Journal of Environmental and Sustainability Law

Missouri Environmental Law and Policy Review
Volume 1
Issue 2 *Fall 1993*

Article 6

1993

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AGRICULTURAL NON-POINT SOURCE POLLUTION AND WETLANDS: A SENSIBLE APPROACH

by ANTHONY P. FARRELL

Farm wetlands, such as prairie potholes, are quickly disappearing while simultaneously our water quality is continuing to degrade. Both problems are inseparably linked to the control of agricultural runoff. Runoff from farms and fields can be filtered effectively through wetlands on farms, but the incentive to restore these natural treatment systems is lacking.

While some state and federal programs are attempting to address the problem through regulation and monetary stimuli, only the marketplace can provide the solution. It is time for the creation of a wetlands mitigation bank,[1] where environmentalists and farmers both will have their interests satisfied.[2]

I. INTRODUCTION

For the last few decades, water quality in the Midwest has noticeably declined, suffering from the ravages of agricultural chemicals, natural additives, and other runoff from farm feedlots, all by-products of farm production.[3] The high rate of nitrates has tainted 52% of the nation's 94,600 public water sources, and often causes "blue baby syndrome" in infant children.[4] These nitrates can be directly traced to the runoff[5] of manure from farm feedlots in the Midwest, and artificial fertilizer added to the fields to replace the use of manure. The nitrate, phosphorus, sediment, and fecal coliform bacteria-contaminated water eventually finds its way to the rivers and streams from which many communities draw their drinking water.

Chemicals from farm fields such as pesticides and herbicides also pollute many of our water supplies, as the residues, especially atrazine,[6] eventually find their way into ground and surface waters.[7] These pollutants are the principal reasons for the low ratings of the quality of ground and surface water in Midwestern states.[8]

One study has concluded that pollution from runoff sources is now a leading cause of water quality impairment;[9] other studies have found farming responsible for 64% of the non-point source pollution in rivers.[10] At the same time, the availability of water in the Midwest has declined, forcing many cities and farms to find new sources of drinking water, as former sources of groundwater either dry up or become polluted.[11] These two trends affecting our drinking water in the Midwest can be attributed largely to the loss of wetlands on farms during the last 100 years.[12]

Since 1790, Missouri has lost 87% of its original freshwater wetlands,[13] leaving only an estimated 643,000 acres comprising 1.4% of the state's total land area.[14] Farming has claimed 87% of the wetland losses[15] from filling, draining, and plowing under the rich soil and utilizing the readily available water to boost yields and to turn what was seen as wasteland into productive farmland. This unchecked destruction of what many consider the earth's most biologically productive habitat[16] was seen as progress, as there was little knowledge of what long term effects this "progress" would have on the ground and surface waters of the Midwest.

Freshwater wetlands act as a natural filter for agricultural pollutants such as nitrates and pesticides, recharge groundwater supplies, protect against floods, and help control erosion of topsoil from farmland.[17] The disastrous flooding this summer in the Midwest might have been substantially diminished had many of the original wetlands been in

1 The term "mitigation banks" refers to "wetlands restoration projects that provide compensation credits to offset foreseeable wetlands losses from future discharges of dredged or fill material into navigable waters where compensatory mitigation is not practicable," *Bill Tracking Report* on S. 1304, 103d Cong., 1st Sess. (1993) ("Wetlands Conservation and Regulatory Improvements Act"), *available* in LEXIS, Legis Library, Bltrck File.

2 *See* William J. Haynes II and Royal C. Gardner, *The Value of Wetlands as Wetlands: The Case for Mitigation Banking*, 23 Envtl. L. Rep. (Envtl. L. Inst.) 10,261 (1993).

3 WORLD RESOURCES INSTITUTE, ENVIRONMENTAL ALMANAC 92 (1992).

4 "Blue baby syndrome" or Methemoglobinemia is a toxic consequence of a high nitrate level in drinking water. Rae Tyson & Tracy Walmer, *Chemicals Seep Into Our Water Supplies*, USA TODAY, November 14, 1990, at 3A.

5 Runoff is "something that drains or flows off, as rain which flows off the land in streams." RANDOM HOUSE DICTIONARY OF THE ENGLISH LANGUAGE, (Unabr. ed. 1971).

6 Atrazine, an ingredient in agricultural herbicides, may cause cancer. *SIU Researchers to Study Farm Chemicals in Floodwaters*, U.P.I. REGNL. NEWS, September 26, 1993.

7 WORLD RESOURCES INSTITUTE, ENVIRONMENTAL ALMANAC 34, 90 (1992). *See* Terence J. Centner, *Groundwater Quality Regulation: Implications for Agricultural Operations*, 12 HAMLINE L. REV. 589 (1989).

8 Iowa, Kansas and Minnesota have significant problems with nitrates and pesticides in their waters. *State by State Rankings of Green Index*, U.P.I. ILL. DIST'N, August 11, 1991, at 1.

9 National Pollutant Discharge Elimination System Permit Application Regulations for Storm Water Discharges, 55 Fed. Reg. 47,990 (EPA 1990) (to be codified at 40 C.F.R. § 122, 123, and 124).

10 *Ability to Control Non-point Sources at Hand, State Water Administrators Say*, 16 Env't Rep. (BNA) No. 38, at 1768 (1986).

11 *See Assault on the Aquifer*, ORLANDO SENTINEL TRIB., January 12, 1993, at 16A; Geordie Wilson, *B.C. Pollution of Aquifer Travels to U.S.*, SEATTLE TIMES, August 9, 1992, at 6B.

12 *See Senate Launches 22 Starts*, ENGINEERING NEWS-RECORD, May 11, 1992, at 12; Pamela King, Note, *The Protection of Groundwater and Public Drinking Supplies: Recent Trends in Litigation and Legislation*, 42 VAND. L. REV. 1649 (1989).

13 WORLD RESOURCES INSTITUTE, ENVIRONMENTAL ALMANAC 134 (1992). Most other states have had similar losses.

14 *Id.* at 138.

15 *Id.* at 139.

16 *Id.* at 137.

17. *Id.* at 134; MISSOURI DEPARTMENT OF CONSERVATION, FARMING AND WILDLIFE, WETLANDS, SERIES 6, 4 (1992).

place to absorb the excess rainfall received.[18] In the flood's aftermath, the Clinton administration is considering a proposal to buy or lease farmland and revert the land to wetlands as flood control.[19]

A 1989 study of a marshy wetland in Hancock County, Iowa showed an 86% reduction of nitrate levels in the water that filtered through the marsh.[20] Despite the current debate on how to define[21] wetlands,[22] freshwater wetlands and their vital filtering process must be preserved and restored in order to ensure a safe and adequate supply of drinking water for our future. Several commentators believe not enough is being done at this time, either by the federal government or the states.[23]

II. Federal Agricultural Regulations and Programs

Water pollution from a "point source"[24] is regulated[25] by the federal government under the Clean Water Act of 1977 (CWA),[26] which requires a National Pollutant Discharge Elimination System (NPDES) permit,[27] for all discharges of point source pollutants,[28] such as industrial and municipal wastes. The discharge must affect "navigable waters,"[29] enabling the federal government to regulate these "Waters of the United States"[30] as opposed to "Waters of the State," discharges to which are governed by state law exclusively. After federal approval, qualified states may administer the NPDES permit program for all waters within the state.[31]

While the precise categorization of what constitutes "navigable waters" is currently in dispute, "navigable waters" do include wetlands adjacent to navigable waters that affect interstate commerce.[32] The wetlands do not even have to be navigable in fact.[33] The federal government's jurisdiction also includes those wetlands used by migratory birds,[34] which ensures the coverage of most farm wetlands.

The majority of runoff from farm fields and feedlots will eventually discharge into or affect either "Waters of the United States" or "Waters of the States," as these terms are given broad interpretation.[35] Thus the federal government or the state would have jurisdiction over the discharge, depending on the facts in each situation, and whether the state has an approved NPDES permit program.

The Clean Water Act does not require the Environmental Protection Agency (EPA)[36] to regulate the runoff from farm fields and feedlots as thoroughly as the NPDES system for point sources.[37] The EPA claims it has not yet aggressively tackled agricultural pollutants because of the high number of sources and the difficulty of controlling the runoff.[38] Instead the EPA has focused its energy on "point sources" of pollution,[39] as opposed to "non-point sources," a distinction based on the physical source of the discharge.

Under the CWA and EPA's regulations, a "concentrated animal feeding operation" must obtain an NPDES permit[40] for large operations which discharge into navigable waters at times other than a 25-year, 24-

18 Richard Gaffney of the Missouri DNR, *quoted in Often-flooded farmland might be bought out*, Columbia Daily Trib., September 15, 1993, at 4A. *See* Ronald E. Yates, *Restless River*, Columbia Daily Trib., July 25, 1993, at 1D.

19 *See* Ronald E. Yates, *Restless River*, Columbia Daily Trib., July 25, 1993, at 1D; Stephen Labaton, *U.S. Is Considering a 'Revolution' in Flood Control*, N.Y. Times, August 28, 1993, at 6.

20 Daryl Smith, *Wetlands: Let's Leave Well Enough Alone*, Star Trib., February 5, 1992, at 15A.

21 Scientists in the Committee on Wetlands Characterization are to publish a report on September 30 on their definition of a wetland, *Scientists define what is a wetland*, U.P.I. Regnl. News, September 8, 1993. *See also* Ruby Abramson, *Experts Assail Proposed Rules For Wetlands*, L.A. Times November 22, 1991, at 1A.

22 The Corps of Engineers and the EPA both look at hydrology, soil, and vegetation for classification of wetlands; "wetlands means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas." 33 C.F.R. § 328.3(b) (Corps 1991); 40 C.F.R. § 230.3(t), § 230.41(a)(3) (EPA 1992).

23 *See e.g.*, Peter Steinhart, *Mud Wrestling*, Sierra, Jan.-Feb. 1993, at 55; *see also* James C. Buresh, Note, *State and Federal Land Use Regulation: An Application to Groundwater and Nonpoint Source Pollution Control*, 95 Yale L.J. 1433 (1986).

24 A point source is defined as: [A]ny discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include agricultural storm water discharges and return flows from irrigated agriculture. 33 U.S.C. § 1362(14) (1988 & Supp. IV 1992); 40 C.F.R. § 122.2 (1992) (differs slightly from statute). Added as a point source by Pub. L. No. 100-4, § 507, 102 Stat. 1018 (1988) (unclassified in U.S.C.) was "landfill leachate collection system."

25 The Clean Water Act has been found to preempt federal nuisance law in interstate waters. *See* Milwaukee v. Illinois & Michigan, 451 U.S. 304 (1981). Thus the nuisance theory is only available in local situations, as between neighbors of a livestock farming operation.

26 Clean Water Act of 1977, 33 U.S.C. §§ 1251-1387 (1988 & Supp. IV 1992), (formerly Federal Water Pollution Control Act).

27 *See* 33 U.S.C. § 1342(a) (1988 & Supp. IV 1992); 40 C.F.R. § 122.1(b) (1992).

28 40 C.F.R. § 122.2 (1992).

29 Navigable waters of the United States are those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. 33 C.F.R. § 329.4 (Corps 1992). *See, e.g.*, United States v. Sasser, 967 F.2d 993, 995 (4th Cir. 1992).

30 "Waters of the United States" is equivalent to "Navigable Waters." 33 U.S.C. § 1362(7) (1988).

31 33 U.S.C. § 1342(b) (1988).

32 United States v. Riverside Bayview Homes Inc., 474 U.S. 121, 135 (1985); Conant v. United States, 786 F.2d 1008 (11th Cir. 1986).

33 *Riverside Bayview Homes, Inc.* at 132.

34 *See* Final Rule for Regulatory Programs of the Corps of Engineers, 51 Fed. Reg. 41,206, 41,217 (Corps 1986) (corrected at 52 Fed. Reg. 1182 (Corps 1987), to be codified at 33 C.F.R. § 320-330); Clean Water Act § 404 Program Definitions and Permit Exemptions, 53 Fed. Reg. 20,764 (EPA 1988) (to be codified at 40 C.F.R. § 232, 233). The courts may require strict proof of this requirement, *see* Hoffman Homes, Inc. v. Administrator, *U.S. E.P.A.*, 1993 U.S. App. Lexis 18186, at *18 (7th Cir. July 19, 1993).

35 Avoyelles Sportsmen's League v. Marsh, 715 F.2d 897, 914 (5th Cir. 1983); 33 C.F.R. § 328.3 (1991).

36 The EPA has set up a "Wetlands Hotline" for information on regulation of wetlands, national and state programs affecting wetlands, and general information on wetlands values and functions. The number is 1-800-832-7282.

37 *See* 40 C.F.R. § 122.3(e) (1992).

38 John H. Davidson, *Thinking About Nonpoint Sources of Water Pollution and South Dakota Agriculture*, 34 S.D. L. Rev. 20 (1989).

39 *Id.* at 21.

40 40 C.F.R. § 122.23(a) (1992).

hour storm event[41] and which exceed the effluent limitations.[42] Concentrated animal feeding operations are thus technically point sources and any excessive discharges require an NPDES permit. The EPA has not yet meaningfully enforced this requirement except in exceptional circumstances[43] where affected citizens prod the EPA to act, such as under the citizen suit provision of the CWA.[44] EPA apparently has focused its efforts on the regulation of industrial and municipal wastes.[45]

Non-point sources are those sources of pollutants which do not qualify as point sources, such as runoff from farm fields and small livestock feeding operations.[46] Under § 208 of the CWA states are given the responsibility to control agricultural non-point sources through an "Areawide Waste Treatment Management Plan."[47] Section 208 directs the states to: 1) Identify and designate areas having substantial non-point source water quality control problems; 2) Begin a planning process within one year to control these problems; 3) Set forth procedures and methods to control to the extent feasible such sources; and 4) Use a combination of agriculture cost sharing and federal grants to achieve the non-point source objectives of the CWA.[48]

Section 303 of the CWA[49] requires the states to adopt and implement water quality standards for approval by the EPA, and consequently to create a "continuing planning process"[50] which incorporates the § 208 Areawide Waste Treatment Management Plan. While the states grudgingly have followed these guidelines, neither the EPA nor the states have put a high priority on adopting and achieving non-point source water quality standards.[51] While Congress attempted to entice the states to review and revise the § 303 standards in 1981,[52] it has never put any teeth into the enforcement of those standards.

The Missouri Department of Natural Resources (DNR) has initiated an Areawide Waste Treatment Management program as required under § 208 of the CWA based on a Management Plan written in 1979.[53] Unfortunately, Missouri has not gone beyond the minimum steps required in §§ 208 and 303 of the CWA.[54] Presumably, this inaction results from the failure of the governor to designate areas with poor water quality which require special attention under the Missouri Clean Water Law as "waste treatment management areas."[55]

The Water Quality Act of 1987 added § 319 to the CWA which requires state Nonpoint Source Management Plans (NPS plan) and sets additional water quality standards the states must meet in accordance with their § 208 Areawide Waste Treatment Management Plans and § 303 continuing planning process.[56] The attainment of certain goals is not required, though the plans were to be prepared for approval by the EPA by August 1988. Congress gave the states $400 million[57] to prepare the NPS plans and implement the programs created under the plans, which are discussed more thoroughly in Part V of this comment.

Congress has begun regulation of pesticide and insecticide use on farms through the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).[58] The act allows the EPA to classify the pesticides and other agricultural chemicals as "registered" and requires certain licensing and training procedures for the application of those pesticides which cause any unreasonable adverse effects on the environment.[59]

Even though FIFRA requires the responsible use of pesticides, contaminated runoff as a result of rainfall will still occur and should be treated before it pollutes surface waters.[60] A preferable watershed planning approach has been adopted in the Clean Water Act reauthorization legislation, Senate Bill 1114.[61]

III. Federal Protection of Wetlands

The Corps of Engineers has exclusive jurisdiction to protect the majority of wetlands through the approval of "dredge and fill" permits under § 404[62] of the Clean

41 *See* Carr v. Alta Verdes Indus., 931 F.2d 1055, 1059 (5th Cir. 1991); 40 C.F.R. § 122 app. B (1992).
42 For point source feedlots the Effluent Guidelines and Standards are in 40 C.F.R. § 412 (1992).
43 *See* the EPA's argument in Natural Resources Defense Council v. Costle, 568 F.2d 1369, 1375 (D.C. Cir. 1977).
44 33 U.S.C. § 1365(a) (1988); Michael Greve, *The Private Enforcement of Environmental Law*, 65 Tul. L. Rev. 339 (1990). *See, e.g.*, Save Ourselves, Inc. v. U.S. Army Corps of Eng's, 958 F.2d 659 (5th Cir. 1992).
45 However, the trend may be changing, see *Draft Legislation Would Require Non-Point Source Pollution Controls*, 1993 D.E.R. (BNA) 59 (1993).
46 33 U.S.C. § 1342(l) (1988 & Supp. IV 1992); *see* United States v. Frezzo Bros., 642 F.2d 59, 62 (3d Cir. 1981), *pet. denied*, 546 F. Supp. 713 (E.D.Pa. 1982), *aff'd*, 703 F.2d 62 (3d Cir. 1983), *cert. denied*, 464 U.S. 829 (1983).
47 33 U.S.C. § 1288 (1988). Agricultural nonpoint sources are in 33 U.S.C. § 1288(b)(2)(F) (1988); *see* Peter N. Davis, *Federal and State Water Quality Regulation and Law in Missouri*, 55 Mo. L. Rev. 411, 445 (1990).
48 33 U.S.C. § 1288(a-j) (1988).
49 33 U.S.C. § 1313 (1988 & Supp. IV 1992).
50 33 U.S.C. § 1313(e) (1988).
51 *See* Natural Resources Defense Council v. United States E.P.A., 915 F.2d 1314 (9th Cir. 1990).
52 33 U.S.C. § 1313(a) (1988).
53 Telephone Interview with Rich George, Missouri Department of Natural Resources, Division of Environmental Quality, Office of Water Quality (October 26, 1992).
54 *See infra*, text accompanying note 94.
55 Mo. Rev. Stat. § 644.141(1), Supp. 1992.
56 33 U.S.C. § 1329 (Supp. IV 1992), Pub. L. No. 100-4, § 316(a) of Title III, 101 Stat. 52 (1987).
57 33 U.S.C. § 1329(h) (Supp. IV 1992).
58 7 U.S.C. §§ 136(a)-136(y) (1988 & Supp. IV 1992).
59 *See* Cynthia A. Lewis and J. Daniel Berry, *EPA's Pesticides in Groundwater Strategy: Will It Work?*, 4 Nat. Resources & Env't 16 (1989).
60 *See Federal Non-point Source Programs Lack Coordination, State Official Says*, 24 Env't Rep. (BNA) No. 11, at 468 (1993). (where a commentator favors a watershed-based approach).
61 Baucus-Chafee Bill, S. 1114, 103d Cong., 1st Sess. (1993).
62 33 U.S.C. § 1344 (1988 & Supp. IV 1992); United States v. Riverside Bayview Homes Inc., 474 U.S. 121, 133 (1985). *See* Virginia Albrecht, *The Federal Wetlands Regulatory Program*, C730 ALI-ABA Course of Study 123 (1992).

Water Act.[63] A § 404 permit is required for any discharge of "dredge and fill" material into, or which will affect, the navigable waters, under guidelines placing the preservation of wetlands as a high priority in the requirement to find "practical alternatives" to the discharge.[64]

Corps of Engineers permitting for § 404 "dredge and fill" operations currently constitutes the main front in the protection of farm wetlands, including prairie potholes. This approach would be dramatically changed by one proposed bill in Congress.[65] Meanwhile, the general or nationwide permit system reduces the strength of § 404 by allowing many activities to proceed unhindered after pre-discharge notification of the Corps.[66]

Section 404 has not been completely effective in stopping the loss of farm wetlands due to the exception from the permitting requirements for normal farming, ranching and forestry activities.[67] This exclusion is limited to activities which do not impair, reduce, or bring the navigable waters into a use to which they were not previously subject.[68]

The Corps exempts "prior converted wetlands" from the § 404 permitting requirements.[69] These are wetlands converted before September 23, 1985, that are inundated for no more than 14 consecutive days during the growing season.[70]

Many of the valuable farm wetlands already have been lost through development, farming, or dredging operations by the Corps itself.[71] The Corps' authority under § 404 is also inadequate to preserve existing farm wetlands, as the majority of "dredge and fill" permits are approved without much hassle.[72]

Several federal programs have attempted to tackle the problem of diminishing wetlands, though with limited success due to funding shortages and the available exceptions. These provisions, while beneficial and significant for wetland protection, fail to recognize the functional values of wetlands[73] beyond reducing soil erosion and providing duck habitats.

The Food Security Act of 1985[74] (1985 Farm Bill) established the Conservation Reserve Program[75] (CRP) to convert highly erodible farm fields to "set-aside" acres, for which the farmer receives an annual payment. This program has been very popular, as 1.2 million acres were placed in the 1987 CRP program in Missouri alone.[76] While the CRP program has reduced soil erosion, the Agricultural Department Soil Conservation Service (SCS) favors highly erodible slopes, areas where wetlands cannot be sustained. The SCS also frequently allowed haying and foraging in these acres during times of drought, creating an unstable environment for wetlands.[77] The 1985 Farm Bill also established an incentive payment program for farmers who create and implement a water quality improvement plan, which may include the use of wetlands.[78]

The 1985 Farm Bill also contained the "Swampbuster Provision"[79] which denies farm subsidies, disaster payments, and various loan eligibilities to those farmers who have converted wetlands to farmland after the 1985 Farm Bill took effect on December 23, 1985. Thus any crops grown by a farmer in violation would not be subsidized by the federal government because of the "converted wetlands."[80] While the Swampbuster program currently removes the subsidy incentives for the destruction of farm wetlands, it does nothing to restore wetlands already

63 *See* Jane Goldman-Carter, *Clean Water Act Section 404: A Critical Link in Protecting Our Nation's Waters*, 5 NAT. RESOURCES & ENV'T 10 (1991); WILLIAM WANT, LAW OF WETLANDS REGULATION (1989).

64 Guidelines are in 33 U.S.C. § 1344(b)(1) (1988) and 40 C.F.R. § 230 (1992). These allow compensatory mitigation proposals as a last resort in 40 C.F.R. § 230.10(d) (1992).

65 Wetlands Conservation and Regulatory Improvements Act, S. 1304, 103d Cong., 1st Sess. (1993) (would designate the Soil and Conservation Service as the lead agency on farm wetlands).

66 For example, nationwide permit # 26 authorizes discharges of dredged or fill material into waters which do not impair or destroy greater than 10 acres of isolated or headwater wetlands with pre-discharge notification, 33 C.F.R. § 330 (1992).

67 33 U.S.C. § 1344(f)(1)(A) (1988); Discharges Not Requiring Permits, 33 C.F.R. § 323.4(a)(1)(i) (Corps 1991); This exclusion resulted from Natural Resources Defense Council Inc. v. Costle, 568 F.2d 1369, 1383 (D.C. Cir. 1977), which required the Corps to issue general or individual permits for non-point source agricultural runoff, instead of a complete exemption. *See also* Kenneth E. Vams, Note, *United States v. Larkins: Conflict Between Wetland Protection and Agriculture, Exploration of the Farming Exception to the Clean Water Act's Section 404 Permit Requirement*, 35 S.D. L. REV. 272 (1990).

68 33 U.S.C. § 1344(f)(2) (1988).

69 Corps of Engineers Guidance Letter 90-7 (1990). This policy may be enacted into law under President Clinton's Wetlands Plan and S. 1304, 103d Cong., 1st Sess. (1993). *See Administration Officials Voice Support for Wetlands Reform Provisions*, 1993 D.E.R. (BNA) 178 (1993).

70 Same definition as the Swampbuster program, *see* text accompanying note 80, *infra*.

71 Pat Durkin, *Rivers will continue to run through it—but with curves; Engineers see error of their ways, begin to restore bends, ecologies*, HOUSTON CHRON., September 20, 1993, at 8.

72 Recently the Corps has been taking its responsibility more seriously as seen by United States v. Pozsgai, 1993 U.S. App. Lexis 15, 293 (3d Cir. Aug. 10, 1993), where the court upheld the Corps' actions in obtaining a restraining order to protect the filling of wetlands.

73 *See* Dalana W. Johnson, Comment, *Saving the Wetlands From Agriculture: An Examination of Section 404 of the Clean Water Act and the Conservation Provisions of the 1985 and 1990 Farm Bills*, 7 J. LAND USE & ENVTL. L. 229 (1992) (the author recognizes the need to identify the inherent value in wetlands through economic incentives).

74 Pub. L. No. 99-198, 99 Stat. 1354, Subtitles A–E of Title XII are classified in 16 U.S.C. §§ 3801-3862 (Supp. IV 1992) (codified as amended in scattered sections of 7, 16, 19, and 42 U.S.C. (Supp. IV 1992)).

75 16 U.S.C. §§ 3831-3836 (Supp. IV 1992).

76 MISSOURI DEPARTMENT OF NATURAL RESOURCES, NONPOINT SOURCE MANAGEMENT PLAN 45 (1989).

77 *See* 16 U.S.C. § 3822(b)1(D) (Supp. IV 1992).

78 16 U.S.C. § 3838 (1988).

79 16 U.S.C. §§ 3821-3822 (Supp. IV 1992); Determination of Ineligibility, 7 C.F.R. § 12.4 (Dept. of Agric. 1992); *see* Stewart L. Hofer, Comment, *Federal Regulation of Agricultural Drainage Activity in Prairie Potholes: The Effect of Section 404 of the Clean Water Act and the Swampbuster Provisions of the 1985 Farm Bill*, 33 S.D. L. REV. 511 (1988).80. Wetlands that have been drained or manipulated and cropped after December 23, 1985. 16 U.S.C. § 3801(a)4(A) (Supp. IV 1992). This section uses the same definition of "wetlands" in 16 U.S.C. § 3801(a)16 (Supp. IV 1992) as does the Corps & EPA, *see supra*, note 22; *but see* 7 C.F.R. §§ 12.2, 12.30 -.34 (1992) for the Agricultural Department's wetlands guidelines.

drained or filled.[81]

If crop prices rise, farmers may be convinced that the loss in subsidies due to the Swampbuster provision will make it worthwhile to convert farm wetlands to production, as there is no guarantee subsidies will always be needed or exercised. The disruption from such a decision would be catastrophic to the maintenance of wetlands, as they are very sensitive to normal farming practices. Unfortunately for water quality in the Midwest, the Agriculture Department would like to soften the Swampbuster rules if the land was farmed six out of the last ten years.[82] This draft proposal would have a devastating effect on the ability to control farm runoff and would allow millions of acres of critical wetlands to be destroyed.

In the Food, Agriculture, Conservation, and Trade Act of 1990 (1990 Farm Bill),[83] Congress has attempted to restore some farm wetlands through the Wetland Reserve Program (WRP)[84] which is to be administered by the Agricultural Stabilization and Crop Service (ASCS) of the Department of Agriculture. In this program farmers offer a bid price for the farmed or converted wetlands they want entered in the program and the ASCS accepts the bids based on the land's value, the bid price, and whether the farmer would agree to a permanent conservation easement over their land.

Under a cost sharing agreement, 75% of the cost for restoring the wetland is paid by the government over a 10-year period. The Soil Conservation Service and the Fisheries and Wildlife Service are to provide technical expertise. In 1992 Congress appropriated $46.4 million for the program in nine pilot states,[85] which is enough for 50,000 acres. The goal for the complete program, one million acres across the country by 1995, should be easily reached as farmers in the pilot program offered up to 500,000 acres.[86] Unfortunately, Congress has not found the money (more likely the political will) to fund the WRP for 1993.[87] With this apparent lack of support, it is clear the federal government is not completely sold on the idea of funding wetland restorations.[88]

IV. Wetland Destruction

Several federal programs have been partially responsible for the loss of wetlands on farms. By propping up the prices farmers receive for their grains, the federal farm subsidy program has promoted the destruction of many vital wetlands. The superficial prices and normal market forces encourage the use of all fertile lands (wetlands being the most fertile) for the production of crops. As the price received for grain remains artificially high, farmers often drain the swamps and marshes on their land and convert them to productive fields to increase their profit margin. As a result, water quality has become of secondary concern, following the need to increase crop production.

Actions by the Corps of Engineers in fulfilling their mission of creating navigable and manageable rivers and streams also have been responsible for the incredible loss of wetlands. As the Corps has straightened and channelized rivers to be deeper and faster, wetlands adjacent to the rivers[89] have been dredged or filled as a nuisance to navigation. These wetlands adjacent to rivers and their tributaries were especially beneficial, as they were the final filtration process for agricultural pollutants before they enter major rivers.

These crucial wetlands in floodplains historically cushioned much of the flooding from the Missouri and Mississippi Rivers. This summers' flooding demonstrates how an increase in transportation abilities can negatively impact flood control efforts.[90]

Now under Executive Order No. 11,990 of May 24, 1977,[91] federal agencies are to ensure their actions minimize the destruction of wetlands and preserve the values of wetlands. This action has virtually reversed much of the Corps' policy and attitude regarding wetlands.

The nature of our society and the position of wetlands on farms also has sped up the process of wetland destruction. Since farmland is privately owned, the government currently places few limits on the uses and management of those lands. This system results in a public resource being depleted by private landowners for their own benefit. To ensure wetlands survive and flourish, the farmers' role as stewards of the land must be reexamined. This task will need to be undertaken by the next generation, while our society tries to fix the immediate problems of the water's deteriorating quality and dwindling availability.

V. State Regulations and Programs

In accordance with the Water Quality Act of 1987,[92] the Missouri DNR has submitted a management plan, identified pollution problems, and made recommendations to control non-point discharges in the "Non-point Source Management Plan" (NPS plan).[93]

81 *See* Anthony N. Turrini, *Swampbuster, a Report from the Front*, 24 Ind. L. Rev. 1507 (1991).
82 *Farmers' Use of Wetlands Eyed*, Chicago Trib., May 23, 1992, at 3.
83 Pub. L. No. 101-624, 104 Stat. 3359 (1990) (codified in scattered sections of 16 U.S.C.); *see* B.J. Wynne III and Carol A. Bradley, *Is the 1990 Farm Bill the Opening Shot in a "Quiet Revolution?"*, 44 Sw. L.J. 1383 (1991).
84 16 U.S.C. §§ 3837-3837(f) (Supp. IV 1992).
85 Minnesota, Iowa, Louisiana, California, Mississippi, New York, North Carolina, Wisconsin, and Missouri are the pilot states for 1992.
86 Dirck Steimel, *Farmers Drawn to Wetlands Offer*, Des Moines Reg., June 21, 1992, at 6B.
87 Sharon Schmickle, *Funds for Wetland Reserve Program Dry Up in Congressional Decision*, Star Trib., August 8, 1992 at 4B. Appropriations for fiscal year 1994 are currently being debated, with the House allowing $22 million for WRP while the Senate decided on $11 million; *see* H.R. 2493, 103 Cong., 1st Sess. (1993).
88 As a small effort to reduce the incentive for the destruction of wetlands on farms, the federal income tax code has been changed so as to characterize income from the sale of farmed wetlands as ordinary income, thus losing the benefit of capital gains treatment. 26 U.S.C. § 1257 (1988).
89 Wetlands adjacent to "navigable waters" are within the Corps' § 404 jurisdiction. United States v. Riverside Bayview Homes Inc., 474 U.S. 121, 106 (1985).
90 According to estimates by the Wisconsin DNR, increasing the wetland acreage in Minnesota and Wisconsin by five percent would reduce the influx of flood waters by 1.5 billion gallons a day. Robert Whereatt and Dean Rebuffani, *Governors forge alliance on high-speed rail; Minnesota, Wisconsin also to cooperate on flood control*, Star Trib., September 11, 1993, at 1B.
91 42 Fed. Reg. 26,961 (1977).
92 33 U.S.C. 1329 (Supp. IV 1992); *see also* Robert D. Fentress, Comment, *Nonpoint Sources Pollution, Groundwater, and the 1987 Water Quality Act: Section 208 Revisited?*, 19 Envtl. L. 807 (1989).
93 Missouri Department of Natural Resources, Nonpoint Source Management Plan (1987).

This non-binding guidance document required by § 319 of the CWA does not require a permit scheme for non-point sources. The DNR has apparently incorporated its former § 208 Areawide Waste Treatment Management Program into the NPS plan.[94]

Programs under Missouri's NPS Plan through the DNR, University of Missouri Extension Service, and the Department of Conservation (MDC), are primarily focused on education, technical assistance, and cost-sharing to control soil erosion and water pollution. Numerous small projects (such as the State Wetland Conservation Program) are available, along with a few large projects (such as the Special Area Land Treatment, SALT) to target critical sites.[95] While these programs may improve the water quality in some areas, the benefits are not widespread and do not attack the pollution at its source, as comprehensive farm wetland restorations could.

In the "Non-point Source Annual Report" for 1991, the DNR explained the activities and progress the state has made toward meeting its water quality standards imposed by § 319 for controlling non-point source pollution.[96] This report included the SALT projects, conservation programs, and testing and survey services in attempts to improve water quality in ground and surface waters. Several of the activities aim to control sediment, nutrients, and pesticides from agricultural runoff through various DNR, MDC, or U.S. Department of Agriculture sponsored projects.[97] Like many others, the state still lacks a comprehensive and effective program for dealing with agricultural runoff.

To achieve the water quality standards for non-point source pollution in § 319 of the federal CWA, the states are to identify and use applicable Best Management Practices (BMP).[98] These BMP's can vary from state to state and are flexible to provide for the treatment of different types of water pollution. In the context of non-point source agricultural runoff, the appropriate BMP's are wetlands, as no other natural or technology-based system can more effectively and efficiently handle the wastes unique to agriculture.

In the Missouri NPS Plan which was prepared in 1989 (to be updated in 1993), many different types of wetlands are utilized as BMP's.[99] The use of these wetlands can easily be expanded due to their efficiency, low cost, and natural occurrence on farms. In classifying more wetlands as BMP's, the DNR can help to satisfy the ambitious goals of the CWA.[100] When agricultural runoff is required to be controlled by the states, the Missouri DNR may then fully realize the value of farm wetlands for their filtering processes and cost effectiveness.

The Missouri Clean Water Law[101] has substantially the same definition for a "point source"[102] as does the federal law, absent the express exclusion for agriculture stormwater discharges and return flows from irrigated agriculture. Under 10 C.S.R. 20-6.010(1)(B)(1), the DNR exempts non-point source discharges from obtaining an NPDES permit in Missouri, much the same as under the federal Clean Water Act.

Where livestock wastes from concentrated animal feeding operations will be discharged, an NPDES permit is required.[103] Feedlots with 300 to 999 "animal units"[104] may use a "grassed buffer area" to avoid the discharge permit requirements.[105] Fully restored wetlands qualify as grassed buffer areas, as wetlands are excellently qualified for such use.

An increased use of wetlands would allow many farmers to avoid the requirements of obtaining an NPDES permit for the runoff from their concentrated animal feedlots. It is likely few feedlot operators know of the need for an NPDES permit; making compliance with the regulations simpler would not only increase water quality, but would also encourage many more to seek authorization for their operations.

Missouri also requires a permit for a "No-Discharge Facility"[106] (excluding non-point sources),[107] but allows nondischarging concentrated animal feeding operations to obtain a "letter of approval" for operating a waste facility, instead of the no-discharge permit.[108]

Without adequate protection from agricultural runoff, private citizens in Missouri have traditionally been forced to rely upon common law remedies such as the "common enemy"[109] doctrine or a private nuisance

94 *See supra*, text accompanying note 47.
95 MISSOURI DEPARTMENT OF NATURAL RESOURCES, NONPOINT SOURCE MANAGEMENT PLAN 11 (1987).
96 *See supra*, note 56.
97 *See* MISSOURI DEPARTMENT OF NATURAL RESOURCES, NONPOINT SOURCE ANNUAL REPORT (1991).
98 "Schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of 'waters of the United States.' BMP's also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage," 40 C.F.R. § 122.2 (1992).
99 "Water Impoundment Reservoir," "Water & Sediment Control Basin," "Grassed Waterway," and "Subsurface Drain" may all be classified as wetlands. MISSOURI DEPARTMENT OF NATURAL RESOURCES, NONPOINT SOURCE MANAGEMENT PLAN 45 (1987).
100 *See* 33 U.S.C. § 1251 (1988).
101 Mo. Rev. Stat. §§ 644.006 - 644.564, Supp. 1992.
102 "Point source" means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are, or may be, discharged. Mo. Rev. Stat. § 644.016(6), Supp. 1992; Mo. CODE REGS. tit. 10, § 20-2.010(53) (1992).
103 Mo. CODE REGS. tit. 10, § 20-6.015(11)(C) (1992).
104 A feedlot with 300-999 animal units is a class II feeding operation. Mo. CODE REGS. tit. 10, § 20-6.015(1)(B)(5) (1992).
105 Mo. CODE REGS. tit. 10, § 20-6.015(11)(C)(1)(A) (1992).
106 A facility which only discharges wastes to surface or sub-surface waters of the state in the wettest one-in-ten year precipitation. Mo. CODE REGS. tit. 10, § 20-2.010(44) (1992).
107 Mo. CODE REGS. tit. 10, § 20-6.015(3) (1992).
108 Mo. CODE REGS. tit. 10, § 20-6.015(4)(A)(1) (1992).
109 *See* Hansen v. Gary Naugle Constr. Co., 801 S.W.2d 71, 74 (Mo. 1990).

theory[110] to protect their drinking supplies. The Missouri Supreme Court recently abandoned the common enemy doctrine in favor of adopting the "reasonable use" rule for diffused surface water.[111] This change may allow additional private actions against farmers whose activities contaminate neighboring groundwater.[112]

One set of plaintiffs in Missouri has successfully used the doctrine of nuisance[113] where overflow of hog wastes from an anaerobic lagoon flowed onto the plaintiffs' land, causing noxious odors and diminishing water quality.[114] The judgment for the plaintiffs was upheld[115] due to an extremely offensive situation where the feedlot runoff adversely affected drinking water supplies and the family's normal daily activities.[116] Nuisance law is of limited use to remedy the problem, as the majority of agricultural runoff only indirectly affects water supplies through streams and rivers, or by seepage into underground aquifers.

The Kansas Department of Health and Environment began a regulatory scheme for controlling agricultural pollutant runoff under Articles 16 and 18 of the Kansas Administrative Regulations in 1991.[117] For manure wastes, Kansas sets minimum standards for runoff from "Water Pollution Control Facilities" and applies different standards for various types of animals and their waste storage or feedlot areas, or a waste retention lagoon.[118] The Kansas approach to agricultural runoff shows its willingness to combat non-point source pollution utilizing a permit and effluent limits system. This type of strategy, while appropriate for point sources, may not be as efficient as would a comprehensive wetlands treatment program which directly improves the water quality.

Minnesota has begun an ambitious project to clean up the Minnesota River in 10 years using pollution control grants and enforcement of dumping regulations.[119] Minnesota officials will be concentrating on controlling the runoff pollution of sediment, nitrates, and fertilizer from farms as they constitute the major sources of pollution. Minnesota hopes the WRP, CRP and its own wetland preservation program will help in the cleanup plan. While the initiative is very encouraging, the state is still depending on government funding for wetland incentive payments, unlike a market-based system such as mitigation banking.

Florida is hoping to begin a vast wetlands restoration project of its own to return the Kissimmee River to its original meandering route.[120] As a part of the Central and Southern Florida Flood Control Project of 1948, the Corps of Engineers built a complex system of levees and canals, turning the Kissimmee River into a "straight ditch."[121] With the source of water for the Everglades being channeled away, the wetlands were drained and converted into farmland now polluting the Everglades with oxygen-robbing nitrates. Now the Corps will attempt to revive the Kissimmee River and restore many of the lost wetlands which were adjacent to its natural channel.[122] This project is exemplary of the Corps' new thinking about wetlands and their values.

Along with the Kissimmee River project, Florida researchers are also experimenting with using wetlands to filter phosphorus and nitrates from farm runoff in the Everglades Nutrient Removal (ENR) project.[123] They are initially using a marsh filtering system on 3,742 acres as a test area for others which will become Stormwater Treatment Areas.[124] The project is being funded through utility fees charged to farmers whose lands drain into the treatment areas. This pilot project is very encouraging and can eventually be adopted by other states as a means to control agricultural runoff.

The Izaak Walton League has begun a program known as "Partners for Wetlands" which uses private donations and state contributions to restore farm wetlands with technical assistance from state soil and water districts.[125] While the program is limited in its ability to affect national resources, it has been very successful in Minnesota to create wetlands for migratory birds and other waterfowl.[126]

Over the last 54 years, Ducks Unlimited has preserved and enhanced nearly 6 million acres of wetlands in North America largely for the purpose of creating waterfowl habitat.[127] Many of these wetlands have been on or near farmland, thus providing filters for agricultural runoff as well as a safe haven for migratory birds. If duck lovers can find enough money to preserve wetlands for game uses, the Midwestern states should be able to fund farm wetland restorations to improve water quality.

Even though the states have been slow to deal with the problem of non-point source pollution, they do acknowledge that the technology and information is available to control it.[128] Even with this technical knowledge, control of non-point source pollution has not yet been adequately addressed by

110 Bower v. Hog Builders, Inc., 461 S.W.2d 784 (Mo. 1970).
111 Heins Implement Co. v. Missouri Hwy. & Transp. Comm'n, No. 75313, 1993 Mo. Lexis 86 (Mo. Aug. 17, 1993).
112 *See* Jennifer S. Graham, Comment, *The Reasonable Use Rule in Surface Water Law*, 57 Mo. L. Rev. 223 (1992).
113 For nuisance elements, see 66 C.J.S. *Nuisances* § 23(d) (1966).
114 *Bower*, 461 S.W.2d at 784.
115 *Id.* at 806.
116 *See Bower*, 461 S.W.2d 784 (Mo. 1970).
117 Kan. Admin. Regs. 28-16-69 (1991); Kan. Admin. Regs. 28-18 (1991).
118 Kan. Admin. Regs. 28-18-3 (1991).
119 Sharon Schmickle, *Minnesota River Cleanup is Pledged*, Star Trib., September 23, 1992, at 1B.
120 Dawn Stover, *Engineering the Everglades; Environment & Technology*, Popular Sci., July 1992, at 46.
121 *Id.*
122 *Id.*
123 *Id.*
124 *Id.*
125 Dean Rebuffani, *Again, Wind Whispers in Marshes; Teamwork and Persistence Help Restore Wetlands*, Star Trib., September 14, 1992, at 1B.
126 For more information on the "Partners for Wetlands" program, call 612/467-2486.
127 Charles Kouri, *Ducks Unlimited Goes South*, Chicago Trib., September 20, 1992, at 9.
128 *See* 16 Env't Rep. (BNA) No. 38, at 1768.

conventional regulatory schemes, primarily because of the overwhelming number of sources and the influence of the farm lobby.[129]

VI. Wetland Technology

Many people automatically think of swamps and marshes when they think of wetlands, but wetlands come in many types, and vary with the region and fluctuation of water inundations. The farm fields and pastures of Missouri and Iowa once were spotted with "prairie potholes" on much of the bottomland, where the rainwater would collect and be filtered back into the groundwater after rains and during the spring melting. As well as purifying agricultural runoff, these marshy wetlands were the feeding and nesting grounds of many migratory birds and other waterfowl.

Not all wetlands must be "wet" in order to be useful; dry wetlands are considered to be more effective at filtering nitrates and other nutrients such as phosphorus.[130] When nitrates and nutrients are present in water which is left standing for extended periods of time, the Biochemical Oxygen Demand (BOD) increases.[131] When the BOD reaches a critical level, an "algae bloom" (eutrophication) is produced which robs the water of much of its oxygen and slows down the filtration process.[132]

Agricultural runoff may best be filtered through the use of a series of stages of different types of wetlands. In the first stage, the water is slowed down by tall grasses and gentle slopes, allowing some of the water to seep in while much of the surface water flows into a wetter wetland.[133] This initial stage would eliminate most of the nitrates and other nutrients by filtering the water through a porous substrate into groundwater.[134] These wetlands would also reduce soil erosion from fields by slowing the runoff.

Pollutants consisting of pesticides, bacteria, ammonia and the like are handled better by vegetation inundated with water for extended periods of time.[135] Cattails, bulrushes, reeds and other wetland grasses are very effective at attracting molecules of these pollutants and breaking them down into harmless by-products.[136] In this second stage of the process, a wet depression or marsh is allowed to collect water for a period of time to recharge groundwater and filter the pesticides, bacteria and ammonia. After the water is filtered through these stages, it may be drained into rivers or streams for later municipal or industrial use.

VII. Proposal

A comprehensive market-based incentive program to replenish the nation's wetland reserves cannot be dependent on handouts or erratic funding from Congress. Funding a project to restore wetlands on farms needs to come from private sources with government supervision.[137]

A Wetland Mitigation Banking System would be able to provide funds for the replacement of farm wetlands through mitigating[138] the losses of non-farm wetlands. "Credits" would be given to farmers who create farm wetlands of a certain acreage, then these credits would be sold to developers who had drained or filled other wetlands to "mitigate" these losses.[139] A governmental entity or the market would approve the farm wetland credits and find buyers for those credits.[140] Those who destroy wetlands in urban or other non-farm areas would be required to buy these credits as the price of developing those wetlands. This concept has been widely used in the reduction of sulfur dioxide (SO_2) emissions from utility plants using high sulfur coal.[141]

In order to increase the net acreage of wetlands, the mitigation bank[142] could require a ratio of three acres of restored wetlands to one acre destroyed. This would speed up the process of replacing the farm wetlands which are urgently needed to filter agricultural runoff. The mitigation rules can be written by either the Corps or the state agency administering the program, which would oversee the creation of the "credit" wetlands. The mitigation bank concept could be implemented in conjunction with the Wetland Reserve Program already in place.

There are theoretical problems with allowing developers to destroy wetlands if they have the money to buy enough credits, but the proposed 3:1 ratio should reduce the monetary inducement. The mitigation bank option would not preclude the possibility of fines, injunctions, and other penalties for developers.

The Corps now favors on-site mitigation and at least a "one for one functional replacement" with an adequate margin for loss (no net loss)[143] in their overall mitigation policy.[144]

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129 John H. Davidson, *Thinking About Nonpoint Sources of Water Pollution and South Dakota Agriculture*, 34 S.D. L. Rev. 20 (1989).

130 Dianne Dumanoski, *Drier Wetlands Believed Better Pollution Filters*, Des Moines Reg., January 5, 1992, at 5A.

131 Biochemical Oxygen Demand: Amount of oxygen needed to decompose organic wastes; this process depletes the oxygen available for fish and other wildlife and also produces methane and hydrogen sulfide by anaerobic decomposition, Dr. Randy Miles, Address at the University of Missouri-Columbia Soil and Water Resources Seminar (September 14, 1992).

132 *Id.*

133 The drier wetlands are known as Vegetative Submerged System (VSS) wetlands. *Id.*

134 *Id.*

135 Known as Free Water Surface (FWS) wetlands. *Id.*

136 *Id.*

137 The Corps of Engineers is to create wetland mitigation bank demonstrations under the Water Resources Development Act of 1990, 33 U.S.C. § 2317, § 307 (1988 & Supp. II 1990).

138 "Mitigation" is defined under the Council on Environmental Quality regulations at 40 C.F.R. § 1508.20 (1992). This definition may be revised however, as President Clinton recently eliminated the Council on Environmental Quality.

139 *See* Robert D. Sokolove and Pamela D. Huang, *Privatization of Wetland Mitigation Banking*, 7 Nat. Resources & Env't 36 (1992).

140 *Id.* at 69.

141 *See* 42 U.S.C. § 751b (1988 & Supp. II 1990).

142 The U.S. Fish and Wildlife Service (FWS) defines mitigation banking as the intentional creation, restoration, or enhancement of a wetland to protect a habitat for the purpose of compensating for unavoidable, necessary losses from specific future development actions. *See* Fish and Wildlife Service, Biological Report 88(41) (July 1988), *interpreted in* Robert D. Sokolove and Pamela D. Huang, *Privatization of Wetland Mitigation Banking*, 7 Nat. Resources & Env't 36 (1992).

143 1990 Memorandum of Agreement (MOA) on mitigation. 55 Fed. Reg. 9210 (1990). *See* Margot Zallen, *The Mitigation Agreement—A Major Development in Wetland Mitigation*, 7 Nat. Resources & Env't 19 (1992).

144 *See* 33 C.F.R. § 320.4(r)(1) (1992).

Many times the projects are left unmonitored and subsequently fail to attain a fully operational status.[145] In an article supporting the creation of private wetland mitigation banks,[146] two environmental attorneys argue on-site mitigation has limited use and effectiveness, and tends to be costly.[147]

Restoring wetlands on farms will be more successful than on-site mitigation as the farmland likely was a wetland before being drained. Wetlands created on farms are generally more valuable to our environment than wetlands in urban areas due to the purifying role farm wetlands play.[148]

Another problem with on-site mitigation projects is that the same developer who destroys wetlands is also responsible for creating new wetlands.[149] With a private wetlands mitigation bank, the farmer creating the farm wetlands has different incentives from the developer destroying the wetlands.

In order for a wetland mitigation bank to be effective, scientists and regulatory agencies need to establish a regional wetland valuation system to define and preserve high priority wetlands.[150] This ranking of wetland types according to functions and values would allow restoration programs to focus on farm wetlands which are valuable in the Midwest, while also according high values to those urban wetlands which comprise crucial habitat.

Farm wetlands could be created in the same areas where they once were, though the restoration program would need to be flexible to address particular needs and situations. For instance, the wetlands could be placed only on erodible bottomland, in waterways between crops, on flat pasture land, or in areas where several farms drain into a common stream, being able to adjust to the available soils, hydrology, and vegetation.

Restoration of wetlands must be done with supervision and technical assistance from biologists, hydrologists, and various engineers in order to be successful. This consultation expertise is readily available from specialists in the state Departments of Conservation, local ASCS offices, and others from the University Extension Services. After the wetlands are in place, minimal oversight can confirm that the wetland is performing as expected, and no actions are taken which could adversely affect the biological health of the area.

A conservation easement on the wetland should be sufficient to protect the wetland from being drained, filled, or otherwise destroyed. These easements should be in perpetuity to keep the area protected from subsequent changes in the ownership of the farmland. Also there must be continued property and income tax advantages to the landowners for their conservation easements.

Using a wetland mitigation bank would take the wetland restoration process away from the politics of Congressional funding so the work can begin. With the political influence wielded by the agricultural lobby, the task of preserving and restoring wetlands should not be left up to those who feed in the farm Political Action Committee trough.

Another way to fund farm wetland restoration would be to charge a "utility fee" to farmers whose lands drain into a common wetlands project. This market-oriented plan would require farmers to take responsibility for the pollutants which runoff from their farming operations.

Monies from the farm subsidy program also should be used to fund the restoration of farm wetlands, as the highly intensive farming practices encouraged by subsidizing crop prices are responsible for much of the destruction of wetlands. Unfortunately, the administrative hassles and the strength of the farm lobby would probably lessen the effectiveness of a utility fee or a decrease in farm subsidies.

VIII. Conclusion

In his wetlands reform plan introduced August 24th, President Clinton seeks to: 1) Affirm the "no net loss" policy as a preliminary step to restoring many wetlands; 2) Exempt "prior converted wetlands" from regulation; 3) Create streamlined appeals processes for affected landowners; 4) Encourage creation of wetlands mitigation banks; 5) Require § 404 permits for actions which drain wetlands; and 6) Designate the SCS as the lead federal agency on farm wetlands.[151] These proposals greatly enhance the likelihood that wetlands mitigation banking will become a reality.

Wetlands are well suited to the task of filtering agricultural runoff, and we need to restore their natural processes. The lost wetlands were originally altered to increase agricultural production or transportation capabilities; the benefit in water quality and availability from the added wetlands will greatly outweigh the corresponding loss in farmland acreage.

Lawmakers must realize that control of agricultural non-point source pollution is not a legal or technical problem, but rather an economic problem which is better addressed through an incentive based mitigation program. We must provide a solution which is more appropriate for the problem of agricultural runoff and is more flexible than ordinary regulatory schemes. While changes must be made in the state and federal approaches to farm runoff, a permit program which simply declares the runoff of agricultural wastes to be criminal will not by itself improve the quality and availability of water in the Midwest. The states in the Midwest must take the initiative to restore farm wetlands by providing cost sharing or mitigation agreement programs to encourage farmers to reinstate nature's way of handling agricultural runoff.

145 Maria Cone, *Many New Wetlands Wither Away in Neglect*, L.A. Times, August 2, 1992, at 1A; *but see* Michael D. Pattinson, *Builder, Project Manager Did Not Neglect Mission Viejo Wetlands*, L.A. Times, August 9, 1992, at 11B.

146 Robert D. Sokolove and Pamela D. Huang, *Privatization of Wetland Mitigation Banking*, 7 Nat. Resources & Env't 36 (1992).

147 *Id.* at 69.

148 *Supra*, note 131.

149 *Supra*, note 143.

150 William E. Taylor and Dennis Magee, *Should All Wetlands Be Subject to the Same Regulation?*, 7 Nat. Resources & Env't 32 (1992).

151 Ken Miller, *Clinton Plan Greeted with Mild Enthusiasm on Hill*, Gannet News Service, September 15, 1993.