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30 Years of Making a Mole Hill Out of a Mountain

31 Environmental Law Reporter 10203 (2001)

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The Environmental Law of Farms: 30 Years of Making a Mole Hill Out of a Mountain

by J.B. Ruhl

Farms and farming are intrinsically linked with human civilization, and have had a dramatic impact on our planet's landscape and environmental systems.¹ Environmental regulation in the United States, though young when compared to other fields of law, is a highly developed body of law. Unfortunately, a wide chasm exists between these two social endeavors—farms are virtually unregulated by the expansive body of environmental law that has developed in the United States in the past 30 years. Yet the absence of an environmental regulation program for farms presents us with the opportunity to create one from scratch. The time for taking advantage of that opportunity is long overdue.

To acknowledge that farms pollute and degrade the environment should neither indict farming as a way of life nor denigrate the ideals farmers hold. Farming in America is a deeply rooted cultural institution with many noble qualities and important economic and social benefits, but it is also an industry having much in common with other industries, their owners, and their workers. Acknowledging that industries cause environmental damage has not generally been regarded as an attack on the people or the institutions involved. Nor should it be so for farms. The plain truth is that farms pollute groundwater, surface water, air, and soils; they destroy open space and wildlife habitat; they erode soils and contribute to sedimentation of lakes and rivers; they deplete water resources; and they often simply smell bad. These effects are and always have been consequences of farming in general.² What is amazing is that these consequences have

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1. See J.B. Ruhl, *Farms, Their Environmental Harms, and Environmental Law*, 27 *ECOLOGY L.Q.* 263 (2000). See A.M. MANNION, *AGRICULTURE AND ENVIRONMENTAL CHANGE* 227 (1995) ("Agriculture, to state the obvious, has had a profound influence on the Earth's surface and the processes that operate thereon. There are few parts of the globe that remain unaffected by agriculture."); P.A. Matson et al., *Agricultural Intensification and Ecosystem Properties*, 277 *SCIENCE* 504, 504 (1997) ("Expansion of agricultural land is widely recognized as one of the most significant human alterations to the global environment."); Peter M. Vitousek et al., *Human Domination of Earth's Ecosystems*, 277 *SCIENCE* 494, 494 (1997) ("The use of land to produce goods and services represents the most substantial human alteration of the Earth system.");
2. Farming has caused widespread environmental degradation for centuries. Six thousand years ago, Sumerian irrigation practices salinized water and soils to the point of inhibiting food production, a factor many historians believe contributed to the decline of the Sumerian culture. See Mohamed T. El-Ashry et al., *Salinity Pollution From Irrigated Agriculture*, 40 *J. SOIL & WATER CONSERVATION* 48, 48 (1985). For comprehensive histories of agriculture from the perspectives of its effects on the environment and vice versa since the dawn of agriculture, see generally MANNION, *supra* note 1, at 31-226 and DANIEL E. VASEY, *AN ECOLOGICAL HISTORY OF AGRICULTURE*, 10,000 B.C.-A.D. 10,000 (1992). For an inventory of the evidence regarding modern American farming's impact on habitat degradation, soil erosion, water resources depletion, soil and wa-

ter salinization, fertilizer and pesticide chemical releases, animal waste releases, nonpoint source water pollution, and air pollution, see Ruhl, *supra* note 1, at 272-92.

3. In the midst of some uncertainty as to what organic farming is, Congress passed the Organic Foods Production Act as part of the 1990 Farm Bill to require the U.S. Department of Agriculture (USDA), with the assistance of a newly created National Organic Standards Board, to promulgate national standards for marketed organic foods. See 7 U.S.C. §§6501-6522 (1994); see also Kenneth C. Amaditz, *The Organic Foods Production Act of 1990 and Its Impending Regulations: A Big Zero for Organic Foods?*, 52 *FOOD & DRUG L.J.* 537 (1997). The USDA proposed standards in 1997, see USDA, Proposed Rules, National Organic Program, 62 *Fed. Reg.* 65850 (Dec. 16, 1997) (to be codified at 7 C.F.R. pt. 205), on which it received over 300,000 comments claiming the standards were contrary to the board's recommendations and at odds with the organic farming industry's goals. The agency recently published a final rule designed to respond to many of the comments received on the first proposal. See USDA, Proposed Rules, National Organic Program, 65 *Fed. Reg.* 80547 (Dec. 21, 2000) (to be codified at 7 C.F.R. pt. 205). Information about organic farming and the standards, including USDA's proposed rule and all the comments, is available at Agricultural Mktg. Serv., USDA, *National Organic Program Home Page*, at <http://www.ams.usda.gov/nop> (last visited Dec. 1, 2000). Several organic farming and food protection advocacy groups have organized continuing campaigns against the USDA's proposals. See International Ctr. for Tech. Assessment, *Dec. 1, 2000 Organic Watch*, at <http://www.icta.org/projects/cfs/orgwtch.htm> (last visited Dec. 1, 2000); Campaign for Food Safety, *Save Organic Standards*, at <http://www.purefood.org/organlink.html> (last visited Dec. 1, 2000). Whatever the effect of the USDA's rules, at present organic farming represents a small proportion of the total farm economy—total retail sales of what are marketed as organically grown foods rose to just over \$3.3 billion in 1998. See Carolyn Dimitri & Nessa J. Richman, *Organic Foods: Niche Marketers Venture Into the Mainstream*, *AGRIC. OUTLOOK*, June/July 2000, at 11.
4. The sustainable agriculture movement focuses on ways to promote natural resource stewardship in agriculture while still maintaining the economic profitability of farms and the social vitality of farming communities. See James Stephen Carpenter, *Farm Chemicals, Soil Erosion, and Sustainable Agriculture*, 13 *STAN. ENVTL. L.J.* 190, 220-43 (1994); Neil D. Hamilton, *Sustainable Agriculture: The Role of the Attorney*, 20 *ELR* 10021 (Jan. 1990); Robert Myers et al., *Developing an Enduring American Agriculture*, 12 *NAT. RESOURCES & ENV'T* 110 (1997); see also VERNON W. RUITAN ED., *AGRICULTURE, ENVIRONMENT, AND HEALTH: SUSTAINABLE DEVELOPMENT IN THE 21ST CENTURY* (1994) (overview of sustainable agriculture movement). Some commentators have described the sustainable agriculture movement as part of a larger "New Agriculture" movement through which a "network of farmers, consumers, educators, community activists, food marketers, and chefs are combining to offer alternatives to [farm] industrialization," Neil D. Hamilton, *Greening Our Garden: Public Policies to Support the New Agriculture*, 2 *DRAKE J. AGRIC. L.* 357, 358 (1997), while others have expressed the concern that the sustainable agriculture movement may play into continued efforts by farming interests to project the "agroecological opium" that farms are environmentally benign, or even have the potential to be environmentally beneficial, thereby making the case to keep environmental regulation of farms an adjunct to overall farm support policies. See Jim Chen, *Get Green or Get Out: Decoupling Environmental From Economic Objectives in Agricultural Regulation*, 48 *OKLA. L. REV.* 333, 337 (1995).

momentum from within the farming community may be steps in the right direction, but they are not panaceas. At best these steps should be taken in addition to, rather than in lieu of, an effort to rein in the environmental impact of farms through a concerted, comprehensive regulatory framework.

To be more accurate, it is not entirely true to say that environmental law has never addressed farming or that farms have wreaked environmental damage unbeknownst to the political institutions that promulgate environmental protection laws. Rather, Congress has actively prevented their intersection through a nearly unbroken series of decisions to exclude farms and farming from the burdens of federal environmental law, with states mainly following suit.⁵ Congress has erected what I will call a vast "anti-law" of farms and the environment. While federal, state, and local governments have been busy addressing most other forms and sources of environmental degradation, farms remain largely unburdened by environmental law,⁶ yet move steadily up the ranks of the worst threats to the environment. Today, farms stand

at or very near the top of that list in many categories of environmental degradation.⁷

It may be that farming has escaped attention because "[a]griculture's vintage—its sheer age as a human activity—obscures its long-term effects on the environment."⁸ Indeed, many farm interests persist in portraying efforts to regulate farms as being premised on "bad science" and exaggerated descriptions of the environmental dangers that farms pose.⁹ But while the magnitude of its environmental impacts is not readily apparent from studying individual farms, serious environmental degradation undisputably results from the aggregation of harmful farming practices across large areas. When compiled on regional, national, and global levels, the numbers are quite alarming.¹⁰ The reality is that farming, particularly in the modern American style, is an intensive land use involving a multitude of polluting and land transforming activities.¹¹ In short, the cumulative effects of more than 450 years of crop and livestock farming in America are no longer obscure; if we continue to leave farms unregulated, it is by choice, not by ignorance. One would be hard pressed to identify another industry with as poor an environmental record and as light a regulatory burden. We ought not ignore the need for environmental regulation of farms simply because farming and farmers are

5. See John Davidson, *Conservation Agriculture: An Old New Idea*, 9 NAT. RESOURCES & ENV'T 20, 20 (1995) (noting that "nearly every major federal environmental statute exempts production agriculture"). As pointed out in this Article, in recent years some states have begun to move ahead of the federal government in environmental regulation of agriculture on certain fronts. See William L. Oemichen, *State Government Service to the Agriculture of Tomorrow*, 2 DRAKE J. AGRIC. L. 247 (1997). Even taken together, however, these state efforts by no means reverse the basic theme of safe harbor for farming in environmental law.

6. As one leading agriculture law scholar has put it, whereas many sectors of the economy are exploring "next generation" environmental policy, "agriculture is different. It never had coherent first-generation environmental protection programs." C. Ford Runge, *Environmental Protection From Farm to Market*, in THINKING ECOLOGICALLY: THE NEXT GENERATION OF ENVIRONMENTAL POLICY 200, 200 (Marian R. Chertow & Daniel C. Esty eds., 1997). Runge points out that even after 30 years of modern statutory environmental law, "[N]o significant environmental controls have been placed on farm practices even where agricultural activities are a primary cause of pollution problems." *Id.* at 201; see also Chen, *supra* note 4, at 350-51 ("Unlike agriculture, which enjoys environmental exemptions both explicit and implicit, virtually every other industry in the United States must face a comprehensive battery of environmental obligations."); Davidson, *supra* note 5, at 20 ("In contrast to the national response to other environmental problems . . . the response by lawmakers to agricultural pollution has been cautious and exploratory."); Margaret Rosso Grossman, *Agriculture and the Environment in the United States*, 42 AM. J. COMP. L. 291, 293 (1994) ("Despite the serious effects of agricultural pollution, little direct environmental regulation of farming practices has occurred, and some federal farm policies have encouraged environmentally harmful practices."); J.W. Looney, *The Changing Focus of Government Regulation of Agriculture in the United States*, 44 MERCER L. REV. 763, 771 (1993) ("The least pervasive area of agricultural regulation is at the farm level."). For background on the law of farms and the environment—what little there is of it—see K. Jack Haugrud, *Agriculture*, in SUSTAINABLE ENVIRONMENTAL LAW 451-574 (Celia Campbell-Mohn et al. eds., 1993) (environmental law treatise chapter covering agriculture); Symposium, *Agriculture and Forestry in a Changing World*, 9 NAT. RESOURCES & ENV'T 3 (1995). See also Sally J. Kelley et al., *Agricultural Law: A Selected Bibliography, October 1992-December 1995*, 61 MO. L. REV. 877, 909-33 (1996) (covering books and articles on agriculture and wetlands, land use, water rights, water quality, pesticides and herbicides, sustainable agriculture, and soil conservation). The U.S. Environmental Protection Agency (EPA) maintains the "Ag Center," an Internet site devoted to assisting the agricultural community in understanding and complying with environmental laws. See Office of Compliance, U.S. EPA, *About the Ag Center*, at <http://es.epa.gov/oeca/ag/about.html> (last visited Dec. 1, 2000). By accessing the "Laws and Policies" portion of the site, visitors can obtain what EPA claims are plain-English descriptions of how environmental laws apply to farming and links to related sites.

7. For example, farms rank as the leading cause of water quality impairment in our nation's lakes and rivers. See OFFICE OF WATER, U.S. EPA, NATIONAL WATER QUALITY INVENTORY 1994 REPORT TO CONGRESS ES-12 TO ES-19 (1994) [hereinafter NATIONAL WATER QUALITY INVENTORY]. This dubious distinction is not limited to farms in the United States. France's Ministry of the Environment recently presented an exhaustive analysis of the environmental consequences of French agriculture, finding that agriculture is that nation's top water consumer, top national emitter of nitrates, and second-highest emitter of phosphates. Environmental problems in France associated with these and other agricultural practices include levels of nitrates in drinking water and groundwater far beyond European Union norms as well as growing concentrations of toxic substances in soils. See Lawrence J. Speer, *Report Blames Agriculture for Damages to Environment, Recommends Eco-Taxes*, Daily Env't Rep. (BNA), Mar. 15, 1999, at A-7. For a thorough discussion of European policies regarding agriculture and the environment, see Margaret Rosso Grossman, *Agro-Environmental Measures in the Common Agricultural Policy*, 25 U. MEM. L. REV. 927 (1995).

8. Chen, *supra* note 4, at 337.

9. See, e.g., NATIONAL LEGAL CTR. FOR THE PUBLIC INTEREST, FARMERS, RANCHERS, AND ENVIRONMENTAL LAW (1995). Many farm advocates remain in deep denial of the industry's environmental failure. For example, one leading farm advocate recently advocated that growth control laws should put farms "legally out of the reach of development for the foreseeable future" because in addition to food, they "provide environmental amenities like scenic open space, wildlife habitat and unpaved watersheds; and [farms] demand few public services." Edward Thompson Jr., "Hybrid" Farmland Protection Programs: A New Paradigm for Growth Management?, 23 WM. & MARY ENVTL. L. & POL'Y REV. 831, 831 (1999) (author is Senior Vice President for Public Policy, American Farmland Trust).

10. A 1998 report prepared jointly by the World Resources Institute, the United Nations Environment Program, the United Nations Development Program, and the World Bank identified "intense agricultural development" as one of three "drivers of change" in the global environment. Alec Zacaroli, *Environmental Degradation Causes Millions of Premature Deaths Per Year, Report Says*, 29 Env't Rep. (BNA) 113 (1998). The other two were industrial development and increased energy use.

11. Its adverse impacts include not only environmental degradation, which is substantial in its own right, but also effects outside the scope of this Article, such as occupational safety risks, food quality impairment, animal mistreatment, the risks of biogenetic engineering, and the promotion of resistant bacteria harmful to humans.

melded into American ideology.¹² Given how distant the lay conception of farms is from reality, ideology seems a poor reason to favor farming in this respect. Rather, "the simple expedient of treating agriculture like any other activity—no more virtuous or villainous—promises to restore some semblance of allocative efficiency and distributive justice to American farm policy."¹³

The first part of this Article provides the background on farming necessary to understand how the mountain of environmental effects from farming has been turned into a mole hill of environmental regulation. Farming as an industry presents complex geographic, economic, and political dimensions that both exacerbate the environmental effects of farming and confound conventional regulatory responses. Resolving the farming problem in environmental law thus requires thinking unconventionally not only about farming's impact on the environment, but also environmental law's approach to farming as a target of regulation.

The second part of this Article provides an inventory of the many provisions of environmental laws that exempt, release, and excuse farms from regulation.¹⁴ Some of these provisions can be understood, in isolation, as rational responses to the need for efficient administration of environmental law and the importance of farming to other social and economic goals. When the sheer mass of this anti-law is considered as a whole, however, it defies reasonable explanation. There is simply no rational relationship between the magnitude of the environmental harms farms cause and the response of environmental law.¹⁵

Some Background on Farms and Farming

The U.S. Department of Agriculture's (USDA's) 1997 Census of Agriculture (Census)¹⁶ defines a farm as "a place

which produced and sold, or normally would have produced and sold, \$1,000 or more of agricultural products during 1997."¹⁷ In 1997, over 1.9 million such operations fit that description in the United States.¹⁸ Data from the Census and from other studies reveal the size and diversity of the industry we call farming and the massive aggregate impact it has on the environment.

Farms cover over 930 million acres of the United States, with roughly equal divisions of cropland and pastureland/rangeland accounting for the vast majority of that total.¹⁹ The total market value of agricultural products sold by American farms in 1997 was just under \$200 billion,²⁰ and total expenses were over \$150 billion.²¹ Individual farms, meanwhile, are tremendously diverse. For example, roughly one-half of American farms generate annual product values under \$10,000 per farm, accounting for less than 1.5% of total farm production value, whereas roughly 3.6% of farms generate over \$500,000 in annual product value per farm, accounting for over 56% of total farm production value.²² Over one-half of farms are under 500 acres in size, whereas only 4% are over 2,000 acres.²³ Over 85% of farms, mostly the so-called small farms, are owned by individuals or families; corporate farms make up under 5% and partnerships just under 9%.²⁴ The four principal crops, in order of acres in production, are corn, soybeans, hay, and wheat.²⁵ The principal livestock, in order of production value, are cattle, poultry, and hogs.²⁶ As a point of reference, farms in the United States produced over 98 million head of cattle, 366 million egg layer chickens, 6.75 billion broilers and meat chickens, and 61 million hogs in 1997.²⁷

Despite their diversity, one feature is common to all farms: they are part of an industry with major national im-

12. A leading scholar of American agricultural law sums it up best in observing that "[m]uch of the favorable regulation enacted for agriculture can be traced to the special status of farming in American society." Grossman, *supra* note 6, at 293. American ideology tends to romanticize farms, focusing on the Jeffersonian agro-society roots of democracy, the plight of dust bowl farmers, and the peacefully bucolic farm by the side of the road. In fact, American farms comprise one of the most massive, self-interested, economically anticompetitive, and politically powerful industries in our nation's history. See generally Jim Chen, *The American Ideology*, 48 VAND. L. REV. 809, 810-31 (1995). For a concise social and political history of farming in America, see Haugrud, *supra* note 6, at 460-74.

13. Chen, *supra* note 12, at 875-76.

14. The favorable treatment of farms is by no means limited to environmental regulation. See *id.* at 875 n.353 (collecting farm safe harbor provisions in antitrust laws, labor laws, minimum wage laws, bankruptcy laws, tax laws, motor carrier laws, and animal welfare laws).

15. For additional legal commentary on some of the safe harbors farms enjoy from environmental regulation, see Haugrud, *supra* note 6 (discussing the general coverage of the environmental law of farms); Elaine Bueschen, *Pfiesteria Piscicida: A Regional Symptom of a National Problem*, 28 ELR 10317 (June 1998) (focusing on water pollution control laws); Larry C. Frarey & Staci J. Pratt, *Environmental Regulation of Livestock Production Operations*, 9 NAT. RESOURCES & ENV'T 8 (1995) (focusing on exemptions covering animal waste runoff); Drew L. Kershen, *Agricultural Water Pollution: From Point to Nonpoint and Beyond*, 9 NAT. RESOURCES & ENV'T 3 (1995) (focusing on water pollution control laws); Grossman, *supra* note 6, at 299-330 (discussing the general coverage of the environmental law of farms).

16. The results of the 1997 Census of Agriculture are available at NATIONAL AGRIC. STAT. SERV., USDA, 1997 CENSUS OF AGRICULTURE, available at <http://www.nass.usda.gov/census/> (last visited Dec. 1, 2000) [hereinafter CENSUS]. USDA's National Agricultural Statistics Service conducts the census in years ending in the numbers

2 and 7 by sending report forms to all known ranchers and farmers, who by law must return the completed forms even if they conducted no agricultural operations. See National Agric. Stat. Serv., USDA, *Frequently Asked Questions About the Census of Agriculture*, at <http://www.nass.usda.gov/census/census97/cenfaqs.htm> (last visited Dec. 1, 2000) (copy on file with author).

17. *Id.* This Article examines the environmental effects and regulation of farms only. Crop production farms are categorized into oilseed and grain farming, vegetable and melon farming, greenhouses and nurseries, tobacco, cotton, sugarcane, hay, and all other crops. See CENSUS, *supra* note 16, at United States Data 69, tbl. 47. Livestock farming is categorized into beef cattle, cattle feedlots, dairy cattle and milk production, hogs and pigs, poultry and eggs, sheep and goats, animal aquaculture, and other animal production. See *id.* The environmental effects and regulation of "upstream" industries that supply farms, such as pesticide manufacturing and seed suppliers, and of "downstream" industries that are supplied by farms, such as meat packing and other food processing and distribution, are vast topics in their own right and outside the scope of this Article. For an excellent discussion of the regulation of the agriculture industry as broadly defined to include these related sectors, see Looney, *supra* note 6.

18. See CENSUS, *supra* note 16, United States Data at 19, tbl. 7.

19. See *id.* at 8, fig. 4. This is roughly 45% of the U.S. 2.1 billion acres of total land mass. Adding forest land to crop and pasture land brings the figure to 75%. See RUTHERFORD H. PLATT, *LAND USE AND SOCIETY* 6-8 (1996).

20. See CENSUS, *supra* note 16, United States Data at 7, fig. 3.

21. See *id.* at 98, tbl. 49.

22. See *id.* at 6, fig. 2.

23. See *id.*

24. See *id.*

25. See *id.* at 8, fig. 5.

26. See *id.* at 9, fig. 6.

27. See *id.* at 10, tbl. 1.

pact. Farms owned an estimated \$110 billion in machinery and equipment in 1997.²⁸ They spent a total of over \$6 billion on gasoline and other fuels,²⁹ over \$18 billion on chemical fertilizers, crop control chemicals, and other agricultural chemicals combined,³⁰ and over \$2.75 billion on electricity.³¹ The payroll for farms in 1997 was over \$14 billion for hired farm labor and over \$2.9 billion for contract labor.³² In short, farming is a vast industry in the United States which, in turn, supplies and is supplied by other major industries.

Yet environmental law would be tested to the limits if farms were included immediately in regulatory programs by simply treating it as any other industry. Instead, environmental law must address farms differently; it must reflect the attributes of farms that led to the creation of the anti-law in the first place. The conventional model of environmental law relies on prescriptive regulation and punitive, deterrent-based enforcement, both of which are designed primarily by federal authorities and implemented primarily by the states.³³ But the geographic, economic, and political demographics of the farming industry challenge any approach that attempts to use this conventional model. EPA recognized this at the dawn of modern environmental law when it sought a way out of regulating farm irrigation return flows under the Clean Water Act (CWA).³⁴ The U.S. Environmental Protection Agency (EPA) is in no better position today to "instruct each individual farmer on his farming practices" than it was in the 1970s.³⁵ In short, because the farm industry is geographically, economically, and politically complex, farms present a special case in environmental law and require a special response.

Geographic Dimensions

Farms are unlike most industries in their number (about 1.9 million to be more precise),³⁶ their distribution throughout

the nation, and their diversity. Given these characteristics, adopting the model of federally designed, nationally uniform, technology-based performance and emission standards would be difficult without vastly increased budgets for farm-by-farm permitting, monitoring, and enforcement.

Regulating the farming industry is thus a daunting prospect. EPA has observed that "[t]oo large a regulated community can make it impossible to implement and enforce requirements."³⁷ The dispersal of farms throughout the nation, including deep into rural areas,³⁸ further compounds the implementation issue. It also means that farms diverge based on the variety of local environmental and social conditions. For example, farms must respond differently to local conditions such as weather, soil salinity,³⁹ soil erosion potential,⁴⁰ leaching potential,⁴¹ and freshwater availability.⁴² Social conditions that vary include proximity to metropolitan areas⁴³ and surrounding land use.⁴⁴ Farms also vary tremendously in terms of crop type⁴⁵ and production practice,⁴⁶ livestock type and concentration,⁴⁷ use of irrigation,⁴⁸ participation in conservation payment programs,⁴⁹ tillage practices,⁵⁰ sediment runoff,⁵¹ fertilizer runoff,⁵² and pesticide runoff.⁵³ The environmental law of farms thus must balance the desire to establish a national policy of environmental protection against the reality that farms are too numerous, too dispersed, and too diverse to address through a one-size-fits-all regulatory framework.

Economic Dimensions

Farms in the United States have tremendous economic value and are a critical economic link to vast supplier and consumer industries. Part of the economic potency of farms has to do with the dispersal of the farm economy among many small farms. But the economic climate for farms is highly volatile today in terms of both individual farm profitability and industrywide structure. Both factors will play an important role in shaping environmental policy for farms.

Financially speaking, farms are doing poorly. Predictions in the early 1990s that "the farm sector seems to be over-

28. *See id.*

29. *See id.* at 23, tbl. 14.

30. *See id.*, tbl. 15.

31. *See id.* at 100, tbl. 49.

32. *See id.*

33. *See* Clifford Rechtschaffen, *Deterrence vs. Cooperation and the Evolving Theory of Environmental Enforcement*, 71 S. CAL. L. REV. 1181, 1181-90 (1998); Clifford Rechtschaffen, *Competing Visions: EPA and the States Battle for the Future of Environmental Enforcement*, 30 ELR 10803 (Oct. 2000).

34. *See infra* notes 78-82 and accompanying text.

35. National Resources Defense Council v. Costle, 568 F.2d 1369, 1380, 8 ELR 20028, 20033 (D.C. Cir. 1977). For example, in its recent policy statement on the development of nutrient criteria for water quality, an issue profoundly affected by and affecting farms, EPA stated that:

EPA's custom of developing water quality criteria guidance in the form of single numbers for nationwide application is not appropriate for nutrients. EPA believes that distinct geographic regions and types of ecosystems need to be evaluated differently and that criteria specific to those regions and aquatic ecosystems need to be developed.

63 Fed. Reg. 34648, 34649 (June 25, 1998); *see also* David Zaring, *Federal Legislative Solutions to Agricultural Nonpoint Source Pollution*, 26 ELR 10128, 10133 (Mar. 1996) ("EPA has concluded that in the context of nonpoint source pollution, site-specific decision making that considers the nature of the watershed, the water body, the point sources, and the management practices to be regulated are more effective than uniform technical controls.").

36. *See* CENSUS, *supra* note 16, United States Data at 10, tbl.1.

37. U.S. EPA, PRINCIPLES OF ENVIRONMENTAL ENFORCEMENT 3-11 (1992).

38. *See* NATURAL RESOURCE CONSERVATION SERV., USDA, GEOGRAPHY OF HOPE 7, 23 (1996) [hereinafter GEOGRAPHY OF HOPE].

39. *See id.* at 33-34.

40. *See id.* at 40-41.

41. *See id.* at 45-48; *see also* Robert L. Kellogg et al., *The Potential for Leaching of Agrichemicals Used in Crop Production: A National Perspective*, 49 J. SOIL & WATER CONSERVATION 294 (1994).

42. *See* GEOGRAPHY OF HOPE, *supra* note 38, at 49-51.

43. *See id.* at 28, 50.

44. *See id.* at 26-27.

45. *See id.* at 27.

46. *See* Office of Pest Mgmt. Policy, USDA, *Completed Crop Profiles, by State/Territory*, at <http://ipmwww.ncsu.edu/opmppiap/proindex.htm> (last visited Dec. 1, 2000) (describing crop production practices for various crops in many different states).

47. *See* GEOGRAPHY OF HOPE, *supra* note 38, at 42.

48. *See id.* at 31.

49. *See id.* at 36.

50. *See id.* at 37.

51. *See id.* at 40-41.

52. *See id.* at 43.

53. *See id.* at 46.

coming the financial difficulties of the mid-1980s⁵⁴ have not come to pass. Today, many farms are crashing economically as commodity prices plummet below costs of production throughout the industry.⁵⁵ In addition to weak export markets, many farm advocates point to the changing economic structure of the farm and related industries as a major culprit. Faced with the increasingly sophisticated and expensive technology needs of farming,⁵⁶ the agriculture industry, from chemical producers to farms to food processors, is consolidating at a rapid pace. Roughly 3.6% of farms generate over \$500,000 in annual product value each, accounting for over 56% of total farm production value.⁵⁷ Upstream and downstream industries exhibit even greater concentration and a propensity toward vertical integration,⁵⁸ leading to concerns about the viability of less advanced farms, the prospects for farm employment, and the impact on rural farm communities.⁵⁹ Increased environmental regulation of farms may reduce the economic viability of farms by raising costs, contributing to further concentration of the industry. Given the economic climate of the farm industry, this may be disastrous. This is not to suggest that our commitment to environmental regulation of farms should be based primarily on the industry's economic health. It does suggest, however, that the distribution of economic impacts on farms resulting from increased regulation will play a large role in the third factor to be considered—the politics of farm policy.

Political Dimensions

Farms possess immense political power not only because of their number, but because most are family owned businesses. Of 1.9 million farms in operation in 1997, 1.6 million were family owned.⁶⁰ This is a substantial block of similarly situated voters. Moreover, farms are so widely distributed in the nation that few federal, state, or local politicians can escape pressure from the farm constituencies, and in farming areas, politicians are dominated by them.⁶¹

Although the broad dispersal of farms might hinder their collective political action, this effect is offset by two important political forces. First, farms play a critical role in the economic fate of their suppliers and customers. The vast agrochemical and food processing industries are character-

ized by greater corporate presence and concentration of economic power than is found in the farm industry. These industries rely heavily on farms and can be expected to align themselves politically with the interests of farms. For example, the Chemical Manufacturers Association, the Fertilizer Institute, and the National Agricultural Chemicals Association regularly weigh in on farm policy issues.⁶² Second, the American Farm Bureau Federation has amassed tremendous financial strength through its farm services arm and purports to speak for all farms; it has become one of the most powerful lobbying forces in the nation.⁶³ The Farm Bureau has fought steadfastly, and often quite successfully, against any and all proposed environmental regulation of farms.⁶⁴ To put it bluntly, any proposal for comprehensive environmental regulation of farming faces stiff political opposition.

The political scene is growing even more complex daily. An emerging political wrinkle in farm policy results from the concentration of the industry, which has left the so-called small farms in dire circumstances.⁶⁵ Smallness, of course, is not a particularly distinguishing factor for farms.⁶⁶ Nevertheless, with absolutely no empirical foundation,⁶⁷ a "small is better" mentality has invaded all facets of farm policy, including environmental issues,⁶⁸ and made it politi-

54. See ECONOMIC RESEARCH SERV., USDA, AGRIC. INFO. BULL. NO. 587, THE U.S. FARMING SECTOR ENTERING THE 1990s 2 (1990) [hereinafter U.S. FARMING SECTOR].

55. See Warren Cohen, *The Seeds of Discontent*, U.S. NEWS & WORLD REP., May 24, 1999, at 26; Daniel Eisenberg, *Lean Times on the Farm*, TIME, Jan. 11, 1999, at 40; Gary Strauss, *Far From Hog Heaven: Farms Fold Under Price Crunch*, USA TODAY, Feb. 2, 1999, at 1B.

56. See U.S. FARMING SECTOR, *supra* note 54, at 41-45.

57. See CENSUS, *supra* note 16, at 6, fig. 2. See generally Brian Halwell, *Where Have All the Farmers Gone?*, WORLD-WATCH, Sept./Oct. 2000, at 12; Dina Temple-Raston, *Corporate Competition Puts Hog Farmers in a Pinch*, USA TODAY, Apr. 6, 2000, at 12A (discussing competitive pressures in the hog industry).

58. See generally WILLIAM HEFFERMAN ET AL., CONSOLIDATION IN THE FOOD AND AGRICULTURE SYSTEM 1-13 (1999).

59. See *id.* at 13-16.

60. See CENSUS, *supra* note 16, United States Data at 10, tbl. 1.

61. Over 500 counties in the United States are "farming-dependent," meaning at least 20% of total business and labor income is from farming, and many more are "farming-important," meaning 10 to 20% of income is from farming. See U.S. FARMING SECTOR, *supra* note 54, at 14.

62. See Allison Rees Armour-Garb, *Minimizing Human Impacts on the Global Nitrogen Cycle: Nitrogen Fertilizer and Policy in the United States*, 4 N.Y.U. ENVTL. L.J. 339, 346-47 (1995).

63. See Vicki Monks, *Farm Bureau vs. Nature*, DEFENDERS, Fall 1998, at 14, 14.

64. See N. William Hines, *The Land Ethic and American Agriculture*, 27 LOY. L.A. L. REV. 841 (1994); Monks, *supra* note 63, at 14. The Farm Bureau or its state offices are frequent plaintiffs and interveners in litigation challenging increased levels of environmental regulation, such as through implementation of Endangered Species Act (ESA) programs. See, e.g., *Sierra Club v. Glickman*, 156 F.3d 606, 29 ELR 20159 (5th Cir. 1998) (intervention in suit challenging irrigation subsidies under ESA); *Idaho Farm Bureau Fed'n v. Babbitt*, 58 F.3d 1392, 25 ELR 21265 (9th Cir. 1995) (plaintiff in suit challenging listing of an endangered species); *Defenders of Wildlife v. EPA*, 882 F.2d 1294, 19 ELR 21440 (8th Cir. 1989) (intervention in suit challenging EPA approval of poison bait for farm animal predators); *Wyoming Farm Bureau v. Babbitt*, 987 F. Supp. 1349 (D. Wyo. 1997) (plaintiff challenging reintroduction of endangered wolves); see generally DEFENDERS OF WILDLIFE, AMBER WAVES OF GAIN 56-61 (2000).

65. See, e.g., William Claiborne, *Fighting the New Feudal Rulers*, WASH. POST, Jan. 3, 1999, at A3 (referring to "small family farms"); *What Price Pigs?*, AUDUBON, Sept./Oct. 1995, at 14 (referring to "smaller farmers").

66. USDA has noted that "most U.S. farms are small, noncommercial, and family owned and operated." U.S. FARMING SECTOR, *supra* note 54, at 1. But as most farms are family owned, small cannot mean simply family owned. USDA's "noncommercial" category describes farms with gross annual sales of less than \$40,000, which often requires that the owners work outside the farm to make ends meet. See *id.* Recall, however, that over half of all farms generate less than \$10,000 in revenue, see CENSUS, *supra* note 16, at 6, fig. 1, meaning that well over half are in noncommercial status. Over one-half of all farms also are under 500 acres. See *id.*

67. Small farms "do not significantly affect the local economy's income and employment," see U.S. FARMING SECTOR, *supra* note 54, at 1, and are worse per unit of production than large farms for many environmental performance indicators. See Chen, *supra* note 4, at 345.

68. Chen refers to this as the "'microecological' variation on the agroecological theme," that is, "the frequently invoked but rarely tested assumption that small farm size and family ownership guarantee sound stewardship." *Id.* at 336, 341. Among animal feeding operations, for example, very small and small operations accounted for almost as much total excess nitrogen application in the form of animal waste as did medium and large operations. See Noel Gollehon & Margaret Caswell, *Confined Animal Production Poses Manure Management Problems*, AGRIC. OUTLOOK, Sept. 2000, at 12, 15.

cally imperative that any farm policy should save small farms.⁶⁹ Thus even assuming it can overcome political opposition from a multitude of powerful upstream and downstream industries, any proposal for comprehensive environmental regulation of farming must also somehow take into account the "save the small farm" factor. Yet, given the fact that most farms are small, is it unreasonable to conclude that small farms are a major part of the problem of environmental harm and should thus bear a major portion of the regulatory burden?⁷⁰ The politics of environmental law for farms are daunting indeed.

The Environmental Law Safe Harbors That Farms Enjoy

The complexity of farming as an industry poses serious challenges to environmental policy. Getting a handle on the environmental law of farms is nothing short of difficult. There is no unified code of environmental law for farms. Federal environmental law itself is scattered throughout many statutes, making it difficult to piece together the various provisions that *could* apply to farms. Although the general theme at the federal level is hands-off, no express or implied preemption prevents states from more aggressively regulating farms. To date, however, states have generally not chosen to regulate the environmental impacts of farming in any comprehensive manner.⁷¹ We are left, therefore, with a collection of provisions, spread throughout many different laws, which combine to form what I call the "anti-law" of farms and the environment. There are few exceptions to this anti-law.

An Inventory of Safe Harbors for Farming

The anti-law of farms and the environment comes in two forms. Some laws, while not expressly exempting or even mentioning farms, are structured in such a way that farms escape most if not all of the regulatory impact. Other laws expressly exempt farms from regulatory programs that would otherwise clearly apply to them. Together, these pas-

sive and active exemptions provide a large safe harbor for farms from the impact of environmental law.

The CWA

The CWA⁷² prohibits the "discharge of any pollutant by any person"⁷³ into waters of the United States and establishes a series of permit programs designed to regulate the discharge of pollutants provided certain conditions are met. Though seemingly straightforward, this prohibition is riddled with important exemptions for farms. Although the CWA defines "pollutant" to include "agricultural waste discharged into water,"⁷⁴ other provisions of the statute put discharges of agricultural wastewater, stormwater, and fill material largely beyond regulatory reach.

□ *Wastewater Permits.* Section 402 of the CWA establishes a permitting program, known as the national pollutant discharge elimination system (NPDES), to regulate the discharge of pollutants.⁷⁵ NPDES permits may be issued only if, among other conditions, the permittee satisfies a set of technology-based⁷⁶ and water quality-based⁷⁷ limitations on the amount and quality of discharged effluent. For almost 20 years, the NPDES program focused on discharges of wastewater effluent from "industrial" processes—that is, water which had come into contact with process wastes or which was used as a waste disposal medium.

Many wastewater discharges from agriculture, such as the collected return flow from irrigated fields, appear to fit within the NPDES permit program as generally described. Indeed, EPA knew that this interpretation was inescapable under the CWA as it was originally enacted.⁷⁸ Awed by the prospect of issuing NPDES permits to two million farms, EPA thus promulgated an administrative exemption from the statute's unambiguous terms.⁷⁹ The courts struck down that exemption as contrary to the clear intent and meaning of the CWA,⁸⁰ but in 1977, Congress overruled the courts and

69. For example, the USDA has established a National Commission on Small Farms, which has devoted considerable attention to attacking corporate farming as the chief threat to small farms. See, e.g., National Comm'n on Small Farms, USDA, *A Time to Act: A Report of the USDA Nat'l Comm'n on Small Farms*, at <http://www.reeusda.gov/agsys/smallfarm/report.htm> (last visited Dec. 1, 2000) (describing "the small farm as the cornerstone of our agricultural and rural economy" and proposing over 100 measures to assist small farms, particularly the position of small farms versus corporate farms). The USDA has also in the past few years established a Deputy Secretary level Small Farms Council, a Small Farms Federal Advisory Commission, and a Small Farms Coordinator position in each USDA office. See USDA, *Small Farms @ USDA*, at <http://www.usda.gov/oc/smallfarm/sfhome.htm> (last visited Dec. 1, 2000).

70. Much of the small farm rhetoric is lodged against "corporate farms." See William Claiborne, *Despite Stink, Hog Farm Proceeds on Tribal Land*, WASH. POST, Apr. 4, 1999, at A3 (referring to "corporate farming ventures"); *What Price Pigs?*, *supra* note 65, at 14 (referring to "corporate giants"). The "small" rhetoric thus appears to be intended to single out the much smaller universe of farms that are corporate owned, large in size, and very large in revenue. Those farms, while presenting many environmental challenges, by no means have caused the bulk of environmental harms inventoried in this Article. Small farms are a major part of the problem.

71. The same political forces that operate on the federal level to impede regulation of farms no doubt operate with equal or greater force at the state and local level. See *supra* notes 60-70 and accompanying text.

72. 33 U.S.C. §§1251-1387, ELR STAT. FWPCA §§101-607. For an overview of the CWA programs, see THE CLEAN WATER ACT HANDBOOK (Parthenia B. Evans ed., 1994).

73. 33 U.S.C. §1311(a), ELR STAT. FWPCA §301(a).

74. *Id.* §1362(6), ELR STAT. FWPCA §502(6).

75. See *id.* §1342, ELR STAT. FWPCA §402.

76. See *id.* §§1311, 1316-1317, ELR STAT. FWPCA §§301, 306-307.

77. See *id.* §§1312-1315, ELR STAT. FWPCA §§302-305.

78. See Kershen, *supra* note 15, at 3 (explaining that EPA took a broad view of its CWA jurisdiction, leading the agency to conclude that farm irrigation return flows channeled in ditches and other conveyances were covered).

79. See 38 Fed. Reg. 18000, 18003 (July 5, 1973) (previously codified at 40 C.F.R. §125.4). The regulation provided that "the following do not require an NPDES permit: . . . (j) Discharges of pollutants from agricultural and silvicultural activities, including irrigation return flow and runoff from orchards, cultivated crops, pastures, rangelands, and forest lands," with an exception for discharges from large confined animal feeding operations and large irrigation projects. *Id.*

80. See *Natural Resources Defense Council v. Costle*, 568 F.2d 1369, 8 ELR 20028 (D.C. Cir. 1977). EPA argued that the regulatory exemption was necessary to allow the Agency to avoid the "administrative infeasibility" of issuing and administering millions of farm NPDES permits. See *id.* at 1374, 8 ELR at 20030. Although the court rejected EPA's position, it explained that EPA could accomplish most of its objectives by promulgating a general permit describing and authorizing the classes of discharges it had sought to exempt entirely. See *id.* at 1380-82, 8 ELR at 20034. EPA later accepted the court's invitation. See 42 Fed. Reg. 6846 (Feb. 3, 1977).

codified EPA's farm exemption. The original version of the CWA defined discharge of a pollutant as "any addition of any pollutant to navigable waters from any point source."⁸¹ To exempt farm irrigation return flows from the reach of NPDES wastewater discharge permits, Congress adopted the fiction that "these sources were practically indistinguishable from any other agricultural runoff"⁸² and simply redefined "point source" to exclude "return flows from irrigated agriculture."⁸³ Congress drove home the point in §402 as well, dictating that EPA may not "require a permit under this section for discharges composed entirely of return flows from irrigated agriculture,"⁸⁴ and, leaving nothing to doubt, elsewhere described irrigation return flows as "agriculturally . . . related nonpoint sources of pollution."⁸⁵ Through this exemption, therefore, farms that discharge soils, animal wastes, fertilizers, and pesticides via return flows into waters of the United States need no authorization for such discharges under the CWA.⁸⁶

□ *Stormwater Permits.* Although EPA's focus for the first 20 years of the NPDES program was on process wastewater, the CWA always provided EPA the authority, under certain conditions, to require permits for stormwater discharged through point sources. In 1987, Congress renewed EPA's attention to polluted stormwater through a series of amendments outlining in detail a framework for NPDES permit-

ting of municipal and industrial stormwater discharges.⁸⁷ In the course of doing so, however, Congress made it clear that the stormwater NPDES program would not extend to farm stormwater runoff. As it had in 1977 for irrigation return flows, Congress defined "point source" so as to exclude "agricultural stormwater discharges."⁸⁸ Hence, like irrigation return flows, stormwater from farms collected in ditches, canals, and other conveyances, and the pollutants carried in it, are beyond NPDES stormwater program coverage.⁸⁹

□ *Dredge and Fill Permits.* The third major CWA water pollutant discharge permitting program, found in §404 of the statute, covers "the discharge of dredged or fill material into the navigable waters."⁹⁰ This so-called dredge-and-fill permit program has been the nation's principal vehicle for wetlands protection.⁹¹ Prominently excluded from the program, however, are discharges "from normal farming . . . activities such as plowing, seeding, cultivating, minor drainage, harvesting for the production of food, . . . or upland soil and water conservation practices."⁹² A significant limitation on this "normal farming" exemption is that it does not apply to activities intended to bring a wetlands area into a use to which it was not previously subject.⁹³ Hence, "normal farming" does not include the conversion of a natural wetlands area to a rice farm or the conversion of farmed wetlands into upland cultivated farmlands.⁹⁴ Nevertheless,

81. 33 U.S.C. §1362(12), ELR STAT. FWPCA §502(12). The "point" in point source refers to the requirement that the discharge be from "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." *Id.* §1362(14), ELR STAT. FWPCA §502(14).

82. S. REP. NO. 95-370, at 35 (1977), reprinted in 1977 U.S.C.C.A.N. 4326, 4360.

83. The CWA of 1977, Pub. L. No. 95-217, § 33(b), 91 Stat. 1566, 1577 (1977) (codified at 33 U.S.C. §1362(14)).

84. *Id.* §33(c), 91 Stat. 1566, 1577 (1977) (codified at 33 U.S.C. §1342(l)(1), ELR STAT. FWPCA §402(l)(1)).

85. *Id.* §33(a) (codified at 33 U.S.C. §1288(b)(2)(F), ELR STAT. FWPCA §208(b)(2)(F)) (emphasis added).

86. It is through this exemption, for example, that hundreds of thousands of acres of California farm lands using subsurface drainage tile fields discharge polluted wastewater to the San Joaquin Valley watershed. See Gary Bobker, *Agricultural Point Source Pollution in California's San Joaquin Valley*, 9 NAT. RESOURCES & ENV'T 13, 13-16 (1995) (noting that hundreds of thousands of farmland acres in the San Joaquin Valley employ such tile systems). The exemption does not apply to other wastewater discharges a farm might produce, such as animal waste collected from feed lots, or manure distributed from spreaders onto farm lands, when ultimately discharged through a point source. See *Concerned Area Residents for the Env't v. Southview Farm*, 34 F.3d 114, 24 ELR 21480 (2d Cir. 1994); see also Kershen, *supra* note 15, at 4; Susan E. Schell, *The Uncertain Future of Clean Water Act Agricultural Pollution Exemptions After Concerned Area Residents for the Environment v. Southview Farms*, 31 LAND & WATER L. REV. 113 (1996). Recently, for example, state and local prosecutors in California joined in filing four lawsuits against dairy operators in San Joaquin County for allegedly allowing cattle manure runoff to pollute waterways. See Carolyn Whetzel, *Attorney General, County District Attorney File Civil Complaints Against Dairy Operators*, Daily Env't Rep. (BNA), May 6, 1999, at A-9. Also, a court recently held that wastes removed from NPDES-regulated manure holding ponds and spread on land as fertilizer remain subject to the continuing jurisdiction of the NPDES permit, meaning that unpermitted discharges of nonpoint runoff from the manure are illegal. See *Community Ass'n for Restoration v. Henry Bosma Dairy*, 65 F. Supp. 2d 1129 (E.D. Wash. 1999) (granting motion for summary judgment); Susan Bruninga, *Land Application of Manure Subject to CWA Requirements, Court Says*, 30 Env't Rep. (BNA) 173 (1999).

87. See Water Quality Act of 1987, Pub. L. No. 100-4, Title IV, §§401-405, 101 Stat. 65, 65-69 (1987) (codified at 33 U.S.C. §1342, ELR STAT. FWPCA §402).

88. Pub. L. No. 100-4, Title V, §503, 101 Stat. 75, 75 (1987) (codified at 33 U.S.C. §1362(14), ELR STAT. FWPCA §502(14)). Congress believed these activities "have no serious adverse impact on water quality," that regulating them under the dredge and fill permit program would produce "no countervailing environmental benefit," and that they would be "more properly controlled by State and local agencies." S. REP. NO. 95-370, at 76, 77 (1977), reprinted in 1977 U.S.C.C.A.N. 4326, 4401; see also 123 CONG. REC. 26,707 (1977) (remarks of Sen. Anderson) ("The exemption of these activities from permit requirements will greatly simplify the administrative process and reduce the potential redtape burden.").

89. *But see infra* note 191 (discussing cases applying NPDES program to irrigation and stormwater runoff carrying pollutants from manure piled onto farmlands).

90. 33 U.S.C. §1344, ELR STAT. FWPCA §404.

91. For a history of how §404, which does not mention the word "wetlands" in connection with the Corps' permitting authority, has become associated primarily with wetlands protection, see Jason Perdion, *Protecting Wetlands Through the Clean Water Act and the 1985 and 1990 Farm Bills: A Winning Trio*, 28 U. TOUL. L. REV. 867, 869-73 (1997).

92. 33 U.S.C. §1344(f)(A), ELR STAT. FWPCA §404(f)(A). Additional exemptions apply to "construction or maintenance of farm or stock ponds or irrigation ditches," *id.* §1344(f)(1)(C), ELR STAT. FWPCA §404(f)(1)(C), and "construction or maintenance of farm roads," *id.* §1344(f)(1)(E), ELR STAT. FWPCA §404(f)(1)(E). See generally Perdion, *supra* note 91, at 874-77.

93. See 33 U.S.C. §1344(f)(2), ELR STAT. FWPCA §404(f)(2). This so-called recapture provision has generally been construed broadly by courts and administrative agencies, making the normal farming exemption narrow and tricky for farmers. See, e.g., U.S. ARMY CORPS OF ENG'RS, SECTION 404 AND AGRICULTURE INFORMATION PAPER (1990) (addressing various scenarios under the normal farming exemption and recapture provision); see also Perdion, *supra* note 91, at 877-83.

94. The recapture provision addresses only those conversions of wetlands to farming accomplished through discharges subject to §404. Two important limitations on the scope of that jurisdiction apply to farms. First, farm wetland areas converted to cropland uses before December 25, 1985—so-called prior converted croplands—are

continued farming in wetlands, or activities designed to reclaim historically farmed wetlands, has accounted for substantial loss and degradation of wetland ecosystems since the enactment of the CWA.⁹⁵

□ *Nonpoint Source Water Pollution.* In a classic example of passive nonregulation, the repeated references in the CWA to "point source" as an essential criterion for application of the NPDES program create one of the largest safe harbors in environmental law for farms—the failure to regulate *nonpoint* sources of water pollution. The size of this harbor and its effects have not gone unnoticed.⁹⁶ It has, however, remained largely open, particularly for farms.⁹⁷

Efforts to address nonpoint source water pollution in the CWA and other statutes have been feeble, unfocused, and underfunded. For example, §208 of the CWA required states to develop areawide waste treatment management plans that were to include a process for identifying nonpoint sources

not subject to §404. See 58 Fed. Reg. 45008 (Aug. 25, 1993). Second, a recent court decision holding that the §404 program does not reach draining and clearing activities that do not involve more than incidental redischARGE, or fallback, of small amounts of debris opens the door to relatively easy conversion of many wetlands to farming free of any §404 consequences. See *National Mining Ass'n v. Corps of Eng'rs*, 145 F.3d 1399, 28 ELR 21318 (D.C. Cir. 1997); see also Revisions to the Clean Water Act Regulatory Definition of "Discharge of Dredged Material," 64 Fed. Reg. 25120 (May 10, 1999) (codified at 33 C.F.R. pt. 323 and 40 C.F.R. pt. 232) (revising regulations to correspond to *National Mining* decision and explaining background thereof). Some farmers already have attempted to take advantage of this turn of events by draining wetlands for conversion to crop uses. See, e.g., *In re Slinger Drainage, Inc.*, CWA Appeal No. 98-10, ADMIN. MAT. 41208 (Sept. 29, 1999) (finding that a farmer who drained wetlands after *National Mining* decision violated Section 404 because installation of drainage tiles involved more than incidental fallback). EPA and the Corps have also proposed regulations to severely narrow the practical effect of the *National Mining* case by placing the burden on the person conducting the clearing or draining to prove that only incidental fallback is involved. See Further Revisions to the Clean Water Act Regulatory Definition of "Discharge of Dredged Material," 65 Fed. Reg. 50108 (Aug. 16, 2000). In any event, such conversions may nonetheless have undesirable consequences to farmers under farm subsidy programs and thus may not be widely implemented. See *infra* notes 249-54 and accompanying text.

95. See NATIONAL WATER QUALITY INVENTORY, *supra* note 7, at ES-27 to ES-29 (noting that agriculture was responsible for 54% of national wetland losses from the mid-1970s to the mid-1980s, and remains the leading source of wetland degradation). One of the murkiest issues involving wetlands and farming is the delineation of wetlands on farms and the determination of which such areas are prior converted croplands for purposes of §404 and farm subsidy programs. See Justin Lamunyon, *Wetlands and the Swampbuster Provisions: The Delineation Procedures, Options, and Alternatives for the American Farmer*, 73 NEB. L. REV. 163 (1994). Recently, environmental groups have alleged that the USDA, the lead agency for delineation of wetlands on farms, has used poor delineation methodology and undercounted wetlands on farming land. See Susan Bruninga, *Group Says Oversight Inadequate in Delineations on Farmland Tracts*, 30 ENV'T REP. (BNA) 313 (1999); Susan Bruninga, *Group Charges EPA Overlooks Failings in Farmland Delineations, Seeks Review*, Daily Env't Rep. (BNA), June 14, 1999, at A-6.

96. See Scott D. Anderson, *Watershed Management and Nonpoint Source Pollution: The Massachusetts Approach*, 26 B.C. ENVTL. AFF. L. REV. 339, 339-40 (1999) ("[T]he control of nonpoint source pollution continues to frustrate the [Clean Water Act's] stated goal to 'restore and maintain the chemical, physical, and biological integrity of the Nation's waters.'"); Kershen, *supra* note 15, at 3 (recounting descriptions of nonpoint source pollution as "'the neglected legacy and unfinished agenda' of federal water pollution laws").

97. For a comprehensive overview of federal regulation of nonpoint source water pollution from farms, see Zaring, *supra* note 35; George A. Gould, *Agriculture, Nonpoint Source Pollution, and Federal Law*, 23 U.C. DAVIS L. REV. 461 (1990).

and establishing feasible control measures.⁹⁸ Upon EPA's approval of a state's plan, the state could receive federal assistance for the planning process.⁹⁹ With high expectations, Congress used the program as the rationale for moving irrigation return flows from the point source side of the CWA to the nonpoint source side¹⁰⁰ and for excluding normal farming from the §404 dredge-and-fill permit program.¹⁰¹ Similarly, in the 1987 Amendments, Congress added §319 to the statute, requiring states to prepare "state assessment reports" that identify waters which cannot reasonably be expected to meet water quality standards because of nonpoint source pollution.¹⁰² States must prepare "state management programs" prescribing the "best management practices" to control sources of nonpoint pollution.¹⁰³ When EPA approves a state's assessment reports and management plans, the state is eligible for federal financial assistance to implement its programs.¹⁰⁴

In the absence of any concrete, enforceable federal blueprint for addressing nonpoint source pollution, the success of §§208 and 319 depended largely on state initiative. It is little surprise, then, that neither §§208 nor 319 produced meaningful results.¹⁰⁵ Congress thus took a more aggressive step in §6217 of the Coastal Zone Act Reauthorization Amendments of 1990,¹⁰⁶ amending the Coastal Zone Management Act (CZMA)¹⁰⁷ to add a requirement that any state with a federally approved coastal zone management plan¹⁰⁸

98. See 33 U.S.C. §1288(a), ELR STAT. FWPCA §208(a); see also Haugrud, *supra* note 6, §8.2(C)(3)(b)(i), at 540-41.

99. See 33 U.S.C. §1329(f), ELR STAT. FWPCA §319(f); see also Haugrud, *supra* note 6, §8.2(C)(3)(b)(ii), at 541-42.

100. See S. REP. NO. 95-370, at 35 (1977), reprinted in 1977 U.S.C.A.N. 4326, 4360 ("All such sources, regardless of the manner in which the flow was applied to the agricultural lands, and regardless of the discrete nature of the entry point, are more appropriately treated under the requirements of section 208(b)(2)(F)."); see also *infra* notes 185-93 and accompanying text.

101. See S. REP. NO. 95-370, at 76 (1977), reprinted in 1977 U.S.C.A.N. 4326, 4401 (noting that §404 need not extend to normal farming activities because they will be "controlled by State and local agencies under section 208(b)(4)").

102. See 33 U.S.C. §1329(a), ELR STAT. FWPCA §319(a).

103. See *id.* §1329(b), ELR STAT. FWPCA §319(b).

104. See *id.* §1329(h), ELR STAT. FWPCA §319(h).

105. An EPA Advisory Committee recently summed up the weakness of the §§208 and 319 programs by explaining that "EPA had no 'hammer' provision for States not adopting programs and no ability to establish a program if a State chose not to." EPA TMDL Federal Advisory Committee, Discussion Paper, Nonpoint Source-Only Waters 5 (1997) (on file with author). See generally Anderson, *supra* note 96, at 344 (noting that "the section 208 program failed to make any significant progress" and under §319 "EPA continues to lack the authority to require the states to take any affirmative action"); Kershen, *supra* note 15, at 4 (noting that "section 208 gave states great discretion . . . and carried no enforcement penalties" and under §319 "the states have been slow to act and EPA has limited enforcement authority to make states act."); Zaring, *supra* note 35, at 10130, 10132 (noting that §208 was "toothless" and §319 suffered from "not enough carrot, not enough stick"). EPA continues nonetheless to devote considerable resources to the §319 program, largely in the form of increased funding for states that EPA is proposing be tied to the requirement that states follow "key elements" EPA is in the process of developing. See *Chances for Clean Water Bill Dim; EPA to Use Existing Authorities on Nonpoint Sources*, Daily Env't Rep. (BNA), Jan. 20, 1999, at S-18.

106. Pub. L. No. 101-508, tit. VI, §6217 (1990), 104 Stat. 1388-314.

107. 16 U.S.C. §§1451-1464, ELR STAT. CZMA §§302-319.

108. For a description of the CZMA coastal management plan provisions, see Robin Kundis Craig, *The Coral Reef Task Force: Protecting the Environment Through Executive Order*, 30 ELR 10343 (May 2000).

must develop a Coastal Nonpoint Pollution Program subject to federal review and approval.¹⁰⁹ States must identify land uses leading to nonpoint source pollution and develop measures to apply "best available nonpoint pollution control practices, technologies, processes, siting criteria, operating methods, or other alternatives."¹¹⁰ When EPA and the National Oceanic and Atmospheric Administration approve a state's Coastal Nonpoint Pollution Program, the federal government agrees not to fund, authorize, or carry out projects inconsistent with the state's plan.¹¹¹ For coastal states, this requirement can serve as an impetus for more aggressive regulation of nonpoint source pollution, but federal funding assistance is woefully short of the expected cost of plan preparation and implementation.¹¹²

Another federally based incentive for state regulation of nonpoint source pollution derives from the CWA's program for determining total maximum daily load (TMDL) waste load allocations under §303(d) of the CWA.¹¹³ Where application of the technology-based NPDES permit discharge limits does not bring a water body within ambient water quality standards,¹¹⁴ the TMDL program implements a procedure to impose more restrictive discharge limits on the

NPDES permittees.¹¹⁵ Under the TMDL program, states must identify impaired water bodies, calculate the total maximum daily loading of pollutants that the water body can tolerate while still meeting water quality goals, and then allocate the necessary reduction in total discharges among NPDES dischargers and, theoretically, nonpoint source dischargers of that pollutant.¹¹⁶ States must include TMDL im-

109. See 16 U.S.C. § 1455b. See generally Clare Saperstein, *State Solutions to Nonpoint Source Pollution: Implementation and Enforcement of the 1990 Coastal Zone Amendments Reauthorization Act Section 6217*, 75 B.U. L. REV. 889 (1995).

110. 16 U.S.C. § 1455b(g)(5).

111. See *id.* § 1455b(k). EPA has recently outlined the guidelines for federal consistency determinations. See Section 319 Federal Consistency Guidance, 63 Fed. Reg. 45504 (Aug. 26, 1998).

112. See ROBERT V. PERCIVAL ET AL., ENVIRONMENTAL REGULATION 755 (3d ed. 2000) (noting that EPA estimated the cost of implementing the measures contemplated in the program at \$390 million to \$590 million, whereas only \$50 million in grant money was available).

113. See 33 U.S.C. § 1313(d), ELR STAT. FWPCA § 303(d).

114. Water quality standards are based on two components: (1) designated uses of the water body, such as recreation or water supply, and (2) water quality criteria, which set concentration levels for individual pollutants designed to attain particular designated uses. Water quality standards thus are designed to regulate ambient water pollution concentrations for identified pollutants in different classes of waters. See 33 U.S.C. § 1313(c), ELR STAT. FWPCA § 303(c); see also PERCIVAL ET AL., *supra* note 112, at 700. One of the difficulties facing efforts to apply the water quality standards program to water pollution from farming is that, at present, no federally promulgated water quality criteria exist for nutrients from nitrogen and phosphorous discharges. EPA, however, is in the process of developing them. See Office of Water, U.S. EPA, Nutrient Criteria Technical Guidance Manual: Rivers and Streams (review draft of Sept. 1999); Office of Water, U.S. EPA, Nutrient Criteria Technical Guidance Manual: Lakes and Reservoirs (review draft of Apr. 1999); U.S. EPA, Notice of National Strategy for the Development of Regional Nutrient Criteria, 63 Fed. Reg. at 34648; see also Susan Bruninga, *Effort to Set Nutrient Criteria Premature, Too Burdensome on POTWs, Officials Say*, 30 Env't Rep. (BNA) 172 (1999); Susan Bruninga, *Regulating Nutrients, Implementing Controls Focus of EPA Meeting on Draft Criteria*, 30 Env't Rep. (BNA) 310 (1999); Karen L. Werner, *Project to Guide States in Development of Limits for Pesticides in Impaired Waters*, 30 Env't Rep. (BNA) 1284 (1999). In the meantime, some states have developed their own nutrient criteria in the absence of federal guidelines, though the process has often been contentious. See Pamela S. Clarke & Stacey M. Cronk, *The Pennsylvania Nutrient Management Act: Pennsylvania Helps to "Save the Bay" Through Nonpoint Source Pollution Management*, 6 VILL. ENVTL. L.J. 319 (1995); Alfred R. Light, *The Myth of Everglades Settlement*, 11 ST. THOMAS L. REV. 55, 62-65 (1998) (discussing litigation over Florida's water quality criteria for phosphorous); James M. McElfish, *State Enforcement Authorities for Polluted Runoff*, 28 ELR 10181, 10195-99 (Apr. 1998). The Ecological Sciences Division of the Department of Agriculture's Natural Resources Conservation Service is also developing policies for providing nutrient management technical assistance in connection with programs protecting highly erodible lands and wetlands. See 64 Fed. Reg. 19122 (Apr. 19, 1999).

115. The TMDL program thus represents the intersection of the CWA's technology-based and water quality-based components of regulation. For comprehensive explanations of the TMDL program, see Robert W. Adler, *Integrated Approaches to Water Pollution: Lessons From the Clean Air Act*, 23 HARV. ENVTL. L. REV. 203, 215-30 (1999); Office of the Administrator, U.S. EPA, *Report of the Federal Advisory Committee on the Total Maximum Daily Load (TMDL) Program (1998)*, at <http://www.epa.gov/owow/tmdl/advisory.html> (last visited Dec. 1, 2000) [hereinafter *Federal Advisory Committee*], and in particular review the series consisting of Oliver A. Houck, *TMDLs: The Resurrection of Water Quality Standards-Based Regulation Under the Clean Water Act*, 27 ELR 10329 (July 1997); Oliver A. Houck, *TMDLs, Are We There Yet?: The Long Road Toward Water Quality-Based Regulation Under the Clean Water Act*, 27 ELR 10391 (Aug. 1997); Oliver A. Houck, *TMDLs III: A New Framework for the Clean Water Act's Ambient Standards Program*, 28 ELR 10415 (Aug. 1998); Oliver A. Houck, *TMDLs IV: The Final Frontier*, 29 ELR 10469 (Aug. 1999). Houck's Articles are included in an indepth analysis published by the Environmental Law Institute, OLIVER A. HOUCK, THE CLEAN WATER ACT TMDL PROGRAM: LAW, POLICY, AND IMPLEMENTATION (2000). The TMDL program lay dormant for almost 20 years before a series of lawsuits against states and EPA in the early 1990s resulted in court-imposed deadlines for completing the TMDL process in many states. See Adler, *supra*, at 221; Houck, *TMDLs, Are We There Yet?*, *supra*. As the weight of litigation turned against them, EPA and the states worked to develop a plan to carry out the TMDL program nationally over a 12-year period beginning in 1998. For current information on this development and the status of the TMDL program, see Office of Water, U.S. EPA, *Total Daily Maximum Load (TMDL) Program*, at <http://www.epa.gov/owow/tmdl> (last visited Dec. 1, 2000).

116. See 33 U.S.C. § 1313(d), ELR STAT. FWPCA § 303(d). In July 2000 EPA promulgated final TMDL regulations designed to include many nonpoint sources in the full scope of the TMDL program. See Revisions to the Water Quality Planning and Management Regulation and Revisions to the National Pollutant Discharge Elimination System Program in Support of Revisions to the Water Quality Planning and Management Regulation, 65 Fed. Reg. 4365 (Jan. 27, 2000) (amending various provisions of 40 C.F.R. pts. 9, 122, 123, 124, 130). These followed controversial proposed rules directed at the same purpose. See generally Lisa E. Roberts, *Is the Gun Loaded This Time? EPA's Proposed Revisions to the Total Maximum Daily Load Program*, 6 ENVTL. LAW. 635 (2000). Nevertheless, there is far from universal agreement as to whether the CWA allows allocation of a portion of the pollutant load to nonpoint sources. Indeed, farming groups have initiated litigation challenging EPA's authority to implement the TMDL program so as to assign allocations to nonpoint sources. See Susan Bruninga, *Suit Challenging EPA Authority to Set TMDLs for Nonpoint Sources Concerns Cities*, Daily Env't Rep. (BNA), May 27, 1999, at A-2; Houck, *TMDLs IV, supra* note 115, at 10474. Some members of Congress have also questioned EPA's authority in this regard and taken measures to block implementation of the final rules. See Susan Bruninga, *Joint Resolutions Aimed at Blocking TMDL Final Rule Introduced in Congress*, 31 Env't Rep. (BNA) 1521 (2000); Susan Bruninga, *House Panel Members Question EPA Authority to Issue TMDL Proposal*, 30 Env't Rep. (BNA) 1241 (1999). EPA's Federal Advisory Committee on TMDL's declined to address these legal issues in its final report. See *Federal Advisory Committee, supra* note 115, at 42. In the first judicial opinion on the question, a California federal district court held that agricultural nonpoint source pollution must be included in TMDL determinations, but that states have discretion as to the load reduction allocation between point and nonpoint sources. See *Pronsolino v. Marcus*, 91 F. Supp. 2d 1337, 30 ELR 20460 (N.D. Cal. 2000). Given the complexities involved in the TMDL and waste load allocation calculations, it appears likely that the implementation process will continue to face litigation challenges at virtually every stage. See Dana A. Elfin, *Challenges to Total Maximum Daily Loads Possible Following Upcoming EPA Regulation*, 30 Env't Rep. (BNA) 311 (1999) (reporting that discharger groups are filing "pre-litigation type comments" on proposed TMDL allocations).

plementation as part of "continuing planning process" programs that EPA must approve in order for a state to retain delegation to administer the NPDES permit program within its boundaries.¹¹⁷

The TMDL program stops there, however, providing no independent source of authority for enforcing load reduction allocations.¹¹⁸ Enforcing allocations for NPDES permit dischargers is a straightforward matter of tightening NPDES permits to reduce total discharges of the pollutants of concern.¹¹⁹ For nonpoint sources, however, the most EPA can say is that TMDL load allocations are to be "enforced" through the §319 program,¹²⁰ which, as pointed out above, fails to secure real gains in control of nonpoint source discharges from farms.

EPA has recognized the obstacle this dichotomy poses to TMDL program implementation. In waters impaired primarily or exclusively by nonpoint sources, EPA has proposed a policy that allows states that promulgate demonstrable means of reducing nonpoint source pollution in a given water body to ease the burdens on NPDES permittees.¹²¹ Where that approach does not work, EPA suggests that states simply declare, presumably as a matter of state law, that offending nonpoint sources are actually point sources and require state-issued NPDES permits and full TMDL compliance.¹²² Nonpoint source pollution, a significant contributor to water quality degradation, has been unregulated

for decades. Substantial gains in water quality thus could be achieved through such an intense focus on nonpoint source pollution. In addition, the marginal costs of pollution reduction for nonpoint sources might be well below those that NPDES permittees would bear to achieve the same reductions in pollutant loads. Although it is questionable whether EPA can use the TMDL program in such a manner or require states to do the same, the program may allow states to do so in order to balance the costs of water quality improvement between point and nonpoint sources.¹²³

The problem with relying on the CZMA's program and CWA's TMDL program as the foundations for regulating farm nonpoint pollution is that neither program addresses farms specifically at the federal level. States, in other words, will have the discretion to achieve the general goal of nonpoint source pollution control in ways that do not place serious burdens on farms, or leave farms entirely unregulated.¹²⁴ Some states have done exactly that in their initial TMDL implementation policies.¹²⁵ Indeed, in a recent series of comprehensive studies of state law, the Environmental Law Institute identified few states with any meaningful program regulating farm nonpoint source pollution, much less an actively enforced one.¹²⁶ Most states have followed the federal lead and focused on point source pollution; of those that have ventured into addressing nonpoint source pollution, most leave farms out of the picture.¹²⁷ EPA re-

117. See 33 U.S.C. § 1313(e)(3)(C), ELR STAT. FWPCA § 303(e)(3)(C).

118. See Office of Water, U.S. EPA, *Total Maximum Daily Load (TMDL) Program, Memorandum From Robert Perciasepe, EPA Assistant Administrator, to Regional Administrators and Regional Water Division Directors Re: New Policies for Establishing and Implementing Total Maximum Daily Loads* (Aug. 8, 1997), at <http://www.epa.gov/owow/tmdl/ratepace.html> (last visited Dec. 1, 2000) [hereinafter Perciasepe Memorandum] ("A TMDL improves water quality when the pollutant allocations are implemented, not when a TMDL is established. . . . Section 303(d) does not establish any new implementation authorities beyond those that exist elsewhere in State, local, Tribal, or Federal law."). Because the TMDL program is limited in this respect, establishing TMDLs "trigger[s] no additional obligations on the part of any [nonpoint source]." Federal Advisory Committee, *supra* note 115, at 5.

119. See 33 U.S.C. § 1312(a), ELR STAT. FWPCA § 302(a); see also Perciasepe Memorandum, *supra* note 118 ("[P]oint sources implement the wasteload allocations within TMDLs through enforceable water quality-based discharge limits in NPDES permits authorized under section 402 of the CWA.").

120. See Perciasepe Memorandum, *supra* note 118 ("[P]rograms and efforts for control of nonpoint sources should be described in the State nonpoint source management program under section 319.").

121. For example, one of EPA's proposed policies is designed to prevent degradation of existing water quality levels by requiring that new significant point sources in a watershed offset their pollutant load with reductions in the existing baseline load by a ratio of less than one-to-one. Where the reductions are made to nonpoint source pollution sources, EPA has explained that "the discharger's NPDES permit would need to contain any conditions necessary to ensure that the load reductions from the nonpoint source will be realized." 64 Fed. Reg. 46057, 46071 (Aug. 23, 1999); see also Perciasepe Memorandum, *supra* note 118 (noting that under the TMDL program, "where any wasteload load allocation to a point source is increased based on an assumption that loads from nonpoint sources will be reduced, the State must provide 'reasonable assurances' that the nonpoint source load allocations will in fact be achieved"); Office of Water, U.S. EPA, *Ensuring That TMDLs Are Implemented—Reasonable Assurance*, at <http://www.epa.gov/owow/tmdl/ensure.html> (last visited Dec. 1, 2000) ("In allocating reductions to nonpoint sources, States must provide reasonable assurance that those nonpoint sources will meet their allocated amount of reductions.").

122. See Office of Water, *supra* note 121 ("Reasonable assurance is satisfied by designating these [nonpoint] sources as point sources and issuing them an NPDES permit.").

123. EPA cannot mandate the methods by which states accomplish this balancing, but the Agency has suggested that states may institute "regulatory, non-regulatory, or incentive-based [measures], depending on the program." Perciasepe Memorandum, *supra* note 118. The use of incentive-based measures could, for example, allow NPDES dischargers to pay for nonpoint source dischargers' reductions in discharge loads and thereby ease restrictions in their NPDES permits. The irony is that farms, the leading source of water pollution in America, would be paid to stop polluting. This prospect is likely to pit farms and other nonpoint sources against NPDES dischargers, which are more likely to support EPA's suggestion that reasonable assurance can also be demonstrated through the direct regulation of nonpoint sources. EPA has essentially left it to each state to decide how to resolve the debate, but it has made clear that a state's failure to resolve the debate will result in federal imposition of TMDLs and load allocations. See Office of Water, *supra* note 121 ("Because reasonable assurance is a required element of a TMDL, EPA may then disapprove that State's TMDL. If EPA disapproves a TMDL, EPA must establish the TMDL.").

124. Even if the CWA allows EPA to include nonpoint sources directly in the TMDL program, in the end "states have discretion in allocating pollution loads among sources as long as the allocations will meet TMDL targets." Report of the Federal Advisory Committee, *supra* note 115, at iii. States will be free to leave farms out of the picture even if other nonpoint sources such as urban runoff are covered. Indeed, although EPA's proposed TMDL rules aggressively invite states to cover more farm animal feeding operations as point sources, see 64 Fed. Reg. at 46074, the proposed rules are otherwise silent with respect to farms. For further discussion of the animal feeding operations issue, see *infra* notes 200-19 and accompanying text.

125. For example, Florida recently enacted a TMDL implementation statute that subjects only *nonagricultural* nonpoint source pollution to load allocations by the Florida Department of Environmental Protection, leaving agricultural sources subject to voluntary best management practices developed by the Florida Department of Agriculture. See FLA. STAT. ANN. §§ 403.067(7)(c) (nonagricultural sources) & 403.067(7)(d) (agricultural sources).

126. See ENVIRONMENTAL LAW INST., ENFORCEABLE STATE MECHANISMS FOR THE CONTROL OF NONPOINT SOURCE WATER POLLUTION (1997); ENVIRONMENTAL LAW INST., RESEARCH REPORT: ALMANAC OF ENFORCEABLE STATE LAWS TO CONTROL NONPOINT SOURCE WATER POLLUTION (1998); McElfish, *supra* note 114, at 10195-99.

127. See ENVIRONMENTAL LAW INST., ENFORCEABLE STATE MECHANISMS, *supra* note 126, at iii ("Agriculture is the most problematic area for enforceable [nonpoint source water pollution] mechanisms.

mains fundamentally powerless to require otherwise.¹²⁸ Hence, while the impetus for state regulation of nonpoint pollution is growing under the CZMA and the CWA, farms appear poised to slip through the process once again. Although states could reverse this continuation of past practice, farms appear likely to retain a safe harbor for their nonpoint source discharges.

Clean Air Act

The Clean Air Act (CAA) provides a complex and comprehensive regulatory framework covering stationary and mobile sources of air pollution.¹²⁹ Although farms do not enjoy the range of express exemptions under the CAA that they do under the CWA, they generally escape most CAA regulatory programs by virtue of de minimis discharge exceptions. By limiting their emphasis to "major sources" emitting more than threshold quantities of regulated pollutants, CAA regulatory programs essentially give farms yet another safe harbor, this one for air pollution.¹³⁰ By contrast, other sectors of the agriculture economy upstream and downstream of farms are heavily regulated by the CAA.¹³¹

A significant CAA regulatory program not tied to minimum emission quantity thresholds leaves the fate of farms open to the states and thus largely beyond direct federal control. Under §§108 and 109 of the CAA, EPA must designate "criteria" air pollutants that may reasonably be anticipated

Many laws of general applicability . . . have exceptions for agriculture. Where state laws exist, they often defer to incentives, cost sharing, and voluntary programs."); McElfish, *supra* note 114, at 10182. Although "no state is entirely without any enforceable authority relevant to nonpoint source discharges . . . some states have few such authorities [and] others have adopted a bewildering array of enforceable tools . . . paired with equally bewildering arrays of exemptions and exclusions." *Id.*

128. For example, EPA has explained that for water bodies impaired primarily or exclusively by nonpoint source pollution, the primary implementation mechanism for the TMDL program "will generally be the State section 319 nonpoint source management program coupled with State, local, and Federal land management programs and authorities. For example, voluntary, incentive-based approaches at the State and local level can be used. . . ." Perciasepe Memorandum, *supra* note 118.
129. See 42 U.S.C. §§7401-7671q, ELR STAT. CAA §§101-618. For an overview of the CAA programs, see THE CLEAN AIR ACT HANDBOOK (Robert J. Martineau Jr. & David P. Novello eds., 1998).
130. See, e.g., 42 U.S.C. §7412(a)(1), ELR STAT. CAA §112(a)(1) (defining major source of hazardous air pollutants as a source emitting 10 tons per year of any such pollutant or 25 tons per year of any combination of such pollutants); *id.* §7479(1), ELR STAT. FWPCA §169(1) (defining major source for purposes of permits designed to prevent significant deterioration of air quality generally as any source emitting 250 tons per year of any air pollutant; farms are not included in the list of specifically identified sources requiring only 100 tons per year to qualify as major); *id.* §7602(j), ELR STAT. CAA §302(j) (defining major source generally for the CAA to mean any source emitting 100 tons per year of any pollutant, unless otherwise specified). One exception is the CAA program for standards of performance for new stationary sources, which establishes no "major source" threshold. See *id.* §7411, ELR STAT. CAA §111. However, the new source emission limits apply only to categories of sources EPA has designated and for which it has promulgated such standards. EPA has not done so for farms generally, though grain terminal elevators storing over 2.5 million bushels are subject to gas emission opacity and particulate matter emission limits. See 40 C.F.R. subpt. DD, §60.300 (standards of performance for grain elevators).
131. See, e.g., 64 Fed. Reg. 33550 (June 23, 1999) (to be codified at 40 C.F.R. pts. 9 & 63) (EPA final rule regulating emissions of hazardous air pollutants from pesticide manufacturers); 64 Fed. Reg. 31358 (June 10, 1999) (to be codified at 40 C.F.R. pts. 9 & 63) (EPA final rule regulating emissions of hazardous air pollutants from fertilizer manufacturers).

to endanger public health or welfare, and then establish nationally uniform ambient air quality standards.¹³² Section 110 of the CAA allows states, if they elect to do so, to develop state implementation plans (SIPs) prescribing the enforceable measures the state will implement to achieve NAAQS.¹³³ Within the SIP framework, the details are left to state discretion. The criteria pollutants are federally designated, but the questions of whom and what to regulate in order to achieve the federal standards are left to the states.¹³⁴ Although states could regulate air pollutant emissions from farms within that scope of discretion,¹³⁵ most states do not do so rigorously, and EPA actively dissuades them from doing so.¹³⁶

132. See 42 U.S.C. §§7408-7409, ELR STAT. CAA §§108-109. For a thorough overview of the NAAQS program, comparing its operation to that of the CWA water quality protection programs, see Adler, *supra* note 115, at 230-34.
133. See 42 U.S.C. §7410, ELR STAT. CAA §110. See generally Adler, *supra* note 115, at 234-50. If a state elects not to prepare a SIP, or prepares one that does not meet EPA approval, EPA must prepare a federal implementation plan for the area in question. See 42 U.S.C. §7410(c), ELR STAT. CAA §110(c).
134. See *Union Elec. Co. v. EPA*, 427 U.S. 246, 267, 269, 6 ELR 20570, 20575 (1976) ("[T]he State has virtually absolute power in allocating emissions limitations so long as the national standards are met. . . . Congress plainly left the States, so long as the national standards were met, the power to determine which sources would be burdened by regulation and to what extent.").
135. EPA has explained that "the degree to which ambient air emissions from farming practices—such as prescribed burning—are allowed are location-specific (specific to a geographic area) within each State Implementation Plan." NATIONAL AGRIC. COMPLIANCE ASSISTANCE CTR., U.S. EPA, LAWS & POLICIES—CLEAN AIR ACT 3, available at <http://es.epa.gov/oeca/ag/lcaa.html> (last visited Dec. 1, 2000).
136. For example, faced with the prospect that its new regulations establishing NAAQS for fine particulate matter could extend to farm emissions of soil and particulates from tilling, prescribed burning, and other practices, EPA is currently devising policies to allow farms to escape regulation. EPA has contended that farms do not constitute major sources of the fine particulates, though data to support that claim appear to be nonexistent. Farm industry advocates are concerned that states could nonetheless attempt to regulate farm emissions through the state SIPs, so EPA is developing "guidance" for states that will reflect the purportedly small contribution farms make to fine particulate emissions. These and other issues are the subject of the Agricultural Air Quality Task Force EPA and the USDA jointly established in 1997. See Alec Zacaroli, *Agencies Develop MOU Addressing Agricultural Impacts on Air Quality*, 28 *Env't Rep.* (BNA) 1282 (1997). The issue has been complicated by a recent court decision striking down EPA's new rule on the ground that it violates the nondelegation doctrine. See *American Trucking Ass'n v. EPA*, 195 F.3d 4, 30 ELR 20119 (D.C. Cir. 1999); see also Alec C. Zacaroli, *Court Rulings Imperil EPA's Efforts to Clamp Down on Ozone Pollution*, 30 *Env't Rep.* (BNA) 325 (1999). A related program designed to protect visibility in and near national parks and other vista areas may provide states with another opportunity to regulate farm emissions. Section 169A of the CAA establishes this so-called regional haze regulatory program, new regulations which EPA recently promulgated to require all states to develop regional haze SIPs to achieve clear visibility for protected areas by the year 2064. See *Regional Haze Regulations*, 64 Fed. Reg. 35713 (July 1, 1999) (to be codified at 40 C.F.R. pt. 51); see also Eric L. Hiser, *Regional Haze and Visibility: Potential Impacts for Industry*, 29 *Env't Rep.* (BNA) 2597 (1999). Although few protected areas lie close to heavily farmed areas, the farm industry has expressed concerns that states may implement regional haze SIPs so as to restrict emissions from tilling and prescribed burning, which could be transported in the atmosphere to distant protected areas. Farming groups have suggested that they would seek congressional intervention should states focus on farms with that objective. See James Kennedy, *Farmers Fear Haze Rule Implementation, Could Seek Congressional Help*, *Group Says*, 29 *Env't Rep.* (BNA) 2558 (1999). As of yet there is no evidence that states are moving toward regulation of farms under regional haze SIPs any more than they have under the NAAQS SIPs.

Under the CAA's program for prevention of significant deterioration (PSD) of air quality, in areas where NAAQS is met for a regulated pollutant, states must establish "increments" of maximum air quality degradation and administer permits for major sources of the covered pollutant.¹³⁷ States may exclude from the increment "concentrations of particulate matter attributable to the increase in emissions from . . . temporary emission-related activities."¹³⁸ This provision would probably cover prescribed seasonal agricultural burning. Hence, although farms would not normally be regulated under the PSD permitting program as they would not meet the "major source" threshold,¹³⁹ the exclusion of seasonal burning removes any incentive a state may have to restrict such farming practices in order to protect the area's increment for other economically valuable sources of emissions.

Beyond the general omission of farm regulation from the CAA framework, several specific exemptions for farms apply, or are proposed to apply, under programs that might otherwise capture some farming emissions. For example, §112 of the CAA requires sources of designated hazardous air pollutants to comply with specified prevention, control, and reporting conditions. Facilities that use the chemicals in quantities above specified thresholds must prepare and file a "risk management plan" with EPA prescribing measures for prevention of and response to accidental releases.¹⁴⁰ Farms do not enjoy a blanket exemption from these requirements; rather, the program allows EPA wide discretion to set threshold quantities and "exempt entirely" any substance that is used as a nutrient in agriculture.¹⁴¹ EPA has done so for ammonia, exempting it "when held by farmers."¹⁴² EPA also has raised the quantity threshold for propane, widely used on farms for heating, cooling, drying grain, and powering irrigation systems, to a level that effectively removes farms from the scope of the planning requirement.¹⁴³

Regulation of emissions from mobile source fuels and engines under Subpart II of the CAA¹⁴⁴ also takes a hands-off approach to farms. For example, §209 of the CAA preempts states from controlling emissions from "new engines . . .

used in farm equipment or vehicles and which are smaller than 175 horsepower."¹⁴⁵ Farms also are exempt from the requirement that centrally fueled fleets of vehicles use lower polluting fuels.¹⁴⁶

A recent example of the clout the farm industry has in securing safe harbors in the air pollution realm comes at the international environmental policy level. The production and consumption of methyl bromide, a colorless gas used as a pesticide on more than 100 crops, has been banned both domestically and internationally because it depletes the stratospheric ozone layer.¹⁴⁷ International protocols will ban methyl bromide in 2005 for industrialized nations.¹⁴⁸ Originally, the CAA specified a domestic phaseout date of 2001¹⁴⁹; however, under tremendous farm industry lobby pressure, Congress extended the implementation date.¹⁵⁰ Hence, where the CAA's "passive" safe harbors for farms do not suffice to protect farms, Congress often provides targeted "active" safe harbors. Although there have been efforts by a few states to regulate farm air pollutant emissions more aggressively, they are trivial by comparison to the overall negligence in this area.¹⁵¹

Agrochemical Regulation Laws

Farms purchase pesticides and fertilizers, apply them to crops and soils, and any excess is removed by water runoff and air dispersal. As demonstrated above, the CWA and the CAA do not purport to reach this "disposal" of chemicals in any meaningful way. Consistent with that theme, the nation's core agrochemical regulation statute, the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA),¹⁵² does

137. See 42 U.S.C. §§7470-7478, ELR STAT. CAA §§160-168.

138. *Id.* §7473(c)(1)(C), ELR STAT. CAA §163(c)(1)(C).

139. See *supra* note 130 (discussing the major source feature of the PSD and other CAA programs).

140. See 42 U.S.C. §7412, ELR STAT. CAA §112.

141. See *id.* §7412(r)(5), ELR STAT. CAA §112(r)(5).

142. 40 C.F.R. §68.125. EPA has explained that the ammonia exemption applies "as long as it is used on that [farm] establishment. It would not be exempt if resold or used on another establishment." See LAWS & POLICIES—CLEAN AIR ACT, *supra* note 135, at 6. Congress added the nutrient exemption option because it believed "the imposition of costly and burdensome regulation on routine use of ammonia emissions associated with the production of crop nutrients would place an undue economic burden on an already beleaguered farm economy," and because "America's farmers have learned to live with and handle ammonia safely." See S. REP. NO. 101-228 (1989), reprinted in 1990 U.S.C.C.A.N. 3385.

143. See *Browner Signs Administrative Stay to Exempt Fuels From Risk Management Requirements*, Daily Env't Rep. (BNA), May 25, 1999, at A-4. In response to a court-ordered stay issued in connection with litigation challenging EPA's authority to extend the program to fuel-related uses of propane, see *National Propane Gas Assoc. v. EPA*, No. 96-1278 (D.C. Cir. Apr. 27, 1999), EPA simultaneously stayed the risk management program for propane, see 64 Fed. Reg. 29168 (May 28, 1999), and proposed a regulation raising the propane threshold quantity to a level that effectively will exclude farms even if the litigation challenging coverage of propane does not succeed, see 64 Fed. Reg. at 29171 (to be codified at 40 C.F.R. pt. 68).

144. See 42 U.S.C. §§7521-7590, ELR STAT. CAA §§202-250.

145. *Id.* §7543(e)(1), ELR STAT. CAA §209(e)(1).

146. See *id.* §7586, ELR STAT. CAA §246 (application of clean fuels requirement to centrally fueled fleets) & §7581(5), ELR STAT. CAA §241(5) (exemption of farm vehicles).

147. For background on methyl bromide and the phaseout bans, see USEPA, Final Rules, Protection of Stratospheric Ozone, 65 Fed. Reg. 70795 (Nov. 28, 2000); U.S. GAO, THE PHASEOUT OF METHYL BROMIDE IN THE UNITED STATES (GAO/RCED-96-16) (1995); Sondra Goldshein, *Methyl Bromide: The Disparity Between the Pesticide's Phaseout Dates Under the Clean Air Act and the Montreal Protocol on Substances That Deplete the Ozone Layer*, 4 ENVTL. LAW. 577 (1998).

148. See Goldshein, *supra* note 147, at 587-92.

149. See *id.* at 585-86.

150. See Omnibus Consolidated Appropriations Act, Pub. L. No. 105-277, §764(a), 112 Stat. 2681, 2681-36 (1998) (codified at 42 U.S.C. §7671c(h), ELR STAT. CAA §604(h)). EPA had indicated its receptiveness to the extension, and the USDA lobbied outright in its favor. See Goldshein, *supra* note 147, at 599-601.

151. See Kip Betz, *Agricultural Coalition Asks Court to Void, Block Enforcement of Odor Regulations*, 30 Env't Rep. (BNA) 952 (1999) (discussing dispute over attempt by Missouri to promulgate ambient air standard for hydrogen sulfide); Kip Betz, *State's Largest Hog Producer Submits Plan to Control Odors, Risk of Waste Spills*, 30 Env't Rep. (BNA) 1338 (1999) (large hog farm agrees to odor control measures as part of consent agreement in settlement of state environmental law violations); Trevor Oliver, *Fighting Corporate Pigs: Citizen Action and Feedlot Regulation in Minnesota*, 83 MINN. L. REV. 1893, 1901-04 (1999) (discussing Minnesota's ambient air standard for hydrogen sulfide from feedlots, which has no federal counterpart).

152. 7 U.S.C. §§136-136y, ELR STAT. FIFRA §§2-34. For an overview of the FIFRA program, see LYNN L. BERGESON, FIFRA (2000); FIFRA DESKBOOK (forthcoming Env't. L. Inst. 2000); WILLIAM H. RODGERS, ENVIRONMENTAL LAW ch. 5 (2d ed. 1994). For an excellent summary of how FIFRA applies to farms, see MICHAEL T. OLEXA, INSTITUTE OF FOOD AND AGRICULTURAL SCIENCES, FACT SHEET FRE-71, LAWS GOVERNING USE AND IMPACT OF AGRICULTURAL CHEMICALS: REGISTRATION, LABELING, AND THE USE OF PESTICIDES (rev. ed. 1995).

little to regulate farm applications of pesticides and leaves fertilizers untouched. FIFRA is primarily a product-licensing statute under which no one may sell, distribute, or use a pesticide unless it has been registered with EPA.¹⁵³ The registration process for new pesticides involves testing designed to detect the harmful effects a product may have on the environment.¹⁵⁴ Approved pesticides must be periodically re-registered, which involves a thorough review of available data about the pesticide.¹⁵⁵ The end result of FIFRA's registration program, assuming the pesticide is approved and retains its registration, is a label describing, among other things, how the pesticide must be used.¹⁵⁶

By regulating which pesticides can be made and sold, FIFRA clearly has a direct effect on farm pesticide use.¹⁵⁷ Direct regulation of farms, however, is not a main concern of FIFRA; the statute does little more than require that pesticides be applied by certified persons and consistent with their label instructions. Pesticides are approved for either "general use," in which case anyone can apply them,¹⁵⁸ or "restricted use," which requires application by a certified applicator.¹⁵⁹ For purposes of restricted pesticide use on farms, FIFRA divides users into "private applicators" who use or supervise the use of restricted pesticides for agricultural commodity production on property owned or leased by them or their employers,¹⁶⁰ and "commercial applicators" who are hired to apply restricted pesticides or otherwise do not qualify as private applicators.¹⁶¹ Commercial applicators must pass a rigorous certification test administered by EPA or a state-approved program¹⁶²; private applicators must also obtain certification, but may not be required to take an examination.¹⁶³ In addition to following worker

safety rules,¹⁶⁴ all certified applicators—private and commercial—must maintain records of restricted pesticide applications, showing product, amount, date, location, and area of application, and comply with any additional state recordkeeping requirements,¹⁶⁵ but they need not report the applications to anyone unless a federal agency (acting through the USDA), state agency (acting through a designated lead state agency), or health professional administering medical treatment so requests or state law requires regular disclosure.¹⁶⁶

In short, so long as the label instructions are followed, the applicator is properly certified and the applicator follows worker safety and recordkeeping requirements, FIFRA imposes no direct restrictions or requirements on farms. While this does not amount to a complete safe harbor for farm use of pesticides, FIFRA's hands-off approach to farms—the primary users of pesticides—pales in comparison with the CAA's and the CWA's regulatory approach to their targeted industries. Under FIFRA, with regard to farmers, no permits are required, no environmental or efficiency performance standards are imposed, no technology-based standards are applied, no regular public reporting of pesticide applications is required, and no monitoring of pesticide levels in soils, runoff, or groundwater is required. Although some states regulate pesticide applications more aggressively than does FIFRA, it is fair to say that the nation has no comprehensive regulatory framework governing farm use of pesticides.

Farm use of fertilizers is subject to even less federal and state control. The Toxic Substances Control Act (TSCA)¹⁶⁷ requires premanufacture registration of the chemical ingredients of fertilizers¹⁶⁸; however, TSCA imposes no use restrictions equivalent to FIFRA's labeling, certification, worker safety, or recordkeeping provisions, and few states impose more rigorous controls.¹⁶⁹ As previously explained, the CWA and the CAA offer a mixture of active and passive

153. See 7 U.S.C. §136a(a), ELR STAT. FIFRA §3(a). EPA reviews about 15,000 pesticide registration applications annually, most of which involve new formulations containing active ingredients which have already been registered. Only about 15 new active ingredients are registered each year. FIFRA allows states to register pesticides for use in their respective boundaries, subject to EPA review. See 7 U.S.C. §136v(c), ELR STAT. FIFRA §24(c).
154. See 7 U.S.C. §136a(c)(5), ELR STAT. FIFRA §3(c)(5) (EPA must find that the pesticide "will perform its intended function without unreasonable adverse effects on the environment").
155. See *id.* §136a-1, ELR STAT. FIFRA §4.
156. See *id.* §136a(c)(1)(C), ELR STAT. FIFRA §3(c)(1)(C). It is a violation of FIFRA "to use any registered pesticide in a manner inconsistent with its labeling." *Id.* §136j(a)(2)(G), ELR STAT. FIFRA §12(a)(2)(G).
157. See Looney, *supra* note 6, at 796-97. EPA can take its product restriction authority one step further toward direct regulation of farm practices by conditioning the legal use of a pesticide. A current example is EPA's proposed rule to restrict the legal sale and use of five pesticides that are in common use on farms—alachlor, atrazine, cyanazine, metolachlor, and simazine—except in compliance with an EPA-approved state management plan outlining measures farms must employ for groundwater protection. See 61 Fed. Reg. 33260 (June 26, 1996) (to be codified at 40 C.F.R. pts. 152 & 156).
158. See 7 U.S.C. §136a(d), ELR STAT. FIFRA §3(d).
159. See *id.* §136a(d)(1)(C)(i), ELR STAT. FIFRA §3(d)(1)(C)(i). A pesticide must be classified as restricted if EPA determines that it "may generally cause, without additional regulatory restrictions, unreasonable adverse effects on the environment, including injury to the applicator." *Id.* §136a(d)(1)(C), ELR STAT. FIFRA §3(d)(1)(C).
160. See *id.* §136(e)(2), ELR STAT. FIFRA §2(e)(2).
161. See *id.* §136(e)(3), ELR STAT. FIFRA §2(e)(3).
162. See *id.* §136i, ELR STAT. FIFRA §11. EPA has promulgated rules for states to use in administering the certified applicator tests. See 40 C.F.R. pt. 171.
163. See 40 C.F.R. §171.5.

164. Thousands of farm workers have become ill or died from exposure to pesticides in the farm workplace. See generally Carpenter, *supra* note 4, at 191-95 (summarizing studies of farming occupational health threats). Regulations to protect farm workers from the dangers of exposure to pesticides have been controversial, though ultimately limited in effect, for over 25 years. See Haugrud, *supra* note 6, §8.2(C)(2)(h), at 366-67. Most such regulation at the federal level is channeled through EPA's authority to regulate the uses of pesticides under FIFRA, through which EPA has promulgated rules regarding hazard notification to workers and restriction of workers from areas where pesticides have recently been applied. See 40 C.F.R. pt. 170 (1999). EPA continues to explore other ways of directly and indirectly ensuring farm worker protection through this and other authorities. See, e.g., *Setting Residue Limits Not Way to Reduce Farm Children's Exposure, Industry Says*, Daily Env't Rep. (BNA), Dec. 22, 1998, at A8 (discussing issue of whether EPA should establish food pesticide residue limits as a way of reducing risks to children in farm occupational settings).
165. See 7 U.S.C. §136i-1(a).
166. See *id.* §136i-1(b) to (c). Certified commercial applicators must provide copies to the person for whom the application was performed. See *id.* §136i-1(a)(2). The USDA and EPA must also survey certified applicator records to develop a database sufficient to compile annual reports concerning pesticide use. See *id.* §136i-1(f).
167. 15 U.S.C. §§2601-2692, ELR STAT. TSCA §§2-412. For an overview of TSCA, see LYNN L. BERGESON, *TSCA (2000)*; *TSCA DESKBOOK* (Env'tl. L. Inst. 1999).
168. 15 U.S.C. §2604(a), ELR STAT. TSCA §5(a).
169. Washington recently enacted fertilizer registration legislation that imposes restrictions on the metals content of fertilizers. See Nan Netherton, *Governor Signs Bill on Dairy Farms, Changes to Commercial Fertilizer Rules*, 30 Env't Rep. (BNA) 186 (1999).

safe harbors for pollution that results from farm use of fertilizers. Other federal environmental laws contain numerous express exemptions for "normal application of fertilizers."¹⁷⁰ Overall, then, fertilizers are simply not in the sights of federal environmental laws.

Chemical Storage and Release Reporting Laws

One of the most prominent trends that has unfolded with the proliferation of federal environmental statutes is the use of information disclosure devices as an adjunct to direct regulation of pollution behavior.¹⁷¹ These measures range from the requirements in Superfund¹⁷² and the Emergency Planning and Community Right-To-Know Act (EPCRA)¹⁷³ that persons who release designated hazardous substances in specified quantities must report such events to public authorities,¹⁷⁴ to EPCRA's broader emergency planning and toxic release inventory (TRI) programs.¹⁷⁵ These programs have significantly increased the information available to the government and citizens about the sources and magnitude of chemical releases to the environment.¹⁷⁶ But not surprisingly, farms have been left out of the information revolution in environmental law.

Superfund, for example, excludes "the normal application of fertilizer" from the definition of release¹⁷⁷ and excludes from reporting requirements any application of a FIFRA-registered pesticide.¹⁷⁸ EPCRA excludes from the definition of hazardous chemicals subject to emergency planning and storage notification any substance in "routine agricultural operations,"¹⁷⁹ and EPCRA's TRI emission reporting regulations specifically incorporate the Compre-

hensive Environmental Response, Compensation, and Liability Act (CERCLA) exemption for FIFRA-registered pesticides.¹⁸⁰ Farms also are outside the categories of facilities subject to the TRI program.¹⁸¹ Information transfer from farms to the public concerning agrochemical use and release is simply not a part of the CERCLA and EPCRA programs.

Hazardous Waste Management Laws

Farms handle large volumes of chemicals, much of which are disposed either directly as spent or residue materials or indirectly as excess fertilizer or pesticide. Most industries in this position must deal with the mind-numbing complexity of the Resource Conservation and Recovery Act (RCRA), the nation's principal hazardous waste management and disposal regulation law.¹⁸² Farms, however, do not.

For example, EPA has not classified solid wastes generated from growing and harvesting crops and from raising livestock as hazardous wastes subject to RCRA's comprehensive "cradle-to-grave" regulations.¹⁸³ Similarly, farm irrigation return flows are not considered solid waste and are not subject to RCRA regulation, notwithstanding the fact that such return flows carry significant quantities of fertilizers, pesticides, contaminated soil, and animal wastes.¹⁸⁴ Farms disposing of waste pesticide from their own use are exempt from RCRA waste management regulations so long as empty containers are triple-rinsed and the pesticides are disposed of consistent with label instructions.¹⁸⁵ Farms generating less than 25 gallons per month on average of used oil are exempt from RCRA's used oil management and disposal regulation,¹⁸⁶ and farms generating less than 100 kilograms per month on average of specified "universal wastes," which include obsolete or unused pesticides, enjoy exemptions from a variety of hazardous waste regulations.¹⁸⁷ Finally, wind dispersal of chemicals used in pesticides is generally not considered a RCRA problem, but instead is handled under the CAA—which does not regulate it in any meaningful way.¹⁸⁸ Although a farm that engages in hazardous waste management not related to farming would fall squarely within RCRA's scope, farms that stick to farming are outside that scope, notwithstanding the large volume of chemicals they dispose.

170. See, e.g., *infra* notes 177 (contaminated site remediation liability), 178 (hazardous substance release reporting), and 179 (chemical storage reporting).

171. See Paul R. Kleindorfer & Eric W. Orts, *Informational Regulation of Environmental Risks*, 18 RISK ANALYSIS 155 (1998) (describing the regulatory impact of several environmental information disclosure programs). The growing importance of information disclosure and other "right-to-know" mechanisms to environmental regulation and enforcement is evidenced by EPA's recent decision to create a new Office of Information. See Sara Thurin Rollin, *New Information Office to Focus on TRI, Confidential Information, FOIA Rule Changes*, Daily Env't Rep. (BNA), June 16, 1999, at AA-1.

172. Superfund is the shorthand name for the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §§9601-9675, ELR STAT. CERCLA §§101-405. For an overview of the Superfund remediation and liability programs, see SUPERFUND DESKBOOK (Env'tl. L. Inst. 1992); RODGERS, *supra* note 152, ch. 8.

173. 42 U.S.C. §§11001-11050, ELR STAT. EPCRA §§301-330. For an overview of the EPCRA program, see JAMES M. KUSZAJ, THE EPCRA COMPLIANCE MANUAL (1997).

174. See 42 U.S.C. §9603(a), ELR STAT. CERCLA §103(a) (Superfund); *id.* §11004, ELR STAT. EPCRA §304 (EPCRA).

175. See *id.* §§11022, ELR STAT. EPCRA §312 (EPCRA emergency planning) & 11023, ELR STAT. EPCRA §313 (EPCRA toxic releases).

176. One of the most innovative uses of the information derived from the TRI and other information disclosure programs is found at the Environmental Defense Fund's "Scorecard" web page where a wealth of information about reporting facilities and the chemicals they emit can be obtained on a site-specific basis in a matter of seconds. See Environmental Defense Fund, *Scorecard*, at <http://www.scorecard.org> (last visited Aug. 8, 1999). As previously noted, see *supra* notes 165-66 and accompanying text, although FIFRA requires recordkeeping for restricted pesticide applications, there is no equivalent to the TRI public disclosure requirement under FIFRA.

177. See 42 U.S.C. §9601(22)(D), ELR STAT. CERCLA §101(22)(D).

178. See *id.* §9603(e), ELR STAT. CERCLA §103(e).

179. See *id.* §11021(e)(5), ELR STAT. EPCRA §311(e)(5).

180. See 40 C.F.R. §355.40(2)(iv).

181. See 42 U.S.C. §11023(b)(1)(A), ELR STAT. EPCRA §313(b)(1)(A) (limiting the TRI requirements to "facilities . . . that are in Standard Industrial Classification Codes 20 through 39"). Courts have also ruled that EPA may not designate chemicals, including fertilizer components such as phosphoric acid, as toxic under the EPCRA TRI program based on their environmental effects; rather, only inherent toxicity may be considered. See *Fertilizer Inst. v. Browner*, No. 98-1067, 1999 U.S. Dist. LEXIS 9298 (D.D.C. Apr. 15, 1999). Although farms would not be required to report their applications of such fertilizers in any event, fertilizer manufacturers would be subject to reporting their emissions in manufacturing the chemicals.

182. See 42 U.S.C. §§6901-6992k, ELR STAT. RCRA §§1001-11011. For an overview of the RCRA program, see RCRA DESKBOOK (Env'tl. L. Inst. 1991).

183. See 40 C.F.R. §261.4.

184. See 42 U.S.C. §6903(27), ELR STAT. RCRA §1004(27).

185. See 40 C.F.R. §§261.4, 262.70.

186. See *id.* §279.20(a)(4).

187. See 40 C.F.R. §§273.3, 273.10 to 273.20.

188. See RCRA DESKBOOK, *supra* note 182, at 6 (air emissions from industrial facilities are typically not "solid wastes" within the meaning of RCRA).

Contaminated Site Remediation Laws

Superfund's enactment in 1980 acknowledged that we had begun the process of beefing up environmental law too late to prevent the proliferation of thousands of contaminated properties around the country. While laws such as the CWA, the CAA, and RCRA helped to stem the tide, Superfund was designed to establish a remedial program focused primarily on the contaminated sites that had been created before those laws were promulgated.¹⁸⁹

While the administrative, legal, and remedial costs of Superfund have grown difficult to justify under any cost-benefit calculus,¹⁹⁰ the farm industry has not paid its share in any way. Despite the persistence of many agrochemicals in soils and sediments and the growing realization that urban expansion into converted farmland contains those latent chemical threats,¹⁹¹ Superfund does not impose liability for any response costs resulting from application of FIFRA-registered pesticides,¹⁹² and excludes the "normal application of fertilizer" from remediation and liability provisions.¹⁹³ Farms also enjoy a significant exemption under the related program for the remediation of petroleum product releases from underground storage tanks.¹⁹⁴

Common-Law Nuisance and Statutory "Right-to-Farm" Laws

It has often been said that the statutory form of modern environmental law is built on the backbone of the common law of nuisance.¹⁹⁵ Given the extent to which modern environmental law is prevented from reaching farms, it is no surprise that nuisance law continues to play an important role in efforts to control the environmental impact of farms. Particularly in areas where suburban development has encroached upon existing farm operations, new residents are likely to object to the resulting dust, noise, and odors, and nuisance provides an obvious cause of action.

189. For a discussion of Superfund's objectives and an overview of its remedial and liability program, see SUPERFUND DESKBOOK, *supra* note 172; RODGERS, *supra* note 152, ch. 8.

190. One recent study found that each case of cancer that Superfund-led remediations have purported to avoid in the future has carried a median cost of \$418 million. See Study Says Faulty Risk Perceptions, Political Influences Bias Site Remediation, Daily Env't Rep. (BNA), June 1, 1999, at A-5.

191. For example, in 1999, the New Jersey Historic Pesticide Contamination Task Force estimated that 5% of the state's land is affected by agricultural pesticides and recommended that areas formerly used for agricultural purposes should be tested for pesticide residue before they are developed. Some local jurisdictions in New Jersey already impose such a requirement. See Task Force Urges Sampling of Farm Areas for Pesticide Residues Before Development, 29 Env't Rep. (BNA) 1896 (1999). Recent studies indicate that humans, and even fetuses, continue to be exposed to pesticides that have long been banned in the United States. See *Pesticide Exposure Begins Early*, 156 Sci. News 47 (1999).

192. See 42 U.S.C. §9607(i), ELR STAT. CERCLA §107(i).

193. See *id.* §9601(22), ELR STAT. CERCLA §101(22).

194. The underground storage tank program is found in subchapter IX of RCRA. See 42 U.S.C. §§6991-6991i, ELR STAT. RCRA §§9001-9010. The program exempts from the definition of underground storage tank any "farm or residential tank of 1,100 gallons or less capacity used for storing motor fuel for non-commercial purposes." *Id.* §6991(1)(A), ELR STAT. RCRA §9001(1)(A). For an overview of the underground storage tank program, see RICHARD P. FAHEY, UNDERGROUND STORAGE TANKS: A PRIMER ON THE FEDERAL REGULATORY PROGRAM (2d ed. 1995).

195. See, e.g., RODGERS, *supra* note 152, ch. 2.

It should also be no surprise that farms enjoy a substantial safe harbor even on this front. All states have enacted so-called right-to-farm laws, which generally exempt farms from common-law nuisance attack.¹⁹⁶ Although the degree of protection afforded by these laws varies,¹⁹⁷ the basic theme is to protect farms from private nuisance actions by codifying the "comes to the nuisance" rule.¹⁹⁸ Although the tide is turning against such laws in some areas,¹⁹⁹ they remain a significant obstacle to the use of common-law environmental remedies against farms.

Significant Exceptions to the General Rule of Safe Harbor

The breadth and depth of the safe harbor that farms enjoy from environmental regulation make it all the more remarkable that three regulatory programs have managed to levy a significant degree of environmental controls on farming. The three programs represent three different approaches to environmental regulation. First, the regulation of concentrated animal feeding operations under the CWA's NPDES program constitutes direct regulation of a limited class of farms; second, the Endangered Species Act (ESA) is a general environmental protection program that has no safe harbor exceptions for farming; and third, the so-called Swampbuster provisions of the 1985 and 1990 Farm Bills indirectly regulate environmental impacts of farms through the manipulation of farm subsidy policies. In each case, farms have felt the unaccustomed pinch of environmental law.

Regulation of Concentrated Animal Feeding Operations

Only 190,000 of the 640,000 farms in the United States that raise or keep livestock rely on pasture land to feed the livestock.²⁰⁰ The remaining farms use animal feeding opera-

196. See generally Neil D. Hamilton, *Right-to-Farm Laws Reconsidered: Ten Reasons Why Legislative Efforts to Resolve Agricultural Nuisances May Be Ineffective*, 3 DRAKE J. AGRIC. L. 103 (1998); McElfish, *supra* note 114, at 10190-91; Alexander A. Reinert, *The Right to Farm: Hog-Tied and Nuisance-Bound*, 73 N.Y.U. L. REV. 1694 (1998). Prior to the advent of these laws in the past two decades, it was not uncommon for farms to be declared a nuisance. See Hank W. Hannah, *Farming in the Face of Progress*, PROB. & PROP., Sept./Oct. 1997, at 9, 9-11.

197. See generally McElfish, *supra* note 114, at 10191 (explaining variation among state laws); Hannah, *supra* note 196, at 11-13 (discussing plaintiff tactics for circumventing right-to-farm laws); Haugrud, *supra* note 6, §8.2(B)(1), at 485-87 (dividing the laws into three models based on scope of covered farms and scope of the safe harbor). Most of the right-to-farm laws deny the protection when the farm is operated negligently in violation of federal or state laws or so as to cause water pollution or soil erosion.

198. See Hamilton, *supra* note 196, at 104; Haugrud, *supra* note 6, §8.2(B)(1), at 484-85; McElfish, *supra* note 114, at 10191.

199. Most significantly, the Iowa Supreme Court recently found that Iowa's right-to-farm law constituted an illegal taking of property adjacent to protected farms, and the Supreme Court let the decision stand. See *Bormann v. Board of Supervisors*, 584 N.W.2d 309, 29 ELR 20235 (Iowa 1998), *cert. denied sub nom.* Girres v. Bormann, 525 U.S. 1172 (1999). But see *Pure Air & Water, Inc. v. Davidsen*, 246 A.2d 786 (N.Y. App. Div. 1998) (differing result from *Bormann*); Terence J. Centner, *Anti-Nuisance Legislation: Can the Derogation of Common-Law Nuisance Be a Taking?*, 30 ELR 10253 (Apr. 2000) (discussing *Bormann*); Jeff Feirick, *Upholding the New York Right to Farm Law*, AGRIC. L. UPDATE, Aug. 1999, at 1 (discussing *Davidsen*).

200. See Office of Enforcement and Compliance Assurance, U.S. EPA, *Compliance Assurance Implementation Plan for Concentrated Animal Feeding Operations 2* (1998), at <http://es.epa.gov/oeca/strategy.html> (last visited Dec. 1, 2000).

tions (AFOs) known as confined feedlots—food is brought to animals kept in confined quarters.²⁰¹ The size of an AFO is measured by the number of cows, hogs, chickens, or turkeys translated into “animal units” (AUs).²⁰² Many AFOs squeeze an impressive number of AUs into confined feedlots, resulting in what is known as a concentrated AFO (CAFO) and, consequently, a point source within the meaning of the CWA.²⁰³ There were about 6,600 such CAFOs holding more than 1,000 AUs each in operation in the United States in 1992.²⁰⁴

Anyone who has visited a CAFO is unlikely to forget the odoriferous experience. Most CAFOs handle their massive quantities of animal waste by collecting the manure and urine in large impoundments and applying it to farmland as crop fertilizer or simply as a method of disposal.²⁰⁵ This practice results not only in an intensely unpleasant odor, but it also increases the potential for environmental degradation and the transport of pathogens to human populations.²⁰⁶ Given their intense and pernicious impacts on surrounding communities, CAFOs have become lightning rods for local land use and environmental controversy.²⁰⁷

Although regulation of CAFOs is a significant exception to the general rule that farms enjoy a safe harbor, the story has two sides. In 1998—over 25 years after Congress included CAFOs in the CWA’s definition of point source—only 2,000 of the nation’s 450,000 AFOs had NPDES permits or state equivalents.²⁰⁸ One large safe harbor for AFOs from the CWA, of course, is the regulatory definition of a CAFO and its relatively high AU threshold. Even those AFOs which attain CAFO status through sufficient AUs or because of the nature of their discharge have another safe harbor in the exclusion of AFOs that only discharge pollutants through a point source in significant storm events. These two filters winnow the nation’s 450,000 AFOs down to the 2,000 presently required to follow NPDES permitting requirements.

Clearly, the AFO issue encompasses more than the 2,000 farms presently under the thumb of NPDES permitting requirements. That reality has become a major focus of federal and state regulators in the past several years. The federal focus recently culminated in the issuance by the USDA and EPA of a Unified National Strategy for Animal Feeding Operations (Unified National Strategy).²⁰⁹ The cornerstone of the Unified National Strategy is a “national performance expectation” that all AFOs will develop and implement technically sound and economically feasible nutrient management plans addressing such operational matters as feed management, manure handling and storage, and land application of manure.²¹⁰ Because the Unified National Strategy imposes no new regulatory requirements, preparation of a plan for most AFOs will be purely voluntary unless state law requires one.²¹¹ On the regulatory front, the Unified National Strategy outlines provisions for CAFOs that will effectively expand the coverage of permitting controls. For example, the Unified National Strategy will expand the number of AFOs requiring NPDES permits to 15,000–20,000 by including most large (over 1,000 AUs) operations as well as AFOs that are either operating under unacceptable conditions or are otherwise contributing to water quality impairment, regardless of their size.²¹² Moreover, all AFOs needing an NPDES permit may be required to prepare nutrient management plans and comply with feedlot effluent stan-

201. In their joint policy on AFOs, EPA and the USDA explain that AFOs “congregate animals, feed, manure and urine, dead animals, and production operations on a small land area. Feed is brought to the animals rather than the animals grazing or otherwise seeking food in pastures, fields, or rangeland.” USDA/U.S. EPA, UNIFIED NATIONAL STRATEGY FOR ANIMAL FEEDING OPERATIONS ¶ 2.1 (Mar. 9, 1999), available at <http://www.epa.gov/owm/finafost.htm> (last visited Dec. 4, 2000) [hereinafter UNIFIED NATIONAL STRATEGY]. To qualify as an AFO, the confined feeding must occur at least 45 days per year and prevent any sustained vegetative production on the lot. See 40 C.F.R. § 122.23(b)(1).

202. One AU is equal to roughly 1 beef cow, 2.5 hogs, 5 horses, 10 sheep, 55 turkeys, or 100 chickens. See 40 C.F.R. pt. 122, app. B.

203. See 33 U.S.C. § 1362(14), ELR STAT. FWPCA § 502(14) (including “concentrated animal feeding operation” within the CWA definition of point source). Generally any AFO is a CAFO if it either (1) confines at least 1,000 AUs, (2) confines at least 300 AUs and discharges pollutants through a point source, or (3) confines under 300 AUs but is designated a CAFO on a case-by-case basis by the relevant permitting authority because it is a significant source of water pollution. However, such operations are not CAFOs if they discharge pollutants only in the event of a 25-year, 24-hour storm event. See *id.* The more technical details of deciding whether an AFO is a CAFO requiring an NPDES permit took EPA ten pages to explain in a recent draft guidance document on CAFO permits. See OFFICE OF WASTE MANAGEMENT, U.S. EPA, GUIDANCE MANUAL AND SAMPLE NPDES PERMIT FOR CONCENTRATED ANIMAL FEEDING OPERATIONS 5-17 (2000) (designated as “final internal review draft”) (on file with author).

204. See UNIFIED NATIONAL STRATEGY, *supra* note 201, ¶ 4.5. EPA and USDA estimate that the number of large CAFOs has grown to 10,000 since the 1992 figure was compiled. See *id.* The vast majority of AFOs confine fewer than 250 AUs. See *id.* ¶ 2.1. Nevertheless, the proliferation of large CAFOs has boosted livestock production even as the total number of AFOs has decreased, indicating that the industry is consolidating into fewer, but larger, AFOs. See *id.*

205. For vivid descriptions of AFO operations, see generally Frarey & Pratt, *supra* note 15, at 8; Trevor Oliver, *Fighting Corporate Pigs: Citizen Action and Feedlot Regulation in Minnesota*, 83 MINN. L. REV. 1893, 1895-97.

206. See UNIFIED NATIONAL STRATEGY, *supra* note 201, ¶ 2.2. Recent studies suggest that CAFOs present a measurable public health threat to surrounding communities. See Terry Hammond, *Study Finds Hog Lagoon Neighbors Report Higher Levels of Respiratory Illness*, Daily Env’t Rep. (BNA), May 14, 1999, at A-5.

207. See generally Ted Williams, *Assembly Line Swine*, AUDUBON, Mar./Apr. 1998; Fern Shen, *Md. Hog Farm Causing Quite a Stink*, WASH. POST, May 23, 1999, at A1; William Claiborne, *Despite Stink, Hog Farm Proceeds on Tribal Land*, WASH. POST, Apr. 4, 1999, at A3. Up-to-date information about the CAFO issue is avail-

able at Environmental Defense’s website, *Hog Watch*, at <http://www.hogwatch.org/> (last visited Dec. 1, 2000).

208. See UNIFIED NATIONAL STRATEGY, *supra* note 201, ¶ 4.2.

209. See UNIFIED NATIONAL STRATEGY, *supra* note 201. The Clinton Administration’s 1998 Clean Water Action Plan called for the USDA and EPA to compile the National Uniform Strategy as one of 111 specific action plans. See *id.* ¶ 1.1. The agencies released a draft for public comment in September 1998. See 63 Fed. Reg. 50192 (Sept. 21, 1998). For a detailed overview of the proposal, describing it as a sign that “AFOs and CAFOs are now entering the meat grinder of regulatory politics,” see Gregory Blount et al., *The New Nonpoint Source Battleground: Concentrated Animal Feeding Operations*, 14 NAT. RESOURCES & ENV’T 42 (1999). For a comprehensive overview of the Unified National Strategy, see Dana R. Flick, *The Future of Agricultural Pollution Following USDA and EPA Drafting of a Unified National Strategy for Animal Feeding Operations*, 8 DICKINSON J. ENVTL. L. & POL’Y 61 (1999).

210. See UNIFIED NATIONAL STRATEGY, *supra* note 201, ¶¶ 3.1-3.5.

211. See *id.* ¶ 4.1.

212. See *id.* ¶ 4.5. The Unified National Strategy envisions that the permitting program will be implemented over several phases and will rely on general permits for all but the larger (over 1,000 AUs) CAFOs, which will need to obtain individual permits. See *id.* ¶ 5.0 (Strategic Issue #3).

dards.²¹³ EPA has begun to implement these proposals through TMDL rules²¹⁴ and guidance documents.²¹⁵

Predictably, reaction to the Unified National Strategy has been mixed, with few interest groups fully in favor. Environmental groups contend the measures do not reach far enough, while farm groups assert that a purely voluntary program will be sufficient.²¹⁶ Many state government representatives have expressed the concern that the Unified National Strategy will constrain state efforts to respond to the CAFO issue with locally designed measures,²¹⁷ even though environmental groups have argued that past state efforts have been weak and poorly implemented.²¹⁸ Moreover,

213. *See id.* ¶ 4.6. The effluent guidelines presently impose a "zero discharge" condition on CAFO feedlots with NPDES permits. *See* 40 C.F.R. pt. 412 (1999). EPA has announced plans to revise the standards, including measures to address phosphorous levels in runoff. *See* 63 Fed. Reg. 62469 (Nov. 9, 1998) (codified at 40 C.F.R. §§412 & 122.23). Farming interests have vociferously opposed EPA's efforts. *See USDA Proposal to Include Phosphorous in Nutrient Plans Concerns Farm Group*, 29 Env't Rep. (BNA) 610 (1998) (quoting American Farm Bureau official).
214. *See supra* note 116.
215. For example, EPA has issued a draft NPDES permit for CAFOs and other AFOs subject to permitting. *See supra* note 203.
216. *See Environmentalists Fault Feedlot Plan While Farmers Want Voluntary Approach*, Daily Env't Rep. (BNA), Sept. 17, 1998, at A-6; Susan Bruninga, *Farmers, Public Interest Groups Debate Merits of Animal Runoff Control Strategy*, 29 Env't Rep. (BNA) 1645 (1998); Susan Bruninga, *Ranchers and Farmers in the West Sound Off on Pollution Control Strategy*, 29 Env't Rep. (BNA) 1646 (1998). Farm groups have pointed to several significant voluntary efforts initiated by different farm sectors to improve nutrient management. *See, e.g.,* Registration and Agreement for Clean Water Act Section 301 Compliance Audit Program for the Pork Production Industry, 63 Fed. Reg. 69627 (Dec. 17, 1998) (recommending that EPA and pork producers agree to initiate voluntary third-party compliance audit program for hog farms in return for reduced penalties and increased EPA educational support). Environmental groups contend that such efforts, while salutary, should not deter efforts to regulate CAFOs more stringently. *See Millions to Be Spent on Training, Oversight of EPA Agreement With Pork Producers*, Daily Env't Rep. (BNA), Nov. 30, 1998, at A-9.
217. EPA has compiled a comprehensive summary of state laws dealing with CAFOs, proving the states' claims that they are addressing CAFOs in ways that often go beyond EPA's regulations. *See U.S. EPA, STATE COMPENDIUM: PROGRAMS AND REGULATORY ACTIVITIES RELATED TO ANIMAL FEEDING OPERATIONS* (1999).
218. In the time it took for the Unified National Strategy to go from draft to final stages, a flurry of initiatives to address AFOs through increased regulation were passed by a variety of states. *See, e.g.,* Michael Blogna, *State Adopts New Reporting Rules for Spills From Livestock Waste Lagoons*, Daily Env't Rep. (BNA), Feb. 17, 1999, at A-3 (Illinois); Thomas R. Head III, *Local Regulation of Animal Feeding Operations: Concerns, Limits, and Options for Southeastern States*, 6 ENVTL. LAW. 503 (2000) (canvassing federal law and the law of eight southeastern states); Theresa Heil, *Agricultural Nonpoint Source Runoff—The Effects Both On and Off the Farm: An Analysis of Federal and State Regulation of Agricultural Nonpoint Source Pollutants*, 5 WIS. ENVTL. L.J. 43, 50-63 (1998) (Wisconsin); Drew Kershen, *Clean Water and Concentrated Animal Feeding Operations*, LOOKING AHEAD: ABA SECTION OF NATURAL RESOURCES, ENERGY, & ENVTL. L. NEWSL., Mar./Apr. 1999, at 2 (Oklahoma, Colorado, and Mississippi); Oliver, *supra* note 205 (Minnesota); Carolyn Whetzel, *Regulators Issue Waste Discharge Plan for Dairy Farms in Southern California*, Daily Env't Rep. (BNA), Apr. 13, 1999, at A-4 (California); *Large Hog Farms to Have Releases Regulated by Water, Multimedia Permits*, 30 Env't Rep. (BNA) 71 (1999) (Mississippi); *Proposed Rules for Corporate Hog Farms Ready for Comment, State Official Says*, 29 Env't Rep. (BNA) 1215 (1998) (Missouri). Indeed, the Unified National Strategy recognizes that many states have already implemented permitting programs for CAFOs that equal or exceed the federal NPDES program requirements and has invited such states to seek delegation of authority to administer the NPDES program. *See UNIFIED NATIONAL STRATEGY*, *supra* note 201, ¶ 5.0 (Strategic Issue #3); Susan

some congressional representatives have questioned whether EPA and the USDA have the legal authority to issue and implement the Unified National Strategy as a "strategy" without following rulemaking procedures.²¹⁹ In any event, issuance of and debate on the Unified National Strategy signals continuing federal and state commitment to retain the lone exception to farming's safe harbor from water pollution regulation and suggests that at least some components of the farming industry are amenable to direct, concerted environmental regulation.

The ESA

The ESA²²⁰ is a rare example of an environmental law with sharp teeth and no safe harbor for farms. Once designated as endangered or threatened,²²¹ a species is protected through several provisions with virtually no federal, state, local, or private actor beyond the ESA's reach. Given their pervasive impact on wildlife habitat, farms have increasingly been at the center of ESA controversy.

Most of the ESA's land use battles begin through the application of one of two regulatory provisions. Section 9 of the ESA prohibits any federal, state, local, or private entity from "taking" a listed animal species,²²² which has been

- Bruninga, *Nonpoint Sources: Animal Waste Strategy to Recognize State Programs, Hold Corporations Liable*, 29 Env't Rep. (BNA) 2225 (Mar. 12, 1999). Nevertheless, state water regulators maintain that the Unified National Strategy will be too expensive to implement fully and have proposed an AFO initiative that relies more on incentives and voluntary measures. *See State Group Seeks More Flexibility in Regulation of Livestock Waste*, Daily Env't Rep. (BNA), Feb. 26, 1999, at A-4; Susan Bruninga, *Faulting EPA-USDA Livestock Strategy, States Say Their Programs Already Work*, 29 Env't Rep. (BNA) 1757 (1999). Environmental groups charge that the state programs are inconsistent and ineffective. *See, e.g.,* NATURAL RESOURCE DEFENSE COUNCIL & CLEAN WATER NETWORK, *AMERICA'S ANIMAL FACTORIES: HOW STATES FAIL TO PREVENT POLLUTION FROM LIVESTOCK WASTE ix-xii* (1998) (identifying 15 major deficiencies in the existing state-level regulation of AFOs).
219. Susan Bruninga, *Small Livestock Facilities May Get More Time to Comply With AFO Strategy*, 29 Env't Rep. (BNA) 2131, 2132 (1999).
220. 16 U.S.C. §§1531-1544, ELR STAT. ESA §§2-18. For an overview of the ESA programs, see MICHAEL J. BEAN & MELANIE J. ROWLAND, *THE EVOLUTION OF NATIONAL WILDLIFE LAW* 193-281 (3d ed. 1997).
221. For a discussion of the listing process and criteria, see J.B. Ruhl, *Section 4 of the ESA—The Cornerstone of Species Protection Law*, 8 NAT. RESOURCES & ENV'T 26 (1993); Holly Doremus, *Delisting Endangered Species: An Aspirational Goal, Not a Realistic Expectation*, 30 ELR 10434 (June 2000); Holly Doremus, *Listing Decisions Under the Endangered Species Act: Why Better Science Isn't Always Better Policy*, 75 WASH. U. L.Q. 1029, 1049-50, 1117-29 (1997).
222. 16 U.S.C. §1538(a) (1994). For an overview of the take prohibition as implemented, see Frederico M. Cheever, *An Introduction to the Prohibition Against Takings in Section 9 of the Endangered Species Act of 1973: Learning to Live With a Powerful Species Preservation Law*, 62 U. COLO. L. REV. 109 (1991); Albert Gidari, *The Endangered Species Act: Impact of Section 9 on Private Landowners*, 24 ENVTL. L. 419 (1994). Section 9(a) species protections vary according to whether a species is plant or animal and whether it is listed as endangered or threatened. Thus, §9(a)(1), the cornerstone of ESA regulation, applies only to "endangered species of fish or wildlife," making it unlawful for "any person subject to the jurisdiction of the United States to . . . take any such species within the United States or territorial sea of the United States." 16 U.S.C. §1538(a)(1), ELR STAT. ESA §9(a)(1). Threatened species of fish or wildlife receive the same level of protection by regulations authorized under §4(d) of the ESA. *See id.* §1533(d), ELR STAT. ESA §4(d); 50 C.F.R. §17.31(a); *see also* Keith Saxe, *Regulated Taking of Threatened Species Under the Endangered Species Act*, 39 HASTINGS L.J. 399

construed to prohibit "significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering."²²³ As farming can involve both the conversion of habitat to farm uses and the degradation of farm and non-farm habitat through pollution, sedimentation, water resource depletion, and other farming impacts, the ESA's habitat modification restriction has increasingly become an issue for farming practices.²²⁴

While the §9 "take" prohibition applies directly to private actions, including farming, §7 of the ESA adds another layer of regulation for farms by restricting the practices of federal agencies that fund, carry out, or grant approvals to state, local, and private actions. Federal agencies must ensure that their actions conserve listed species²²⁵ and do not jeopardize

the continued existence of any listed species.²²⁶ As farming in the United States depends heavily on federal support through subsidies and access to federal public resources, §7 conditions have also become major battlegrounds between farming and the ESA.²²⁷

Although the restrictions in §§9 and 7 of the ESA are mitigated by the availability of permits for "incidental take" of listed species,²²⁸ farms have no special status under the relevant permitting provisions and enjoy no general exemptions from §§9 and 7. Moreover, neither §9 nor §7 contains any threshold criteria or gaps in coverage that would allow farms to escape regulatory consequences covertly. While a farm that poses no on-site or off-site consequences to listed species need not take affirmative conservation steps to promote a listed species,²²⁹ the ESA stands virtually alone among the major federal environmental laws as offering farms no safe harbor from its prohibitions and permitting requirements.²³⁰

Subsidy-Based Conservation Programs

Given the size of the farm economy, even without its related agricultural industries, federal farm policy has been a centerpiece of national politics since its emergence in the New Deal. The primary objectives of federal farm policy have been stabilizing commodity prices and supporting farm income.²³¹ Indeed, even what passes today as the "conservation" component of federal farm policy began as a means of controlling farm commodity production.²³² Nevertheless,

- (1988). Plants receive less protection under §9(a) than do fish and wildlife species and are not in any circumstance protected from take in the broad sense used in the context of fish and wildlife species. Rather, §9(a)(2)(B) provides that endangered plants on federal lands are protected from being removed, maliciously damaged, or destroyed. See 16 U.S.C. §1538(a)(2)(B), ELR STAT. ESA §9(a)(2)(B). Endangered plants on nonfederal lands are protected only if removing, damaging, or destroying them would constitute "a knowing violation of any law or regulation of any State or . . . violation of a State criminal trespass law." *Id.* Hence, farming implicates the ESA's take prohibition primarily through its effects on terrestrial and aquatic wildlife species.
223. 50 C.F.R. §17.3. The Supreme Court upheld the regulation defining take to include habitat modification, albeit emphasizing the narrow criteria of actual death or injury required to make habitat modification into a prohibited take. See *Babbitt v. Sweet Home Chapter of Communities for a Great Or.*, 515 U.S. 687, 25 ELR 21194 (1995). For a description of the controversial administrative and judicial developments leading up to and culminating in the *Sweet Home* case, see Steven G. Davison, *Alteration of Wildlife Habitat as a Prohibited Taking Under the Endangered Species Act*, 10 J. LAND USE & ENVTL. L. 155 (1995).
224. A current and highly controversial example is the black-tailed prairie dog, which is under consideration for listing as a threatened species. See 64 Fed. Reg. 14424 (Mar. 25, 1999) (proposed to be codified at 50 C.F.R. pt. 17). Most of the reasons contributing to the species' impaired status relate to farming—for example, conversion of habitat to farming; sport and varmint shooting; competition and predation from species introduced through farming; habitat fragmentation through farming; and poisoning. See *id.* at 14426-28. Farming interests have decried the potential listing of the species as "propaganda" and contend that the §9 prohibitions that would come with listing the species will destroy "the agricultural way of life . . . because it is not compatible with uncontrolled prairie dog populations." Jake Cummins, *Target on Prairie Dogs*, at <http://www.fb.com/mfbb/newnews/prairiedogs.htm> (last visited June 10, 1999) (statement of Montana Farm Bureau official) (copy on file with author); see also *Prairie Dog Receives Positive Petition Finding*, ENDANGERED SPECIES & WETLANDS REP., Apr. 1999, at 13. Recognizing the potential constraints §9 places on farming practices after a species is listed, the Farm Bureau has become active in challenging species listings. See, e.g., *Idaho Farm Bureau Fed'n v. Babbitt*, 58 F.3d 1392, 25 ELR 21265 (9th Cir. 1995) (upholding listing of a small snail deemed endangered because of water depletion through farm irrigation and other farming practices).
225. Conservation is defined in the ESA as "the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this chapter are no longer necessary." 16 U.S.C. §1532(3), ELR STAT. ESA §3(3). Section 7(a)(1) of the ESA directs federal agencies to "utilize their authorities in furtherance of the purposes of this chapter by carrying out programs for the conservation of endangered species and threatened species." *Id.* §1536(a)(1), ELR STAT. ESA §7(a)(1). Though mandatory on its face, agencies and courts have construed the conservation provision as a discretionary guideline for agency action. See J.B. Ruhl, *Section 7(a)(1) of the "New" Endangered Species Act: Rediscovering and Redefining the Untapped Power of Federal Agencies' Duty to Conserve Species*, 25 ENVTL. L. 1107 (1995).
226. Section 7(a)(2) of the ESA initiates a complicated set of procedures implementing the duty of federal agencies to "insure that any action authorized, funded, or carried out by such agency . . . is not likely to jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of habitat of such species which is determined . . . to be critical." 16 U.S.C. §1536(a)(2), ELR STAT. ESA §7(a)(2). Section 7(a)(2) has by far been the dominant ESA provision affecting federal agencies. See Ruhl, *supra* note 225, at 1119-20.
227. See, e.g., *Bennett v. Spear*, 520 U.S. 154, 27 ELR 20824 (1997) (involving application of the §7(a)(2) "no jeopardy" provision to a federal agency granting ranching interests access to federal irrigation water); *Sierra Club v. Glickman*, 156 F.3d 606, 29 ELR 20159 (5th Cir. 1998) (involving application of the §7(a)(1) conservation duty to federal agency subsidization of farm irrigation water supplies).
228. Section 7(b)(4) provides for issuance of "incidental take statements" allowing projects that are carried out, funded, or authorized by federal agencies to obtain permission to commit take of listed species. 16 U.S.C. §1536(b)(4), ELR STAT. ESA §7(b)(4). Section 10(a)(1)(B) of the ESA provides "incidental take permit" procedures and standards for all other projects. *Id.* §1539(a)(1)(B), ELR STAT. ESA §10(a)(1)(B). Both permitting paths involve complicated and expensive procedures and impact mitigation requirements. See generally J.B. Ruhl, *How to Kill Endangered Species, Legally: The Nuts and Bolts of Endangered Species Act "HCP" Permits for Real Estate Development*, 5 ENVTL. LAW. 345 (1999).
229. Section 7(a)(1) is the only provision of the ESA that imposes a conservation duty. By its terms it applies only to federal agency programs and thus does not extend to private actors whose actions do not require funding or approval from federal agencies.
230. See generally Jan Lewandrowski & Kevin Ingram, *Policy Considerations for Increasing Compatibilities Between Agriculture and Wildlife*, 39 NAT. RESOURCES J. 229, 252-55, 261-62 (1999).
231. For an excellent overview and history of these objectives, see AGRICULTURAL POLICY REFORM IN THE UNITED STATES (Daniel A. Sumner ed., 1995).
232. See Charles E. Grassley & James J. Jochum, *The Federal Agriculture Improvement and Reform Act of 1996: Reflections on the 1996 Farm Bill*, 1 DRAKE J. AGRIC. L. 1, 4 (1996). For a concise history of the conservation side of federal farm policy, see Christopher R. Kelley & James A. Lodoen, *Federal Farm Program Conservation Initiatives: Past, Present, and Future*, 9 NAT. RESOURCES & ENV'T 17 (1995).

the important role federal farm programs play today in the economics of farming²³³ has created opportunities to influence environmental performance through means other than direct regulation.

For many decades the core of federal farm policy, and the feature that provides leverage for influencing farms' environmental record, has been a complicated web of commodity and income support programs.²³⁴ These rely on a mixture of loan support and forgiveness measures, crop set-aside payments, government purchases, marketing agreements, low-cost insurance, benefit payments, price support payments, and import restrictions. When combined, these and other price and farm income supports create a remarkably convoluted and inconsistent set of incentives and disincentives with respect not only to farm production decisions²³⁵ but also to the environment.²³⁶ Notwithstanding recent changes in some federal farm commodity and income subsidy programs,²³⁷ determining the amount and methods of federal support for farming through these and other mechanisms remains an annual rite of passage for American politics,²³⁸ and the bill to taxpayers remains massive.²³⁹

233. Farm income attributable to government payments exceeded \$5 billion in 1997. See CENSUS, *supra* note 16, at United States Data 66, tbl. 47.

234. See Grassley & Jochum, *supra* note 232, at 3 ("The commodity title is the heart of any farm bill."). For a brief history of these programs, see Haugrud, *supra* note 6, §8.1(B)(3), at 465-70.

235. For example, crop set-aside payments reduce supply to increase commodity prices, but commodity price support programs provide incentive to increase supply, which reduces prices. See Kelley & Lodoen, *supra* note 232, at 19. For an excellent summary of the influence of farm commodity programs on planting decisions, see Paul C. Wescoat & C. Edwin Young, *U.S. Farm Program Benefits: Links to Planting Decisions & Agric. Markets*, AGRIC. OUTLOOK, Oct. 2000, at 10.

236. For example, commodity price support programs generally focus on crops with high agrochemical input and soil erosion impacts and discourage farmers from crop rotation. See Grossman, *supra* note 6, at 332-34; Kelley & Lodoen, *supra* note 232, at 19. For a thorough review of the environmental impact of the crop payment subsidy programs, see WALTER N. THURMAN, *ASSESSING THE ENVIRONMENTAL IMPACT OF FARM POLICIES* (1995).

237. Ostensibly to move closer to a market-based farming economy, in 1996 Congress overhauled the subsidy programs to wean farmers from their reliance on fixed, guaranteed payments by reducing subsidy levels in return for relaxing crop restrictions. See Freedom to Farm Act, Federal Agriculture Improvement and Reform Act of 1996, Pub. L. No. 104-127, 110 Stat. 888 (1996).

238. See, e.g., *Farmers' Plight Takes Campaign Spotlight*, USA TODAY, Aug. 9, 1999, at 4A (describing the politics behind the 1999 bill). As an example of how complicated and laden with specialized programs the farm bills have become, the USDA's highly condensed title-by-title summary of the 1996 Farm Bill is 16 single-spaced pages long. See Office of Communications, Dep't of Agric., *The Federal Agricultural Improvement and Reform Act of 1996: Title-by-Title Summary of Major Provisions of the Bill*, at <http://www.usda.gov/farbill/title0.htm> (last visited Dec. 1, 2000).

239. Notwithstanding Congress' professed theme of moving toward a market-based farm economy, the federal government will spend \$15 billion in 1999 on direct payments to farmers, the highest of any fiscal year on record. See Published Comments by Glickman on the Future of Agriculture, AGRIC. L. UPDATE, Aug. 1999, at 7 (published speech of USDA Secretary Dan Glickman). Moreover, the combination of sagging export markets, bumper domestic and worldwide crops, increased domestic harvested cropland, and domestic droughts and floods led Congress to approve \$6 billion in emergency farm support in 1998 and an \$8.7 billion bailout in 1999. See generally *Congress Passes a Record \$8.7B Farm Bailout Package*, USA TODAY, Oct. 14, 1999, at 4A; James Cox, *Farmers' Tough Row to Hoe*, USA TODAY, Aug. 24, 1999, at 1B; Debbie Howlett, *Farmers'*

A relatively recent appendage to these "crop payment" programs is a grab bag of four major "green payments" programs designed to pay farmers not to put land into commodity production, with an ancillary objective being conservation of soil and wildlife resources.²⁴⁰ The Conservation Reserve Program (CRP) pays farmers to take highly erodible land out of production for extended periods.²⁴¹ The Wetlands Reserve Program (WRP) pays farmers to remove wetlands from production for extended periods or permanently.²⁴² The Wildlife Habitat Incentives Program (WHIP) pays farmers to restore and develop wildlife habitat.²⁴³ And finally, the Environmental Quality Incentives Program (EQIP) consolidates and expands financial incentives to farmers who agree to participate in conservation plans prescribing structural, vegetative, and land management practices.²⁴⁴

Although no one is completely satisfied with the crop payment/green payment system of farm conservation policy. Although an impressive amount of farmland has been placed in temporary or permanent conservation status as a result of the four programs,²⁴⁵ the results have come only at huge taxpayer cost.²⁴⁶ Moreover, the crop payment and green payment programs have not dovetailed as completely

Crops, Worries, Pile Up, USA TODAY, Aug. 2, 1999, at 1A; Judy Keen, *In Iowa, a Full Harvest of Political Discontent*, USA TODAY, Aug. 9, 1999, at 4A.

240. Some commentators condemn the green payment programs, which are "putatively designed to protect the environment," as being "more honestly described as programs for boosting commodity prices and farm incomes by restricting output." Chen, *supra* note 4, at 343. For concise summaries of the grab bag of green payment programs, which consists of a number of provisions in addition to the four major programs covered here, see Economical Research Serv., Dep't of Agric., *Conservation and the 1996 Farm Act*, AGRIC. OUTLOOK, Nov. 1996, at http://usda.mannlib.cornell.edu/reports/erssor/economics/ao-bb/1996/complete/agricultural_outlook_10.28.96 (last visited Dec. 4, 2000); Natural Resources Conservation Serv., Dep't of Agric., *USDA Conservation Programs*, at <http://www.nrcs.usda.gov/NRCSProg.html> (last visited Dec. 4, 2000). The four major programs discussed here were introduced through the 1985, 1990, and 1996 Farm Bills. See Federal Agriculture Improvement and Reform Act of 1996, Pub. L. No. 104-127, 110 Stat. 888 (1996); Food, Agriculture, Conservation, and Trade Act of 1990, Pub. L. No. 101-624, 104 Stat. 3359 (1990); Food Security Act of 1985, Pub. L. No. 99-198, 99 Stat. 1354 (1985).

241. See 16 U.S.C. §§3831-3836; see also Haugrud, *supra* note 6, §8.2(B)(2)(a), at 493-99.

242. See *id.* §§3837-3837f.

243. See *id.* §3836a.

244. See *id.* §3839aa to 3839aa-8.

245. Total acreage conserved under the CRP and the WRP combined was 29.5 million acres in 1997, divided among 225,000 farms. See CENSUS, *supra* note 16, United States Data at 19, tbl. 7.

246. There is considerable debate over whether the green payment programs are the most cost-efficient means of attaining lasting farm conservation progress. See generally Grossman, *supra* note 6, at 324; Ralph E. Heimlich & Roger Claassen, *Paying for Wetlands: Benefits, Bribes, Taxes*, NAT. WETLANDS NEWSL., Nov./Dec. 1998, at 1. Indeed, many commentators are quick to point out that the green payment programs violate the polluter pays principle that provides a common thread to most of environmental law—that is, while most landowners must obtain permits and pay mitigation costs to develop their land for productive purposes, farmers are paid not to develop their land. See Chen, *supra* note 4, at 344. The green payment programs are not an anomaly in this respect. For example, in 1999 federal agencies doled out \$144 million to help CAFOs better manage their livestock wastes. See *Large Scale, Intensive Livestock Operations Getting USDA Help With Waste Management*, 30 Env't Rep. (BNA) 661 (1999).

as intended in terms of recipients.²⁴⁷ Evidence suggests that farmer participation in the green payment programs is highly sensitive to market commodity prices and does not reflect any newly found farm stewardship ethic.²⁴⁸ Farmers, like most of us, follow the money.

Hence, rather than relying entirely on an incentive-based approach to farm conservation policy, the so-called Swampbuster and Sodbuster programs add a punitive element to farm conservation policy. The Swampbuster program makes farmers ineligible for all crop payment program benefits if a farmer converts certain wetlands to agricultural production.²⁴⁹ Meanwhile, the Sodbuster program imposes the same sanctions on farmers who put any highly erodible land into production without an approved conservation plan.²⁵⁰ Unlike the green payment programs, these payment ineligibility provisions work close to the core of federal farm policy. Indeed, the subsidy programs have been so important to the farming industry that farmers may perceive any prerequisites to receiving subsidies as regulatory requirements.²⁵¹ Nevertheless, because the Swampbuster and Sodbuster programs remain coupled to crop payment subsidy programs, they depend on the subsidy programs for their force and thus do little to alter the fundamental incentives in federal farm policy.²⁵² Moreover, through a litany of exemptions from ineligibility and a lackluster enforcement record, the programs no doubt have accomplished less than they could have even given their inherent limits.²⁵³ Including the Swampbuster and Sodbuster programs as the third major exception to the general rule of safe harbor for farms thus illustrates how paltry the universe of environmental regulations is for farms.²⁵⁴

Conclusion

The solution to the disconnect between environmental effect of farming and environmental law's response is complex. It may be that "[t]raditional agriculture quakes at the idea that environmental law will come to the farm."²⁵⁵ If so, perhaps the approach of *traditional* environmental law is part of the problem. Protecting the environment from farms is not merely a matter of applying traditional approaches that have worked with other industries. Rather, the geographic, economic, and political settings of the farming industry call for approaches that may be outside the box of conventional environmental law. The environmental regulation of farms must incorporate several key features if it is to succeed where traditional models of environmental law surely would not. First, it must relate to farms the way farms relate to the landscape—that is, as numerous, disperse, and diverse operations having cumulative effects over large geographic scales. Second, it must take full advantage of market incentives and adaptive management techniques as means of keeping farms and their regulatory burdens flexible and responsive to rapidly changing social and economic conditions—that is, it must avoid relying exclusively on command-and-control regimes that have dominated modern federal environmental law. Finally, it must relate to farms the way farms relate to the relevant decisionmaking bodies—that is, local and state governing bodies must be sufficiently empowered to form arm's-length cooperative relationships with federal regulatory authorities.

Satisfying these criteria through a national environmental law system for farms probably will not require a completely new model of environmental law. Farms may present a special case requiring unconventional responses, but we are not completely inexperienced in dealing with these issues in similar contexts. Although environmental law has deliberately overlooked farms, it has tested a variety of regulatory models in other settings, from heavily centralized command-and-control schemes to relatively decentralized market-based trading systems. Many of these programs have successfully managed problems similar to those presented by farms. The ingredients for an appropriate approach to regulating farms thus are already developed and in use, albeit scattered throughout a multitude of other environmental regulation programs.

Elsewhere I have proposed a framework for a farm-environment management law that cherry picks from existing successful environmental law programs to assemble a comprehensive legal framework that responds to the geographic, economic, and political setting of the farming industry.²⁵⁶ The anti-law of farms and the environment should be replaced with a body of positive law that responsibly addresses the problems of the future. Prescriptive, centrally planned regulation should be kept to a minimum, targeted mainly at true agro-industrial operations. Information-based measures should be applied to all farms to in-

247. For example, many farms favored by and thus heavily invested in the crop payment programs are not located in areas where the green payment programs are likely to focus. See Kelley & Lodoen, *supra* note 232, at 67.

248. See Roger Classen & Richard D. Horan, *Environmental Payments to Farmers: Issues of Program Design*, AGRIC. OUTLOOK, June/July 2000, at 15 ("In a competitive environment, agricultural producers have few, if any, financial incentives to provide environmental services . . . without government involvement"); Tina Adler, *Prairie Tales*, 149 SCI. NEWS 44, 45 (1996) (discussing research showing "commodity prices determine the popularity of the [CRP] program among farmers").

249. See 16 U.S.C. §§3821-3824; see also Grossman, *supra* note 6, at 323-24; Haugrud, *supra* note 6, §8.2(A)(2)(c), at 480-81; Linda A. Malone, *Reflections on the Jeffersonian Ideal of an Agrarian Democracy and the Emergence of an Agricultural and Environmental Ethic in the 1990 Farm Bill*, 12 STAN. ENVTL. L.J. 3 (1993).

250. See 16 U.S.C. §§3811-3813; see also Grossman, *supra* note 6, at 322-23; Haugrud, *supra* note 6, §8.2(C)(1)(d), at 518-20; Karen R. Hansen, *Agricultural Nonpoint Source Pollution: The Need for an American Farm Policy Based on an Integrated Systems Approach Recoupled to Ecological Stewardship*, 15 HAMLIN J. PUB. L. & POL'Y 303 (1994).

251. See Looney, *supra* note 6, at 799.

252. See Kelley & Lodoen, *supra* note 232, at 67. Of the 78 million acres of wetlands in the United States, 17 million acres are suitable for conversion to croplands, and of those only 6 million acres would depend heavily on crop program payments to make production viable. See U.S. FARMING SECTOR, *supra* note 54, at 27.

253. See Kelley & Lodoen, *supra* note 232, at 67.

254. Some commentators point to the CRP, the WRP, and Swampbuster programs as providing "extensive evidence of agriculture's greatly improved [environmental] performance in recent years." Neil D. Hamilton, *Agricultural Production and Environmental Policy: How Should Producers Respond?*, 1 DRAKE J. AGRIC. L. 141, 142 (1996). Yet CRP, WRP, and Swampbuster are but small specks in

the sea of environmental policy, under which farms stand out as one of the dirtiest of America's dirty industries. Even if farming has improved its overall environmental performance record in recent years, an assertion that finds little support in the data presented *supra*, it clearly has not improved its position relative to other industries.

255. Chen, *supra* note 4, at 351.

256. See Ruhl, *supra* note 1, at 333-48.

crease public awareness of farm chemical usage and to facilitate the introduction of tax and trading programs. Agrochemical use tax programs could then apply an economic incentive solution to the problem of pesticide and fertilizer usage. And watershed-based pollutant trading programs would allow for focus on local water quality problem areas through a market-based instrument that maximizes overall efficiency. Finally, incentive programs using federal funding to acquire valuable conservation habitat, instead of attempting to regulate its use, would assist in retiring farmland into conservation land. Overall, a package of these and similar instruments would balance national authority with local authority, big farm with small farm, and prescriptive controls with flexible controls in a way that responds to the realities of the farm industry.

Nevertheless, such a reform package cannot work alone. A separate federal environmental law for farms does not mean state and local initiatives are unwelcome or unnecessary. Indeed, the core programs this Article mentions would not address all of the harms that farms cause, much less offer solutions for them. Water resource depletion, water salinization, soil erosion, and air pollution remain unsettled. Because they are profoundly local in nature, strong initiatives from the states will be needed on these fronts. The proposed regulatory instruments also are not intended to thwart other promising incentive-based programs.²⁵⁷ Indeed, the watershed-based planning units I have proposed in more detailed discussions of the issue may provide a suitable planning base for other local efforts.

A separate federal environmental law for farms also does not mean that reform of federal agricultural and environmental policy in general is unnecessary. Key additional changes will be needed if the positive environmental law of farms is to operate to its fullest potential. First and foremost, farm commodities subsidies and income subsidies must be reformed to support the objectives of the environmental program.²⁵⁸ Second, upstream and downstream industries should be enlisted to facilitate the farm-based environmental program.²⁵⁹ Finally, international trade policy must be

changed to eliminate the concern that further financial burdens on U.S. farmers will put them at competitive disadvantages with less environmentally responsible countries.²⁶⁰ Each of these initiatives involves major challenges, and they merit more complete coverage at a later time. But none of them is worth worrying about until we build the core of a federal environmental law for farms.

Conventional, prescriptive, and centrally planned and rigidly implemented environmental regulation is appropriate for only a small slice of the farm industry, but can achieve significant benefits when applied to that narrow sector. For the rest of farming, a combination of information, tax, incentive, and trading programs would offer farmers opportunities to abate pollution flexibly and efficiently, rather than at the direction of bureaucrats.²⁶¹ The question is whether the farm industry will use its substantial political clout to keep the debate at the "whether to" level, a battle they cannot win in the long run, or take action now in the "how to" debate to shape a positive environmental law of farming they and everyone else can live with well into the future.

farm feedlot contractors. *See, e.g., New NPDES Permit Condition to Hold Chicken Producers Accountable for Waste*, Daily Env't Rep. (BNA), Mar. 22, 1998, at A-2. Maryland proposes requiring producers to buy chickens only from growers who have an approved comprehensive nutrient management plan required by state law for any farm that uses animal manure or sludge as a fertilizer. *See id.* EPA recently has suggested that it will move in that direction with its CAFO regulations, or encourage states to do so generally. *See GUIDANCE MANUAL AND SAMPLE NPDES PERMIT FOR CONCENTRATED ANIMAL FEEDING OPERATIONS*, *supra* note 203, at 15; Susan Bruninga, *Animal Waste Strategy to Recognize State Programs, Hold Corporations Liable*, 29 Env't Rep. (BNA) 2225 (1998) (discussing possible federal proposals to make processors co-permittees with CAFOs under NPDES program).

257. *See also* ENVIRONMENTAL DEFENSE FUND, *PLOWING NEW GROUND: USING ECONOMIC INCENTIVES TO CONTROL WATER POLLUTION FROM AGRICULTURE* (1994) (describing other possible economic incentives, including trading mechanisms).

258. For background, see *supra* notes 231-54 and accompanying text.

259. For example, some states are experimenting with measures that place restrictions on how food processing companies deal with their

260. Trade liberalization and environmental protection have collided numerous times in the international arena. Concerns that environmental standards will be used as nontariff import barriers have made it increasingly difficult for a nation to impose strong domestic environmental responsibilities on its industries without exposing them to competitive disadvantages in international markets. *See* Steve Charnowitz, *Free Trade, Fair Trade, Green Trade: Defogging the Debate*, 27 CORNELL INT'L L.J. 459 (1994); Thomas Schoenbaum, *Free International Trade and Protection of the Environment: Irreconcilable Conflict?*, 86 AM. J. INT'L L. 700 (1992).

261. *See, e.g.,* Mark E. Smith et al., *Curbing Nitrogen Runoff: Effects on Production and Trade*, AGRIC. OUTLOOK, May 2000, at 19, 20 (comparing the effects of regulation, green payments, and tax approaches to nitrogen loading from fertilizer applications to wheat crops and showing green payments and taxes to be as effective environmentally and financially in reducing nitrogen loads).