The Middle Ground of Pesticide Regulation: Why EPA Should Use a Watershed-Based Permitting Scheme in Its New Aquatic Pesticides Rule

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In its en banc decision in National Cotton Council v. EPA*, the Sixth Circuit decided that EPA could not exempt pesticide users from the requirements of the Clean Water Act. The court found that persons using pesticides in or near water must apply for a permit under the Clean Water Act, even if the pesticide had been approved for use by EPA under the Federal Insecticide, Fungicide, and Rodenticide Act. EPA must now create a new rule on aquatic pesticide use. This new rule should contain monitoring requirements, public participation, and best available technology standards. The best approach would be a watershed permitting scheme, which concentrates on the regional use of pollutants to balance competing interests. The flexibility of a watershed-based permitting scheme would be particularly useful if agricultural pesticide users are required to apply for Clean Water Act permits.*

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INTRODUCTION

In the recent case *National Cotton Council v. EPA*, the Sixth Circuit considered whether and when Clean Water Act (CWA) permitting requirements should apply to the application of pesticides over or near waters of the United States.[1] Holding for the plaintiffs, the court rejected the Environmental Protection Agency's (EPA) argument that the application of aquatic pesticides does not require CWA permits.[2] The court held that the CWA requires a National Pollutant Discharge Elimination System (NPDES) permit for applications of aquatic pesticides in and around rivers, lakes, and other bodies of water.[3]

The court's ruling in *National Cotton* will affect farmers, land managers, developers, and others who routinely use pesticides. The court has granted a two-year stay of its decision so that EPA can create a new

1. Nat'l Cotton Council v. EPA, 553 F.3d 927(6th Cir. 2009), *cert. denied sub nom.* Am. Farm Bureau Fed. v. Baykeeper, 78 U.S.L.W. 3295 (2010).
2. *Id.* at 940 (6th Cir. 2009).
3. *Id.*

Final Rule on pesticide use. This new rule must balance the concerns of environmental groups, agricultural interests, monitoring requirements and logistics, and the great administrative cost imposed by issuing permits to so many new applicants. As a means of ameliorating some of these concerns, EPA is considering a general permitting system that lacks site-specific and monitoring requirements, rather than creating a pesticide-specific permitting system.

This paper considers the risks and harms of unmonitored aquatic pesticide use and reaches five conclusions: (1) the harms of the status quo to human health and to the environment from unregulated pesticide release are too great to be ignored; (2) the general permitting system currently under consideration will not protect the nation's waters; (3) a new rule with monitoring and enforcement requirements would help regulators control pesticide pollution; (4) agricultural use of pesticides must be regulated, rather than given an exemption, to ensure adequate protection of public health and the environment; and, (5) the best way to balance the costs of efficiency while protecting health and the environment is to develop watershed-based permits—local and regional permits that would encourage local involvement while lowering the cost of enforcement and implementation to EPA. Each conclusion will be addressed in turn.

I. AN OVERVIEW OF THE CLEAN WATER ACT AND THE FEDERAL INSECTICIDES, FUNGICIDES, AND RODENTICIDES ACT

National Cotton is the first case to determine how the CWA should interact with the Federal Insecticides, Fungicides, and Rodenticides Act (FIFRA), which regulates the production and marketing of pesticides. The Sixth Circuit held that dischargers of pesticides must comply with both Acts when pesticides are used on, above, or near water.[4] To help the reader understand the importance of this decision, this Note begins with short histories and a comparison of the two Acts.

A. The History and Purpose of the CWA

In 1972, Congress enacted the CWA, a landmark piece of legislation intended to restore the nation's waterways to fishable and swimmable conditions.[5] The CWA establishes a comprehensive program designed "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters," with the ultimate goal of entirely eliminating the

4. *Id*.
5. Clean Water Act § 101(a), 33 U.S.C. § 1251(a) (2006).

discharge of pollutants into navigable waters.[6] EPA, which is charged with implementation of the CWA,[7] oversees all pollutants discharged into watercourses.

To further the goal of eliminating pollution, Congress requires that polluters apply for an NPDES permit.[8] A person can apply to EPA or to a state agency to get an NPDES permit.[9] Permits require an application fee and set limits on how and where a discharger can pollute; they can be general or site-specific.[10] The permits must, inter alia, assure compliance with applicable effluent standards.[11] The CWA differentiates between point source and nonpoint source pollution. The CWA only regulates point sources, which is defined as "any discernible, confined and discrete conveyance. . . from which pollutants are or may be discharged."[12] The CWA does not regulate or define nonpoint sources of pollution.[13]

The CWA establishes a technology-based requirement for what pollutants may be discharged. CWA section 301(b) "sets forth two stages of effluent limitations which are to be achieved as intermediate steps in pursuit of the . . . objective": elimination of all pollutant discharges.[14] The first step requires point sources (other than publicly owned treatment works) to comply with effluent limitations that require "the application of the best practicable control technology currently available."[15] The second step requires point sources to apply "the best available technology economically achievable. . . toward the national goal of eliminating the discharge of all pollutants."[16]

6. Natural Res. Def. Council v. Train, 510 F.2d 692, 695 (D.C. Cir. 1975) (quoting 33 U.S.C. § 1251(a)(1)).

7. 33 U.S.C. § 1251(d).

8. The 1971 Senate Report explains:

> The Committee believes that the no-discharge declaration . . . of the 1899 Refuse Act is useful as an enforcement tool. Therefore, this section declares the discharge of pollutants unlawful . . . . But the Committee recognizes the impracticality of any effort to halt all pollution immediately. Therefore, this section provides an exception if the discharge meets the requirements of this section, Section 402, and others listed in the bill.

S. Rep. No. 92-414, at 43 (1971), *as reprinted in* 1972 U.S.C.C.A.N. 3668.

9. 33 U.S.C. § 1251(a). For an explanation of when the state or EPA issue NPDES permits, see *infra* notes 42–44 and accompanying text.

10. *Id.* The regulations determining whether a permit will be general or site-specific are based on EPA's decision for that type of permitting scheme.

11. *Train*, 510 F.2d at 696.

12. 33 U.S.C. § 1362(14).

13. *See id*. § 1362(12) (The discharge of a pollutant regulated by the Clean Water Act include "any addition of any pollutant to navigable waters from any *point source*.") (emphasis added).

14. *Train*, 510 F.2d at 696.

15. 33 U.S.C. § 1311(b)(1)(A).

16. *Id.*

B. The History and Purpose of FIFRA

Unlike the CWA, FIFRA's purpose does not include the ultimate elimination of pollutant discharges, or even that pollutant discharges be minimized. FIFRA also does not specifically address the chemical, physical, and biological integrity of U.S. waterways. Instead, FIFRA establishes a nationally uniform registration scheme[17] by which pesticides are registered for use by the public.[18]

In contrast to the CWA, FIFRA regulates a small number of pollutants.[19] These pollutants are generally pesticides, including insecticides, fungicides, and rodenticides.[20] When FIFRA was first passed in 1947, it gave the U.S. Department of Agriculture the responsibility for regulating pesticides.[21] When FIFRA underwent a major revision in 1972, Congress transferred responsibility of pesticide regulation to EPA.[22]

FIFRA establishes registration requirements for all pesticides.[23] After a period of data collection to determine the effectiveness of each pesticide for its intended use, its appropriate dosage, and the hazards of the particular material,[24] FIFRA requires that each pesticide is carefully labeled and that each label describes the permissible use for that pesticide.[25] FIFRA requires registration of all pesticides that are intended to prevent, destroy, repel, or mitigate certain pests.[26]

EPA generally allows a pesticide to be approved and used by the public so long as "it will perform its intended function without *unreasonable* adverse effects on the environment; and when used in accordance with widespread and commonly recognized practice it will not *generally* cause unreasonable adverse effects on the environment."[27] Significantly, FIFRA only requires an assessment of whether the economic and social benefits of a pesticide outweigh the harm caused to the environment.[28] If the use of a pesticide has benefits *not* related to

17. 7 U.S.C. § 136(a).
18. *Id.*
19. *Id*.
20. *Id.*
21. Harold R. Willson, *Pesticide Regulations*, *in* RADCLIFFE'S IPM WORLD TEXTBOOK (Edward B. Radcliffe & William D. Hutchison eds., 1996), *available at* http://ipmworld.umn.edu/chapters/willson.htm.
22. *Id.*
23. 7 U.S.C. § 136(a).
24. *Id.*
25. *Id.*
26. *Id.* According to the definitions section of FIFRA, the term pest means, "(1) any insect, rodent, nematode, fungus, weed, or (2) any other form of terrestrial or aquatic plant or animal life or virus, bacteria, or other micro-organism . . . ." *Id.* § 136t.
27. 7 U.S.C. § 136a(c)(5) (emphasis added).
28. *See id.* § 136(bb).

water quality, those benefits can take precedence over protection of water quality.[29]

C. A Comparison of the CWA and FIFRA

In *National Cotton*, the Sixth Circuit grappled with the intersection of the CWA and FIFRA.[30] Examining the differences between the CWA and FIFRA informs the issues addressed in *National Cotton*.

1. Unlike FIFRA Permits, CWA Permits Consider Local Conditions

One of the most significant differences between FIFRA and the CWA is that FIFRA lacks a mechanism for considering local conditions. The CWA establishes national effluent standards to regulate the discharge of all pollutants into the waters of the United States, but it also establishes the National Pollution Discharge Elimination System, which is a permit program that allows, under certain circumstances, individual discharges.[31] The NPDES program also directs EPA to consider local environmental conditions.[32] Unlike the CWA's NPDES program, FIFRA lacks provisions designed to regulate pesticide applications on a water body-specific basis. Rather, FIFRA regulates the use of pesticides through a national labeling scheme for pesticide containers, prohibiting the use of such pesticides in a manner not allowed by the label.[33] The Ninth Circuit has observed that "FIFRA's labels are the same nationwide, and so the statute does not and cannot consider local environmental conditions."[34]

Under FIFRA, waterways with particularly vulnerable aquatic ecosystems are not specifically protected. For example, certain pesticides (such as synthetic pyrethroids) are "extremely toxic to mosquitoes."[35] But these pesticides are equally toxic to lobsters, shrimp, nymphs, and zooplankton.[36] The use of synthetic pyrethroids near a thriving lobster industry would be devastating. These pesticides, however, can be used in any location under FIFRA. Put simply, FIFRA's broad labeling

29. *Id.*

30. Nat'l Cotton Council v. EPA, 553 F.3d 927, 929–30 (6th Cir. 2009), *cert. denied sub nom.* Am. Farm Bureau Fed. v. Baykeeper, 78 U.S.L.W. 3295 (2010).

31. 33 U.S.C. § 1342.

32. Headwaters, Inc. v. Talent Irrigation Dist., 243 F.3d 526, 531 (9th Cir. 2001).

33. *See* 7 U.S.C. §§ 136(q), 136a, 136j(a)(2)(G).

34. *Headwaters*, 243 F.3d at 531.

35. Letter from Eileen Gunn, Beyond Pesticides, et al. to Water Docket, EPA, Re: Interim Statement and Guidance on Application of Pesticides to Waters of the United States in Compliance with FIFRA (Oct. 14, 2003), *available at* http://www.beyondpesticides.org/watchdog/comments/Water_comments_10-14-03.htm.

36. *Id.*

requirements do not provide adequate protection against specific, individual impacts to water bodies regulated under CWA.

2. Applying for an NPDES Permit Is More Onerous than Complying with FIFRA Regulations

Applying for an NPDES permit is more challenging than complying with FIFRA. An NPDES permit serves to transform the CWA's broad water quality protection standards into specific discharge limitations applicable to specific polluters in specific water bodies.[37] However, some NPDES permits can be generalized to a large number of polluters so that the agency can act more efficiently and effectively.[38] Extensive monitoring and periodic public reporting to enforcement authorities ensure compliance with the NPDES program.[39] FIFRA, however, has no mandatory mechanism for ensuring compliance with a pesticide label's restrictions on use.[40]

The CWA has a "zero discharge" standard, meaning any amount of discharge, no matter how small, without a permit, constitutes a violation of the CWA.[41] While the CWA provides for federal NPDES permits to authorize discharges, most states have assumed a delegation of authority from the federal government to issue state permits.[42] In forty-five states, federal NPDES permits are suspended so that a state agency may issue permits instead.[43] States implementing permitting programs are required to delineate discharge standards and limitations at least as stringent as those required by federal law.[44]

37. No Spray Coal., Inc. v. City of New York, 351 F.3d 602, 604 (2d Cir. 2003) (finding that under CWA, "EPA and state governments . . . may proceed on a case-by-case basis, taking into account the ecological conditions of particular waterways"); *Headwaters*, 243 F.3d at 530.

38. A permitting authority may issue "general" NPDES permits applicable to a group of point sources consisting of similar operations and similar types of pollutant discharges. *See* 40 C.F.R. 122.28(a) (2009). But even where a specific discharger might be eligible for coverage under a general permit, a permitting authority may require that discharger to apply for an individual NPDES permit based on, *inter alia*, the threat of waterbody-specific impacts. *See* 40 C.F.R. 122.28(b)(3).

39. *See* 33 U.S.C. §§ 1318(a), 1342(b)(2)(B) (2006).

40. *Cf.* 7 U.S.C. § 136f (stating that general recordkeeping and inspection requirements are applicable to pesticide producers, registrants, and applicants, but not to end-users).

41. Natural Res. Def. Council v. Costle, 568 F.2d 1369, 1374 (D.C. Cir. 1972).

42. EPA, National Pollutant Discharge Elimination System: State Program Status (Apr. 14, 2003), http://cfpub.epa.gov/npdes/statestats.cfm.

43. *Id.*; *see also* 33 U.S.C. §§ 1342(b)(1), 1342(c) (authorizing states with approved programs to issue permits and suspend federal permits).

44. Terence J. Centner, *Courts and the EPA Interpret NDPES General Permit Requirements for CAFOs*, 38 ENVTL. L. 1215, 1221 (2008).

In comparison to the CWA, FIFRA has a weaker risk assessment standard[45] that establishes the basis for its national pesticide labeling system and does not encompass a permit system for individual applications of pesticides.[46] FIFRA has comparatively broad labeling requirements.

3. Public Participation Options under the CWA Allow for More Meaningful Public Participation than under FIFRA

Unlike FIFRA, the CWA guarantees the public an opportunity to participate in regulating pollutant discharge. The CWA allows public involvement in the NPDES permitting process on a case-by-case basis.[47] Periodic discharge monitoring reports and other records are open to public inspection.[48] In contrast, FIFRA assigns a considerably more circumscribed role to private citizens. FIFRA allows public input on the use of pesticides only under specific circumstances, such as allowing public notice and comment only when decisions affect whether a chemical manufacturing company can register a pesticide for sale.[49]

The CWA also grants citizens the right to sue permit violators in federal court for injunctive relief and penalties.[50] This right can be useful for citizens who experience the deleterious effects of uncontrolled pesticide use: "Citizen suits are a proven enforcement tool . . . . They have deterred violators and achieved significant compliance gains."[51] FIFRA, however, has no citizen suit provision to spur or supplement government enforcement.[52]

D. History of the Interaction between CWA and FIFRA Prior to National Cotton

The history of the interaction between the CWA and FIFRA is murky. In 1977, EPA issued a public FIFRA guideline requiring all pesticide labels to contain the following warning: "Do not discharge into

45. Eileen Gunn, *Interim Statement and Guidance on Application of Pesticides to Waters of the United States in Compliance with FIFRA*, BEYOND PESTICIDES, Oct. 10, 2003, http://www.beyondpesticides.org/watchdog/comments/Water_comments_10-14-03.htm.

46. Headwaters, Inc. v. Talent Irrigation Dist., 243 F.3d 526, 530 (9th Cir. 2001).

47. *See* 33 U.S.C. § 1342(b)(3); *see also* 40 C.F.R. §§ 124.6(c)–(e) (2006) (required draft permit), 124.10 (requiring public notice and comment on draft permit), 124.19 (allowing permit appeal). These requirements allow each permit to be decided on based on their own merits through a public notification process.

48. *See* 33 U.S.C. § 1318(b).

49. *See* 7 U.S.C. §§ 136a(c)(4), 136a(c)(8), 136d(b).

50. *See* 33 U.S.C. § 1365(a)(1); No Spray Coal., Inc. v. City of New York, 351 F.3d 602, 605 (2d Cir. 2003).

51. S. Rep. No. 99-50, at 28 (1985).

52. *See No Spray*, 351 F.3d at 605.

lakes, streams, ponds or public waters unless in accordance with an NPDES permit."[53] While this rule would seem to require NPDES permits for pesticide emitters, no such permits were issued.[54]

The interaction between the Acts remained ambiguous in guidelines issued over the next thirty years. In 1984, the required warning changed to read: "Do not discharge effluent containing this active ingredient into lakes, streams, ponds, estuaries, oceans, or public waters unless this product is specifically identified and addressed in an NPDES permit."[55] By 1993, the required warning read: "Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge."[56] In 1995, EPA limited the labeling requirement to large pesticide product containers, but otherwise affirmed the underlying rule.[57]

EPA did very little to enforce the requirement that pesticide emitters must apply for a permit. There was no monitoring or enforcement of pesticide use.[58] EPA collected little data about the effects of pesticide use, and did not keep track of the amount of pesticides being emitted.[59] Despite the language of the labeling requirement, EPA has not required a NPDES permit for aquatic pesticides,[60] as long as these applications complied with FIFRA.[61]

53. EPA, POLICY AND CRITERIA NOTICE 2180.1 (1977).

54. Interim Statement and Guidance on Application of Pesticides to Waters of the United States, 68 Fed. Reg. 48,385–401 (Aug. 13, 2003) ("EPA does not issue NPDES permits solely for the direct application of a pesticide to target a pest that is present in or over a water of the United States . . . .") To add to the confusion, EPA claims that it has never "stated in any general policy or guidance that an NPDES permit is required for such applications." *Id.*

55. EPA, PESTICIDE REGULATION NOTICE 93-10 (1993) (reporting 1984 amendments).

56. *Id.* EPA removed the 1984 condition that the pesticide merely be "specifically identified and addressed in" an NPDES permit because certain EPA regions and state permitting authorities had chosen not to issue permits to pesticide users "due to the number of dischargers they oversee." *Id.* "In effect, pesticides labeled with the 1984 wording *could not be used* in those states." *Id.* (emphasis added). By requiring that the pesticide be used only "in accordance with the requirements of" a NPDES permit, EPA closed this loophole.

57. *See* EPA, PESTICIDE REGULATION NOTICE 95-1 (1995) ("The purpose of these statements is to remind manufacturers, formulators, and facilities which may use and discharge pesticides of their obligations under the Clean Water Act . . . ."). EPA indicated in this 1995 statement that its regulatory intent had remained consistent since the initial 1977 statement, despite variations in the labeling language since then. *Id.*

58. Interim Statement and Guidance on Application of Pesticides, 68 Fed. Reg. at 48,385–401.

59. *Id.*

60. *See* Application of Pesticides to Waters of the United States in Compliance with FIFRA, 71 Fed. Reg. 68,483 (Nov. 27, 2006) (to be codified at 40 C.F.R. pt. 122).

61. 7 U.S.C. § 136–136y (2006).

The ambiguous language of the policy and EPA's lukewarm enforcement efforts resulted in an unclear rule. After years of uncertainty about whether the CWA applied to pesticide use, EPA took action. On November 20, 2006, EPA issued a Final Rule on aquatic pesticides.[62] The Rule clearly eliminated the need for an NPDES permit for an application of pesticides to waters[63] when made in accordance with FIFRA labels. EPA's regulation took effect on January 26, 2007.[64]

II. SUMMARY OF *NATIONAL COTTON* AND ITS POTENTIAL EFFECTS ON PESTICIDE USE

The *National Cotton* decision will have a significant impact on aquatic pesticide use. Since the court decided that the Clean Water Act applies to pesticides, dischargers of pesticides have new responsibilities and rights.

A. Background to the National Cotton Litigation

The Final Rule followed precedent set by several Ninth Circuit decisions. In *Headwaters, Inc. v. Talent Irrigation District*, the Ninth Circuit held that aquatic herbicide residue left in water from pesticide applications was a "chemical waste" and thus a "pollutant" requiring a permit under the CWA.[65] In another aquatic pesticide case, *Fairhurst v. Hagener*, the Ninth Circuit tackled the question remaining after *Talent*—namely, whether pesticides that are directly and intentionally applied to water bodies, in accordance with the requirements of FIFRA, are "chemical wastes," and thus CWA "pollutants" that require an NPDES permit.[66] The *Fairhurst* court held that pesticides intentionally applied to the nation's waters, in compliance with FIFRA, and producing no residue or unintended effects, are not "pollutants" requiring a NPDES permit.[67] EPA issued its Final Rule exempting aquatic pesticides one year after *Fairhurst*.[68] EPA's 2006 Final Rule formalized the judicially developed exemption from CWA requirements for any aquatic pesticide applied in compliance with FIFRA.[69]

EPA's Final Rules established that an NPDES permit was not required for: (1) the application of pesticides directly to water in order to

62. 40 C.F.R. § 122.3(h)(1) (2010).
63. *Id.*
64. *Id.*
65. Headwaters, Inc. v. Talent Irrigation Dist., 243 F.3d 526, 528 (9th Cir. 2001).
66. Fairhurst v. Hagener, 422 F.3d 1146, 1149 (9th Cir. 2005).
67. *Id.* at 1150–51.
68. Application of Pesticides to Waters of the United States in Compliance with FIFRA, 71 Fed. Reg. 68,483 (Nov. 27, 2006) (to be codified at 40 C.F.R. pt. 122).
69. *Id*.

control pests; and (2) the application of pesticides to control pests present over or near water where a portion of the pesticides would unavoidably be deposited into waters.[70] EPA made clear that its rule was based on its longstanding policy that pesticides applied according to their federal labels are not CWA "pollutants" and thus do not require NPDES permits.[71] EPA explained that aquatic pesticides that are sprayed or otherwise applied consistently with FIFRA are not "chemical wastes" because they have been "evaluated and registered for the purpose of controlling target organisms, and are designed, purchased, and applied to perform that purpose."[72]

Further, EPA stated that aquatic pesticides are not "biological materials" because to find otherwise "would mean that biological pesticides are pollutants, while chemical pesticides used in the same circumstances are not."[73] Finally, EPA wrote that, while residual material remaining after pesticide application may be considered "pollutants," the pesticide itself is not a pollutant *at the time of discharge*. Accordingly, EPA encouraged treating the residual as a nonpoint source pollutant for which no NPDES permit would be required.[74]

B. Analysis of National Cotton

Environmental and industry groups subsequently challenged EPA's Final Rule in eleven circuit courts throughout the United States. An order of the Judicial Panel on Multidistrict Litigation consolidated the petitions for review in the Sixth Circuit.[75] A number of additional industry groups also intervened in support of the Final Rule.[76] The environmental petitioners[77] argued: (1) EPA exceeded its authority by excluding pesticides from the definition of a CWA "pollutant"; (2) EPA exceeded its authority by determining that the residue of such pesticides is a "nonpoint source pollutant"; and (3) that EPA may not exempt pesticide applications from the reach of the CWA.[78] The industry

70. *Id*.
71. *Id.*
72. *Id.* at 68,486.
73. *Id.*
74. *Id.*
75. Nat'l Cotton Council v. EPA, 553 F.3d 927 (6th Cir. 2009), *cert. denied sub nom.* Am. Farm Bureau Fed. v. Baykeeper, 78 U.S.L.W. 3295 (2010).
76. *Id.* at 934.
77. Environmental Petitioners included Baykeeper; Californians for Alternatives to Toxics; Californian Sportsfishing Protection Alliance; National Center for Conservation Science and Policy; Oregon Wild; Saint John's Organic Farm; Waterkeeper Alliance, Inc.; Peconic Baykeeper, Inc.; Soundkeeper, Inc.; Environmental Maine; and Toxics Action Center.
78. *Nat'l Cotton*, 553 F.3d at 934.

interveners[79] argued that EPA's final rule was arbitrary and capricious because pesticides applied in violation of FIFRA are "pollutants" while the same pesticides applied in compliance with FIFRA are not.[80]

The court first examined whether the CWA unambiguously includes excess pesticides within its definition of "pollutant," and concluded that it does.[81] The CWA defines a "pollutant" to include "chemical wastes" and "biological materials."[82] After analyzing the plain meaning of the word "waste," the court found that the CWA definition of "chemical waste" includes "'discarded' chemicals, 'superfluous' chemicals, or 'refuse or excess' chemicals."[83] Like the Ninth Circuit in *Fairhurst*,[84] the Sixth Circuit found: "so long as the chemical pesticide 'is intentionally applied to the water [to perform a particular useful purpose] and leaves no excess portions after performing its intended purpose, it is not a 'chemical waste' . . . and does not require an NPDES permit."[85]

However, the court held that excess chemical pesticide and pesticide residue may be "pollutants."[86] The Sixth Circuit observed that there are at least two situations in which excess pesticide or pesticide residue would meet the CWA definition of "chemical wastes" where chemical pesticides are applied to land or air, and excess pesticides or pesticide residue is subsequently deposited into jurisdictional waters, and where pesticides residue remains following the direct application of chemical pesticides to jurisdictional water to serve a beneficial purpose.[87] Most chemical pesticides are not fully utilized and thus may be subject to regulation under the Act.[88]

Second, the court examined the plain meaning of the term "biological materials" and decided that that term unambiguously includes biological pesticides and their residues that are discharged into water.[89] The court concluded that the application of biological pesticides should not be exempted from NPDES permitting requirement.[90]

79. Industry Petitioners included Agribusiness Association of Iowa; BASF Corporation; Bayer CropScience LP; CropLife America; Delta Council; Eldon C. Stutsman, Inc.; FMC Corporation; Illinois Fertilizer & Chemical Association; The National Cotton Council of America; Responsible Industry for a Sound Environment; Southern Crop Production Association; and Syngenta Crop Protection, Inc., LP.

80. *Nat'l Cotton*, 553 F.3d at 934.

81. *Id.* at 935–37.

82. 33 U.S.C. § 1362(6) (2006).

83. *Nat'l Cotton*, 553 F.3d at 936.

84. Fairhurst v. Hagener, 422 F.3d 1146, 1149 (9th Cir. 2005).

85. *Nat'l Cotton,* 553 F.3d at 936.

86. *Id.*

87. *Id.* at 936–37.

88. *Id.* at 938.

89. *Id.* at 937.

90. *See id.*

Third, the Sixth Circuit found that pesticide discharges should be considered a point source.[91]

Finally, the court rejected EPA's argument that excess and residual pesticides should be exempt from NPDES permitting requirements because they do not qualify as pollutants at the time of discharge.[92] The court found: "[t]here is no requirement that the discharged chemical, or other substance, immediately cause harm . . . . Rather, the requirement is that the discharge come from a 'discernable, confined, and discrete conveyance,' . . . which is the case for pesticide applications."[93] Thus, the court found that the CWA did not support EPA's attempt to inject a temporal requirement for the discharge of pollutants.[94]

The court held that EPA's Final Rule was not a reasonable interpretation of the CWA because the plain language of "chemical waste" and "biological materials" unambiguously includes some aquatic pesticides. The court vacated EPA's Final Rule.[95]

On June 8, 2009, the Sixth Circuit granted EPA a two-year stay of the mandate in *National Cotton Council v. EPA*. While *National Cotton* was a Sixth Circuit decision, it applies nationally because it was consolidated and assigned to the Sixth Circuit from eleven different circuits.[96] Given that the Supreme Court declined to hear the industry's appeal,[97] EPA must issue a final NPDES permit for covered pesticide applications before the ruling takes effect on April 9, 2011.[98]

Following these decisions, pesticide applicators will need an NPDES permit to apply aquatic pesticides into, around, and over water. NPDES permits will not be required, however, for applications of chemical pesticides that leave no residue in the receiving waters. States are expected to review their current NPDES permitting requirements for aquatic pesticide use in light of the court's decision.[99]

91. *Id.* at 939–40.

92. *Id.* at 939.

93. *Id.* (quoting 33 U.S.C. § 1362(14) (2006)).

94. *Id.*

95. *Id.* at 940. The court did not analyze arguments addressing the relationship between the CWA and FIFRA.

96. The petitions for review were consolidated in the Sixth Circuit by an order of the Judicial Panel on Multidistrict Litigation. *Id.* at 930. The ruling applies nationally because the case was consolidated from all the circuits. *See* 28 U.S.C. § 1407.

97. Am. Farm Bureau Fed. v. Baykeeper, 78 U.S.L.W. 3295 (2010).

98. Larry Pearl, *EPA to Allow "Plagiarism" of NPDES General Permit for Pesticide Applications*, PESTICIDE & TOXIC CHEMICAL NEWS, June 29, 2009, at 1. Irrigation return flows and agricultural runoff, however, will not require NPDES permits as they are specifically exempted from the CWA. 33 U.S.C. § 1362(14).

99. While several states, including Washington, California, Oregon, and Nevada, have developed NPDES permit programs for aquatic pesticides, other states have not issued permits. Washington continued to issue NPDES permits for applications of aquatic pesticides pending the outcome in *National Cotton*. *See* KELLY MCLAIN, WASH. STATE DEP'T OF ECOLOGY,

By requiring an NPDES permit for pesticide emissions, the Sixth Circuit places new burdens on pesticide users. In the past, pesticide users only needed to use FIFRA-approved pesticides in order to fulfill the requirements of federal law. Now users will have to comply with the CWA as well: the court's decision heightens permitting requirements for pesticide users, increases the amount of public oversight for pesticide use, and allows the public more opportunity to protect their health through litigation.[100]

III. CRUCIAL CONSIDERATIONS FOR ANY NEW RULE

Before EPA issues a new rule for pesticide emissions, it must balance competing considerations and interests. There are several crucial issues that EPA should consider.

A. Any New Rule Must Include Rigorous Monitoring Provisions

1. The CWA Calls for a High Level of Monitoring Pesticide Use

Pesticide use must not only be curtailed, it must also be monitored, because the CWA specifically calls for the careful monitoring of pesticide use. The CWA provides that state-issued NPDES permits must include inspection, monitoring, entry, and reporting requirements.[101] These provisions were based upon a finding by Congress that the prior federal water pollution control program suffered "from a lack of information concerning dischargers, amounts and kinds of pollution, abatement measures taken, and compliance."[102]

In addition, the legislative history of the Act demonstrates the overwhelming focus of congressional intent upon prevention of harm from pesticide use. The Senate Report from the debates on the CWA's passage reflects an acknowledgement of the harmful effects of pesticides: "Agricultural runoff, animal wastes, soil erosion, fertilizers, *pesticides* and other farm chemicals that are a part of runoff . . . are major contributors to the Nation's water pollution problem."[103] Likewise, in supplemental comments to the Senate Report, even conservative-leaning Senator Robert Dole explained: "The chief hazard of *pesticide use* lies in the long-lasting properties . . . their residues are introduced into the complicated

FOCUS ON STATE'S RESPONSE TO EPA RULE ON AQUATIC PESTICIDE PERMITTING, Pub. No. 07-10-013 (2007), *available at* http://www.ecy.wa.gov/pubs/0710013.pdf.

100. *See* discussion *supra* Part I.C.1–3.

101. *See* 33 U.S.C. § 1342(b)(2)(B).

102. S. Rep. No. 92-414, at 6, *reprinted in* 1972 U.S.C.C.A.N. at 3673.

103. *Id.* at 39 (emphasis added).

food chains at work in nature, and, ultimately, they become concentrated at levels which are hazardous to both animal and human life."[104] The concern of the senators about the use of pesticides shows that one purpose of the CWA is to protect animal and human life from the dangers of pesticide use.

The CWA was intended to protect the nation's waters from pollutants like pesticides, but without more monitoring and study the exact harms caused by pesticide use will remain unknown. EPA should include monitoring and testing provisions in its Final Rule to meet the text of the statute and the concerns of Congress when it passed the CWA.[105]

2. Scientific Evidence of the Harms to Human Health and the Environment Associated with Pesticide Use Demonstrate the Importance of Careful Monitoring

In order to understand why monitoring and careful permitting are important to human health and the environment, one must understand the significant risks of unmonitored pesticide use.

All pesticides are used to kill or disrupt living organisms.[106] Many pesticides are broad-spectrum and affect diverse species, including organisms not targeted by pesticide application.[107] However, even narrowly-targeted pesticides may have significant impacts on species closely related to the intended targets.[108] The potential ecological risks of pesticide use depend on a number of factors, including toxicity, method of application, persistence in the environment, amount used, and susceptibility of non-pest organisms.[109]

Many pesticides in use today cause severe harm to mammals, birds, reptiles, amphibians, fish, and invertebrates.[110] While the strict restriction of certain pesticides has dramatically reduced some risks to wildlife, many

104. *Id.* at 99 (supplemental views of Sen. Dole).

105. *See* 33 U.S.C. § 1342; *see also* Property Owners Ass'n v. Gorsuch, 601 F. Supp. 220, 221 (D. Md. 1983) (finding that monitoring was an important component for enforcing the Clean Water Act).

106. *See* 7 U.S.C. § 136(u)(1)–(3).

107. *See* WILLIAM H. RODGERS, ENVIRONMENTAL LAW 407–09 (2d ed. 1994). Narrow-spectrum pesticides are those that only affect a small group of organisms, where as broad-spectrum pesticides are those that affect a wide range of organisms. *Id.*

108. Clive A. Edwards, *The Impact of Pesticides on the Environment*, *in* THE PESTICIDE QUESTION 17–24 (David Pimentel & Hugh Lehman eds., 1993).

109. *See id*.

110. Laura A. Haight, *Local Control of Pesticides in New York: Perspectives and Policy Recommendations*, 9 ALB. L. ENVTL. OUTLOOK 37, 51 (2004); *see also* JOHN M. JOHNSON & GEORGE W. WARE, PESTICIDE LITIGATION MANUAL 214 (1996).

risks still remain.[111] For example, pesticides are contributing to the worldwide decline in amphibian populations.[112] Additionally, pesticide use kills approximately 6 to 14 million fish every year in the United States,[113] adversely affecting the fishing industry.[114]

Not much is known about the environmental effects of pesticides with respect to numerous other species. A serious issue for pesticide regulation is that the ecological risks of pesticides cannot be easily described or quantified.[115] Unknown effects could include harmful reactions in human and animal growth, physiology, and reproduction.[116] Moreover, it is well documented that pesticides have significant indirect effects on nontarget organisms by reducing the populations of animals or plants that serve as food or cover for other species.[117]

Pesticides may also have harmful effects on reproductive health. Exposure to pesticides has been correlated with adverse effects in humans, including decreased sperm counts, breast and testicular cancers, endometriosis, deformed or stunted reproductive organs, neurological defects, and low birth weights.[118] Fetuses and young children are particularly at risk when exposed.[119] In addition to harming human reproductive health, pesticides have also been implicated in reproductive harm to numerous wildlife populations, including the deformation of alligators and reproductive difficulties in birds, fish, and mammals.[120] The estrogenic effects of pesticides on humans and animals can be extremely complex, unpredictable, and difficult to understand.[121]

111. Nancy A. Beecher et al., *Agroecology of Birds in Organic and Nonorganic Farmland*, 16 CONSERVATION BIOLOGY 1620 (2002). *See generally* Keith Cunningham-Parmeter, *A Poisoned Field: Farmworkers, Pesticide Exposure, and Tort Recovery in an Era of Regulatory Failure*, 28 N.Y.U. REV. L. & SOC. CHANGE 431, 491 (2004).

112. Haight, *supra* note 110, at 51.

113. David Pimental et al., *Environmental and Economic Costs of Pesticide Use*, 42 BIOSCIENCE 750, 756 (1992).

114. *Id.* For one such claim of pesticides negatively affecting the fishing industry, see Lucy Ament, *Lobstermen Want Companies to Fork over Millions for Lobster Die-Off*, 28 PESTICIDE & TOXIC CHEMICAL NEWS 45 (2000).

115. *See* Edwards, *supra* note 108, at 24.

116. *See id.*

117. *Id.* at 28–29.

118. Noah Sachs, *Blocked Pathways: Potential Legal Responses to Endocrine Disrupting Chemicals*, 24 COLUM. J. ENVTL. L. 289, 303–07 (1999). Because pesticides are often directed at killing pests in the larval stage, these pesticides seem to have a particularly adverse affect on fetuses and larvae. *Id.*; *see also* Alexandra B. Klass, *Pesticides, Children's Health Policy, and Common Law Tort Claims*, 7 MINN. J. L. SCI. & TECH. 89, 105 (2005) (claiming that some pesticides might have negative effects "including sterility in men and birth defects in the unborn children of pregnant women.").

119. Edwards, *supra* note 108, at 28–29; *see also* Klass, *supra* note 118.

120. Sachs, *supra* note 118, at 302–07.

121. *Id.*

More information about pesticide use is needed. Without the imposition of a requirement for additional testing about the dangers of pesticide use, communities will be deprived of important information about how pesticide use affects their water sources. EPA's new Final Rule should include monitoring and testing requirements in order to meet this need and protect the nation's water and its health.

B. Any New Rule Must Regulate Agricultural Pesticides

1. Political Pressure for Applying the Agricultural Run-Off Exemption to Agricultural Pesticides

The difficulty with encompassing agricultural pesticides in the new Final Rule is that farmers might claim that *National Cotton* should not apply to agricultural pesticides because of the exemption for agricultural run-off in the CWA. Since the 1977 amendment to the CWA, activities on farmland have been considered a potential nonpoint source of pollution. The amendment excluded "return flows from irrigated agriculture."[122] In amending the Act, Congress chose to "exempt irrigation return flows from all permit requirements under section 402 . . . and assure that area wide waste treatment management plans under section 208 include consideration of irrigated agriculture."[123] Agricultural run-off has been treated by EPA and viewed by the courts as nonpoint source pollution, which is generally addressed by best management practices rather than NPDES permits. This is now called into question: "The [*National Cotton*] decision likely upsets the apple cart which has been in place for decades with respect to farmers' proper application of pesticides . . . even if conducted in accordance with the FIFRA label."[124]

The court's creation of mini "point sources" (such as a nozzle) in areas that have been historically defined as nonpoint sources (such as runoff from a farm field) is confusing at best. A group of state departments of agriculture have shown concern over this lack of clarity: "We are deeply concerned with this change . . . in determining whether potential pesticide residue would be considered discharged from a point source.We believe these actions undermine the agricultural exemptions

122. *Id*.

123. S. Rep. No. 95-217, 95th Cong., 1st Sess. 35 (1977), *reprinted in* 1977 U.S.C.C.A.N. 4326, 4360.

124. Stewart D. Fried & Gary H. Baise, *Impacts of National Cotton Council v. EPA: Wheat Growers May Need NPDES Permits to Apply Pesticides*, WHEATWORLD.ORG, Feb. 20, 2009, http://www.wheatworld.org/wp-content/uploads/enviro-fried-and-baise-on-sixth-circuit-20090220.pdf.

of the CWA and disregard congressional intent."[125] However, the Sixth Circuit indicated that the agricultural exemption for run-off should not apply to agricultural pesticides. The court categorized pesticide use as point source pollution. Thus, pesticides use should not be interpreted as "run-off" under the agricultural exemption.

If EPA decides to include agricultural emitters in its new Final Rule on Aquatic Pesticides, the number of applicants who require NPDES permits would exponentially increase. It would also enlarge the number of permittees that EPA would have to monitor. However, having considering the possible impacts on human health and the environment, in Part IV.B.1, *supra*, EPA should nevertheless include agricultural pesticides in its new Final Rule.

2. Agricultural Pesticides Must Be Regulated Because They Are Particularly Harmful to Human Health and the Environment

The use of agricultural pesticides carries extra risks than other uses of pesticides due to the amount used, the application method, and the disproportionate effect on disadvantaged communities and children. Agricultural pesticide use accounts for 80 percent of yearly pesticide use worldwide, by far the largest sector.[126] Industrial agriculture is one of the leading causes of water pollution in the United States today.[127] Well over 500 million pounds of pesticides have been applied annually on farmland since the 1980s.[128] Pesticide use is ubiquitous on farms and is necessary for most farming operations.[129] Poor application methods can dramatically increase health risks, however. Farmers or migrant workers generally spray agricultural pesticides themselves instead of hiring professional pesticide applicators.[130] If applications are made without masks or gloves, the risks associated with pesticides skyrocket.[131]

The risks associated with agricultural pesticides disproportionately affect the rural and the poor, because farming often takes place in rural

125. Letter from Ron Sparks, President of the National Association of State Departments of Agriculture, to Lisa P. Jackson, Administrator, EPA (May 28, 2009), *available at* http://www.nasda.org/cms/7197/21404/21658/23355.aspx.

126. Carlo V. Di Florio & Matthew McLees, *Pesticide Regulation: The Plight of Migrant Farmworkers v. The Politics of Agribusiness*, 1 DICK. J. ENVTL. L. & POL'Y 148–49 (1992) (listing the health effects of pesticides); *see also* JOHNSON & WARE, *supra* note 110, at 6–9.

127. Beatrice Bobotek, *Farmworkers and Pesticides: The Struggle for Protections*, 29 CLEARINGHOUSE REV. 397–408 (1995).

128. *Id.*

129. MARGARET SANBORN ET AL., ONTARIO COLLEGE OF FAMILY PHYSICIANS, SYSTEMATIC REVIEW OF PESTICIDE HUMAN HEALTH EFFECTS 160 (2004), *available at* http://www.cfpc.ca/local/files/Communications/Current%20Issues/Pesticides/Final%20Paper%2023APR2004.pdf.

130. *Id.*

131. *Id.*

communities.[132] Great risks also exist where communities rely on well water for drinking, since pesticides and nitrates from fertilizers and manures have been found in the groundwater of most states.[133] Children, in particular, are at risk for neurological damage associated with agricultural pesticides.[134]

Finally, congressional concerns about agricultural pesticides during enactment of the CWA demonstrate that these pesticides are of particular concern for government protection of health and the environment. Specifically, a Senate Report exploring the effects of the Clean Water Act explains that "[a]gricultural pollutants from land runoff, animal wastes, pesticides, and fertilizers add to the load of wastes . . . ."[135]

EPA's new Final Rule must include agriculture if it is going to offer meaningful protection for human health and the environment because of the special considerations mentioned above. Further, the new rule must include monitoring requirements in order to determine whether any agricultural pesticide regulatory scheme is actually sufficient.

3. National Cotton *Requires Inclusion of Agricultural Pesticides in Any New Rule*

The most important reason why EPA must include agricultural pesticides in its new Final Rule is because the *National Cotton* case applies to agricultural pesticides. In *National Cotton*, the court determined that pesticide "residuals," as well as pesticides applied directly to watercourses, were regulated by the CWA:

> [A]t least two easily defined sets of circumstances arise whereby chemical pesticides qualify as pollutants under the CWA. In the first circumstance, a chemical pesticide is initially applied to land or dispersed in the air—these pesticides are sometimes referred to as either 'terrestrial pesticides' or 'aerial pesticides' and include applications 'above' or 'near' waterways. At some point following application, excess pesticide or residual pesticide finds its way into thenavigable waters of the United States. Pesticides applied in this way and later affecting the water are necessarily 'discarded,'

132. *See* Lenore S. Azaroff & Lucas M. Neas, *Acute Health Effects Associated with Nonoccupational Pesticide Exposure in Rural El Salvador*, 80 ENVTL. RESEARCH 158 (1999).

133. Robert F. Blomquist, *Applying Pesticides: Toward Reconceptualizing Liability To Neighbors For Crop, Livestock and Personal Damages from Agricultural Chemical Drift*, 48 OKLA. L. REV. 393, 413 (1995).

134. SANBORN ET AL., *supra* note 129, at 168.

135. *See Hearings on Bills Amending the Federal Water Pollution Control Act and Other Pending Legislation Relating to Water Pollution Control Before the Senate Committee on Public Works*, 92nd Cong. 1965 (1971) (statement from COUNCIL ON ENVIRONMENTAL QUALITY, OCEAN DUMPING: A NATIONAL POLICY. A REPORT TO THE PRESIDENT (1970)) (emphasis added).

> 'superfluous,' or 'excess' chemical. Such chemical pesticide residuals meet the Clean Water Act's definition of 'chemical waste.'[136]

This decision indicates that pesticides applied on land, but near water, such as agricultural pesticides, should now be regulated under the CWA. The court determined that because pesticides are not technically run-off, but actually emitted from a point source, agricultural pesticides would need an NPDES permit. This interpretation is in line with the text and the purpose of the CWA.

The question of how EPA will choose to regulate agricultural pesticides is of great importance. The Sixth Circuit in *National Cotton* held that agricultural pesticides are pollutants *as long as* the pesticides were emitted near watercourses and reach those waterways.[137] Several courts besides the Sixth Circuit have found that agricultural pesticides expended over land and in the air are pollutants. In *No Spray Coalition, Inc. v. City of New York*, the court found that if the city in fact directly sprayed pesticides into the water, it must obtain an NPDES permit to do so.[138] Without a permit, spraying pesticides into the water would have been a violation of the CWA.[139] In another case, *Concerned Area Residents for the Env't v. Southview Farm*, the court found that runoff from a farm was not itself a point source.[140] However, the court held that the farm itself could be considered a point source under the CWA.[141] While many other courts have been hesitant to hold farms or agricultural productions to the requirements of the CWA, *No Spray*, *Southview Farm*, and *National Cotton* together represent a step toward greater enforcement of the CWA's requirements regarding agriculture.

EPA seems to indicate that pesticide application is not agricultural run-off, and therefore not exempted. In its "Summary of Revisions to Interpretive Statement" of its 2006 Final Rule, EPA stated that the proposal "only specifically analyzes the applicability of NPDES permitting requirements to pesticide applications in the two circumstances identified therein."[142] It is not meant to cover "the application of agricultural and other pesticides in accordance with relevant FIFRA requirements."[143]

136. Nat'l Cotton Council v. EPA, 553 F.3d at 936–37 (6th Cir. 2009).
137. *Id*. at 940.
138. *Id.*
139. *Id.*
140. Concerned Area Residents for the Env't v. Southview Farm, 34 F.3d 114, 122 (2d Cir. 1994). Agricultural pesticides that are not emitted near watercourses are still exempt, since the Clean Water Act only regulates water.
141. *Id.*
142. 70 Fed. Reg. 5,093, 5,095 (February 1, 2005) (to be codified at 40 C.F.R. pt. 122).
143. *Id*.

Pesticides discharged directly into water during terrestrial agricultural operations, whether as a result of spray drift or inadvertent spraying, fall squarely within the definition of "pollutant" as "chemical wastes." These pesticides, when discharged to water, are performing no agricultural function. And there can be no question that, when it comes to agriculture, Congress knew exactly what it was doing in writing the CWA. Congress explicitly exempted only two types of agricultural discharges from NPDES requirements: "agricultural stormwater" and "return flows from irrigated agriculture." [144] All other agricultural waste discharged from a point source is a pollutant. Because the court in *National Cotton* determined that pesticides are emitted from a point source, agricultural pesticides emitted near water are not run-off but pollutants. However, *National Cotton* leaves unanswered the question of how close a point source must be to water in order to be "near" water for permitting purposes.

IV. EPA SHOULD ADOPT A WATERSHED-BASED PERMITTING RULES THAT BALANCES ENVIRONMENTAL CONCERNS WITH COSTS

EPA should issue a strong permitting system for aquatic pesticides in order to finally meet the concerns of Congress embodied in the CWA. This system should have high monitoring requirements and public participation opportunities. Agricultural pesticides should be specifically included in the permitting scheme. Such a permit would meet the concerns of the court in *National Cotton* that pesticide emitters were not being properly regulated. However, both the agency and Congress have indicated that EPA will issue a general NPDES permit with no monitoring requirements in its Final Rule.[145]

Taking these issues into consideration, I explore three possible Final Rules. The first is a general permit based on past NPDES permits, the second is a site-specific permit, and the third is a watershed-based permit. Part IV.C ultimately concludes that a watershed-based permitting scheme would be a successful choice for regulating pesticide use.

144. 33 U.S.C. § 1362(14) (2006).

145. *See* Pearl, *supra* note 98, at 1; *see also* Brief for Federal Respondent in Opp., Am. Farm Bureau Fed. v. Baykeeper, 78 U.S.L.W. 3295 (2010) (No. 09-548) ("Indeed, EPA is currently in the process of developing general permits governing the types of pesticide applications covered by its rule.").

A. EPA's Suggested Generalized Permit Will Not Adequately Protect the Nation's Waters

EPA is considering a generalized permit,[146] which does the bare minimum to comply with the CWA's provisions and requirements. EPA is considering using a general permit because it is quick and easy to issue,[147] it would not require an exertion of resources or energy by the agency, and it would comply with the *National Cotton* decision. However, this plan has fatal flaws because a general permit would provide few additional protections beyond those already required by FIFRA. If EPA chooses to use a general permit, it might comply with the bare bones of the *National Cotton* decision, but it will not comply with the spirit of the court's decision.

1. Elements of the General Permit

A definition of a general permit would help to determine if a general permit would work for pesticides. According to EPA, "[a] general permit is an NPDES permit that covers several facilities that have the same type of discharge and are located in a specific geographic area."[148] It applies the same or similar conditions to all covered dischargers.[149] "Using a general permit to cover numerous facilities reduces paperwork for permitting authorities and permittees, and ensures consistency of permit conditions for similar facilities."[150] EPA issues general permits when administrative burdens are high and there are large numbers of similarly situated dischargers.[151]

Under a general permit, EPA issues "notices of intent" rather than individualized permits.[152] This process drastically reduces the amount of time required for administrative review.[153] The conditions of a general

146. *Id.*

147. *Id.*

148. EPA, NPDES: View Individual and General Permits (Feb. 8, 2010), http://cfpub.epa.gov/npdes/permitissuance/genpermits.cfm.

149. *Id.*

150. *Id.*

151. *See* OFFICE OF WASTEWATER MGMT., STATE GENERAL PERMITS PROGRAM DEVELOPMENT 1 (1989); *see also* National Pollutant Discharge Elimination System—Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges, 64 Fed. Reg. 68,722, 68,737, 68,762 (Dec. 8, 1999) (to be codified at 40 C.F.R. pts. 9, 122, 123, 124); National Pollutant Discharge Elimination System General Permits and Reporting Requirements for Storm Water Discharges Associated With Industrial Activity, 56 Fed. Reg. 40,948, 40,961 (Aug. 16, 1991) (to be codified at 40 C.F.R. pt 122); National Pollutant Discharge Elimination System Permit Application Regulations for Storm Water Discharges, 55 Fed. Reg. 47,990, 48,002 (Nov. 16, 1990) (to be codified at 40 C.F.R. pts. 122, 123, 124).

152. OFFICE OF WASTEWATER MGMT., *supra* note 151, at 1.

153. *Id.*

permit are developed through a "notice and comment" proceeding, so there is some limited public participation at the start of the process.[154] Sources seeking coverage under a general permit generally need only submit a "notice of intent" to the permit authority, and they are then authorized to discharge under the terms of the general permit without additional government review or public participation.[155] EPA plans to phase in the notice-of-intent process six months after they issue the first NPDES permit in April of 2011.[156]

EPA is currently developing a new Final Rule that would be a very simplified general permit. Bill Jordan, a senior advisor in the Office of Pesticide Programs, has stated that the "EPA is working to develop a general permit—an approach whereby a group of activities with common characteristics are regulated under a single document."[157] EPA plans to combine aerial, water, and land-based pesticide emissions into one permit.[158] Further, EPA has tentatively decided that there may not be numeric limits or benchmarks in the permit,[159] which means that there will be little oversight or monitoring under this general permitting scheme.

While NPDES permits typically have monitoring, reporting, and recordkeeping requirements, these elements will be absent from the general permit. Jack Faulk, from the Water Permits Division in EPA's Office of Water, stated that "there may not be routine reporting," and that the permit "may not entail sample collection and analysis."[160] Also, the Senate Committee on Agriculture has urged EPA to develop a rule with even fewer requirements—one that would basically duplicate the FIFRA requirements.[161]

This rule would be similar to the permitting requirements in effect prior to the *National Cotton* decision and to the requirements for labelers under FIFRA. Emitters of pesticides would not have to worry about local input, monitoring requirements, or best available technology standards. EPA has suggested that they will not even develop a new general permit

154. Jeffrey M. Gaba, *Generally Illegal: NPDES Permits Under the Clean Water Act*, 31 HARV. ENVTL. L. REV. 409, 433, 434 (2007).

155. *Id.* at 435.

156. Pearl, *supra* note 98, at 1.

157. *Id.*

158. *Id.*

159. *Id.*

160. *Id.*

161. Letter from Thomas Harking & Saxby Chambliss, United States Senators, to Lisa P. Jackson, Administrator, EPA (Apr. 3, 2009), *available at* http://216.40.253.202/~usscanf/index.php?option=com_content&task=view&id=1869&Itemid=71.

for pesticides, but will instead use a general permit application that they have already made for other pollutants.[162]

EPA is likely to require the least protections available because they are concerned about the potential expansion of clean water permitting requirements over previously unregulated activities. Court decisions in recent years have "stretched a little bit to cover more [NPDES-related] activities"[163] by "imposing" new permitting requirements on EPA in three previously unregulated areas of activity—water transfers, ballast water, and pesticide applications. EPA estimates that the *National Cotton* decision will affect approximately 365,000 pesticide applicators that perform 5.6 million pesticide applications annually.[164] EPA's lack of resources makes creating a "general" NPDES permit very tempting to the agency.

2. A General Permit is Inappropriate for Four Reasons

Efficiency would come at a high price for human health and the environment. First of all, the broad scope of most general permits precludes site-specific monitoring by regulators.[165] For example, the lack of monitoring means no assessment will be made of discharges into waters that have already been dangerously polluted.[166] Second, general permits will not adequately assure meaningful public participation because pollution control plans developed by permittees are not available for public review.[167] General permits also pay only lip-service to the requirement that permits must include applicable technology-based effluent limitations.[168] Many general permits purport to meet this requirement by having permittees develop their own effluent limitations based on "best management practices."[169] However, these practices are neither reviewed nor approved by the permit writer.[170] Finally, a general permit fails to consider the specialized needs of agricultural pesticide users. These problems are fatal to a general permitting scheme.

162. *See* Pearl, *supra* note 98, at 1.

163. Amena H. Saiyid, *EPA Raises Concern Over Expansion Of Clean Water Permitting Activities*, 38 Env. Rep. (BNA) 37 (2007), *available at* http://news.bna.com/erln/ERLNWB/split_display.adp?fedfid=7292260&vname=ernotallissues&wsn=533276000&searchid=10916539&doctypeid=1&type=date&mode=doc&split=0&scm=ERLNWB&pg=0.

164. EPA, NPDES Topics: Agriculture (April 30, 2009), http://cfpub.epa.gov/npdes/home.cfm?program_id=41.

165. Gaba, *supra* note 154, at 433.

166. *See id.*

167. *Id.*

168. *See id.*

169. *See id.*

170. *Id.*

a. EPA's Proposed General Permit Is Not Adequate Because It Does Not Require Monitoring and Reporting of Pesticide Emissions

NPDES permits typically require that monitoring and reporting occur on a regular basis, and that the resulting information be made available to the public.[171] As a result, environmental problems are more likely to be discovered and rectified before serious damage is done. However, if EPA adopts a general permit, any heightened impacts associated with water body-specific variables will go undetected.

Protecting water quality solely through a general permit is inadequate in several ways. General permits cannot take account of local water body conditions because there are no reporting requirements. Local conditions are largely ignored, which can be dangerous when local conditions render a pesticide discharge inadvisable depending on geological and water level conditions.[172] A general permit does not consider the presence or abundance of specific non-target animals and plants. It does not account for the history of pesticide applications. Finally, a general permit does not consider alternatives to pesticide use in a particular water body, or whether a less harmful pesticide could be used.

A general permit does not evaluate the existing load of pollutants in that water body, and therefore cannot consider the combined or synergistic effects of pollutants—if two pesticides together can be greater than the sum of their individual toxicities.[173] For example, "the application of an aquatic herbicide, which in itself may not cause toxicity, could in combination with other chemicals in the water be toxic to non-target organisms in the region of application."[174]

A general permit program for pesticide emitters also does nothing to monitor toxicity to non-target organisms outside the zone of application of the pesticide. Pesticide registration involves toxicity testing against a suite of standard organisms, but it does not provide information on whether a pesticide that is applied at one location can be transported

171. EPA, NPDES Permit Program Basics (Feb. 1, 2007), http://cfpub.epa.gov/npdes/faqs.cfm?program_id=45.

172. *See, e.g.*, USDA ERS AGRIC. RES., WATER QUALITY EFFECTS OF CROP RESIDUE MANAGEMENT 3 (1993) ("The potential for ground water contamination is [determined by] how easily water can percolate through the soils and geologic formations. Water movement can be rather rapid through soils developed in glacial outwash materials and over fractured limestone (karst) formations . . . .").

173. G. Fred Lee & Anne Jones-Lee, Comments to the Cal. Water Bd., *Inadequate Regulation of Potential Water Quality Impacts of Aquatic Pesticides* 2 (2004), *available at* www.gfredlee.com/Nutrients/InadequateRegAqPest.pdf.

174. *Id.*

from that location to other areas where it may be toxic to aquatic life.[175] For example, when California issued a general permit for aquatic pesticide emitters, all that was required was a fee, a licensing permit, an agreement to comply with potential monitoring and best management practices, and a map of the zone of application.[176]

It could be claimed that general permits provide ease to state environmental regulators and pesticide applicators. But overburdening environmental regulators is a secondary concern because of the harms associated with unregulated pesticide use, which the Sixth Circuit found outweighed EPA's efficiency concerns in *National Cotton*.[177] The more important issue should be the adverse affect on the nation's waters and human health.

b. A General Permit Is Not Adequate Because It Does Not Provide Public Participation or Local Control

The necessity for local input is different from the necessity for reporting and monitoring, although both work together. Local input and local participation are required by the CWA, which mandates that "[p]ublic participation. . . shall be provided for, encouraged, and assisted by the [EPA] and the States."[178] Public participation is a mandatory requirement, the importance of which cannot be overlooked.[179]

The benefits of local participation are similar to the benefits of monitoring, such as the possible prevention of dangerous synergistic effects. However, some benefits of local participation are discrete from those of monitoring because communities, unlike federal agencies, "have the flexibility necessary to adapt to changing circumstances and new information."[180] An NPDES permit that lacks public participation is not properly protecting the nation's waters from pesticide discharge.

A general permit is insufficient because it does not require any public participation. If the permits lack local participation and local reporting, there would be little difference between FIFRA requirements and a NPDES permit. Local control allows better access to and understanding of local conditions that would affect grant of a permit.

175. CAL. STATE WATER QUALITY RES. BD., FACT SHEET FOR WATER QUALITY ORDER NO. 2001-12-DWQ 3 (2002), *available at* http://ceres.ca.gov/tadn/control_manage/docs/NPDES_permit_fs.pdf.

176. *See id.*

177. Nat'l Cotton Council v. EPA, 553 F.3d 927, 1040 (6th Cir. 2009), *cert. denied sub nom.* Am. Farm Bureau Fed. v. Baykeeper, 78 U.S.L.W. 3295 (2010).

178. 33 U.S.C. § 1251(e) (2006).

179. *Id.*

180. *See* Mary Angelo, *Embracing Uncertainty, Complexity and Change to Protect Ecological Integrity: An Eco-Pragmatic Reinvention of a First Generation Environmental Law*, 33 ECOLOGY L.Q. 105, 201 (2006).

Professor Mary Jane Angelo suggests that more local involvement in pesticide applications would be the best way to find out how pesticides are interacting with the local environment:

> The consideration of local factors in making the determination of whether or how to use a specific pesticide in a specific location is of particular import. The benefit *of local control over pesticide use* is that decisions can be made based on local factors. Such factors could include presence of threatened, endangered, or otherwise rare species, presence of sensitive species, soil conditions, climatic conditions, proximity to environmentally sensitive lands, types of crops grown, types of farming practices used, severity of pest infestations, or other relevant site-specific factors.[181]

Another advantage of encouraging local input before issuing a pesticide permit is that local regulators can ensure that pesticides are not interacting harmfully. Some pesticides interact dangerously with other pesticides.[182] Local regulators would have a better chance of preventing such harmful interactions from occurring if they knew which pesticides were being emitted into the local watercourses.

c. A General Permit Is Also Inadequate Because It Will Not Require a Consideration of the Technology-Based Effluent Limitations

An aquatic pesticide NPDES permit should also contain a best available technology standard; however, a general permit would not require that this standard is updated over time. The CWA imposes this standard,[183] under which the level of effluent control that is currently technologically and economically achievable determines the technology-based requirement.[184]

The best available technology standard can only be achieved if EPA sets benchmarks, but a general permit scheme is unlikely to do so. Benchmarks would educate emitters about the safest and most efficient application of pesticides, and emitters should be required to emit no more than the benchmark level of pesticides. A similar balancing act has been successfully implemented in the requirements for stormwater permits, and should also be required of pesticide users.[185]

In order to determine what pesticides are least harmful and to set the requisite benchmarks, this Note suggests that EPA should engage in a

181. *Id.* at 195 (emphasis added).

182. *See supra* notes 173–174 and accompanying text.

183. EPA, NPDES Permit Writers' Manual 52 (1996), *available at* http://www.epa.gov/npdes/pubs/owm0243.pdf.

184. 33 U.S.C. §§ 1314(b), 1316 (2008).

185. EPA, NPDES: Stormwater Phase II Final Rule: An Overview (Jan. 1, 2008), http://cfpub.epa.gov/Npdes/Stormwater/Swfinal.Cfm.

large-scale study.[186] With more data, the effects of pesticides on the environment will be better understood. EPA cannot gather this data if it simply issues a copycat general permit and ignores the reality that more requirements are needed to protect the nation's waters.

d. A General Permit Will Not Adequately Address Agricultural Pesticides

Under *National Cotton*, most agricultural pesticides emitted on, above, or near water are not longer exempted from the CWA. In its Final Rule, EPA must consider how to encourage farmers to apply for permits and how to monitor the enforcement of the new rule in agricultural communities.

A general permit will not take into account the special needs of the agricultural community. A "plagiarized" general permit that copies the requirements placed on another industry will lack the contemplation necessary for an agricultural pesticides permit.[187] For instance, farmers might experience sudden pest infestations that require flexibility in a permitting scheme.[188] In addition, encouraging farmers to apply for and use a NPDES permit can be difficult, which would be a problem that would go unaddressed under a general permitting scheme.[189]

A general NPDES permit will not have adequate monitoring provisions or public participation provisions, establish proper effluent limitations on pesticide emitters, or specifically address the challenges of agricultural pesticides. EPA's proposed plan will not be sufficient to protect the nation's waters. Its adoption would be a mistake, carrying both environmental and human health risks.

B. The Second Option, a Site-Specific Permitting System, Will Place Too Many Administrative Burdens on the Agency

Individual permits would solve many of the shortcomings of a general permit. A site-specific, or individual, permit contains limits on what an applicant "can discharge, monitoring and reporting requirements, and other provisions to ensure that the discharge does not harm water quality or people's health. In essence, the permit translates

186. Sara Goodman, *Study Raises Questions About EPA's Pesticide Risk-Assessment Scheme*, N.Y. TIMES, Aug. 19, 2009.

187. *See* Pearl, *supra* note 98.

188. Letter from Thomas Harking & Saxby Chambliss, *supra* note 161.

189. *See id.* The Senate Agricultural Committee contemplated this possibility: "Nor would it be workable to give farmers a choice: risk Clean Water Act liability for applying pesticides without a permit, or allow their crops to be damaged by refraining from using pesticides." *Id.*

the general requirements of the CWA into specific provisions tailored to the operations of each person discharging pollutants."[190]

Site-specific permits have high monitoring and reporting requirements.[191] They also require site-specific evaluations of the amount of discharges that are allowed in a location.[192] An example of a site-specific permit is the stormwater permitting system,[193] which takes local environmental conditions into account and requires permittees to reduce pollutants to the maximum extent practicable.[194] These permits are useful because they take local environmental conditions into account before a permit is issued.

However, the advantages of a specific permit are also its disadvantages. EPA and state water control boards likely lack the resources for extensive monitoring and reporting requirements because these requirements use a lot of manpower and other agency resources. If agricultural pesticides are included in this permitting scheme, resources will be stretched even thinner.[195] EPA has seen the number of permit applications for their various programs explode. From the year 2000 until 2005, the number of permit applications grew from 100,000 to 600,000 per year.[196] Adding a new permitting scheme will only increase that number. If EPA or the state boards become too overburdened, the NPDES program will not be effective or useful. If it takes too long to apply for a permit, pesticide emitters are likely to avoid applying for a permit at all.[197] Some applicants have reported that it takes five years to receive a specific permit from EPA.[198] Increasing that wait time is bound to discourage new applicants.

Further, EPA is unlikely to issue a site-specific permit. EPA has publicly stated that it is overwhelmed by permit applications.[199] A site-specific permit would be unappealing to the agency during this crisis and EPA is unlikely to issue a Final Rule on Aquatic Pesticides that will

190. EPA, NPDES Permit Program Basics (Feb. 1, 2007), http://cfpub.epa.gov/npdes/faqs.cfm?program_id=45.

191. EPA, NPDES: View Individual and General Permits, *supra* note 148.

192. EPA, NPDES Permit Program Basics, *supra* note 148.

193. *Id.*

194. John H. Minan, "Municipal Separate Storm Sewer System (MS4) Regulation Under the Federal Clean Water Act: The Role of Water Quality Standards?" 42 SAN DIEGO L. REV. 1215, 1218–20. ("For most local governments, the cost of compliance must be balanced against the demand for a wide range of competing public services.")

195. Letter from Thomas Harking & Saxby Chambliss, *supra* note 161.

196. LINDA EICHMILLER, CALL FOR CHANGE—NPDES PROGRAM, ASSOCIATION OF STATE AND INTERSTATE WATER POLLUTION CONTROL ADMINISTRATORS 2 (2006), *available at* www.asiwpca.org/home/docs/NPDES.pdf.

197. *Id.*

198. *Id.*

199. *See* Pearl, *supra* note 98, at 1.

overwhelm their resources. If they were forced to use a site-specific permit, their resources could be stretched to the point where they might not have the ability to ensure long-term monitoring and data assessment.

A site-specific permitting system is not the best solution for the new Final Rule. However, an overly generalized permit would not meet the purpose of the CWA to protect the nation's waters. Thus, some middle ground must be reached between environmental concerns and bureaucratic reality.

C. The Third Option, a Watershed-Based Permit, Is a Balanced Permitting Scheme That Adequately Protects the Nation's Waters without Burdening the Agency

Based on the severe shortcomings created by issuing a general permit and the infeasibility of site-specific permits, EPA should instead issue a watershed-based permitting scheme that has high monitoring and benchmark requirements. A watershed-based permit would have the advantages of meaningful local involvement, high monitoring requirements, low enforcement costs, and flexibility for agricultural pesticide users.

1. Elements of a Watershed-Based Permit

A watershed-based permit is really a group of permits for a region that emphasizes addressing "all stressors within a hydrologically-defined drainage basin, rather than addressing individual pollutant sources on a discharge-by-discharge basis."[200] A watershed-based scheme would be specific to the community that contains a watershed. Either the state or EPA would approve the size and boundaries of the watershed.[201] Once the watersheds are defined, the local goals and monitoring requirements for the watershed would be decided by the pesticide emitters within those communities.[202] At a minimum, each pesticide emitter would need a general NPDES permit like the one EPA has proposed.[203] However, extra requirements for emitters based on the condition of the local watershed would also be required.

Each source would receive a permit based on basin or watershed management areas. This process allows permittees to compare their

200. EPA, Watershed-Based Permitting Under the NPDES Program: Summary of Related Background Information (July 31, 2007), http://cfpub.epa.gov/npdes/wqbasedpermitting/wspermitting.cfm.

201. *Id.*

202. *Id.*

203. *Id.*

permits with other dischargers in the same area and facilitates sharing data to arrive at the most appropriate limits. This permit approach is known as the Watershed-based General Permit for a Common Source.[204] A watershed permit may take a variety of forms and could cover multiple municipal and industrial point source facilities and an array of nonpoint sources, such as runoff and air deposition, as selected by local stakeholders and the permittees and as identified in the permit.[205]

2. A Watershed-Based Permit is Preferable for Four Reasons

This approach is a good compromise between efficiency and thoughtful regulation. EPA believes that a watershed-based approach is an innovative tool for achieving new efficiencies and environmental results.[206] EPA has further stated that watershed-based permitting can help target specific locations and measure local improvements in water quality, reduce the cost of improving the quality of the nation's waters, and facilitate program integration with other acts, such as the Safe Drinking Water Act.[207] EPA's interest in this approach demonstrates that watershed permitting could be a real-world solution.

a. A Watershed Approach Meets Local Enforcement Concerns

How would a watershed permit work for pesticide emissions? An NPDES permitting authority (either EPA or a state-run water board) would develop and issue a watershed permit for a category of point sources within a watershed, such as all publicly owned treatment works or all confined animal feeding operations.[208] This approach is similar to the current general permit, except that the geographic area covered by the permit would correspond to the watershed boundary. The most significant difference between a traditional general permit and the watershed-based general permit for common sources would be that watershed permits reflect local water quality standards.[209] These watershed-specific permits would also look at what pesticides are being emitted by various stakeholders, so that the water control board could ensure that pesticides are not interacting dangerously.[210]

204. G. TRACY MEHAN, EPA, MEMORANDUM: WATERSHED-BASED NPDES POLICY STATEMENT (2003).
205. EPA, Watershed-Based Permitting, *supra* note 200.
206. MEHAN, *supra* note 204.
207. *Id.*
208. EPA, Watershed-Based Permitting, *supra* note 200.
209. *Id.*
210. *See, e.g.*, *id.*

State boards that issue pesticide permits should be trained and required to evaluate the local conditions—including the particular pest concerns, the climatic conditions, and a wide variety of local environmental factors—before "prescribing" that a particular pesticide be used. This prescription-type approach to pesticide application could similarly adjust over time after consideration of changed local conditions or new information about local environmental factors.[211]

The prescription approach has already been tried in concert with a watershed-based permitting scheme. In North Carolina, the local water board created a 30 percent total nitrogen reduction goal for the Neuse River basin.[212] To meet this goal, public and private entities in the basin that hold individual NPDES permits formed the Neuse River Compliance Association.[213] The North Carolina Department of Environment and Natural Resources issued an individual watershed-based permit with multiple permittees to the members of the Association.[214] The dischargers participating in the Association keep their existing individual permits, but are subject to the limits in the group compliance permit.[215] Reporting and monitoring is done through group meetings and each member is responsible to the whole group for compliance.[216]

EPA has already identified over forty watershed-specific local groups that could help run a watershed-based permitting scheme at the local level.[217] Working with these groups would distribute the costs of monitoring and enforcement between local government and the federal government. Further, it would encourage the involvement of local groups and participants. A watershed-based approach balances the costs of enforcement with the concern of public participation.

b. A Watershed Approach Is Flexible

A watershed-based permitting scheme accounts for a wide variety of pesticide dischargers. This program brings together municipal, industrial, and agricultural pesticide dischargers. Each of these groups can barter for how they want discharges to be handled. EPA has suggested that this kind of bartering encourages people to be a part of the permitting process, since people in the same group would encourage others of their

211. Angelo, *supra* note 180, at 130.

212. EPA, Watershed-Based NPDES Permitting: Rethinking Permitting As Usual (May 1, 2003), *available at* http://cfpub.epa.gov/npdes/wqbasedpermitting/wspermitting.cfm.

213. *Id.*

214. *Id.*

215. *Id.*

216. *Id.*

217. EPA, Watershed Organization Fact Sheet: Appendix A (2002), *available at* http://www.epa.gov/npdes/pubs/watershed_techguide_appena.pdf.

group to be a part of the negotiations.[218] Farmers in a community, for example, would want other farmers to take part in the negotiation so that their constituency would look influential and committed.[219] The flexible nature would allow a more generalized watershed permit to be provided to agriculture and small business emitters, while more stringent requirements could be placed on large, sophisticated emitters.[220]

Watershed-based permitting also can incorporate a variety of point source pollution into an overall management scheme.[221] Pesticide use is often difficult to regulate because some pesticides are discharged on land and near water, while other pesticides are released from the air. It is unclear exactly how much of those pesticides enter into the water. Because the *National Cotton* decision applies to discharges that are released *near* water, EPA must find some way to regulate the uncertain amount of pesticide release.[222] Watershed-based permitting looks at the water system as a whole and can better account for this uncertainty.[223] Watershed-based "permits target geographic areas encompassing particular watershed boundaries."[224] "Topographic factors and watershed-specific water quality standards are easier to address" under this permit system.[225]

General permits do not target specific area water quality concerns, so they are somewhat ineffective in protecting already impaired watersheds. By developing watershed-based permits it will be easier to provide additional protection to designated high quality and impaired waters.

c. Watershed-Based Permitting Has High Monitoring Standards and Is Well-Suited for Pesticide Studies

The advantage of a highly monitored permitting scheme is that it gives regulators more information about what sorts of pesticides are being used and what water bodies are being affected.[226] It would also provide enough data that researchers can truly evaluate the effects of

218. EPA, Watershed-Based Permitting, *supra* note 200.

219. *Id.*

220. *Id*.

221. Danielle J. Diamond, *Illinois' Failure to Regulate Concentrated Animal Feeding Operations in Accordance with the Federal Clean Water Act*, 11 DRAKE J. AGRIC. L. 185, 194 (2006).

222. Nat'l Cotton Council v. EPA, 553 F.3d 927, 936–37 (6th Cir. 2009), *cert. denied sub nom.* Am. Farm Bureau Fed. v. Baykeeper, 78 U.S.L.W. 3295 (2010).

223. ENVT'L LAW & POLICY CENTER, ILLINOIS WATER QUALITY AND THE CLEAN WATER ACT 10 (2003), *available at* http://www.elpc.org/documents/ILWaterQuality.pdf.

224. Diamond, *supra* note 221, at 194.

225. *Id.*

226. EPA, Watershed-Based Permitting, *supra* note 200.

pesticide use. In addition, issuing these permits would provide a way for regulators to educate emitters about the specific pesticides they will be using.

EPA should enforce a large-scale study about the effects of pesticide use as part of the Final Rule. There is currently not enough information about the effects and harms associated with pesticide use.[227] The watershed-based approach is the perfect way for EPA to start a pesticide study because pesticide use could be evaluated in concert with specific types of watersheds and ecosystems.

A benefit to regional studies under a watershed-based scheme is the sharing of costs and data between federal, state, and local bodies. For example, "in 2000, the Colorado Department of Public Health and Environment (CDPHE) proposed lowering the chronic selenium standard."[228] "Conoco Inc. convened a stakeholder group of point sources that discharge to the South Platte River and its tributaries to discuss potential impacts of changing the selenium standards within [the] watershed."[229] "The state granted a three-year Temporary Modification for a portion of this watershed to allow for" the study to occur.[230] This study "facilitated the collection of a large amount of quality data" that can now be used to develop and implement future best available technology standards for selenium emission in the region.[231]

EPA should take this watershed-based opportunity to use their monitoring requirements for a data collection study. EPA could collect a more definitive answer about the effects of pesticides on human health and the environment. It also presents a good opportunity for EPA to use the resources of local environmental groups to help collect data—an efficient way of gaining more information about pesticides while also protecting the environment.

d. A Watershed-Based Permitting Scheme Would Provide Flexibility for Regulating Agriculture

Due to the lack of legal clarity and the agricultural community's resistance to pesticide regulation, it will be difficult for EPA to include agricultural pesticides in their new Aquatic Pesticides Rule. However, EPA *should* include agricultural pesticides because they are such a large source of pesticide emissions. The best way for EPA to balance these forces is to use a watershed-based permitting scheme, as the watershed-

227. *See supra* Parts IV.A.2, B.1.
228. EPA, Rethinking Permitting As Usual, *supra* note 212.
229. *Id.*
230. *Id.*
231. *Id.*

based scheme will help provide localized enforcement and can give farmers a voice in how they will be regulated.

A watershed-based permitting scheme is flexible and localized, as described above. This approach will make agricultural communities feel more involved in decision making, since these are bottom-up rather than top-down regulations.[232] Good feelings between stakeholders could increase the chance that people will participate in and report on local pollution levels.[233] For example, the Neuse River Basin project reported that they received 30 percent more monitoring information after instituting their watershed program.[234] Increased monitoring also means that the public will have better access to correct information about the state of their water system. Hopefully, that will encourage local participants to take more responsibility for the impact they have on the environment.

EPA has reported other reasons why local participants would want to be involved in a watershed-based program. Other stakeholders may compensate reluctant sources through a trading program.[235] These trading programs would be particularly advantageous among farm co-ops or farming societies. Farmers could trade their allowable level of pesticide emissions for some other benefit within their communities. People may receive some other benefit, such as technical assistance, from taking actions not required of them now.[236] Holding a watershed pesticide permit could become a valuable asset.[237]

The watershed-based permitting approach is the best way to encourage agricultural pesticide emitters to comply with the CWA. A watershed permit is flexible and can become a valuable trading tool. EPA should require that agricultural pesticide users comply with the CWA, and they should do so using a watershed-based permitting scheme.

CONCLUSION

EPA has two years to develop a new rule to meet the requirements set out in *National Cotton*, while simultaneously balancing health and environmental concerns, outcry from the agricultural community, and economic interests. With a projected increase of 365,000 pesticide

232. EPA, Watershed-Based Permitting, *supra* note 200.
233. *Id.*
234. *Id.* at 27.
235. *Id.* at 24.
236. *Id.* at 24–25.
237. *Id.* at 25.

applicators that perform 5.6 million pesticide applications annually, EPA must also consider monitoring and enforcement costs.[238]

EPA should utilize a watershed-based permitting scheme, which has the following virtues: First, it will take into account regional challenges and assets. Second, it will utilize systems that are already in place. Third, it will provide a platform for future pesticide impact studies. It has the flexibility to encompass agricultural pesticide users along with municipal and industrial emitters.

With so much possibility for success, will EPA shrink from the challenge of protecting the nation's waters from unregulated pesticide use? Pesticides are too harmful to be callously dismissed under a rubber-stamp permitting system. However, EPA faces many problems in constructing a new NPDES permitting system for aquatic pesticides. There are significant monitoring and enforcement challenges because of the sudden explosion in permitting applicants. The agricultural community has already expressed its resistance to the yoke of pesticide regulation. Instead of shrinking from this challenge, EPA should use it as an opportunity to utilize local systems and to build an innovative regulatory scheme: the watershed-based pesticide permit.

238. Press Release, EPA, Pesticide News Story: Motion Filed to Stay Court Decision in Aquatic Pesticide Application Case (April 10, 2009), *available at* http://www.epa.gov/oppfead1/cb/csb_page/updates/2009/aquatic-pesticide.html.