44, at 5.

50. See Susan Schell, *The Uncertain Future of Clean Water Act Agricultural Pollution Exemptions After Concerned Area Residents for the Environment v. Southview Farm*, 34 F.3d 114 (2d Cir. 1994), *cert. denied*, 115 S. Ct. 1793 (1995), 31 LAND & WATER L. REV. 113, note 3 (1996). No federal statutory or regulatory definition of nonpoint source exists. All pollution sources that are not defined as point sources are *ipso facto* nonpoint sources. The EPA has adopted the following non-regulatory definition: "Nonpoint source pollution is caused by diffuse sources that are not regulated as point sources and normally is associated with agricultural, silvicultural and urban runoff, runoff from construction activities, etcetera. In practical terms, nonpoint source pollution does not result from a discharge at a specific single location, but generally results from land runoff, precipitation, atmospheric deposition, or percolation. (citing ENVIRONMENTAL PROTECTION AGENCY, NONPOINT SOURCE GUIDANCE DOCUMENT 3 (Dec. 1987)). See also *National Wildlife Fed'n v. Gorsuch*, 693 F.2d 156, 166 (D.C. Cir. 1982) (quoting the EPA brief describing a "nonpoint source" as nothing more than a pollution problem not involving a discharge from a point source").



created through surface water runoff and through percolation into groundwater, has continued to expand since the passage of the Act.<sup>51</sup> The necessity of controlling nonpoint sources was first identified in the 1972 amendments to the Clean Water Act.<sup>52</sup> Section 208 of the Clean Water Act called for the development and implementation of "area-wide" water quality management programs to insure adequate control of all pollutants in areas where water quality was impaired.<sup>53</sup> Although the emphasis of the Clean Water Act was on controlling pollution from point sources, Section 208 brought about concern about pollution from all sources, both point and nonpoint.<sup>54</sup> The 1972 Clean Water Act directed the states to develop plans for reducing nonpoint sources of pollution,<sup>55</sup> the goal of the Clean Water Act was to restore and maintain the chemical, physical, and biological integrity of the waters<sup>56</sup> of the United States.<sup>57</sup> Included in these plans were appropriate

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51. Scientific models estimate the majority of the phosphorus and nitrogen loads deposited into the Chesapeake Bay originate from nonpoint source pollution. These models estimate that in 1985, 18.6 million pounds out of the 27.2 million pounds, or 68%, of the phosphorous was contributed by nonpoint sources. Also in that same year, 77%, or 291.6 million pounds out of the 376.3 million pounds of nitrogen estimated to have been deposited into the Bay were from nonpoint sources. See PHILIP FAVERO, ANALYZING NONPOINT SOURCE WATER POLLUTION PROBLEMS: NUTRIENT CONTROL POLICIES IN THE CHESAPEAKE BAY STATES, 2 (1997).

52. See Ribaud, *supra* note 44, at 2.

53. See *id.*

54. See *id.*

55. See *id.*

56. See Hansen, *supra* note 40, at 308-309. "The phrase 'waters of the United States' now encompasses the widest reach of the Commerce Clause and enables the Clean Water Act to protect virtually every aspect of the American hydrogeologic system." *Id.* See also *United States v. Ashland Oil & Transp. Co.*, 504 F.2d 1317 (6th Cir. 1974); *Natural Resources Defense Council, Inc. v. Callaway*, 392 F. Supp. 685 (D.D.C. 1975); *Avoyelles Sportsmen's League, Inc. v. Alexander*, 511 F. Supp. 278 (W.D.La. 1981); *United States v. Texas Pipeline Co.*, 611 F.2d 345 (10th Cir. 1979); 33 U.S.C.A. § 1251(g).

57. See 33 U.S.C. § 125. The Clean Water Act separates water pollution into point and nonpoint sources; point sources have been aggressively regulated by the federal government. This strategy has been quite effective, but nonpoint source pollution has been left primarily to the states to regulate. The Clean Water Act contains a non-degradation provision designed to prevent the deterioration of water quality. Under the Clean Water Act, states are required to adopt and submit water quality standards to the EPA. Since the Clean Water Act has not been effective at regulating nonpoint sources of water pollution, the Clean Water Act was amended in 1987. The 1987 Nonpoint Source Management Program, 33 U.S.C. § 1329, attempts to identify waters where additional controls will be necessary to attain or maintain applicable water quality standards. See Hansen, *supra* note 40, at 309.

land management controls.<sup>58</sup> Nonpoint source control was emphasized more in the 1977 amendments to the Clean Water Act.<sup>59</sup>

It was later determined that the Section 208 process was generally not a success. There was little technical and financial support from the Regan and Bush administrations, and there was no coordination between the point source program and the nonpoint source program.<sup>60</sup> There was also insufficient data to implement an effective program on regulating nonpoint source pollution.<sup>61</sup> Consequently, states were unable to develop area-wide management programs and the EPA could not determine whether the Section 208 plans were achieving the goals of regulating nonpoint source pollution.<sup>62</sup> One reason for the lack of progress with the section 208 plan was the importance placed on point source pollution compared to that of nonpoint sources. Point sources were controllable through the NPDES permit system, therefore, a greater amount of effort and resources was devoted to the regulation of point source pollution.<sup>63</sup>

The problems associated with nonpoint source pollution continued to grow and by the mid 1980's, the EPA began to examine nonpoint source pollution as an important cause of the remaining water quality problems.<sup>64</sup> Though point source discharges of pollution were still problem areas, nonpoint sources of pollution had become the largest unregulated source of water pollution.<sup>65</sup>

Congress responded to the EPA reports by revising the nonpoint source program in the Water Quality Act of 1987.<sup>66</sup> The Water Quality Act placed a special emphasis on the problem of nonpoint source pollution by amending the Clean Water Act's Declaration of Goals and Policy to focus on the control of nonpoint sources of pollution.<sup>67</sup> The Water Quality Act required the

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58. See Ribaldo, *supra* note 44, at 3.

59. See *id.*

60. See *id.*

61. See *id.*

62. See *id.*

63. See Ribaldo, *supra* note 44, at 3.

64. See *id.*

65. See *id.* The EPA's 1984 report to Congress regarding water quality across the country continued to list nonpoint sources as a major source of water pollution. This report also stated that agriculture was the most pervasive cause of nonpoint source water quality problems. *Id.*

66. See *id.* (citing 33 U.S.C. § 1329).

67. 33 U.S.C. § 1329 (1998). The Water Quality Act requires the Governor of each state to submit to the Administrator for approval a report which: (A)

management plan to contain a list of the best management practices for controlling nonpoint source pollution along with a timetable to implement the plan and enforcement measures to ensure that the plan was implemented.<sup>68</sup> To further ensure implementation of the plan, the Water Quality Act authorized federal loan and grant funds to help states develop and implement nonpoint source control programs, and currently, all states have federally approved nonpoint source management programs.<sup>69</sup>

The federal government also attempted to control the problem with nonpoint source pollution by enacting the Coastal Zone Management Act Reauthorization Amendments<sup>70</sup> (hereinafter "CZMARA"). The goal of the CZMARA was to restore and protect the coastal waters of the United States.<sup>71</sup> These amendments required specific measures to deal with nonpoint source pollution, particularly from agricultural activities, in the coastal zone.<sup>72</sup>

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identifies those navigable waters within the state which, without additional action to control nonpoint sources of pollution, cannot reasonably be expected to attain or maintain applicable water quality standards or the goals and requirements of this act; (B) identifies those categories and subcategories of nonpoint sources or, where appropriate, particular nonpoint sources which had significant pollution to each portion of the navigable waters identified under (A) in amounts which contribute to such a portion not meeting such water quality standards or such goals and requirements; (C) describes the process, including intergovernmental coordination and public participation, for identifying best management practices and measures to control each category and subcategory of nonpoint sources and, where appropriate, particular nonpoint sources identified under subparagraph (B) and to reduce, to the maximum extent practicable, the level of pollution resulting from such category, subcategory, or source; and (D) identifies and describes state and local programs for controlling pollution added from nonpoint sources to, and improving the quality of, each such portion of the navigable waters, including but not limited to those programs which are receiving Federal assistance under subsection (h) and (i) of this section. *Id.*

68. See Ribaldo, *supra* note 44, at 4.

69. See *id.*

70. 16 U.S.C. § 1462 (1994).

71. See Ribaldo, *supra* note 44, at 4.

72. See *id.* CZMARA required that each state with an approved coastal zone management program submit to the EPA, as well as the National Oceanic and Atmospheric Administration, a program which would attempt to implement management measures for nonpoint source pollution. Each state's management plan included a list of apparently economically feasible measures to control agricultural nonpoint source pollution. The federal government wished to remain a secondary party to these management plans and not develop national standards to ensure that each state's management measures are the best for that local area. Each state plan, however, must be approved by the EPA and the National Oceanic and Atmospheric Administration to provide at least some standard of quality assurance. The effect of the CZMARA has yet to be determined because it is not

The Clean Water Act and CZMARA only apply to pollution of surface water. Attempts have been made to regulate groundwater pollution from agricultural nonpoint sources. In particular, the Safe Drinking Water Act (hereinafter "SDWA"),<sup>73</sup> which was developed under the 1986 Well-Head Protection Program, required states to prepare a program which protects public water wells from being contaminated by all sources.<sup>74</sup> Some of these sources include fertilizer and pesticide residuals from agricultural activities. The SDWA had many other functions such as: (1) establishing national drinking water regulations; (2) setting and enforcing primary drinking water standards in public water systems; (3) regulating underground injection wells; (4) protecting "sole source aquifers;"<sup>75</sup> and (5) providing for well-head protection area programs.<sup>76</sup> This program, like other programs such as the Clean Water Act, provided for the creation of state rather than federal programs.

The regulation of nonpoint sources is different from that of point sources. Whereas point sources have a highly centralized two-tier program, nonpoint source regulatory programs are much less centralized.<sup>77</sup> The states have the lead role in establishing nonpoint programs, whereas the EPA mainly provides guidance, technical support, and funding, which is considerably different compared to the strict guidelines that the EPA enforces on point source polluters.<sup>78</sup>

Though the point/nonpoint dichotomy of the Clean Water Act has been the most important legal response to the problem of water pollution over the past twenty years, several state and federal laws have also been considered to account for the specific pollution from agricultural activities. Four such programs that affect agricultural water pollution were contained in the Food Security Act of 1985<sup>79</sup> and the Food, Agriculture, Conservation, and Trade Act of 1990.<sup>80</sup>

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mandatory until 1999, and even then the penalties for failing to implement the plan are only minimal. *Id.*

73. 42 U.S.C. §§ 300(f)-300(j) (1988).

74. See Ribaud, *supra* note 44, at 5.

75. A sole source aquifer is an aquifer which is the sole or principal drinking water source for the area which, if contaminated, would create a significant health hazard. 42 U.S.C. § 300(h).

76. See Hansen, *supra* note 40, at 310. (citing 42 U.S.C. § 300(j)).

77. See Ribaud, *supra* note 44, at 6.

78. See *id.*

79. 16 U.S.C. § 3801 (1994).

80. 7 U.S.C. § 5501 (1994).

These programs<sup>81</sup> are more commonly known as: (1) the "sodbuster" program;<sup>82</sup> (2) the "swampbuster" program;<sup>83</sup> (3) the environmental conservation program;<sup>84</sup> and (4) the Agricultural Water Quality Incentives Program.<sup>85</sup>

The sodbuster program was designed to induce farmers to voluntarily set aside farmland to control the effects of erosion.<sup>86</sup> To accomplish this, the program denied federal benefits to farmers who farm highly erodible land unless that farmer has an approved conservation plan that was fully implemented by January 1, 1995.<sup>87</sup>

The swampbuster program was similar to the sodbuster program in that it restricted the conversion of wetlands to crop production areas.<sup>88</sup> This program made those farmers who converted a wetland to agricultural commodity production ineligible for federal farm program benefits unless a specific exemption is satisfied.<sup>89</sup> As a consequence of the swampbuster program, the streams and lakes of the nation are protected because the wetlands serve as filters and traps for nonpoint source pollutants that might otherwise reach them.<sup>90</sup>

The environmental conservation programs affected agricultural water pollution because it used long term contracts or easements to retire some agricultural lands from active agricultural production.<sup>91</sup>

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81. See Drew Kershen, *Agricultural Water Pollution From Point to Nonpoint and Beyond*, NR&E, 3, 5 (Winter 1995).

82. See 16 U.S.C. §§ 3811-3813 (1994).

83. See 16 U.S.C. §§ 3821-3824 (1994).

84. See 16 U.S.C. §§ 3830-3836, 3837-3837f, 3839-3839d (1994).

85. See 16 U.S.C. §§ 3838-3838f (1994).

86. See Hansen, *supra* note 40, at 313. (citing Linda A. Malone, *Reflections On The Jeffersonian Ideal of an Agrarian Democracy and the Emergence of an Agricultural and Environmental Ethic in the 1990 Farm Bill*, 12 STAN. ENVTL L.J. 3, 11-16 (1993)).

87. See Kershen, *supra* note 81, at 5.

88. See Hansen, *supra* note 40, at 313.

89. See *id.* at 314. "The act of converting a wetland to make production possible will invoke a loss of program benefits until the wetland is restored, although a 'minimal effect clause' exempting conversions determined to have a minimal effect, will allow a farmer to drain a wetland without losing program benefits if another prior converted wetland on the farm or in the local area is restored. The swampbuster program contained a graduated penalty of \$750 to \$10,000 to a good-faith converting farmer who violated swampbuster if in ten years the wetland is restored. However, that farmer remains ineligible for farm program benefits until the converted wetland is either restored or mitigated." (citing U.S. Dept. of Agric., AGRICULTURE RESOURCES: CROPLAND, WATER, & CONSERVATION SITUATION & OUTLOOK, 23, 26 (Sept. 1991)).

90. See Kershen, *supra* note 81, at 5.

91. See *id.* The farmer must convert the land to less intensive uses in accordance with an approved plan. Once a conservation reserve program contract

The lands that were subject to these programs were those that were critical for preventing erosion, wetlands loss, or other environmental degradations.<sup>92</sup> After being subject to these programs, the farmers must implement a conservation plan which insures that the retired land achieved the intended environmental benefits, of which many relate directly to nonpoint source pollution.<sup>93</sup>

The Agricultural Water Quality Incentives Program was adopted in 1990 and it encouraged the development of farm water quality protection practices.<sup>94</sup> To take part in the program, agricultural producers in environmentally sensitive areas requested assistance to develop and implement on-farm water quality protection plans in order to comply with state and federal environmental laws and to enhance the environment.<sup>95</sup> Though the Agricultural Water Quality Incentives Program was only a voluntary program, it was specifically oriented toward the prevention of the release of agricultural nonpoint source pollution into the environment.<sup>96</sup>

Other programs such as the previously described CZMARA of 1972 and its corresponding amendments, have attempted to alleviate the environmental problems associated with agricultural nonpoint source pollution. Two provisions from the Coastal Zone Management Act Reauthorization Amendments were particularly important to the fight against nonpoint source pollution. First, if a state failed to submit an acceptable Coastal Nonpoint Source Pollution Control Program, the Secretary of Commerce as well as the EPA Administrator were permitted to withhold certain federal environmental grants from the offending coastal state.<sup>97</sup> The second significant provision is that the EPA was required to publish a document giving guidelines specifying the Best Management Practices that states should adopt in their management plans for controlling

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expires, the farmer may return the land to crop production, but the land continues to be subject to a conservation compliance provision. See Hansen, *supra* note 40, at 312. (citing 16 U.S.C.A. § 3832(a)(4) (West Supp. 1992); 7 C.F.R. §§ 1410.107-1410.124 (1993)).

92. See Kershen, *supra* note 81, at 5.

93. See *id.*

94. 16 U.S.C.A. § 3838(b) (1986 & Supp. 1993).

95. See Kershen, *supra* note 81, at 5. (citing 16 U.S.C. § 3838 (1994)).

96. See *id.* Participants in the Agricultural Water Quality Incentive Program were required to implement a USDA-approved water quality protection plan, report nutrient, pesticide, and animal waste materials usage rates, and supply production evidence, well test results, soil tests, and tissue tests for each year of the agreement. See Hansen, *supra* note 40, at 314.

97. See Kershen, *supra* note 81, at 5.

nonpoint source pollution.<sup>98</sup> The EPA published a document entitled Proposed Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters in 1991 to comply with this second provision under the CZMARA.<sup>99</sup>

These federal government programs, as well as many others adopted by the individual states, have attempted to control the pollution to the waterways of the United States from nonpoint sources with varying degrees of success. Though many programs have been adopted to eliminate the problems caused by nonpoint source water pollution for agricultural activities, the case law on the issue is very sparse. However, *Concerned Area Residents for the Environment v. Southview Farm*<sup>100</sup> is regarded as the most influential decision in regulating agricultural effects on the environment.

Whereas most of the regulations under the Clean Water Act, as well as other programs developed to protect the environment, have produced a significant amount of progress in controlling pollution discharged from point sources, the same cannot be said for nonpoint source pollution. Consequently, the failure to regulate and control major sources of pollution from nonpoint sources has jeopardized water quality improvements resulting from the regulation of point sources. Some agricultural activities that may otherwise be regarded as point sources have been found to be exempt from the provisions under the Clean Water Act due to the general theory that most, if not all, agricultural activities are nonpoint sources and therefore cannot be subject to the NPDES permit requirements of the Clean Water Act.<sup>101</sup> The U.S. Court of Appeals for the Second Circuit's decision in the *Southview Farm* case has created questions regarding the interpretation of the agricultural exemptions under the Clean Water Act.<sup>102</sup>

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98. *See id.*

99. *See id.*

100. *See Concerned Area Residents for the Environment v. Southview Farm*, 34 F.3d 114 (1994).

101. 33 U.S.C. § 1311(e). Effluent limitations established pursuant to this section or section 302 of this Act shall be applied to all point sources of discharge of pollutants in accordance with the provisions of this Act. Since 33 U.S.C. § 1342(14) does not define agricultural activities, but only CAFOs, as point sources of pollution, most agricultural activities along with AFOs are not subject to the NPDES permit requirement. *Id.*

102. *See Southview*, 34 F.3d at 120. "The exemption at issue was added by the Water Quality Act of 1987." *See* PUB.L. NO. 100-4 § 503, 101 STAT. 7, 75 (1987). *See also*, 40 C.F.R. § 122.3(e) (1993). An AFO will not be found to be a CAFO even if it exceeds the relevant number of animal units provided in Appendix B Supp. to Part 122 at (a) if "the only time a discharge of pollutants into navigable waters occurs is during a 25 year, 24-hour rainfall event." *See also* 40 Fed. Reg.

In *Southview Farm*, the plaintiffs were a group of landowners who lived near the defendant, Southview Farms.<sup>103</sup> Southview Farms was a dairy farm in Wyoming County, New York,<sup>104</sup> and was one of the largest dairy farms in the state of New York. In 1992 it consisted of 1,100 crop acres as well as 1,290 head of mature cows with over 900 head of young cattle, heifers, and calves, making a total of 2,200 animals being raised on the farm.<sup>105</sup> Southview's farming operations were unlike traditional dairy farms in that Southview did not pasture its cattle, but rather the cows remained in their barns except during the three times a day they were let out for milking.<sup>106</sup> Southview was also different in the way that it disposed of the waste generated by the cattle. Whereas old-fashioned farmers would allow the manure to accumulate and later spread the manure on the fields with a conventional manure spreader, Southview Farms disposed of the waste generated on the farm by allowing the manure to be collected in liquid form and then stored in one of the five storage lagoons on the main farm.<sup>107</sup> Each of these lagoons was four acres in size and could hold approximately six to eight million gallons of liquid cow manure.<sup>108</sup> This liquid manure was later applied to the fields as fertilizer in one of three ways: (1) through a center pivot irrigation system located throughout the fields; (2) through a hard hose with a nozzle on the

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54182, 54183 (Nov. 20, 1975) and 41 Fed. Reg. 11458, 11458 (Mar. 18, 1976).

103. See *Southview*, 34 F.3d at 115.

104. *Id.*

105. *Id.* at 116.

106. *Id.* Congress explicitly included concentrated animal feeding operations as a point source in the Clean Water Act. Animals are maintained when they are confined in an area where waste is generated or concentrated or are watered, cleaned, groomed or medicated in a confined area. Certain animal feeding operations are classified as concentrated animal feeding operations depending on the number and type of animals confined. An animal feeding operation is a CAFO for purposes of § 122.23 of the Code of Federal Regulations if any of the following criteria are met. More than the numbers of animals specified in any of the following categories are confined: 1,000 slaughter and feeder cattle; 700 mature dairy cattle; 2,500 swine each weighing over 25 kilograms; 500 horses; 10,000 sheep or lambs; 55,000 turkeys; 100,000 laying hens or broilers (if the facility has continuous overflow watering); 30,000 laying hens or broilers (if the facility has a liquid manure system); 5,000 ducks; or 1,000 animal units. The term animal unit is a unit of measurement for an animal feeding operation which can be obtained by calculating the following numbers: the number of slaughter and feeder cattle multiplied by 1.0, plus the number of mature dairy cattle multiplied by 1.4, plus the number of swine weighing over 25 kilograms multiplied by 0.4, plus the number of sheep multiplied by 0.1, plus the number of horses multiplied by 2.0. See Mollnow, *supra* note 34, at 252 (citing 40 C.F.R. § 122 App. B(a) (1995)).

107. See *Southview*, 34 F.3d at 116.

108. See *id.*



end allowing the manure to be spread in a three hundred foot wide diameter; or (3) through conventional manure spreading equipment including spreaders pulled behind tractors as well as self-propelled vehicles.<sup>109</sup> According to its records, Southview has applied millions of gallons of manure onto its fields.<sup>110</sup>

In *Southview*, the plaintiffs claimed the defendants violated eleven provisions of the Clean Water Act. The trial court jury returned a verdict in favor of the plaintiffs on five of the eleven claims.<sup>111</sup> However, the trial court granted the defendant's motion for judgment as a matter of law and a final judgment was entered thereafter from which an appeal to the U.S. Court of Appeals for the Second Circuit followed.<sup>112</sup>

Under the Clean Water Act, the discharge of any pollutant by any person shall be unlawful, subject to certain limitations, if no permit has been obtained for such discharge.<sup>113</sup> As was discussed above, any point source or CAFO is subject to the NPDES permit requirement, but this does not include agricultural stormwater discharges and return flows from irrigated agriculture.<sup>114</sup> Therefore, the basic questions in *Southview Farms* were whether the defendants discharged the manure pollutant from any point source into navigable waters, and whether the agricultural stormwater exemption or any other limitation applies.<sup>115</sup>

One of the key determinants of whether Southview Farms was subject to the NPDES permit requirement was the size of the farm. The district court concluded as a matter of law that Southview Farms was not a CAFO because Southview cultivated crops on a portion of the farm.<sup>116</sup> The Court of Appeals, with the help of the United States appearing as *amicus curiae* in support of the plaintiffs, concluded that Southview Farms fell under the classification of a CAFO because more than 700 cattle were raised at Southview which was greater than the stated requirement for a CAFO.<sup>117</sup> Another argument used by the plaintiff was that

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109. *See id.*

110. *See id.*

111. *See id.*

112. *See Southview*, 34 F.3d at 116.

113. *See id.* (citing 33 U.S.C. § 1311(a)).

114. *See id.* (citing 33 U.S.C. § 1362(14)).

115. *See id.* at 117.

116. *See id.* at 118.

117. *See Southview*, 34 F.3d at 118. (citing 40 C.F.R. § 122 app. B(a) *supra* note 106). An AFO can also be classified as a CAFO if more than the following number and types of animal are confined: 300 slaughter or feeder cattle; 200 mature dairy cattle; 750 swine each weighing over 25 kilograms; 150 horses; 3,000

Southview is a CAFO as a matter of law because the crops were not grown in the feed lot in which the milking cows are confined.<sup>118</sup>

The Concerned Area Residents for the Environment alleged that Southview Farms violated the Clean Water Act: (1) by spreading liquid manure over a field that tracked down to a swale on the farm's property which was collected and channeled through a ditch and eventually flowed into an stream and ultimately the Genesee River;<sup>119</sup> (2) Southview continued to spread manure over the same fields a multiple number of times;<sup>120</sup> and (3) Southview spread manure on areas of the fields until the manure began to "pool" and eventually flowed off the Southview property.<sup>121</sup> The U.S. Court of Appeals for the Second Circuit reversed the district court's decision holding that the swale, coupled with the drain tile leading into a stream, were in and of themselves point sources.<sup>122</sup> The Court of Appeals also held that the manure-spreading vehicles were point sources.<sup>123</sup> The exception for agricultural activities being nonpoint sources, and not subject to the permit requirement, was not applicable because the discharges of manure were not the result of rainfall but rather from the over saturation of the fields with liquid manure.<sup>124</sup> For the above-listed reasons, particularly the fact that Southview Farms was classified as a CAFO, Southview

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sheep or lambs; 16,500 turkeys; 30,000 laying hens or broilers (if the facility has continuous overflow watering); 9,000 laying hens or broilers (if the facility has a liquid manure handling system); 1,500 ducks; or 300 animal units; and either one of the following conditions are met: (1) pollutants are discharged into navigable waters through a manmade ditch, flushing system or other similar man-made device; or (2) pollutants are discharged directly into waters of the United States which originate outside of and pass over, across, or through the facility or otherwise come into direct contact with the animals confined in the operation. See 40 C.F.R. § 122 app. B(b).

118. See *Southview*, 34 F.3d at 118. A lot or facility is an AFO when it confines and maintains animals on a lot which does not contain vegetation in the normal growing season. The vegetation criterion applies to the lot or facility in which the animals are confined. *Id.*

119. See *id.* at 118-119.

120. See *id.* at 119-120.

121. See *id.* at 120-121.

122. See *Southview*, 34 F.3d at 118. The definition of a point source is to be broadly interpreted. See also, *Dague v. City of Burlington*, 935 F.2d 1343, 1354 (2d Cir. 1991).

123. See *Southview*, 34 F.3d at 119. Case law holds that the collection of liquid manure into tankers and their discharge on fields from which the manure directly flows into navigable waters are point source discharges. See also, *United States v. Tull*, 615 F. Supp. 610, 622 (E.D. Va. 1983), and *United States v. Weisman*, 489 F. Supp. 1331, 1337 (M.D. Fla. 1980).

124. See *Southview*, 34 F.3d at 119.

Farms was held liable because the pollutants discharged from Southview Farms originated from point sources without Southview obtaining the appropriate permit and Southview Farms was not subject to any agricultural exemption under the Clean Water Act.

#### IV. EPA/USDA Unified Strategy for AFOs

The decision in *Southview Farms* has expanded the possibility of regulating pollution originating from nonpoint sources, but nonpoint source pollution continues to be a severe problem throughout the nation. To account for the problems associated with water pollution, in February 1998, President Clinton released the Clean Water Action Plan,<sup>125</sup> which serves as a blueprint for restoring and protecting water quality across the nation. The Clean Water Action Plan identifies polluted runoff as the most important remaining source of water pollution. To account for this pollution, the Clean Water Action Plan calls for the EPA to join forces with the USDA to develop a Unified National Strategy to minimize the effects that AFOs have on the water quality and health of the nation.<sup>126</sup>

The USDA and EPA announced the release of the Unified Strategy on September 16, 1998; the goal of the strategy is for AFO owners and operators to take actions to minimize water pollution

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125. EPA AND USDA, CLEAN WATER ACTION PLAN: RESTORING AND PROTECTING AMERICA'S WATERS 1-89, (February 1998). The Clean Water Action Plan aims to achieve clean water by strengthening public health protections, targeting community-based watershed protection efforts at high priority areas, and providing communities with new resources to control polluted runoff. In implementing this Action Plan, the federal government will: (1) support locally led partnerships that include a broad array of federal agencies, states, tribes, communities, businesses, and citizens to meet clean water and public health goals; (2) increase financial and technical assistance to states, tribes, local governments, farmers, and others; and (3) help states and tribes restore and sustain the health of aquatic systems on a watershed basis. *Id.*

126. See Unified Strategy, at 50192-50209. The eight guiding principles of the Unified National Strategy for AFOs are: (1) minimize water quality and public health impacts from AFOs; (2) focus on AFOs with the greatest risk to the environment and public health; (3) ensure that environmental protections measures complement the sustainability of livestock production; (4) establish a national goal and environmental performance expectation for all AFOs; (5) build on the strengths of the agencies to make appropriate use of diverse tools including voluntary, regulatory, and incentive based approaches; (6) foster public confidence that AFOs are meeting their performance expectations; (7) coordinate activities among agencies that influence the management and operations of AFOs; and (8) focus technical and financial assistance to support AFOs to meet the national performance expectation established in this strategy. *Id.* at 50193.

from confinement facilities and land application of manure.<sup>127</sup> To accomplish this goal, this strategy established a national performance expectation that all AFOs should develop and implement technically sound and economically feasible Comprehensive Nutrient Management Plans<sup>128</sup> (hereinafter “CNMP”) to minimize impacts on water quality and public health by 2008.<sup>129</sup> Both the USDA and EPA believe that a CNMP should address feed management,<sup>130</sup> manure handling and storage,<sup>131</sup> land application,<sup>132</sup> record keeping,<sup>133</sup> and management of other utilization options to be effective.<sup>134</sup> It is estimated that 300,000 AFOs will need to develop or revise CNMPs to meet expectations under this strategy.<sup>135</sup>

Though the draft plan is regarded as the most aggressive strategy ever proposed to address the problem of nonpoint source pollution and protect our nation’s rivers, lakes, and streams,<sup>136</sup> the strategy is a voluntary program for most of the AFOs across the nation. “The strategy does not contain new regulations, and the strategy itself is not a rule. The strategy simply recognizes and provides for how the voluntary and regulatory aspects of the

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127. *See id.* at 50,195.

128. A comprehensive nutrient management plan identifies actions or priorities that will be followed to meet clearly defined nutrient management goals at an agricultural operation. *See id.*

129. *See id.*

130. Where possible, animal diets and feed should be modified to reduce the amounts of nutrients in manure. *See* Unified Strategy, at 50195.

131. Manure needs to be handled and stored properly to prevent water pollution from AFOs. The handling and storage considerations should include: diverting clean water; preventing leakage; providing adequate storage; treating manure; and disposing of dead animals appropriately. *See id.*

132. Land application is the most common, and usually most desirable method, of utilizing manure because of the value of the nutrients and organic matter. Land application in accordance with the CNMP should minimize the harmful effects of the quality of water along with the risks to public health. *See id.*

133. AFO operators should keep records that indicate the quantity of manure produced and ultimate utilization, including where, when, and how much of the nutrient is applied. *See id.*

134. In vulnerable watersheds, where the potential for environmentally sound land application is limited, alternative uses of manure may need to be considered. *See id.*

135. *See* Release No. 0372.98, *USDA, EPA Announce Joint Strategy For Animal Feeding Operations*, September 19, 1998, <[www.usda.gov/news/releases/1998/09/0372](http://www.usda.gov/news/releases/1998/09/0372)>.

136. This was a statement by EPA Administrator Carol M. Browner when asked to describe the Unified Plan. *See* 180 DEN A-6, 1998.

respective agencies were set up to operate.”<sup>137</sup> The strategy is an outline of how the EPA and USDA are to coordinate efforts to work together to fulfill the goals of the Clean Water Action Plan.<sup>138</sup>

Although the USDA and EPA estimate that ninety-five percent of the 450,000 AFOs<sup>139</sup> will be encouraged to implement voluntary CNMPs, voluntary and regulatory programs will serve complementary roles ensuring protection of water quality and public health.<sup>140</sup> While CNMPs are not required for AFOs participating in voluntary programs, they are strongly encouraged because the voluntary programs are the best means of managing the water quality in the nation.<sup>141</sup> It will be the duty of the states to ensure that those CNMPs that are voluntarily developed by AFOs are sufficient to meet the requirements for participation in such programs.<sup>142</sup> All AFO owners who voluntarily implement CNMPs must agree to implement those plans before receiving financial assistance.<sup>143</sup>

There are three types of voluntary programs to help AFO owners and operators succeed: (1) locally led conservation; (2) environmental education; and (3) technical and financial assistance programs.<sup>144</sup> The USDA and EPA believe that locally led conservation is one of the most effective ways to achieve conservation goals because individuals can see how their actions fit with those of their neighbors.<sup>145</sup> Environmental education is one of the best ways to participate in the voluntary program to reduce the impact of their operations on the environment, because the many well-

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137. Quote by Janet Oertly, USDA NRCS state conservationist (PA). *See USDA NRCS, EPA to Hold Meeting on AFO Proposal*, LANCASTER FARMING, November 14, 1998, at A-35.

138. *See id.*

139. Of the 450,000 agricultural operations nationwide, eighty-five percent of these farms have fewer than 250 animal units. An animal unit is equal to roughly one beef cow. Of these in 1992, about 6600 operations had more than 1000 animal units and were considered to be large operations. *See Unified Strategy* at 50193.

140. *See Unified Strategy*, at 50196.

141. *See id.* at 50198.

142. *See id.*

143. *See id.* Implementing voluntary programs requires the support of local leadership and full participation in planning and implementing conservation activities. Partnerships with federal and state agencies, groups, Soil and Water Conservation Districts, Resource Conservation and Development Councils, private landowners and between local leadership and science-based technical assistance are essential to success. *Id.*

144. *See Unified Strategy*, at 50198.

145. *See id.*

managed AFOs that are faithfully following best management practices developed in the past, are unintentionally contributing to water pollution because of lack of access to the newest information.<sup>146</sup> There are numerous sources of financial and technical assistance programs which exist to provide AFO owners and operators advice in developing CNMPs along with implementing solutions to defray the costs of approved/needed structures or to implement other practices such as installation of conservation buffers to protect water quality.<sup>147</sup> Using all USDA, EPA, and other federal, state and local programs together as tools helps leverage resources to assist AFO owners and operators in voluntarily addressing water quality and public impacts.<sup>148</sup>

The regulatory program places priority on the permitting and enforcement of high-risk operations, AFOs with unacceptable conditions, and AFOs that are significant contributors to water quality impairment within a watershed.<sup>149</sup> It is estimated that 15,000 to 20,000 livestock operations will be required to develop CNMPs as part of NPDES permits under the authority of the Clean Water Act.<sup>150</sup> NPDES permits will require CAFOs to develop CNMPs and to meet other conditions that minimize the threat to water quality and public health and ensure compliance with the requirements of the Clean Water Act.<sup>151</sup> The EPA believes that virtually all CAFOs with over 1,000 animal units should be a priority for NPDES permitting.<sup>152</sup> It is these large facilities that produce such large quantities of manure that they are a great risk to the nation's waters, as well as the public health regardless whether the facilities are well managed or not.<sup>153</sup>

A second priority for the regulatory program is for those facilities that have unacceptable conditions that pose a significant

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146. *See id.* Once producers have an understanding of potential problems and solutions, they can take a proactive role in developing their CNMP through the voluntary program. *Id.*

147. *See id.*

148. *See id.*

149. *See* USDA, EPA Announce Joint Strategy For Animal Feeding Operations, *supra* note 135, at 2.

150. *See id.*

151. *See* Unified Strategy at 50200.

152. *See id.* There are an estimated 450,000 AFOs in the United States, and 6,600 of these fulfill the requirements to be classified as a CAFO. However, only 2,000 NPDES permits have been issued to these CAFOs; therefore, a minimum of 4,600 permits need to be issued, excluding all other priorities under this plan. *Id.*

153. *See id.*

risk of water pollution or public health problems.<sup>154</sup> In particular, those facilities that have man-made conveyances that discharge animal waste to waters directly or that come into direct contact with animals represent a great risk that needs to be regulated.<sup>155</sup> The final priority for the regulatory program is for those facilities that are significant contributors to water quality impairment.<sup>156</sup> This priority will concentrate on those facilities that have fewer than 1000 animal units. Although these facilities are smaller, they contribute significantly to the impairment of a waterbody.<sup>157</sup> Based on water quality assessment information from states, the number of facilities that meet these conditions is estimated to be between 1000 to 3000 facilities.<sup>158</sup>

The strategy supplements these regulatory program priorities with two types of incentives for some types of AFOs. The first incentive is that smaller CAFOs<sup>159</sup> that are not located in watersheds, and are impaired, are permitted to exit the permit program following the five-year permit term.<sup>160</sup> To exit the program, these facilities must demonstrate that they: (1) have successfully addressed the initial condition that caused them to be designated as CAFOs; (2) are fully implementing their CNMP; and (3) offer evidence that they are in full compliance with their permit at the end of the permit term.<sup>161</sup>

The strategy also describes a "good faith incentive" for some AFOs to avoid being covered under the regulatory program if they have and are implementing a CNMP.<sup>162</sup> This incentive is designed for those facilities that have a discharge that makes them subject to the NPDES permit requirement, but the facilities are not included in the priorities under this strategy and the facilities have taken a pro-active role in voluntarily implementing a CNMP.<sup>163</sup> The

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154. *See id.*

155. *See* Unified Strategy, at 50200. There is insufficient data on which to base an estimate of the number of AFOs that have unacceptable conditions. The EPA and USDA believe that those AFOs that have unacceptable conditions will voluntarily address those conditions to avoid the requirement to have a NPDES permit. *Id.*

156. *See id.*

157. *See id.*

158. Those CAFOs with fewer than 1000 animal units are considered to be small operations. *See id.*

159. *See* Unified Strategy, at 50201.

160. *See id.*

161. *See id.*

162. *See id.*

163. *See id.*

strategy addresses seven strategic issues that the USDA and EPA hope to accomplish through the administration of the voluntary and regulatory programs.

The first strategic issue is building a capacity for CNMP development and implementation.<sup>164</sup> The desired outcomes from the development and implementation of the CNMP program are to: increase the number of certified specialists to develop CNMPs; ensure that CNMPs are implemented under the guidance of qualified specialists; achieve consistent quality of CNMP development and implementation; and ensure that all AFO owners have a CNMP developed by a certified specialist by 2008.<sup>165</sup> To achieve the desired outcomes, the USDA and EPA will take many actions, to the extent permitted by available appropriations, to increase the supply of qualified technical specialists to assist AFO owners and operators develop and implement CNMPs.<sup>166</sup>

The second strategic issue is accelerating voluntary incentive based programs.<sup>167</sup> The USDA and EPA agree that it is the ultimate responsibility of individual owners and operators to minimize the release of pollutants from their operations.<sup>168</sup> The desired outcomes of this second issue are to; ensure that all AFOs develop and implement CNMPs by 2008; minimize pollution from AFOs to the greatest extent practical; ensure the maximum environmental benefit is obtained per public dollar expended; ensure that adequate financial incentives are available to minimize the economic impact of implementing CNMPs; and ensure that limited resource, minority, and other underserved producers have

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164. See Unified Strategy, at 50201. The successful implementation of this strategy depends on the availability of qualified specialists from either the private or public sectors to assist in the development and implementations of CNMPs. *Id.*

165. See *id.*

166. See *id.* Some of the actions taken by the USDA and EPA are as follows: review available certification programs for developing CNMPs for AFOs to ensure technical adequacy; encourage participation of private sector consultants to be utilized by AFO owners when developing CNMPs; increase funding within the USDA-NRCS Conservation Extension System; permit potential AFO operators to develop and implement their own CNMPs; facilitate the training of conversion contractors in the installation of practices specified in a CNMP; provide computer models or expert systems to assist in the development of CNMPs; give priority to training those agencies and organizations that deliver services at the local level; sponsor national meetings on the implementation of CNMPs; develop agreements with third-party vendors; analyze the potential impact of this strategy on public and private resources and their availability to develop and implement CNMPs. *Id.*

167. See Unified Strategy, at 50202.

168. See *id.* Under this strategy, most AFOs will minimize the risk of pollution by voluntarily developing and implementing a CNMP. *Id.*



the opportunity to participate fully in the voluntary programs.<sup>169</sup> To accomplish these objectives the USDA and EPA will identify those practice standards which need to be developed or revised and propose a schedule for such development.<sup>170</sup> Each of the agencies will provide guidance that can be used by AFO owners, operators, and others to develop a CNMP by indicating what should be contained in the CNMP.<sup>171</sup> Financial assistance will also be available for AFO owners and operators who are implementing CNMPs through the USDA and EPA.<sup>172</sup> Owners implementing CNMPs who do not qualify for assistance from the USDA or EPA may find available funding from states which have cost-sharing programs that address water quality issues.<sup>173</sup>

The third strategic issue is implementing and improving the existing regulatory program detailed in the 1972 Clean Water Act.<sup>174</sup> The satisfaction of that this strategy will lead to the minimization of pollution from CAFOs to the greatest extent possible.<sup>175</sup> It is also hoped that the first round of NPDES permits can be issued to all CAFOs by the spring of 1999 and the large CAFOs will have developed and implemented CNMPs by 2003.<sup>176</sup> If this strategy works as planned, the second round of NPDES permits to CAFOs will be issued by 2005 and all CAFOs in NPDES authorized states will have been developed and implemented CNMPs by 2005.<sup>177</sup> To begin improving the implementation of the existing Clean Water Act permitting program, the EPA will establish a two-phase approach to permitting CAFOs.<sup>178</sup> The first round of CAFO permits will occur under the EPA's existing CAFO

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169. *See id.*

170. *See id.*

171. *See* Unified Strategy, at 50202. Some of the items that may need to be contained in the CNMP are aerial photos, plan maps, planned conservation practices with implementation schedules, engineering designs, soil records, etc. *Id.*

172. *See id.* The primary source of USDA assistance to AFO owners is the Environmental Quality Incentive Program which was initiated in the 1996 Farm Bill. The Conservation Reserve Program and the Small Watershed Protection Program are also available to AFO owners meeting program eligibility requirements. EPA will present funds from the Nonpoint Source Management Program as well as the Clean Water Act. *Id.*

173. *See id.*

174. *See* Unified Strategy, at 50203.

175. *See id.*

176. *See id.*

177. *See id.*

178. *See id.*

regulations.<sup>179</sup> Then in the second round of permits, core elements may be expanded to reflect revisions to the effluent guidelines, permit program regulations and state adopted quantity standards for nutrients.<sup>180</sup>

The EPA and USDA recognize that the current law and regulations provide authority to issue permits to a larger group of CAFOs than is identified as the priority classes described above.<sup>181</sup> To account for this, states are asked to prioritize NPDES permit issuance to those AFOs that fall into the three priority permitting categories, then any other AFOs the state determines should have permits consistent with the authority of the current law following the guidelines for round one and round two permitting take priority.<sup>182</sup>

The EPA and USDA will also review and revise as appropriate the effluent limitation guidelines to assure that the guidelines will be closely coordinated with the NPDES permitting regulations.<sup>183</sup> These agencies will also revise the existing permitting regulations as necessary to clarify expectations and requirement for CAFOs as well as to reflect changes in the industry.<sup>184</sup> Finally, the EPA will revise its CAFO Compliance Assurance Implementation Plan as necessary to ensure that EPA and state enforcement priorities support implementation of this strategy.<sup>185</sup>

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179. See Unified Strategy, at 50203. In round one, EPA will work with NPDES authorized states to issue statewide general NPDES permits to cover all CAFOs with greater than 1000 animal units and CAFOs with between 300-1,000 animal units that have unacceptable conditions. General permits will require facilities to develop and implement CNMPs on a schedule identified in the permit, develop record-keeping procedures, and routinely report on the implementation of the CNMP. The EPA will also work with states to issue watershed general permits for facilities in selected watersheds in round one which will allow for tailoring of NPDES permit requirement to the needs of a watershed. *Id.*

180. See Unified Strategy, at 50204. Round two permits will include reissuance of statewide general permits, individual permits, and watershed general permits. These second-round permits will begin at the end of the five-year permit term of round one and will incorporate new requirements resulting from revisions to the existing CAFO effluent guideline and NPDES permitting regulations. These permits will also incorporate requirements that reflect on-going activities related to nutrient water quality criteria development. *Id.*

181. See *id.* at 50205.

182. See Unified Strategy, at 50205. Some states have significantly greater numbers of AFOs requiring permits than do other states. The EPA will work with the states to ensure that EPA enforcement priorities will compliment and ensure successful implementation of this strategy. *Id.*

183. See *id.*

184. See *id.*

185. See *id.* The EPA will also work with the states to establish commitments for inspection of CAFOs to determine if those facilities need to be placed in a

The fourth strategic issue is for the USDA and EPA, together with other federal partners, to establish coordinated research, technical innovation, technology transfer activities, compliance assistance, and establish a single point information center.<sup>186</sup> To accomplish this outcome, the USDA and EPA will develop a coordinated AFO research plan which will establish priorities for future research,<sup>187</sup> develop a coordinated AFO technology transfer plan which will describe how to disseminate the results of all research conducted by the agencies, and develop a Virtual Center with the goal of creating a single point of reference for both agencies, the individual producers, the livestock industry, and the general public.<sup>188</sup>

The fifth strategic issue is for the animal agriculture industry to take the lead in promoting and ensuring the protection of water quality on individual AFOs through development and implementation of CNMPs on all AFOs.<sup>189</sup> To promote industry involvement the USDA and EPA will work with industry to: (1) identify opportunities for greater industry involvement in pollution prevention; (2) investigate the potential for manure brokering networks to make certain excess manure is available where needed; (3) promote a peer network of AFO owners and operators willing to assist other producers in their area with questions or assistance on CNMPs; (4) disseminate information; (5) promote locally led watershed efforts; (6) develop planning tools; (7) conduct environmental reviews of AFO members; and (8) encourage dialogue on how to maximize the benefits of using manure, fertilizer and biosolids.<sup>190</sup>

The sixth strategic issue is USDA/EPA coordination on data sharing that protects the trust relationship between USDA and farmers and provides regulatory authorities with information that is useful in protecting water quality.<sup>191</sup> To achieve this desired outcome, the EPA and USDA will develop a joint policy statement

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category that is a priority for NPDES permitting. *Id.*

186. See Unified Strategy, at 50,206.

187. See *id.* Some of the priorities for future research are: better manure management, modification of animal diets to reduce nutrients in manure, mitigation of sites with excessive pollutants, and alternative uses of animal manure. *Id.*

188. See *id.*

189. See Unified Strategy, at 50,207.

190. See *id.*

191. See *id.* Several kinds of information are useful, but ambient water quality information, aggregate information about multiple AFOs and information about individual AFOs are the most helpful. These three kinds of data are available from the USDA, EPA, United States Geological Survey, Army Corps of Engineers, and state agencies. *Id.*

on information coordination, along with reviewing existing policies and guidelines based on the joint policy statement. Furthermore, the agencies will act to develop a joint evaluation of the costs and benefits of this strategy, consider the development of revised CAFO regulations, and the EPA will develop an inventory of facilities subject to regulatory activities to ensure a program that is consistent with NPDES program activities.<sup>192</sup>

The final strategic issue is for an effective performance measurement system for AFOs that include appropriate programmatic output and environmental outcomes that allow USDA, EPA, and other stakeholders to determine the level of success and improve AFO related programs.<sup>193</sup> Although the agencies would like the implementation of this strategy to have an instantaneous impact on the improvement on the waters of the nation, they recognize that the measurement of AFO progress will take considerable time.<sup>194</sup> To ensure timely measurement of success of this strategy the USDA, EPA, and other federal agencies will establish a joint work group to develop a coordinated set of programmatic outputs and environmental outcome measures for this strategy.<sup>195</sup>

## V. Critique of the New Unified Strategy

For the goals of this strategy to be accomplished, many people and governmental entities must cooperate and work together as a uniform team. Although both the voluntary<sup>196</sup> and regulatory<sup>197</sup> programs will be designed by the federal government, state and local governments bear the majority of the responsibility for implementing the federal strategy.<sup>198</sup> Perhaps the group of people who will best determine if this strategy will be a success is the individual owners and operators of AFOs in the livestock industry.

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192. *See id.* at 50208.

193. *See* Unified Strategy, at 50208.

194. *See id.* Two reasons for the extensive time it will take to address the water quality issues are: (1) it will take time to develop appropriate measures; and (2) it will take time for water quality progress to be achieved. *Id.*

195. *See id.*

196. *See id.* The USDA, through conservation, research, and education provisions of the Farm Bill and other legislation, is largely responsible for programs that help AFOs meet performance expectations through voluntary efforts. *Id.*

197. *See* Unified Strategy, at 50208. The EPA, through the Clean Water Act, Coastal Zone Act Reauthorization Amendments, and the Safe Drinking Water Act, is charged with the regulatory responsibilities including permitting, compliance assurance, and enforcement that relate to AFOs. *Id.*

198. *See id.*

It is the obligation of these owners to minimize the release of pollutants into the environment,<sup>199</sup> without their co-operation no regulation, regardless of its aggressive nature, will be successful.<sup>200</sup>

As for the future of the Unified Strategy, most experts are uncertain as to its effectiveness. Although the success of the strategy is not guaranteed, it is certain that something has to be done to curtail the pollution caused from agricultural operations. This strategy does attempt to alleviate the pollution problem which arises from nonpoint sources through the implementation of nutrient management plans, but the results could be unsatisfactory for the following reasons.

One of the problems with this strategy is that it does not introduce a large number of new regulations. The nutrient management plan introduced in the strategy, however, is a new attempt to limit the pollution produced from AFOs. On the contrary, this strategy also aspires to implement and enforce regulations which were developed in past attempts to control the problem of polluting the nation's waters. If these regulations were not successful in the past, it is difficult to believe that time alone will change their effectiveness. Perhaps a better alternative would be to develop and implement new regulations, which are based on past regulations, rather than just attempting to re-implement the old regulations. This approach may convince those who violated past regulations to follow the new regulations out of fear of prosecution.

A second possible problem with the strategy is that over ninety-five percent of the AFOs in the nation will only be encouraged to implement voluntary nutrient management plans rather than having mandatory plans imposed on them.<sup>201</sup> The agencies place priority on the large agricultural operations across the nation with over 1,000 animal units, along with those AFOs which have unacceptable conditions or are significant contributors to the impairment of water quality. Although it is undisputed that such facilities cause severe damage to the nation's water, these facilities are already subject to regulations.<sup>202</sup> The majority of those that are stated as priority facilities are also determined to be concentrated animal feeding operations which are defined as point sources under the Clean Water Act.<sup>203</sup> Therefore, those priority facilities

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199. *See id.* at 50209.

200. *See id.*

201. *See supra* at note 139.

202. *See supra* at note 42.

203. *See supra* at page 5.

which are also CAFOs are already regulated by the NPDES permit requirement established in the Clean Water Act.<sup>204</sup>

Claiming such operations as priority facilities only recognizes the ineffectiveness of past regulations. The goal of this unified strategy is to alleviate the water pollution problems arising from nonpoint sources. Such sources of pollution are believed to be those agricultural operations which are not classified as point sources and subject to the NPDES permit requirement. This strategy does not place priority on regulating such operations, but rather encourages them to act voluntarily and adopt the nutrient management plan established by this strategy. Although the agencies provide incentives for voluntary participation in the nutrient management program, often the cost of implementing such plans will not be feasible for many agricultural facilities.

If the Unified Strategy does not prove to be successful in minimizing the pollution of the nation's waters through nonpoint sources, other possible solutions have also been presented.<sup>205</sup> The first solution for utilizing manure in a feasible manner is to continue to use manure as a fertilizer for growing crops.<sup>206</sup> If utilized properly, the manure has little pollution risk and can offer significant benefits in soil and crop fertility.<sup>207</sup> Such a solution may be more effective than the Unified Strategy.

Another common use for manure, which when used appropriately, would decrease the likelihood of pollution to the nation's waters, is as a compost.<sup>208</sup> Composted manure is less offensive to handle and can be stored as a commodity with the possibility of becoming a marketable product.<sup>209</sup> A final suggestion for the disposition of manure is through the development of manure-fueled

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204. Only five percent of the nation's largest livestock and poultry farms will be required to take steps to reduce nutrient runoff from manure and fertilizer. *See* David DeKok, *EPA seeking to involve federal law*, THE PATRIOT NEWS, November 22, 1998, D3.

205. Some other forms of manure utilization practices that have been proven to be safe include "processing and recycling through feeding programs, biogas production as an energy resource using anaerobic digester technologies, pyrolysis processes to produce chars and industrial petrochemicals, microbial and algae production as an animal feed source, aerobic degradation to produce composted products, and mushroom production from composted manures." However, economic factors have limited the implementation of these as practices except in niche markets. *See Summary: Integrated Animal Waste Management*, November 18, 1998 at 1, <[www.cast-science.org/anwa\\_is.htm](http://www.cast-science.org/anwa_is.htm)>

206. *See* Fulhage, *supra* note 23, at 4.

207. *See id.*

208. *See id.*

209. *See id.*

power plants.<sup>210</sup> Such programs offer the double benefit of serving as an energy source while reducing the pollution potential of the manure.<sup>211</sup> The only problem with this solution is that high transportation costs make it prohibitive to send the waste to other parts of the country.<sup>212</sup> Despite some drawbacks, alternatives to the Unified Strategy could prove more successful than the Unified Strategy. The EPA should encourage the implementation of these strategies in addition to implementing the Unified Strategy.

## VI. Conclusion

Since the implementation of the Clean Water Act, the United States has made great strides in its elimination of the nation's water pollution, however, most of the progress has been associated with regulating point sources of water pollution. For the nation to continue this success into the next millennium, it must take a substantial step forward in its attempt to control water pollution from nonpoint sources. The EPA and USDA believe that this next step has been taken by drafting their Unified Strategy for Animal Feeding Operations to account for nonpoint source pollution and agricultural pollution, in particular.

The Unified Strategy has been called the most aggressive action proposed to address this problem, but its effectiveness can be questioned. The strategy calls for the implementation of past regulations adopted in the Clean Water Act rather than adopting new more pervasive regulations. The strategy also focuses on regulating only the largest farming operations, most of which were already subject to the Clean Water Act's NPDES permit requirement which proved to be unsuccessful, while the majority of the agricultural operations across the nation will be subject to the strategy only if they volunteer to be.

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210. See Fulhage, *supra* note 23, at 4. Livestock feedstuffs of a grain, forage, or vegetable origin contain 6,000 to 8,000 BTU of energy per pound of dry matter, and thirty to forty percent of this energy may be excreted in manure. An average dairy cow that weighs approximately 1,300 pounds produces 55 cubic feet of biogas per day which accounts for 33,000 BTU of energy produced per day. *Id.*

211. See *id.*

212. See *id.*

Although the Unified Strategy may have its faults, it is a step in the right direction. There is no question that actions need to be taken to curtail the water pollution in this nation, the only question is whether the Unified Strategy will be able to provide effective results.

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