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POULTRY, WASTE, AND POLLUTION: THE LACK OF ENFORCEMENT OF MARYLAND'S WATER QUALITY IMPROVEMENT ACT

Between the Chesapeake Bay and Maryland's Atlantic coast exists an expansive poultry enterprise.¹ Poultry farms on the Delmarva Peninsula, classified as Animal Feeding Operations (AFOs),² each year raise 600 million chickens that produce 750,000 tons of waste.³ Maryland alone has at least 6000 "chicken houses" each containing approximately 25,000 birds that produce hundreds of thousands of tons of waste a year.⁴ The majority of these poultry farms are independent operations that receive chicks from one or more of the large poultry processing companies located in Maryland, such as Tyson Foods, Inc.⁵ Although the independent farmers house and raise the chickens, these large processing companies retain ownership over the chickens.⁶

1. Peter S. Goodman, *An Unsavory Byproduct; Runoff and Nutrient Pollution*, WASH. POST, Aug. 1, 1999, at A01; see also Delmarva Poultry Industry, Inc., *Facts About Maryland's Broiler Chicken Industry*, at <http://www.dpichicken.org/download/factsmd2001.doc> (last visited Apr. 3, 2003) [hereinafter *Chicken Facts*] (ranking Maryland's Wicomico, Caroline, Worcester, Dorchester, and Somerset counties among the United States leaders in broiler chicken production).

2. See U.S. Dep't of Agric. & U.S. Env't Prot. Agency, *Unified National Strategy for Animal Feeding Operations* § 2.1. (Mar. 9, 1999) (defining an Animal Feeding Operation as a facility that raises and feeds animals for meat, and collects waste from a large number of animals located in confined, closed buildings year-round), available at <http://www.epa.gov/npdes/pubs/finafost.pdf>. The Environmental Protection Agency has developed a plan for managing AFOs. See Amy Willbanks, *The Unified National Strategy for Animal Feeding Operations: Another Federal-State Partnership in Environmental Regulation*, 8 S.C. ENVTL. L. J. 283 (2000) (discussing the Environmental Protection Agency's 1999 Unified Strategy for Animal Feeding Operations and the relationship between the federal government and state governments in implementing the program).

3. Josh Marks, *Regulating Agricultural Pollution in Georgia: Recent Trends and the Debate Over Integrator Liability*, 18 GA. ST. U. L. REV. 1031, 1051 (2002).

4. Joel McCord, *Plan Targets Poultry Waste; Big Processors Would Have to Aid in Disposal of Manure*, BALT. SUN, Dec. 16, 2000, at 1A.

5. *Chicken Facts*, supra note 1. For 2001, Maryland's broiler production value was \$552,560,000. *Id.* Value is the gross income earned from broiler chickens. *Id.* Maryland ranked eighth in the country in value from broiler chicken production. *Id.* For example, the following is a list of poultry growers in Maryland (with their national ranking): Tyson Foods, Inc. (#1); Perdue Farms, Inc. (#5); Mountaire Farms, Inc. (#10); and Allen Family Foods, Inc. (#18). *Id.*

6. See Anita Huslin, *Md. Aims to Tighten Chicken Waste Rules*, WASH. POST, Aug. 9, 2000, at B01 [hereinafter *Chicken Rules*] (describing the argument advocating that the companies that own the chickens should be held liable for waste the chickens produced).

This global industry produces significant environmental consequences.⁷ The poultry farms on the Delmarva Peninsula generate more waste than a city of four million people.⁸ In Maryland, agricultural sources, which include animal waste from AFOs, represent the most omnipresent threat to water quality, particularly on Maryland's Eastern Shore where agricultural runoff accounts for over seventy percent of the nitrogen and phosphorus polluting the region's watersheds.⁹ This waste is the largest source of nutrient loading in the Chesapeake Bay.¹⁰ High nutrient levels can cause algal blooms and eutrophication, which reduce sunlight and oxygen levels in the water threatening the ecosystem's flora and fauna.¹¹ Waste containing nitrogen and phosphorus from poultry farms also has a serious impact on humans by triggering the growth of the toxic *Pfiesteria piscicida* microbe,¹² causing groundwater contamination, and contributing to the

7. Goodman, *supra* note 1.

8. *Id.*

9. See William R. Reid, *Pfiesteria and Maryland's Water Quality Improvement Act of 1998*, 7 U. BALT. J. ENVTL. L. 18, 25 (1999) (stating that "nutrient sources have been termed the most pervasive water quality problem in Maryland"); UNITED STATES EPA, REGION 3 CHESAPEAKE BAY LIAISON OFFICE, CHESAPEAKE BAY NONPOINT SOURCE PROGRAMS 3 (1988) (explaining that cropland contributes the greatest amount of nutrient load to the Bay).

10. Marks, *supra* note 3, at 1051; see also John P. Almeida, *Nonpoint Source Pollution and Chesapeake Bay Pfiesteria Blooms: The Chickens Come Home to Roost*, 32 GA. L. REV. 1195, 1196 (1998) (stating that microorganisms such as *Pfiesteria* are likely to be present in the Chesapeake Bay because of the high level of nutrients resulting from runoff from the many poultry farms in the area). Another significant source of agricultural runoff is dairy farming, but this Comment will not address the impact or control of excess nutrients from Maryland's dairy farms.

11. Bradley C. Karkkainen, *Collaborative Ecosystem Governance: Scale, Complexity, and Dynamism*, 21 VA. ENVTL. L.J. 189, 198 (2002); see also Roy A. Hoagland & Jean G. Watts, *Federal Minimums: Insufficient to Save the Bay*, 29 U. RICH. L. REV. 635, 642 (1995) (explaining how excessive levels of nutrients can cloud the water, blocking sunlight and causing algal blooms). Eutrophication is the "process by which a body of water begins to suffocate from receiving more nutrients, such as nitrogen and phosphorus, than it can handle." Almeida, *supra* note 10, at 1197 n.10 (quoting OFFICE OF WATER, EPA, ENVIRONMENTAL INDICATORS OF WATER QUALITY IN THE U.S. 17, 21 (1996)). Algal blooms result from an unnaturally high abundance of algae species in the water caused by an excessive amount of nutrients (nutrients are a source of algal food). See Maryland Department of Natural Resources, *Harmful Algae Blooms in Maryland* (explaining the causes and effects of algae blooms), at <http://www.dnr.state.md.us/bay/hab/index.html> (last visited Apr. 3, 2003).

12. See Reid, *supra* note 9, at 21 (describing *Pfiesteria* as "single-celled, eucaryotic microorganisms" that are "predators capable of feeding on other organisms . . . much larger than themselves"); see also R. Wayne Litaker et al., *Life Cycle of the Heterotrophic Dinoflagellate Pfiesteria Piscicida (Dinophyceae)*, 38 J. PHYCOL. 442 (2002) (describing the toxic effect of *Pfiesteria* on human health). But see Heather Dewar, *Scientists Challenge Theory on Toxicity of Pfiesteria*, BALT. SUN, June 21, 2002, at 12B (reporting that *Pfiesteria* may not be toxic to fish nor humans); Nichlos Wade, *Deadly or Dull? Uproar Over a Microbe*, N.Y. TIMES, Aug. 6, 2002, at F1 (same).

spread of pathogens.¹³

In 1998, Maryland's General Assembly addressed the health and environmental concerns caused by agricultural runoff by enacting the Water Quality Improvement Act (WQIA).¹⁴ The WQIA requires the Maryland Department of Agriculture (MDA) to oversee the implementation of Nutrient Management Plans (NMPs) regulating all farming operations with gross incomes greater than \$2500.¹⁵ The WQIA requires a person who is either certified or licensed by the State to prepare the NMPs for the poultry growers.¹⁶ Furthermore, the WQIA provides that Maryland's governor will allocate funding every year to help develop NMPs and that those who apply nutrients to their land will complete a continuing education program every three years.¹⁷ In addition to penalties established for noncompliance with the NMPs,¹⁸ the WQIA provides that failure to prepare or meet certain deadlines in preparing a NMP results in the return of any state funds disbursed to assist farmers in offsetting the costs of developing a NMP.¹⁹

In July 2001, the Maryland Department of the Environment (MDE) also attempted to address the environmental problems caused by poultry farming by placing conditions on the National Pollutant Discharge Elimination System (NPDES) permits that regulate wastewater discharge from three of Maryland's largest poultry processing companies.²⁰ In the MDE's "[f]inal [d]eterminations" regarding the

13. See generally George A. Gould, *Agriculture, Nonpoint Source Pollution, and Federal Law*, 23 U.C. DAVIS L. REV. 461, 464-68 (1990) (describing the consequences on human health from agricultural runoff); see also MINORITY STAFF OF SENATE COMM'N ON AGRIC., NUTRITION, AND FORESTRY, 105TH CONG., ANIMAL WASTE POLLUTION IN AMERICA: AN EMERGING NATIONAL PROBLEM 3 (1997).

14. MD. CODE ANN., AGRIC. §§ 8-801 to -807 (1999). The General Assembly enacted the WQIA in response to a 1997 *Pfiesteria* outbreak that commanded large media attention. See Reid, *supra* note 10, at 19 (describing the political debate over the passage of the WQIA). In addition to the WQIA, the General Assembly has enacted other statutes addressing nutrient runoff and nonpoint source pollution. See MD. CODE ANN., AGRIC. § 6-107.1 (requiring chicken feed to contain enzymes that reduce the phosphorus in poultry waste); *id.* §§ 8-702, 8-703, 8-704 (prescribing other methods to curb nonpoint pollution in Maryland); MD. CODE ANN., AGRIC. § 6-802 (1998) (creating a fund to support and encourage the reduction of nutrients found in animal waste).

15. MD. CODE ANN., AGRIC. §§ 8-801.1, 8-803.1(b)(1).

16. *Id.* § 8-802(a).

17. *Id.* §§ 8-803.1(c), 8-803.3(b). However, the continuing education programs do not apply to "[a] person who applies nutrients to 10 acres or less of land each year; or [a] person who applies nutrients for hire." *Id.* § 8-803.3(a) (enumerations omitted).

18. *Id.* § 8-803.1(j).

19. *Id.* § 8-803.1(k)(1). In addition to having to return disbursed funds, failure to prepare a NMP could also result in future cost-share payments being withheld. *Id.* § 8-803.1(k)(2).

20. *In re Tyson Foods, Inc.*, Case Nos. MDE-WMA-63-200200001 to 03, Md. Office of Admin. Hearings (Aug. 23, 2002) (decision on motion). *In re Tyson Foods* involved process-

renewal/modification of the NPDES permits for three poultry processing facilities, it attached conditions to these permits requiring the facilities to monitor activities surrounding nutrient management, composting mortality, and sludge management.²¹ Previously, the NPDES permits regulated only the waste emitted from these facilities.²² Accordingly, the companies contested these new permit conditions because they related to any farms in Maryland that grow chickens for these three corporations.²³ First, the poultry companies filed requests to have a contested case hearing challenging the MDE's final rule regarding the renewal or modification of the three poultry companies' NPDES permits.²⁴ On June 12, 2002, a motions hearing was held at the Maryland Office of Administrative Hearings.²⁵ Administrative law judge, Neile S. Friedman, found these conditions to be invalid because they were beyond the MDE's authority and because the legislature indicated its intent for the MDA to address water quality issues through implementation of NMPs.²⁶ Judge Friedman concluded that the conditions did not relate to the water discharged from the processing plants, but rather to the management of poultry litter and manure generated elsewhere.²⁷

The issue of responsibility for excess poultry waste must be reconsidered by Maryland's legislature. The decision in *Tyson* restricts the MDE's enforcement power and ultimately will weaken Maryland's abil-

ing plants owned by Tyson Foods, Inc., Perdue Farms, Inc., and Allen Family Foods, Inc. *Id.* After a favorable decision for the poultry companies striking the contested conditions from the companies' NPDES permits, the MDE appealed the administrative law judge's order to the Maryland Circuit Court. Ted Shelsby, *State Is Challenging Ruling on Chicken Growers' Waste; MDE Wants to Hold Companies Accountable*, BALT. SUN, Sept. 21, 2002, at 1C. See also *infra* notes 96-109 and accompanying text for further discussion on *In re Tyson*. The MDE has responsibility for issuing NPDES permits based on conditions it believes necessary to prevent the pollution of Maryland's water. See MD. CODE ANN., ENVIR. § 9-326(a) (1996) (providing "[t]he Department [of the Environment] may condition the issuance of discharge permits contingent on any conditions the Department considers necessary to prevent the violation of this subtitle"). The MDE regulations regarding NPDES or other state discharge permits mandate a permit be issued for "any system for the disposal of waste or wastewater into the waters of the State, or a system which may result in discharge into these waters." MD. REGS. CODE tit. 26, § 08.04.01(B)(3) (2002). Poultry processing plants use water to clean and process chickens, and then the plants treat and discharge the wastewater. *In re Tyson*, at 13.

21. *In re Tyson*, at 11. Additionally, the poultry corporations must ensure that the chicken growers keep records and allow frequent inspections. Anita Huslin, *Poultry Farms Win Round Against Md.*, WASH. POST, Aug. 27, 2002, at A05.

22. *In re Tyson*, at 13.

23. *Id.* at 14.

24. *Id.* at 2.

25. *Id.*

26. *Id.* at 31, 35.

27. *Id.* at 14.

ity to control water pollution. The General Assembly possesses numerous options to address this important issue. This Comment will briefly examine three legislative options, which would improve the State's ability to address the health and environmental concerns resulting from excessive poultry waste. The first option is to shift some, if not all, enforcement power in the nutrient management program from the MDA to the MDE. The second option is to impose strict, joint and several liability on the large poultry processing companies and the poultry growers.²⁸ The third option available to the General Assembly is to adopt a nutrient trading program to help reduce overall agricultural runoff in the state.

I. BACKGROUND

Water pollution is regulated by a combination of federal and state laws. This scheme combats the problem of water pollution by creating a national permit program and establishing water quality standards for point sources.²⁹ However, the Clean Water Act (CWA) lacks a direct regulatory structure for addressing nonpoint source pollution.³⁰ First, this Part examines two federal statutes discussing nonpoint source pollution. It then describes the *Pfiesteria* outbreak in Maryland and the State's response—the Water Quality Improvement Act. Lastly, this Part will examine the dispute between poultry companies located in the three states on the Delmarva Peninsula and *In re Tyson* in which the MDE failed in its attempt to regulate poultry processing companies through conditions attached to NPDES permits.

A. *The Clean Water Act*

The Clean Water Act is the primary federal environmental legislation for protecting the nation's water from pollutants.³¹ Generally, the CWA forbids the "discharge of any pollutant by any person" into a navigable water of the United States.³² The CWA requires dischargers to obtain an NPDES permit in order to discharge a pollutant into the waters of the United States.³³

28. See Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. § 9607(a) (2000) (setting forth the Act's liability scheme).

29. See Almeida, *supra* note 10, at 1198 (describing the structure of the CWA). A point source is defined as "any discernible, confined, and discrete conveyance, including but not limited to any pipe . . ." 33 U.S.C. § 1362(14) (2002).

30. See Almeida, *supra* note 10, at 1199 (noting the absence of measures to restrict pollution from nonpoint sources).

31. 33 U.S.C. §§ 1251-1387 (2000).

32. *Id.* § 1311(a).

33. *Id.* § 1342(a).

The CWA primarily focuses on point sources of pollution; in doing so, it de-emphasizes the importance of controlling nonpoint sources.³⁴ Point sources, specifically regulated by NPDES permits, are discharges from a specific point such as a pipe or ditch.³⁵ Conversely, nonpoint sources include water pollution from anything that is not a point source, the primary example being agricultural runoff.³⁶ Many commentators suggest that a glaring shortfall of the CWA is its “inability to provide a significant mandatory enforcement mechanism” for controlling nonpoint source pollution.³⁷ Section 208 of the CWA encourages states to develop programs addressing nonpoint source pollution.³⁸ The problem rests with voluntary provisions in the treatment plans enacted by the states.³⁹ Due to the absence of strict enforcement provisions in this section, states adopted nonpoint source pollution plans in accordance with section 208 that included many voluntary provisions, which were never executed due to opposing political pressure.⁴⁰ Thus, this section has failed to control nonpoint source pollution because it lacks “adequate incentives” to motivate states in developing management plans.⁴¹

In an effort to remedy this perceived shortfall, Congress amended the CWA in 1987.⁴² Section 319 of the amended statute provides a skeletal framework for lowering nonpoint source pollution.⁴³ This section requires states to prepare a report assessing the

34. *Id.* The CWA requires a permit for the “discharge of any pollutant. The Act defines the term “discharge of a pollutant” as “any addition of any pollutant to navigable waters from any *point source*.” *Id.* § 1362(12) (emphasis added).

35. *Id.* § 1362(14). Point sources are “any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel . . . *concentrated animal feeding operation* . . . from which pollutants are or may be charged.” *Id.* (emphasis added).

36. Reid, *supra* note 9, at 24; *see also* Almeida, *supra* note 10, at 1196 (explaining that “[n]onpoint source pollution (NSP) is a term used to describe diffuse water pollution that comes from sources that are difficult to identify, such as rainwater runoff”).

37. Reid, *supra* note 9, at 23.

38. 33 U.S.C. § 1288(a) (2000).

39. *See* Reid, *supra* note 9, at 26 (stating that section 208 outlines the framework for states to address nonpoint source pollution). One weakness of section 208 was its lack of mandatory enforcement provisions. *Id.*

40. *Id.* State regulators feared they would lose business to states with lax environmental regulations if their state enacted strict regulations with mandatory enforcement. *Id.*

41. *Id.*

42. 33 U.S.C. § 1329 (nonpoint source management programs); *see also* Mandi M. Hale, *Pronsolino v. Marcus, The New TMDL Regulation, and Nonpoint Source Pollution*, 31 ENVTL. L. 981, 985 (2001) (noting that section 319 of the CWA was enacted in response to the failures of section 208).

43. *See id.* § 1329(a)-(b) (requiring each state to prepare a report identifying navigable waters significantly affected by nonpoint source pollution and propose management programs for these waters which is to be submitted to EPA).

status of nonpoint pollution in the state.⁴⁴ In addition, the state must establish a management program addressing nonpoint pollution.⁴⁵ Section 319, however, has also been viewed as a disappointment because Congress has been unwilling to provide states with the necessary funds for the management plans and states have not mandated the development of nonpoint source pollution plans.⁴⁶ In adding section 319, which covers AFOs, Congress failed to include a provision that would require mandatory enforcement of nonpoint source pollution plans by the regulating state. Furthermore, commentators suggest that these failures indicate that either Congress did not foresee the significant impact AFOs have on agricultural runoff or that it was unwilling to regulate land use practices directly to effectively address nonpoint source pollution.⁴⁷

B. The Control of Nonpoint Source Pollution Under the Coastal Zone Management Act

In addition to the CWA, the Coastal Zone Management Act (CZMA) attempts to address the problem of nonpoint source pollution. In 1972, Congress enacted the CZMA to control land use activities impacting coastal water quality.⁴⁸ The CZMA attempted to use incentives to encourage states to design coastal management plans.⁴⁹ The first type of incentive provided federal grants to states that devised and administered coastal management programs.⁵⁰ The second incentive, a federal consistency requirement, supplied states with the power to object to federal actions inconsistent with the state's coastal management program.⁵¹ The weakness of the CZMA arose because of the voluntary participation aspect of the legislation.⁵² Unlike the

44. *Id.* § 1329(a).

45. *Id.* § 1329(b).

46. See Reid, *supra* note 9, at 27 (stating that Congress' reluctance to provide adequate funding for the section 319 programs in combination with the lack of mandatory provisions has resulted in the failure to lower pollution from nonpoint sources). Section 319 requires development of nonpoint source plans but provides no mechanism that forces states to implement those plans. *Id.*; see also Hale, *supra* note 41, at 985 (explaining that inadequate funding and the "insignificant consequences" of inaction led to the failure of section 319).

47. Reid, *supra* note 9, at 23; Hale, *supra* note 41, at 986.

48. Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464 (1995); Andrew Solomon, *Section 6217 of the Coastal Zone Act Reauthorization Amendments of 1990: Is There Any Point?*, 31 ENVTL. L. 151, 153 (2001).

49. Solomon, *supra* note 48, at 155.

50. *Id.*

51. *Id.* "[A] state can object to permits issued by federal agencies, to federally sponsored activities, and to direct action by federal agencies." *Id.*

52. *Id.* at 154.

CWA, where the federal government will administer the program if a state fails to do so, the CZMA lacks a provision authorizing the federal government to develop and administer coastal management programs for non-participating states.⁵³ To remedy the failure of states to control non-source point pollution, Congress enacted section 6217 of the Coastal Zone Reauthorization Amendments of 1990 (CZARA).⁵⁴ In section 6217, Congress attempted to force states with coastal zone management programs "to develop and implement management measures for nonpoint source pollution to restore and protect coastal waters."⁵⁵ If a coastal state fails to submit "an approvable program," the CZARA requires the withholding of a state's coastal management funds.⁵⁶ Implementation of the CZARA, however, has been slow.⁵⁷ More than ten years after its enactment, only a few states have approved coastal nonpoint pollution control programs.⁵⁸

C. *The 1997 Pfiesteria Outbreak and Maryland's Legislative Response*

In 1997, an outbreak of *Pfiesteria* on Maryland's Eastern shore caused schools of fish to rapidly and mysteriously die.⁵⁹ Fishermen discovered fish with open sores on their bodies and themselves began suffering from several health problems.⁶⁰ Scientists connected the fish kills and human health problems to the microorganism *Pfiesteria piscicida*.⁶¹ Environmentalists claimed agricultural runoff, particularly from poultry farms, was the primary culprit because the excess nutri-

53. *Id.* at 154 & n.24.

54. Coastal Zone Reauthorization Amendments of 1990, 16 U.S.C. § 1455b (1995).

55. *Id.* § 1455b(a)(1).

56. *Id.* § 1455b(c)(3). Congress added the provision allowing the federal government to withhold state funds if a state failed to submit an approvable program as another incentive for states to develop coastal management programs. The incentive worked because within six years all coastal states submitted approved coastal management programs. See Solomon, *supra* note 48, at 164 (stating that "all twenty-nine states and territories with approved coastal management programs" were submitted to EPA and National Oceanic and Atmospheric Administration by July 1996).

57. Solomon, *supra* note 48, at 153.

58. *Id.* (noting that EPA and the National Oceanic and Atmospheric Administration (NOAA) have given final approval to coastal nonpoint programs for Maryland, Rhode Island and California).

59. Almeida, *supra* note 10, at 1195.

60. *Id.*; see Bill Lambrecht, *Human Memory Loss, Fish Kills Linked to Mysterious Flesh-Eating Organism*, ST. LOUIS POST-DISPATCH, Sept. 22, 1997, at 01A (describing the human health problems resulting from the *Pfiesteria* outbreak, including "confusion and short-term memory loss, nausea and flu-like symptoms, breathing difficulties, rashes and lesions").

61. Almeida, *supra* note 10, at 1195. *Pfiesteria* is a toxic microorganism that transforms multiple times throughout its life cycle. *Id.* at 1195 n.4.

ent runoff provided the perfect environment to detonate a population explosion of *Pfiesteria*.⁶²

In response to the outbreak, Governor Parris Glendening and the General Assembly created the Blue Ribbon Citizens Pfiesteria Action Commission.⁶³ After studying the problem, the Commission reported that "it appears that excessive nutrient loadings help create an environment rich in microbial prey and organic matter that the *Pfiesteria* use as a food supply."⁶⁴ The Commission also concluded that a chemical excreted by fish must be present in the water to allow a toxic outbreak to transpire.⁶⁵ By intensifying the accumulation of *Pfiesteria*, however, nutrient overflows augment the possibility of a toxic outbreak if sufficient quantities of fish are in the water.⁶⁶

In response to the Commission's report, legislators drafted bills in an effort to curb pollution from poultry farms.⁶⁷ Ultimately, in 1998, the General Assembly adopted the Water Quality Improvement Act.⁶⁸ The WQIA applies to any farm that uses a chemical fertilizer or animal manure.⁶⁹ However, large chicken farms such as Tyson were specifically targeted by the MDE.⁷⁰ The WQIA resulted from a political compromise between Senate Bill 178 and House Bill 599.⁷¹ The Governor's bill, approved by the Senate and supported by environmental activists, pushed for quick compliance by farmers and large oversight by the Department of the Environment.⁷² Maryland's agriculture industry, however, backed the House Bill which allowed for longer compliance deadlines and gave regulatory oversight by the MDA.⁷³ The final compromise included provisions to implement

62. *Id.* at 1196.

63. See BLUE RIBBON CITIZENS *Pfiesteria* Action Commission, Report of the Citizens Pfiesteria Action Commission, at 2 (1997) [hereinafter COMMISSION REPORT] (providing a chronology of events that led to the Commission forming).

64. *Id.* at 10.

65. *Id.*

66. *Id.*

67. Reid, *supra* note 9, at 35.

68. MD. CODE ANN., AGRIC. §§ 8-801 to -807 (1999).

69. *Id.* §§ 8-803.1(2)(i), (2)(ii). The WQIA does not apply to farms "with less than \$2,500 in gross income" or "livestock operations with less than eight animal units. *Id.* § 8-803.1(b).

70. See *In re* Tyson Foods, Inc., Case Nos. MDE-WMA-63-200200001 to 03, Md. Office of Admin. Hearings, 8 (Aug. 23, 2002).

71. Reid, *supra* note 9, at 35.

72. S.B. 178, 1998 Leg., 412th Sess. (Md. 1998).

73. H.B. 599, 1998 Leg., 412th Sess. (Md. 1998); see also Michael Dresser, *Accord Reached on Bill for Pfiesteria; House, Senate Deal May Clear the Way for Approval of Bill Today*, BALT. SUN, Apr. 11, 1998, at 1B [hereinafter *Senate Deal*] (describing the details of the legislative compromise).

mandatory nutrient runoff plans, but left enforcement of the law to the MDA.⁷⁴

The backbone of the WQIA is the requirement that all farming operations with gross incomes of \$3500 or greater develop nutrient management plans (NMP).⁷⁵ The goal of developing these plans is to prevent pollution by enabling a nutrient management consultant “to manage the amount, placement, timing, and application of animal waste, commercial fertilizer, sludge, or other plant nutrients.”⁷⁶ Only nutrient management consultants, certified by the MDA, can devise management plans.⁷⁷ The WQIA also requires an owner or manager of more than ten acres of agricultural land to complete an educational course in nutrient application every three years.⁷⁸ In addition, the WQIA provides funding to aid farmers in developing nutrient management programs and allows MDA to assess penalties for noncompliance.⁷⁹

D. *The Dispute Between the Poultry Growers and the Poultry Processing Companies in Maryland, Delaware, and Virginia*

The poultry growers on the Delmarva Peninsula function under contracts where the large processing companies own the chickens, but the growers pay for the costs of raising them, including the costs of waste removal.⁸⁰ The “take-it-or-leave it” contracts that the poultry companies offer their growers add to the disparity between the rich corporations and the small growers.⁸¹ If the growers do not accept the

74. See S.B. 178, 1998 Leg., 412th Sess.; H.B. 599, 1998 Leg., 412th Sess.; see also *Senate Deal*, *supra* note 73 (stating that “talks came down to the question of chicken manure”). The WQIA mandated the implementation of nutrient management plans aiming to lower the amount of nutrients in Maryland’s waters. Reid, *supra* note 9, at 35. In so doing, the WQIA elevated Maryland to become the first state to regulate farm fertilizer as a pollutant. Heather Dewar, *Manure Cleanup on the Shore; Maryland Is Making Strides to Control Polluted Farm Runoff, with Uncertain Consequences for Farmers and Chicken Growers*, BALT. SUN, Dec. 31, 2000, at 1J.

75. MD. CODE ANN., AGRIC. § 8-803.1(b) (1999).

76. *Id.* § 8-801(c).

77. *Id.* § 8-802(a).

78. *Id.* § 8-803.3. The section also enables the state to have a registry of everyone who has completed a nutrient education course. *Id.* § 8-803.3(c)(4).

79. *Id.* § 8-803.1(d)(1) (providing that “State cost sharing may be made available to farmers to help offset the costs of having a nutrient management plan prepared by a certified nutrient management consultant”); *id.* §§ 8-803.1(h)-(j) (setting forth the procedures for providing notice to a violator and the penalties that may be assessed).

80. McCord, *supra* note 4.

81. Dewar, *supra* note 74; see Peter S. Goodman, *The Costs to the Bay; Who Pays for What Is Thrown Away? Impact of New Pollution Controls May Hinge on Liability for Manure*, WASH. POST, Aug. 3, 1999, at A01 (estimating that the Delmarva poultry industry has sales of \$1.6 billion per year).

contractual terms offered by the companies, the companies often withhold the next shipment of chicks making it difficult for the growers to repay the loans incurred to construct the enormous chicken houses.⁸² Many growers believe that the poultry companies should be liable for all aspects of the business.⁸³ On the other hand, the poultry companies argue against being a watchdog for the poultry growers.⁸⁴

Adding to the problem, the growers and the companies confront different sets of regulations in each of the three Delmarva states. In Virginia, the large poultry processing companies must assist the growers in discovering alternatives for waste disposal, but the growers are liable themselves for any resulting harm to the environment.⁸⁵ Virginia's regulations include requiring farmers to maintain records of their methods of manure disposal and allowing yearly inspections by the state.⁸⁶ In addition, Virginia requires most poultry operations to have a nutrient and animal waste management program.⁸⁷ Delaware also requires participating growers to be certified, to maintain comprehensive records on waste and fertilizer handling and to file yearly reports with the state.⁸⁸ Furthermore, Delaware mandates nutrient management plans for any agricultural operation exceeding ten acres or eight animal units.⁸⁹

Maryland's WQIA requires the MDA to administer NMPs for all farming operations with gross incomes greater than \$2500 or livestock

82. Dewar, *supra* note 74.

83. *Id.* One poultry grower stated in a recent newspaper article that the companies "ultimately should be responsible for the whole thing, because I'm just the operator of a chicken mill, so to speak, and I run it for [the poultry companies]." *Id.*

84. *Chicken Rules*, *supra* note 6; see also Joel McCord & Chris Guy, *Proposed Waste Regulations Draw Protest; Poultry Growers Say New Rules Would Hurt Industry*, BALT. SUN, Jan. 30, 2001, at 2B (stating that the MDE's proposed scheme "would place poultry processors in the role of enforcers over their growers").

85. Scott Harper, *Va. Sets Poultry Waste Rules*, BALT. SUN, Sept. 26, 2000, at 6B.

86. *Id.* Under Virginia's scheme, merchants who buy the waste to resell it as fertilizer must also record and report their transactions to the state authorities. *Id.*

87. *Id.*; see also CTR. FOR AGRIC. RESEARCH AND POLICY, ECONOMIC SITUATION AND PROSPECTS FOR MD. AGRIC. 53 (2000) (identifying that poultry operations in Virginia are mandated to develop a phosphorus-based nutrient and animal waste management plans), available at <http://www.mda.state.md.us/geninfo/agfuture.pdf> (last visited Nov. 12, 2002) [hereinafter FUTURE OF MARYLAND AGRICULTURE].

88. Randall Chase, *Nutrient Management Program Enters Mandatory Compliance Phase*, ASSOCIATED PRESS NEWSWIRE, July 15, 2002. Specifically, Delaware law requires management plans for "all nutrient-receiving land, including crop fields and golf courses." *Id.*

89. FUTURE OF MARYLAND AGRICULTURE, *supra* note 87, at 53. The EPA has proposed new regulations regarding water pollution permits for AFOs. *Id.* These regulations would require "co-permitting of any animal feeding operation under 'significant' control of another entity [and] . . . the integrators would be co-permitted with growers due to the 'significant' control they maintain." *Id.* at 53-54. The EPA's regulations would "attach poultry integrators to the permits of the poultry growers." *Id.* at 54.

operations with eight or more animal units.⁹⁰ In addition, farmers whose operations are required to submit NMPs must complete a training course every three years and face penalties for noncompliance with the WQIA.⁹¹ In Maryland, poultry industry representatives claim that co-permitting⁹² “would ruin the independence of thousands of small family farmers.”⁹³ Poultry representatives also contend that any added regulations would increase pressure on the industry’s declining exports and low market prices.⁹⁴ In contrast, supporters of co-permitting, including the MDE, argue that the large processing companies should be liable because they contract with the growers, own the chickens, and control the feed type and methods for raising the chickens.⁹⁵ As a result of placing the enforcement authority with MDA to oversee the NMPs, farmer compliance with the Act has been low and the threat of another *Pfiesteria* attack lingers.

E. In re Tyson

In July 2001, the Maryland Department of the Environment (MDE) attached new conditions to the wastewater discharge permits of three of the state’s largest poultry processing companies making these companies liable for the poultry manure produced on the farms raising the chickens.⁹⁶ Although a few farms are company-owned, most of these poultry farms are independently owned and operated.⁹⁷ The

90. MD. CODE ANN., AGRIC. §§ 8-801.1, 8-803.1(b) (1999).

91. *Id.* §§ 8-803.3(b), 8-803.1(j).

92. Co-permitting is the process of regulating the previously unregulated farms where individual contractors raise the chickens through the current permits issued to the plants (owned by Perdue, Tyson, Allen, etc.) for their wastewater discharges. Anita Huslin, *Poultry Firms Win Round Against Md., Ruling Blocks Plan to Regulate Manure*, WASH. POST, Aug. 27, 2002, at A5.

93. McCord & Guy, *supra* note 84. Growers opine that “[t]he only purpose of co-permitting is to further harass the poultry grower.” *Id.*; see also National Pollution Discharge Elimination System Permit Regulation and Effluent Limitation Guidelines and Standards for Concentrated Animal Feeding Operations, 66 Fed. Reg. 2960, 3136 (Jan. 12, 2001) (to be codified at 40 C.F.R. pt. 122 and 412) (defining co-permitting).

94. McCord & Guy, *supra* note 84 (stating that the poultry industry has recently experienced a decline in exports and some of the lowest prices for poultry in two decades).

95. Huslin, *supra* note 92. Supporters also argue that “as the integrator stands to make [the] most profit from poultry productions and has the most control over the organization of the industry, increased responsibility should be assigned to these companies in dealing with excess animal waste.” Marks, *supra* note 3, at 1067 (quoting DAVE CAZIER & ALISSA SALMORE, THE ETOWAH INITIATIVE: POULTRY WASTE MANAGEMENT FOR BETTER WATER QUALITY IN THE ETOWAH RIVER 1, 13 (1998)).

96. *In re Tyson Foods, Inc.*, Case Nos. MDE-WMA-63-200200001 to 03, Md. Office of Admin. Hearings, at 13-14 (Aug. 23, 2002). The MDE and the poultry companies reached an undisclosed settlement agreement.

97. *In re Tyson*, at 14.

large poultry processing companies supply the growers with everything, from the chicks to the chicken feed, even transporting the fattened chickens to local slaughterhouses.⁹⁸ The conditions attached by the MDE to these companies discharge permits required them to assist the growers with the disposal of chicken waste in an environmentally protective manner.⁹⁹ The permit conditions required the farmers to develop and perform many tasks such as withholding chickens from farmers in violation of the WQIA regarding nutrient management and disposal.¹⁰⁰ The MDE argued that it possessed the authority under the WQIA to attach these conditions to the discharge permits under its expansive power to control water pollution in Maryland.¹⁰¹ The companies argued that the MDE was using its authority to regulate wastewater discharges from the processing plants to devise a new regulatory structure aimed at reducing nutrient runoff from chicken growing facilities.¹⁰²

In *Tyson*, Administrative Law Judge Neile S. Friedman ruled that the MDE exceeded its scope of authority by exercising control over the disposal of manure on farms that were not physically a part of the permitted sites.¹⁰³ Judge Friedman concluded that the conditions were unrelated to the three poultry processing plants themselves, but

98. See Dewar, *supra* note 74 (stating that “the big companies, or ‘integrators,’ supply their contract growers with everything from chick to feed and medicine, then haul the fattened birds away for slaughter”).

99. *In re Tyson*, at 14-15. Until this attempt by the MDE, the poultry companies did not play a part in the manure disposal process. Dewar, *supra* note 74.

100. The permit conditions mandated several actions including: (1) providing certified nutrient management planners to prepare NMPs for all chicken farmers that raise chickens for the companies; (2) determining those contract farms generating more litter/manure than can be used consistently with their NMPs; (3) planning for the management of all the litter/manure generated by all their contract farmers; (4) providing “compliance assistance” to farmers under contract who need help disposing of excess poultry litter/manure; (5) training of farmers on litter/manure management; (6) conducting research on disposing “excess” litter/manure and on formulating feed and/or additives aimed at reducing poultry litter/manure nutrients; (7) withholding chickens from farmers who are in violation of the WQIA; (8) assisting farmers who do not have the capacity to compost mortality, by transporting mortality on a daily basis to a suitable facility; and, (9) filing detailed reports with the MDE on all of the above. *In re Tyson*, at 8-9.

101. *In re Tyson*, at 15-16; see MD. CODE ANN., ENVIR. § 9-326(a) (1996) (providing that “[t]he Department [of the Environment] may condition the issuance of a discharge permit contingent on any conditions the Department considers necessary to prevent the violation of this subtitle”); MD. REGS. CODE tit. 26, § 08.04.01B(3) (2003) (stating that a person cannot “construct, install, modify, extend, alter, or operate any system for the disposal of waste or wastewater into the waters of the State” without an authorized discharge permit).

102. *In re Tyson*, at 13, 15.

103. *Id.* at 35. Judge Friedman stated that the MDE assumed “a significant role in the management of agriculturally-related nonpoint source pollution by creating, on its own, a new regulatory scheme to address the problem posed by agricultural nutrients.” *Id.* at 34.

instead attached to the hundreds of farms on the Eastern Shore that raise chickens for the big companies.¹⁰⁴ Judge Friedman determined that the plain language of section 9-323 of the Environment Article of the Maryland Code on Environment did not authorize the MDE to regulate discharges from operations controlled by the permittee, but not physically a part of the processing plants covered by the discharge permit.¹⁰⁵ Furthermore, Judge Friedman concluded that the General Assembly delegated enforcement authority over nutrient runoff from poultry farms to MDA and not to the MDE.¹⁰⁶ She stated that the method adopted by the MDE was especially vexing because its initiative was “specifically rejected by the Legislature.”¹⁰⁷ In addition, she determined that the MDE did not follow proper procedure for introducing a new administrative rule.¹⁰⁸ Accordingly, Judge Friedman ordered that the attached conditions be stricken from the permits.¹⁰⁹

II. ANALYSIS

This Part will address three possible solutions aimed at increasing compliance with the WQIA. The first possible solution is for the General Assembly to shift enforcement responsibilities from the MDA to the MDE. Another solution is to apply strict, joint and several liability to both the poultry processing companies and the growers. Finally, this analysis will examine the use of a nutrient trading system as a possible solution to the excess poultry waste problem.

A. *The General Assembly Should Shift Enforcement from the Department of Agriculture to the Department of the Environment*

The Tyson decision weakened Maryland’s ability to control water pollution by removing the MDE from a position of enforcement. *In re*

104. *Id.* at 14.

105. *Id.* at 18-19.

106. *Id.* at 30; see MD. CODE ANN., AGRIC. § 8-805 (1999) (stating “the Department [of Agriculture] may deny, suspend, or revoke a certificate or license for a violation of this subtitle”). Judge Friedman observed, “the General Assembly did not authorize MDE to determine compliance with NMPs; or to be able to assess, . . . civil . . . as well as criminal penalties.” *Tyson*, at 31. However, the Code of Maryland Regulations does provide the MDE with some enforcement authority. See MD. REGS. CODE tit. 15, § 20.07.07 (stating that “[i]f an operator fails to comply with the provisions . . . of this chapter following a third citation by the Department, the violation shall be referred to the Maryland Department of Environment for further action”).

107. *In re Tyson*, at 34. Judge Friedman hypothesized that the MDE was reacting to political pressure surrounding the *Pfiesteria* outbreaks. *Id.*

108. *Id.* (stating “that MDE’s interpretation is not the result of a rule-making process or contested adversarial proceeding”). See MD. CODE ANN., STATE GOV’T §§ 10-201 to 226 (1999) (setting forth Maryland’s Administrative Procedure Act).

109. *In re Tyson*, at 35.

Tyson limited the scope of the MDE's authority by ruling that the conditions placed on the poultry processors' wastewater permits created a new regulatory scheme.¹¹⁰ Thus, the MDE, Maryland's environmental enforcement agency, lost the ability to hold the big poultry processing companies liable for the excess poultry waste.

In reconsidering how to solve the problem of excess poultry waste, the General Assembly should shift enforcement of the nutrient management program from the MDA to the MDE. Traditionally, the MDA's role has been to serve and assist Maryland farmers.¹¹¹ The MDE is the better agency to enforce the nutrient management program because the WQIA's purpose is to protect the quality of Maryland's waters, which is part of the MDE's mission and goals.¹¹² The burden of enforcement, in addition to overseeing the implementation of nutrient management plans, is more enforcement authority than what the MDA is accustomed to having.¹¹³ Currently, pesticide control is the only other enforcement program administered by the MDA.¹¹⁴ Accordingly, the MDA is unlikely to strictly enforce the provisions of the WQIA.

During the debates regarding the WQIA, the Maryland General Assembly "expressly rejected" extending the MDE regulatory oversight for the storage and disposal of surplus poultry waste.¹¹⁵ Instead, the General Assembly enacted the WQIA and gave enforcement authority

110. *Id.*

111. The MDA works with farmers to implement best management practice designed to reduce animal waste. MD. RECS. CODE tit. 15, § 01.05.02B(1) (2002). In addition, the MDA administers a cost sharing program and provides financial assistance to farmers aimed at controlling waste and water pollution. MD. CODE ANN., AGRIC. § 8-702 (1999); MD. RECS. CODE tit. 16, §§ 01.05.02B(12), .03(A) (2002).

112. MDE, *About MDE*, at <http://www.mde.state.md.us/AboutMDE/index.asp> (last visited Apr. 17, 2003).

113. See Md. Dept. of Agric., *MDA—Its History and Purpose* (reporting the mission of the MDA as providing support to agriculture), at <http://www.mda.state.md.us/geninfo/gen1.htm> (last visited Apr. 17, 2003). As indicated in its mission statement, the MDA supplies support rather than penalties to the regulated agricultural community.

114. MD. CODE ANN., AGRIC. §§ 8-801 to 8-807 (1999); see Maryland Department of Agriculture, *Pesticide*, at <http://www.mda.state.md.us/geninfo/general0.htm>. In comparison to the MDA, the MDE has the responsibility to enforce many laws and regulations protecting the quality of the environment such as NPDES permits, lead paint regulations, and air quality or radiological health laws. Maryland Department of the Environment, *Organizational Guide to the Maryland Department of the Environment*, at [http://www.mde.state.md.us/assets/document.mdguide\(1\)/pdf](http://www.mde.state.md.us/assets/document.mdguide(1)/pdf) (last visited Apr. 17, 2003).

115. *In re Tyson*, at 29. A Senate bill before the 1998 legislature would have allowed the MDE to regulate waste management practices of commercial poultry companies. S.B. 413, 1998 Leg., 412th Sess. (Md. 1998). The bill would have forced the poultry companies to submit to the MDE a poultry waste management plan to ensure that excess poultry waste would be treated according to the MDE's regulations. *Id.* at 9-281(D). However, this bill was not adopted by the General Assembly. *In re Tyson*, at 29.

to the MDA.¹¹⁶ Although the MDA's regulatory oversight seems to make sense because poultry farms are agricultural operations, giving the MDA exclusive enforcement authority over nutrient management plans does not effectively provide for the enforcement of the State's water quality laws.

Judge Friedman in *Tyson* failed to realize that the Code of Maryland Regulation provides the MDE with an enforcement role. Additionally, the MDA website directs farmers to the MDE to obtain the NPDES/State permits and the section 401 water quality certification required by the CWA.¹¹⁷ Furthermore, the MDA's mission is "to provide leadership and support to agriculture and the citizens of Maryland by *conducting regulatory, service, and educational activities* that assure consumer confidence, protect the environment, and promote agriculture."¹¹⁸ When the MDA formulates regulations, it does so in the field of agriculture and is typically not accustomed to an enforcement role.¹¹⁹ In particular, the MDA is not accustomed to enforcement of the State's water quality laws.¹²⁰

The organizational structure of the MDE is better designed to handle the enforcement duties for permits regulating excess nutrients entering Maryland's waters as a result of poultry feeding operations. The General Assembly recognized this in 1987 when the MDE was created to centralize all of Maryland's environmental regulatory operations into one executive agency.¹²¹ The reason for consolidating regulatory functions into the MDE was "to strengthen the state's enforcement capability and to streamline its fulfillment of other envi-

116. MD. CODE ANN., AGRIC. § 8-805. Specifically, "the General Assembly struck from the WQIA provisions that would have authorized MDE to regulate under or to enforce violations under the Act." *In re Tyson*, at 30.

117. Maryland Department of Agriculture, *Permit Guide for Farmers*, at <http://www.mda.state.md.us/resource/guide.htm> (last visited Apr. 17, 2003); see MD. REGS. CODE tit. 26, § 08.04.01(A) (2003) (stating that the MDE shall issue Maryland's NPDES permits).

The Department [of the Environment] shall issue State discharge permits or NPDES permits . . . to satisfy the regulatory requirements of the National Pollutant Discharge Elimination System (NPDES), established under the Federal Act.

118. Maryland Department of Agriculture, *Vision and Mission Statement*, at <http://www.mda.state.md.us/geninfo/genera26.htm> (emphasis added) (last visited Apr. 17, 2003).

119. See source cited *supra* note 113.

120. E-mail from Royden N. Powell, III, Assistant Secretary, Office of Resource Conservation, Maryland Department of Agriculture (Nov. 14, 2002) (on file with author). In contrast, "[the] MDE's duties encompass enforcement and regulation." Maryland Department of the Environment, *Beginnings*, at <http://www.mde.state.md.us/aboutmde/aboutmde.htm#mission> (last updated Sept. 10, 2002) [hereinafter *Beginnings*].

121. PIPER & MARBURY L.L.P., MARYLAND ENVIRONMENTAL LAW HANDBOOK 2 (3d ed. 1997).

ronmental responsibilities."¹²² Thus, enforcement of the WQIA should be placed with the MDE because the agency was created to protect the environment through various methods such as enforcement and regulation.¹²³ In addition, the MDE's enabling statute requires the Secretary of the MDE to submit a yearly report on the Department's enforcement actions.¹²⁴ The MDA's enabling act does not have a corresponding section that requires the Secretary of the MDA to submit a yearly report on its enforcement activities.¹²⁵ This would suggest that the MDA lacks the knowledge and resources necessary to enforce the nutrient permit system.

Furthermore, the MDE's organizational structure includes an Environmental Crimes Unit.¹²⁶ The Environmental Crimes Unit's mission is to seek criminal penalties for violations of Maryland's environmental statutes and regulations.¹²⁷ No such "environmental crimes unit" counterpart exists at the MDA.¹²⁸ Hence, given their respective structures, the MDE is the appropriate agency to maintain and strengthen Maryland's ability to control water pollution from excess poultry waste.

B. The General Assembly Should Apply Strict, Joint and Several Liability to Both the Poultry Processing Companies and Growers

Another possible solution to the problem of excess poultry waste is to hold both the poultry companies, as owners of the waste, and the

122. *Id.*; see also Letter from William Donald Schaffer, former Governor of Maryland, to Clarence W. Blount, Congressman in Maryland's General Assembly (Feb. 25, 1987) (on file at University of Maryland School of Law) (explaining that the newly formed MDE would "consolidate the regulatory programs designed to protect Maryland's environment and provide a more responsive and efficient permitting process").

123. Maryland Department of the Environment, *About MDE*, at <http://www.mde.state.md.us/AboutMDE/index.asp> (last visited Apr. 17, 2003).

124. MD. CODE ANN., ENVIR. § 1-301(d) (2002 Supp.) (providing that "[o]n or before October 1 of each year, the Secretary, in consultation with the Attorney General, shall submit to the Legislative Policy Committee . . . a report on enforcement activities conducted by the Department during the previous fiscal year").

125. See MD. CODE ANN., AGRIC. § 2-103 (1999) (describing the duties and power of the Secretary of the Department of the Environment).

126. See *Beginnings*, *supra* note 121. Maryland Department of the Environment, *Organizational Guide to the Maryland Department of the Environment* 3, at <http://www.mde.state.md.us/assets/document/mdeguidel1/pdf> (last visited Mar. 14, 2003).

127. Maryland Department of the Environment, *Environmental Crimes Unit*, at <http://www.mde.state.md.us/aboutmde/ecu.htm> (last updated Sept. 10, 2002).

128. See Maryland Department of Agriculture, *MDA—Its History and Purpose* (listing the MDA's three operating units: Office of Marketing, Animal Industries and Consumer Services; Office of Plant Industries and Pest Management; and the Office of Resource Conservation), at <http://www.mda.state.md.us/geninfo/genera20.htm> (last visited Apr. 17, 2003).

poultry growers, as operators of the waste, responsible for the consequences of its mishandling. Under the current system, the small growers are liable for the environmental harms caused by excess poultry waste, while the large poultry processing companies, which own the chickens and provide the feed, are shielded from liability for the environmental consequences generated by their industry.¹²⁹ Voluntary programs for the growers, instituted in the past have been unsuccessful in providing for adequate disposal of the abundant waste produced by animal feeding operations.¹³⁰ Because of their level of involvement in the process and the financial resources of the large poultry companies, these companies should be required to share the responsibility for disposing of the poultry waste.¹³¹ These companies are in a better position to develop creative and cost-effective disposal methods that the small farmer is ill-equipped to develop.¹³²

Maryland could model liability based on the scheme adopted in Kentucky, which has encountered similar poultry waste problems.¹³³ In 2000, a proactive Kentucky Natural Resources and Environmental Protection Cabinet (NREPC) introduced poultry regulations that included integrator liability.¹³⁴ These regulations define owners and operators of animal feeding operations to be the persons who own the animals.¹³⁵ Therefore, the poultry processing companies who own the chickens can be held liable for waste disposal.¹³⁶ Because the

129. See *Chicken Rules*, *supra* note 6 (explaining that the WQIA pushed all responsibility on the farmers/growers for manure disposal); Cynthia M. Roelle, *Pork, Pollution & Priorities: Integrator Liability in North Carolina*, 35 WAKE FOREST L. REV. 1055, 1074 (2000) (describing similar liability schemes in the pork industry).

130. See Marks, *supra* note 3, at 1067 (stating that "voluntary programs are simply ill-equipped to handle the voluminous waste" produced by consolidated animal growing operations).

131. See Laure Triefeldt, *Pollution Controls May Make Poultry Manure a Liability*, GAINESVILLE TIMES (Florida), Aug. 9, 1999, at A1. One MDE regulator has observed that "[o]nly the big chicken companies . . . have the deep pockets, distribution systems, and business savvy to develop alternative uses for chicken manure. Farmers are not going to be able to dispose of all this stuff on their farms The companies are the only ones that can market it and get rid of it." *Id.*

132. See Christopher D. Knopf, *What's Included in the Exclusion: Understanding Superfund's Petroleum Exclusion*, 5 FORDHAM ENVTL. L.J. 3, 41 n.232 (1993) (describing how strict liability forces companies to seek safer methods of waste disposal).

133. See Marks, *supra* note 3, at 1054-56 (describing Kentucky's poultry industry, its manure problems, and its legislation attempting to curb pollution from poultry farms); see also Roelle, *supra* note 129, at 1073-76 (describing integrator liability as a method to control water pollution from North Carolina's pork industry).

134. 401 KY. ADMIN. REGS. 5:074E (2001); see also Marks, *supra* note 3, at 1033 (defining integrators as the "corporate owners of the animals").

135. 401 KY. ADMIN. REGS. 5:074E.

136. *Id.*

question of integrator liability remains open in Maryland, the legislature should delegate authority to the MDE to define poultry waste liability. The MDE should then create a regulatory scheme, similar to that adopted by Kentucky, to disperse liability among both the poultry processing companies and growers.

A regulatory scheme incorporating strict, joint and several liability for both the processing companies and the growers would help to rectify the discrepancy of power between these two groups, and, more importantly, redistribute the responsibilities for pollution control to both groups.¹³⁷ The threat of strict, joint and several liability would create a powerful incentive for the poultry processing companies to find alternative means for the disposal of poultry manure.¹³⁸ These regulations would effectively place the burden of environmental compliance on the poultry companies that created the environmental risk in the first place.¹³⁹ However, the threat of liability might place the poultry processing companies at a competitive disadvantage resulting in them leaving Maryland for states with more relaxed regulations.¹⁴⁰ Integrator liability would also ensure availability of funds for the proper mitigation of environmental problems resulting from poultry waste.¹⁴¹ In Kentucky, the NREPC regulations impute integrator liability to avoid the problem of leaving the growers and, in many cases, the taxpayers, with all of the responsibility for environmental damage.¹⁴² Thus, if Maryland held the poultry companies liable through integrator liability, it could avoid passing the cost of cleaning up the water pollution caused by poultry waste to taxpayers.

137. See Marks, *supra* note 3, at 1067 (stating that the poultry companies have enough monetary resources to assist the poultry growers in dealing with the waste problem).

138. See ROBERT V. PERCIVAL ET AL., ENVIRONMENTAL REGULATION: LAW, SCIENCE, AND POLICY 306 (3d. ed. 2000) (noting that strict, joint and several liability places liability for the burden of environmental injuries on the industry engaged in the polluting activity).

139. See *id.* (describing strict, joint and several liability in the context of the federal Comprehensive, Environmental Response, Compensation and Liability Act).

140. See Shelsby, *supra* note 20, at 1C (stating that the "MDE's action could put Maryland's poultry industry at a competitive disadvantage with processors in other parts of the country").

141. See Marks, *supra* note 3, at 1056 (noting that "integrator liability provisions . . . seek to ensure the proper mitigation or clean up of a spill or accident by ensuring that sufficient funds are available").

142. *Id.* at 1055, 1061 (quoting a Georgia legislator who said, "[w]e need to protect Georgia taxpayers from liability for millions of dollars of cleanup costs"); Dave Williams, *Panel Looks at Poultry Farm Size*, FLA. TIMES UNION, May 19, 2000, at B1.

C. Nutrient Trading Program

A third viable option for reducing excess poultry waste is for the General Assembly to adopt a nutrient trading program (NTP).¹⁴³ A NTP is “the transfer of nutrient reduction credits, specifically those for nitrogen and phosphorus, between buyers (entities that purchase nutrient reduction credits) and sellers (entities that offer nutrient credits for sale).”¹⁴⁴ Nutrient trading employs market-based mechanisms to achieve cost-effectiveness and improve environmental quality.¹⁴⁵ The NTP would be most effective as a supplement to Maryland’s nutrient management plan and requires certain conditions such as a well-functioning enforcement system, a flexible legal foundation, and a simple process for using the marketplace in order to function effectively.¹⁴⁶

The benefits of a NTP include flexibility because such an approach affords the discharger the ability to decide where pollution reductions will occur.¹⁴⁷ A NTP also has built-in incentives that help minimize the costs of controlling pollution.¹⁴⁸ A NTP would be particularly desirable in Maryland because of the cost disparity of controlling nonpoint source pollution from Maryland’s poultry industry.¹⁴⁹ In Maryland, every poultry grower has a different cost of compliance.¹⁵⁰ Thus, the pollution permit market would determine the

143. Chesapeake Bay Program, *Nutrient Trading*, at <http://www.chesapeakebay.net/trading.htm> (last visited Nov. 12, 2002); Env'tl. Prot. Agency, *Draft Framework for Watershed-Based Trading*, at <http://www.epa.gov/OWOW/watershed/summary.html> (last visited Nov. 30, 2002); see also Ann Powers, *Reducing Nitrogen Pollution on Long Island Sound: Is There a Place for Pollutant Trading?*, 23 COLUM. J. ENVTL. L. 137, 186-96 (1998) (describing current water pollution trading programs in Wisconsin, North Carolina, and Colorado).

144. Chesapeake Bay Program, *Nutrient Trading*, at <http://www.chesapeakebay.net/trading.htm> (last visited Nov. 12, 2002). The fundamental principles of nutrient trading are that the “key criteria that must be met for a successful and defensible nutrient trading program.” *Id.* There are six elements of nutrient trading that define the activities, events, and responsibilities of those involved with the program, which include: identifying nutrient reduction goals, determining eligibility, performing trade administration, enduring accountability, assessing progress, and involving stakeholders. *Id.*

145. Esther Bartfeld, *Point-Nonpoint Source Trading: Looking Beyond Potential Cost Savings*, 23 ENVTL. L. 43, 44 (1993).

146. James Boyd, *The New Face of the Clean Water Act*, 11 DUKE ENVTL. L. & POL'Y F. 39, 81 (2000) (describing the obstacles to trading water quality permits).

147. See *id.* at 78 (describing the desirability of nutrient trading program because of their high degree of flexibility).

148. *Id.*; see Bartfeld, *supra* note 145, at 46 (stating that in NTPs the “dischargers decide among themselves the optimal levels of abatement necessary to meet an aggregate pollution limit most efficiently”).

149. See Almeida, *supra* note 10, at 1196-97 (stating that nonpoint source pollution is difficult to regulate because it is difficult to ascertain its source and its detrimental effects may be due to multiple source accumulation).

150. Bartfeld, *supra* note 145, at 45.

amount of control needed by each grower.¹⁵¹ Under a market-based approach, neither the MDE nor the MDA would prescribe pollution control programs or technology. Instead, regulated entities themselves would decide on the best pollution control methods by seeking the lowest-cost alternative to reach environmentally set goals.¹⁵² The credits could be purchased by growers and then traded among themselves to efficiently meet each grower's specific cost schedule. However, a NTP does face barriers similar to water-quality trading such as the complexity of a watershed and laws requiring technology-based standards.¹⁵³ However, notwithstanding these drawbacks, the benefits of NTPs, such as cost-effectiveness, outweigh the drawbacks.¹⁵⁴

III. CONCLUSION

Maryland's General Assembly must reassess the problem of excess poultry waste generated by animal feeding operations on the Eastern Shore. The recent administrative decision precluding the MDE from exercising enforcement responsibilities weakens the State's ability to address nonpoint source pollution. The Water Quality Improvement Act of 1998 was a huge step in the right direction for controlling nutrient runoff into the Chesapeake Bay. However, to ensure the health and economic viability of the Chesapeake Bay, further action must be taken to combat the negative impacts on water quality and the environment caused by concentrated poultry operations. Three plausible options for the General Assembly are to grant enforcement authority to the MDE, impose strict, joint and several liability on both the poultry companies and growers, or institute a nutrient trading program. Providing the MDE with enforcement authority would vest this power in the agency that is best equipped to handle the responsibility of enforcing environmental law. Furthermore, applying strict, joint and several liability to both the poultry companies and growers would give poultry companies an incentive to take into account how their business can negatively affect the environment. In addition, the fear of liability will force the poultry companies to think of creative non-polluting methods, market-based or otherwise, for disposing of excess

151. See *id.* at 56-57 (stating that the market prices will push the growers to the least cost solution as each individual grower makes choices to meet the required pollution limit).

152. See *id.* at 57 (describing the theory behind regulation through economic incentives).

153. See Boyd, *supra* note 146, at 81-83 (describing barriers to water quality trading); see also Bartfeld, *supra* note 145, at 89-98, 104 (exploring the complexities and difficulties in implementing a trading program).

154. See *supra* notes 147-152 and accompanying text (describing the cost-effectiveness of trading programs).

poultry waste.¹⁵⁵ Finally, a NTP would create a market for nutrient reduction credits allowing polluters to achieve cost-effectiveness and improve environmental quality. Adopting one or more of these strategies would improve the State's effort to reduce nonpoint source pollution and maintain the health and economic viability of the Chesapeake Bay.

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155. See Knopf, *supra* note 132, at 41 n.232.

