ESTABLISHING A RATIONAL BASIS FOR REGULATING ANIMAL FEEDING OPERATIONS: A VIEW OF THE EVIDENCE

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I. THE PROBLEM

The United States' failure to achieve the water quality goals delineated by the Clean Water Act of 1972[1] has led to public outcry for ways to redress continuing pollution problems. One of the more popular avenues has been the call for more regulation, but such regulatory zeal often assumes away the problem. For example, it is taken for granted that the expansion of animal feeding operations (AFOs) into larger confined animal feeding operations (CAFOs) has contributed significantly to ongoing pollution problems.[2] Arguably, agriculture does contribute pollutants to fifty-nine percent of the impaired river and stream miles in the United States,[3] and specifically, animal feedlots may contribute pollutants to about sixteen percent of the total impaired river and stream miles.[4] While, such estimates have led policy makers to the conclusion that pollution from AFOs is a legitimate subject for more demanding

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1. Pub. L. No. 92-500, 86 Stat. 816 (codified as amended at 33 U.S.C. §§ 1251–1385 (2000)).

2. National Pollutant Discharge Elimination System Permit Regulation and Effluent Limitations Guidelines and Standards for Concentrated Animal Feeding Operations, 66 Fed. Reg. 2960 (proposed Jan. 12, 2001) (to be codified at 40 C.F.R. pts. 122, 412) [hereinafter EPA Proposed Rule]; *see also* ROBIN MARKS, NATURAL RES. DEF. COUNCIL, CESSPOOLS OF SHAME 1–2 (2001) (describing large polluters and recommending technology that is safer and more sustainable), *available at* http://www.nrdc.org/water/pollution/cesspools/cesspools.pdf (last visited Oct. 19, 2002); ENVTL. LAW INST., LOCATING LIVESTOCK (1999) (outlining programs that deal with water pollution from animal facilities, describing regulations, and suggesting how water quality programs can encourage compliance with pollution control requirements), *at* http://www.elistore.org/Data/products/d9.10.pdf (last visited Oct. 19, 2002); WATER KEEPER ALLIANCE, INDUSTRIAL AGRICULTURE: POISONING OUR WATERS AND OUR HOMES (2002) (describing a coalition of environmentalists, family farm activists and animal welfare advocates fighting pollution from corporate hog operations), *at* http://www.waterkeeper.org/mainarticledetails.aspx?articleid=87 (last visited Oct. 19, 2002).

3. OFFICE OF WATER, U.S. EPA, NATIONAL WATER QUALITY INVENTORY: 1998 REPORT TO CONGRESS 51, 62 (2000) [hereinafter NATIONAL WATER QUALITY INVENTORY], *available at* http://www.epa.gov/305b/98report (last visited Oct. 19, 2002). "Impaired" means that these waters are not fully supporting their designated uses, such as allowing swimming or providing drinking water. U.S. GAO, RES., CMTY., AND ECON. DEV. DIVISION, ANIMAL AGRICULTURE: INFORMATION ON WASTE MANAGEMENT AND WATER QUALITY ISSUES 1 (1995), *available at* http://www.gao.gov/archive/1995/rc95200b.pdf (last visited Oct. 19, 2002); *see also* 33 U.S.C. § 1314(a)(1)(C) (2000) (requiring publication of criteria for water quality).

4. NATIONAL WATER QUALITY INVENTORY, *supra* note 3, at 65.

restrictions,[5] it is not clear that more restrictions are warranted given an examination of the facts and circumstances surrounding U.S. CAFOs.

Since 1960, the number of hogs and cattle in the United States has remained about the same,[6] the number of dairy animals has declined,[7] and the number of poultry has increased significantly.[8] Yet there has been a fifty-nine percent reduction in the number of cattle operations,[9] a ninety-four percent reduction in dairy farms,[10] and a ninety-five percent reduction in hog farms.[11] Given the consolidation of animal operations and the

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5. This includes federal agencies as well as state legislatures and state agencies. *See, e.g.*, EPA Proposed Rule, *supra* note 2, at 2962–84 (outlining the differences between existing and proposed rules regulating CAFOs and delineating justifications for changing federal regulations); GA. COMP. R. & REGS. r. 391-3-6.20 (2002) (adopting new rules for swine operations in 1999 and amending them in 2000), *available at* http://www.dnr.state.ga.us/dnr/environ/rules_files/exist_files/391-3-6.pdf (last visited Oct. 19, 2002); ILL. ADMIN. CODE tit. 35, §§ 506.101-506.704 (2001) (adopting livestock rules in 1997 and 1998), *available at* http://www.ipcb.state.il.us/Archive/dscgi/ds.py/Get/File-12092 (last visited Oct. 19, 2002); MD. CODE ANN., AGRIC. § 8-802 (1999) (adding a certification provision for persons preparing nutrient management plans), *available at* http://mlis.state.md.us/cgi-win/web_statutes.exe (last visited Oct. 19, 2002); MO. CODE REGS. ANN. tit. 10, § 20-14.010-030 (2001) (adopting rules for certification of concentrated animal feeding operations personnel in 1996), *available at* http://www.sos.state.mo.us/adrules/csr/current/10csr/10c20-14.pdf (last visited Oct. 19, 2002); *see also infra* note 91 (listing the dates of revisions to selected administrative rules governing animal wastes in the six states with the largest numbers of beef cows, hogs, dairy cows, and chickens).

6. In 1960, there were more than 96.2 million cattle and 59 million hogs in the United States. NAT'L AGRIC. STATISTICS SERV., U.S. DEP'T OF AGRIC., AGRICULTURAL STATISTICS 1961 312 tbl.450, 327 tbl.480 (1961) [hereinafter AGRICULTURAL STATISTICS 1961]. In 2000, the government reported more than 98.1 million cattle and 59.8 million hogs. NAT'L AGRIC. STATISTICS SERV., U.S. DEP'T OF AGRIC., AGRICULTURAL STATISTICS 2001 VII-1 tbl.7-2, VII-18 tbl.7-25 (2001) [hereinafter AGRICULTURAL STATISTICS 2001].

7. Farmers had more than 19 million cows and heifers kept for milk production in 1960. AGRICULTURAL STATISTICS 1961, *supra* note 6, at 376 tbl.552. In 2000, they only had about 9.2 million. AGRICULTURAL STATISTICS 2001, *supra* note 6, at VIII-2 tbl.8-2.

8. The government reported that more than one billion broilers were produced in our nation in 1959. NAT'L AGRIC. STATISTICS SERV., U.S. DEP'T OF AGRIC., 1992 CENSUS OF AGRICULTURE, HISTORICAL HIGHLIGHTS 8 tbl.1 (1992) [hereinafter CENSUS OF AGRICULTURE, HISTORICAL HIGHLIGHTS], *available at* http://www.nass.usda.gov/census/census92/volume1/us-51/v1-tbl01.pdf (last visited Oct. 19, 2002). By 2000, our country's broiler production increased to more than 8 billion. AGRICULTURAL STATISTICS 2001, *supra* note 6, at VIII-40 tbl.8-51. Nearly 370 million chickens (excluding broilers) were produced in 1960. AGRICULTURAL STATISTICS 1961, *supra* note 6, at 412 tbl.599. This increased to more than 434 million chickens (excluding broilers) in 2000. AGRICULTURAL STATISTICS 2001, *supra* note 6, at VIII-31 tbl.8-39.

9. More than 2.6 million cattle operations existed in the United States in 1959. CENSUS OF AGRICULTURE, HISTORICAL HIGHLIGHTS, *supra* note 8, at 8 tbl.1. By 2000, fewer than 1.1 million cattle operations remained. AGRICULTURAL STATISTICS 2001, *supra* note 6, at VII-12 tbl.7-18.

10. In 1959, there were approximately 1.7 million operations with milk cows. CENSUS OF AGRICULTURE, HISTORICAL HIGHLIGHTS, *supra* note 8, at 8 tbl.1. Approximately 105,000 operations were reported in 2000. AGRICULTURAL STATISTICS 2001, *supra* note 6, at VIII-3 tbl.8-4.

11. Statistics show approximately 1.8 million hog farms in 1959. CENSUS OF AGRICULTURE, HISTORICAL HIGHLIGHTS, *supra* note 8, at 8 tbl.1. In 2000, only about eighty-five thousand hog farms were reported. AGRICULTURAL STATISTICS 2001, *supra* note 6, at VII-18 tbl.7-26.

manure generated by large numbers of animals at a single location, it is not surprising that animal waste has emerged as a public issue.[12] Moreover, some types of agricultural production are expected to create localized problems. The need for specialized production inputs (such as pesticides and the cultivation of fields) or byproducts (such as manure) means that agriculture will generate pollutants.[13] As with any potential polluter, the question is: What can and should be done to ameliorate the adverse effects of this contamination?

The Environmental Protection Agency (EPA) estimates that there are 376,000 AFOs in the United States.[14] Approximately 12,700 of these AFOs qualify as CAFOs, which are subject to the discharge requirements of the Clean Water Act.[15] This is an important distinction. CAFOs are required to secure National Pollutant Discharge Elimination System (NPDES) permits and are therefore subject to greater governmental scrutiny; AFOs that are not classified as CAFOs, on the other hand, are only governed by federal nonpoint-source pollution regulations.[16] A

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12. *See, e.g.*, Terence J. Centner, *Animal Feeding Operations: Encouraging Sustainable Nutrient Usage Rather Than Restraining and Proscribing Activities*, 17 LAND USE POL'Y 233, 238 (2000) (calling for alternative regulatory approaches for responding to nitrogen and phosphorus pollution); Terence J. Centner, *Concentrated Feeding Operations: An Examination of Current Regulations and Suggestions for Limiting Negative Externalities*, 25 COLUM. J. ENVTL. L. 219, 222 (2000) (advocating incentives for conservation buffers to intercept nutrient pollution); Robert Innes, *The Economics of Livestock Waste and Its Regulation*, 82 AM. J. AGRIC. ECON. 97, 112 (2000) (suggesting alternative regulatory policies); Mark Metcalfe, *State Legislation Regulating Animal Manure Management*, 22 REV. AGRIC. ECON. 519, 519–20 (2000) (noting that new state legislation may obviate the need for duplicative and disruptive federal action); James B. Ruhl, *Farms, Their Environmental Harms, and Environmental Law*, 27 ECOLOGY L.Q. 263, 263 (2000) (recommending that farmers be subject to more environmental regulations); Amy Willbanks, *The Unified National Strategy for Animal Feeding Operations: Another Federal-State Partnership in Environmental Regulation*, 8 S.C. ENVTL. L.J. 283, 283–84 (2000) (intimating that the federal government will become more active in responding to water pollution problems); *see also* Dana R. Flick, Comment, *The Future of Agricultural Pollution Following USDA and EPA Drafting of a Unified National Strategy for Animal Feeding Operations*, 8 DICK. J. ENVTL. L. & POL'Y 61, 90 (1999) (arguing that a proposed governmental strategy does not go far enough in addressing pollution from CAFOs); Theresa Heil, Note, *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, 62 (1998) (noting the ineffectiveness of regulations addressing nonpoint-source pollution from farms); Trevor Oliver, Note, *Fighting Corporate Pigs: Citizen Action and Feedlot Regulation in Minnesota*, 83 MINN. L. REV. 1893, 1893–95 (1999) (advocating citizen actions to enforce environmental laws against feedlots); Cynthia M. Roelle, Comment, *Pork, Pollution, and Priorities: Integrator Liability in North Carolina*, 35 WAKE FOREST L. REV. 1055 (2000) (recommending greater accountability of integrators to reduce environmental harm).

13. The U.S. Department of Agriculture estimates that AFOs produce more than 64 million tons of manure each year. EPA Proposed Rule, *supra* note 2, at 2986 tbl.6-3.

14. *Id.* at 2984.

15. *Id.* at 3080.

16. States may enact regulations that further regulate AFOs based upon state legislative authority. *See infra* notes 209–211 and accompanying text.

shortage of crop-land near some of the large facilities means that excessive amounts of manure are applied to nearby fields, resulting in nutrient contamination of streams and other waters.[17] The EPA's calculations show that AFOs produce approximately 1.3 million tons of nitrogen and 700,000 tons of phosphorous each year.[18] Since ninety percent of manure does not leave the area where it was produced,[19] the concentrated operations may place too many nutrients in a given locale.

The real pollution danger from nitrates and phosphates comes from their entry into water systems. Nitrates from animal manure are water soluble, meaning they have the potential to leach into groundwater and run off into surface water.[20] Phosphorous is less mobile in the soil than nitrogen;[21] but eroding soils carry phosphates into water bodies.[22] Nitrates and phosphates in water bodies lead to increased algae growth, which takes up dissolved oxygen from the water.[23] Algae and dead algae may block sunlight required by other vegetative species, causing both vegetation and fish to die off.[24]

The impairment of water quality by nitrogen and phosphorous from animal waste is an issue that has recently received legislative attention.[25]

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17. *See, e.g.*, Paul J.A. Withers & S.C. Jarvis, *Mitigation Options for Diffuse Phosphorus Loss to Water*, 14 SOIL USE & MGMT. 186, 187 (1988) (noting that the highly specialized production operations may be located on small areas of land leading to phosphorus surpluses).

18. EPA Proposed Rule, *supra* note 2, at 2986. *See also* Harold Taylor, ECON. RESEARCH SERV., U.S. DEP'T OF AGRIC., *Nutrients*, *in* AGRICULTURAL RESOURCES AND ENVIRONMENTAL INDICATORS, 1996–97, at 97–114 (Economic Research Service, USDA Agricultural Handbook No. 712, 1997) (calculating that, in 1992, these farms produced approximately 1.2 million tons of nitrogen and 1.3 million tons of phosphates).

19. Taylor, *supra* note 18, at 99. The EPA found that the greatest risk from the trend toward fewer, larger, and more industrialized operations is the volume of manure generated at the facilities, which "often do not have an adequate land base for manure disposal through land application." EPA Proposed Rule, *supra* note 2, at 2974–75.

20. David G. Abler & James S. Shortle, *The Economic Performance of Alternative Agricultural Nonpoint Pollution Controls*, 48 OKLA. L. REV. 427, 429 (1995).

21. *Id.*

22. *See* Andrew Sharpley et al., *Practical and Innovative Measures for the Control of Agricultural Phosphorus Losses to Water: An Overview*, 29 J. ENVTL. QUALITY 1, 5 (2000) (discussing phosphorus transport).

23. Abler & Shortle, *supra* note 20, at 429.

24. *Id.*

25. *See, e.g.*, Rachel Jay Smith, *A Guide to Permitting Confined Animal Feeding Operations in Wyoming*, 35 LAND & WATER L. REV. 339, 340 (2000) (reporting on Wyoming's regulations of large swine facilities); *see also* David R. Gillay, Comment, *Oklahoma's Concentrated Animal Feeding Operations Act: Balancing the Interests of Landowners with the Exponential Growth of the Hog Industry*, 35 TULSA L.J. 627, 627–30 (2000) (reporting on Oklahoma regulations of CAFOs); Erika N. Hartliep, Comment, *Federal and Pacific Northwest State Water Laws Pertaining to Dairies*, 37 IDAHO L. REV. 681, 682 (2001) (noting state and federal regulations over dairies); Dustin W. Mullin, Note, *Old McDonald Had a Government-Regulate-Confined-Swine-Operation: A Substitute for H.B. 2950*, 38 WASHBURN L.J. 655, 655–56 (1999) (noting proposed Kansas legislation to regulate additional pollution

Following numerous state legislative efforts responding to water pollution problems from AFOs, the federal government has submitted sweeping new regulations to address waters impaired by animal feedlots.[26] The EPA is advancing a Proposed Rule in response to a consent decree that established a schedule for final agency action on enumerated point-sources of pollution.[27] Based on the authority of the Clean Water Act,[28] the EPA has advocated updating two regulations that address manure, wastewater, and other process waters generated by CAFOs: the NPDES provisions governing CAFOs[29] and the Effluent Limitations Guidelines for feedlots.[30] The EPA is proceeding through an expedited informal rulemaking process, rather than the formal rulemaking procedure of the APA, relying simply on communications between the agency, the industry, and other interested parties.[31]

If the projected changes of this Proposed Rule are adopted, the federal government could double or triple the number of CAFOs subject to point-source pollution regulations.[32] The rule's adoption will also duplicate some state legislative provisions and may be disruptive to established state regulations.[33] The EPA estimates that the Proposed Rule will be implemented in January 2003 and rules reclassifying AFOs based on threshold numbers of animals will not take effect until January 2006.[34]

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from AFOs, particularly hog feeding operations).

26. EPA Proposed Rule, *supra* note 2, at 2960.

27. *Id.* at 2962.

28. The Proposed Rule lists seven sections of the Clean Water Act for its authority: 33 U.S.C. §§ 1311, 1314, 1316, 1317, 1318, 1342, 1361 (2000). *Id.* at 2962.

29. 40 C.F.R. pt. 122 (2001).

30. *Id.* pt. 412.

31. EPA Proposed Rule, *supra* note 2, at 3050. The modification of an existing rule is possible without a hearing and is often referred to as informal rulemaking. *See* 5 U.S.C. § 553(b)(2)(B) (2000) (providing that an agency, upon a finding for good cause, may forego formal notice and public hearing requirements except when they are required by statute); *see also* United Church of Christ v. FCC, 707 F.2d 1413, 1422 (D.C. Cir. 1983) (finding informal rulemaking reviewable under 5 U.S.C. § 706(2)(A)); BP Exploration & Oil, Inc. v. EPA, 66 F.3d 784, 792 (6th Cir. 1995) (observing that informal rulemaking is governed by 5 U.S.C. § 706(2)).

32. EPA Proposed Rule, *supra* note 2, at 2985.

33. *See, e.g.*, Metcalfe, *supra* note 12, at 530 (expressing concern about the consequences of revised federal regulations); *see also Management Options for Concentrated Animal Feeding Operations: Hearing Before the House Subcomm. on Water Resources and Environment of the Comm. on Transportation and Infrastructure*, 107th Cong., 1st Sess. 49–51 (2001) (testimony of Russell J. Harding, Director, Mich. Dep't of Envtl. Quality) (contending that the proposed regulations would result in shifting state regulatory resources from higher priority areas creating an actual degradation in overall water quality). *available at* http://commdocs.house.gov/committees/trans/hpw107-21.000/hpw107-21_0.htm (last visited Oct. 19, 2002).

34. EPA Proposed Rule, *supra* note 2, at 3071.

Although the federal government previously indicated through various communications that more stringent regulations governing water pollution from animal operations would be forthcoming,[35] the expansive nature of the Proposed Rule has alarmed producers and farm organizations.[36] The Proposed Rule is costly because it uses a single set of regulations that apply to all CAFOs regardless of geographic location.[37] EPA calculations suggest that the new provisions may impose costs of $831- 930 million annually.[38] The Proposed Rule is expected to reduce aggregate national economic output by nearly $2 billion per year.[39] States could incur nearly $6 million in administrative costs while off-site farming operations that receive manure from CAFOs would incur costs of roughly $10 million per year.[40] The compliance costs of more rigorous environmental controls will be difficult for many operations.[41] Moreover, it can be expected that smaller producers will experience the greatest financial stress.[42]

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35. *See* U.S. DEP'T OF AGRIC. & U.S. EPA, DRAFT UNIFIED NATIONAL STRATEGY FOR ANIMAL FEEDING OPERATIONS (1998) [hereinafter UNIFIED NATIONAL STRATEGY] (announcing a proposed strategy that the federal government will be more active with mandatory and voluntary programs regarding AFOs), *at* http://www.cleanwater.gov/afo/index.html (last visited Oct. 19, 2002); OFFICE OF WASTEWATER MGMT, U.S. EPA, 2000 DRAFT GUIDANCE MANUAL AND SAMPLE NPDES PERMIT FOR CONCENTRATED ANIMAL FEEDING OPERATIONS, FINAL INTERNAL DRAFT REVIEW, (proposed Sept. 21, 2000) (enumerating a policy that will protect water resources against potential discharges from large AFOs), *available at* http://www.epa.gov/npdes/pubs/dman_afo-2000.pdf (last visited Oct. 19, 2002); OFFICE OF ENFC. AND COMPL. ASSURANCE, U.S. EPA, COMPLIANCE ASSURANCE IMPLEMENTATION PLAN FOR CONCENTRATED ANIMAL FEEDING OPERATIONS (March 1998) (addressing compliance and enforcement efforts to ensure compliance by CAFOs), *available at* http://www.epa.gov/Compliance/resources/policies/civil/cwa/cafostrat.pdf (last visited Oct. 19, 2002).

36. *See, e.g.*, AM. FARM BUREAU FED., ANIMAL FEEDING OPERATIONS (2002) (opposing the proposed federal controls), *at* http://www.fb.org/issues/backgrd/cafo107.html (last visited Oct. 19, 2002); NAT'L PORK PRODUCERS COUNCIL, NPPC COMMENTS FOCUS ON SOUND SCIENCE, AFFORDABILITY AND LAW (July 31, 2001) (detailing perceived problems with the Proposed Rule), *at* http://www.nppc.org/NEWS/073101NPPCmtsFocus.htm (last visited Oct. 19, 2002).

37. *See* Sabrina Isé Lovell & Peter J. Kuch, *Rethinking Regulation of Animal Agriculture*, CHOICES, Second Quarter 1999, at 9–13 (raising questions about future federal regulation of CAFOs including the problem of one set of regulations that disregard geography and watersheds).

38. EPA Proposed Rule, *supra* note 2, at 3086–87 tbl.10-3, 10-4.

39. *Id.* at 3094.

40. *Id.* at 3092, 3094 tbl.10-13.

41. *Id.* at 3089 (estimating that 1,890 operations would experience financial stress under the two-tier system and 2,410 under the three tier). Hog producers would be subjected to the most stress with 17% estimated to be adversely affected. *Id.* About 9% of the dairy operations would be stressed under the Proposed Rule. *Id.*

42. FOOD AND AGRIC. POLICY INST., FAPRI'S ANALYSIS OF THE EPA'S PROPOSED CAFO REGULATIONS, FAPRI-UMC REPORT #06-0121 (July 30, 2001) (recommending more analysis of costs on a farm-by-farm basis), *available at* http://www.fapri.Missouri.edu/Publications/2001Publications/CAFORegs/fapriepacafo.pdf (last visited October 19, 2002).

The underlying justification for CAFO regulations is the Clean Water Act and its water quality goals.[43] While water quality problems support the further regulation of water pollution sources, the EPA's referenced data shows AFOs impairing about three percent of rivers and approximately one-half of one percent of our nation's lake acreage.[44] Established jurisprudence requires consideration of all relevant evidence in devising new regulations, and the evidence supporting the regulations must be reflective of current conditions.[45] The question remains as to whether the Proposed Rule's referenced data, collected nearly ten years ago, reflects current conditions so that there is a rational connection between the documented facts and the submitted revisions. The Clean Water Act restricts federal permit regulations to point-source pollution.[46] It is unclear whether some of the suggested provisions embody federal permitting rules for nonpoint-source pollution. Regulators may want to step back and proceed more judiciously so that they might develop regulations addressing actual rather than potential pollution.[47]

II. FEDERAL AUTHORITY AND PROPOSED STANDARDS

The Clean Water Act prohibits discharges from point-sources to waters of the United States except as authorized by NPDES permits.[48] Federal law defines CAFOs as point-sources so that they are subject to point-source regulations.[49] NPDES permits delineate technology-based effluent discharge limitations and, in qualifying cases, may delineate water quality-based effluent limits.[50] Water quality-based effluent limits are also

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43. EPA Proposed Rule, *supra* note 2, at 2972.

44. *See infra* notes 109 & 119 and accompanying text.

45. *See infra* notes 162–174 and accompanying text.

46. *See, e.g.*, Am. Wildlands v. Browner, 260 F.3d 1192, 1193–94 (10th Cir. 2001) (commenting that the EPA does not have authority to control nonpoint-source discharges through the permitting process); Or. Natural Desert Ass'n v. Dombeck, 172 F.3d 1092, 1096 (9th Cir. 1998) (observing that discharges from nonpoint-sources are not prohibited by the Clean Water Act).

47. This might also be labeled as moving towards results-oriented regulations rather than process-oriented. *See Management Options for CAFOs: Hearing on Management Options for CAFOs Before the Transportation and Infrastructure Comm., Subcomm. on Water Resources*, 107th Cong., 1st sess. 18–20 (2001) (statement of Rep. Nick Smith) (asserting that a change in the storm-event exemption may force 30,000 farms to obtain federal discharge permits despite the fact that none of them have ever had a discharge), *available at* http://www.house.gov/transportation/water/05-16-01/nicksmith.html (last visited Oct. 19, 2002).

48. 33 U.S.C. §§ 1311, 1342 (2000); 40 C.F.R. pt. 122 (2000). Thus, the Act regulates discharges, not point-sources. 33 U.S.C. § 1342 (2000). *See, e.g.*, NRDC v. EPA, 859 F.2d 156, 169–70 (D.C. Cir. 1988) (clarifying that the Clean Water Act does not empower the EPA to regulate point-sources).

49. 33 U.S.C. § 1362 (14) (2000).

50. EPA Proposed Rule, *supra* note 2, at 2964.

used to implement Total Maximum Daily Loads.[51] All states are authorized to administer base NPDES programs except Alaska, Arizona, Idaho, Maine, Massachusetts, New Hampshire, New Mexico and the District of Columbia.[52]

Effluent limitation guidelines and standards for "Feedlots Point Source Category" are enumerated in the Code of Federal Regulations for some large animal operations.[53] Under the Proposed Rule, these guidelines would be modified to include beef, dairy, swine, chicken, and turkey subcategories.[54] The advocated provisions advance a zero discharge of process wastewater from the production area for all CAFOs in the Feedlots Point Source Category with an exception for a twenty-four hour storm event once every ten years.[55] Furthermore, these CAFOs would be prohibited from applying animal waste within 100 feet of surface waters, tile drain inlets, sinkholes, and agricultural drainage wells.[56]

The Proposed Rule would markedly expand the number of AFOs that would be considered CAFOs.[57] The suggested change is ostensibly to better regulate turkey operations, poultry operations with dry manure handling systems, swine nurseries, dairy heifer operations, and veal production facilities.[58] Another suggested provision would define CAFOs to include the land area where animal waste is applied.[59] Some off-site recipients of manure may be regulated under the new proposal.[60]

The major effect of the amendment is to increase the number of operations subject to point-source regulations by reducing the threshold numbers of animals for defining CAFOs.[61] Because of expected controversy with a proposal to compel more AFOs to obtain NPDES permits, the Proposed Rule delineates several alternative structures to define which AFOs would become CAFOs.[62] The first is a two-tier structure consisting of operations having a threshold of 500 animal units and operations

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51. 33 U.S.C. § 1313(d) (2000); EPA Proposed Rule, *supra* note 2, at 2964.

52. EPA Proposed Rule, *supra* note 2, at 2964.

53. 40 C.F.R. pt. 412 (2001).

54. EPA Proposed Rule, *supra* note 2, at 3050.

55. *Id.* at 3053.

56. *Id.* at 3054.

57. *Id.* at 2996–99.

58. *Id.* at 3010–13.

59. *Id.* at 3009–10. The current rule has been interpreted to apply to the land areas of the farm. *See infra* notes 132–133 and accompanying text.

60. *Id.* at 3000. *See infra* notes 126–136 and accompanying text.

61. *Id.* at 2996–98.

62. *Id.* at 2993, 2996. The EPA is searching for a preferred strategy that will be incorporated into the final rule. *Id.*

designated under a case-by-case designation.[63] The EPA calculated that 25,540 operations would be considered CAFOs under this two-tier structure.[64] Since approximately 12,700 operations are CAFOs under the current regulations,[65] the suggested two-tier structure would double the number of CAFOs subject to NPDES permits.

The second alternative structure retains the three-tier structure of the existing regulations but amends the conditions under which AFOs with 300 animal units would be defined as CAFOs.[66] The EPA estimates that more than 39,000 operations would be affected by the second proffered structure.[67] Operations with 300 to 1,000 animal units would have to apply for an NPDES permit or certify to the permit authority that they are not a CAFO based on existing practices.[68] Operations with less than 300 animal units could be designated CAFOs under a case-by-case designation.[69]

Under the current CAFO regulations, the EPA reported that forty-nine percent of the manure from AFOs is produced by operators subject to NPDES permits.[70] Under the Proposed Rule's two-tier structure, sixty-four percent would be regulated;[71] under the three-tier structure, seventy-two percent would be regulated.[72]

Under current CAFO regulations, some state officials overseeing state NPDES programs do not have sufficient resources or are reluctant to adequately enforce existing regulations.[73] The Proposed Rule would

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63. *Id.* at 2993, 2996–98.

64. *Id.* at 2997.

65. *Id.* at 2985 tbl.6-1.

66. *Id.* at 2998–99.

67. *Id.* at 2998.

68. *Id.* This would affect 26,665 AFOs. *Id.*

69. *Id.* at 2993. The case-by-case designation provision is part of the current rules and is included in all of the major alternative proposals. *Id.*

70. *Id.* at 2998.

71. *Id.* at 2997.

72. *Id.* at 2998.

73. This also may involve the question of whether operations without permits can be charged with a violation of the Clean Water Act. A North Carolina case presented the argument that the Act only creates liability for discharges and not for operating without a permit. Water Keeper Alliance, Inc. v. Smithfield Foods, Inc., 53 ERC 1508, 1509–11 (E.D.N.C. Sept. 20, 2001). The district court noted that the Clean Water Act's enforcement and monitoring mechanisms would be compromised if there was no authority to require defendants to obtain a permit. *Id.* at 1510. The court thereby found that the Act created a claim for failure to obtain a NPDES permit. *Id.*; *see also* Terence J. Centner, *Evolving Policies to Regulate Pollution from Animal Feeding Operations*, 28 ENVTL. MGMT. 599, 606 (2001) (noting that governments have not been effective in achieving compliance with NPDES permit requirements); *Management Options for Concentrated Animal Feeding Operations*, *supra* note 33 (testimony of Russell J. Harding expressing concerns about the regulatory burdens that would be imposed by the Proposed Rule).

provide the EPA with explicit authority to designate CAFOs, even in states with approved NPDES programs.[74] In this manner, the EPA could confront instances of significant discharges from CAFOs that are not addressed by state regulators.

The Proposed Rule introduces federal co-permitting provisions to address perceived environmental problems of operators who are producing livestock in conjunction with a contract with a processor or integrator.[75] This would extend the EPA's NPDES permit authority further by defining CAFOs to include processors and integrators so that they become parties to the permitting process.[76] Under the submitted co-permitting provisions, the EPA would regulate 364 non-farming entities that exercise "substantial operational control" over a CAFO through co-permitting requirements.[77]

III. JUSTIFYING THE PROPOSED RULE

The Proposed Rule addresses the impacts on water quality from manure, wastewater, and other process waters generated by CAFOs.[78] Animal manure wastes containing excessive nutrients, oxygen-depleting substances, and other pollutants are impairing water quality.[79] Although considerable state action addresses CAFOs and their pollution issues, the EPA observed that these efforts were inconsistent.[80] States' assessments of rivers and streams, contained within the 1998 *National Water Quality Inventory*,[81] led the EPA to conclude that evidence of pollution from CAFOs justified additional federal directives.[82]

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74. EPA Proposed Rule, *supra* note 2, at 3071.

75. *Id.* at 3023–28. A few states have considered co-permitting provisions. For example, Kentucky has adopted co-permitting provisions that aim to address environmental problems caused by farmers who have production contracts. 401 KY. ADMIN. REGS. § 5:074 (2001) (replacing expired regulation 401 KY. ADMIN. REGS. 5:072 (2000)), *available at* http://water.nr.state.ky.us/dow/LRCver5-074RIA06-01.pdf (last visited Oct. 19, 2002). Other states are contemplating similar requirements. *See, e.g.*, Anita Huslin, *Md. Aims to Tighten Chicken Waste Rules; Manure Disposal Would Become Job of Major Firms*, WASH. POST, Aug. 9, 2000, at B1.

76. EPA Proposed Rule, *supra* note 2, at 3023–28.

77. *Id.* at 3024–26. The co-permittees would be comprised of ninety-four meat packing plants that slaughter hogs and 270 poultry processing facilities. *Id.* at 3026. Potential annual costs for co-permittees were estimated at $34–117 million for broiler processors and $135–306 million for hog processors. *Id.* at 3026.

78. *Id.* at 2962.

79. *Id.*

80. *Id.* at 2968–70. The EPA compiled a detailed state summary of regulations pertaining to AFOs. U.S. EPA, STATE COMPENDIUM: PROGRAMS AND REGULATORY ACTIVITIES RELATED TO ANIMAL FEEDING OPERATIONS, 4–5 (May 2002), *available at* http://www.epa.gov/npdes/pubs/statecom.pdf (last visited Oct. 19, 2002).

81. NATIONAL WATER QUALITY INVENTORY, *supra* note 3, at 51.

82. EPA Proposed Rule, *supra* note 2, at 2972–73.

But how conclusive are these data? An evaluation of the data's age, the amount of data on animal sources of pollution, the reported measurements of water impairment, and the referenced support for regulating the off-site application of manure articulate several conundrums. While Americans are intent on eliminating water pollution, governments are restricted by existing legal mandates. Requirements of the Administrative Procedure Act constrain governmental action; courts will set aside regulations that are arbitrary, capricious, or that lack a rational basis for the course of action. [83]

A. When Was the Data Collected?

The data employed to justify the Proposed Rule from the *National Water Quality Inventory* (*National Inventory*) was collected by state governments to form part of a mandatory biennial report to Congress.[84] Since the data comes from documents submitted for the 1998 Report, they were ostensibly collected up to five years prior to the state reports.[85] Given the 1998 date for submission, the data would have been collected between 1993 and 1998. However, the *National Inventory* reported that forty-five percent of the data were more than five years old.[86] This suggests that some of the data may have been collected in the early 1990s, or even in the 1980s. Since the Proposed Rule would take effect in 2003, the data supporting the regulations are approximately ten years old.

The issue is whether there are any problems with justifying new CAFO regulations through data collected in the early 1990s. Does the data accurately reflect the quality of today's waters? Does data showing that waters were impaired ten years ago mean they are impaired today? What is the probability that pollution from an AFO calculated in the early 1990s is still present in a stream or river? To assume that data from ten-year ago reasonably describes the current water quality conditions requires that the locations and practices of AFOs have not undergone any significant changes. It also assumes that if any changes have occurred due to the expansion or demise of operations, they have not markedly altered the pollution reported in the early 1990s. Furthermore, reliance on this data assumes polluters of the 1990s are engaged in the same activities today

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83. *See infra* notes 138–145 and accompanying text.

84. NATIONAL WATER QUALITY INVENTORY, *supra* note 3, at ES-2. This data is commonly referred to as section 305(b) data, denoting the section of the Clean Water Act (*codified at* 33 U.S.C. § 1312(b) (2000)) mandating collection of the data. *Id.*

85. *Id.* at 52.

86. *Id.*

and that they have not implemented new pollution-prevention practices. Given the available data on current AFO practices, these assumptions are simply not realistic.

The first assumption, that AFOs have not changed in size since the early 1990s, is, by the EPA's own admission, not true.[87] Statements accompanying the Proposed Rule acknowledge a trend toward fewer but larger operations.[88] This suggests that where AFOs have grown in size, pollution may be worse. At the same time, any AFO that has grown above the animal-number threshold would be a CAFO that is already regulated under the Clean Water Act. These operations already are required to have NPDES permits, so the Proposed Rule should not markedly alter discharges from these operations.

The second assumption, that AFOs of the early 1990s are still operating with the potential to pollute waters, may also not be very accurate. Governmental data show marked reductions of AFOs since early the 1990s. Supporting documentation for the Proposed Rule reports 191,300 hog farms in 1992 but only 109,800 operations in 1997.[89] Other documentation suggests that the number of AFOs decreased by 74,000 over a two-year period in the late 1990s.[90] Thus, it may be surmised that one-fourth of the AFOs generating potential pollutants in the early 1990s are no longer in business. This implies that more than 100,000 AFOs with the potential to impair waters are no longer in operation. In those locations where AFOs have ceased operations, a pollution problem may not exist. Given the changes in the size and location of AFOs, data from the early 1990s may not be representative of current pollution problems.

Turning to changes involving manure management, an examination of state regulatory changes suggests that reliance on pollution data from the early 1990s may be misplaced. An analysis of the state administrative rules governing animal wastes in the six states with the largest numbers of beef cows, hogs, dairy cows, and chickens shows that all of these rules

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87. EPA Proposed Rule, *supra* note 2, at 2972 (discussing the changes that have occurred in the animal production industry).

88. *Id.*

89. OFFICE OF WATER, U.S. EPA, ENVIRONMENTAL AND ECONOMIC BENEFIT ANALYSIS OF PROPOSED REVISIONS TO THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM REGULATION AND THE EFFLUENT GUIDELINES FOR CONCENTRATED ANIMAL FEEDING OPERATIONS 2–4 tbl.2-1, *available at* http://www.epa.gov/unix0008/water/wastewater/cafohome/cafodownload/cafodocs/EconSec1-5.pdf (last visited Oct. 19, 2002).

90. In 1998, the U.S. Department of Agriculture and the EPA claimed there were 450,000 AFOs in the United States. UNIFIED NATIONAL STRATEGY, *supra* note 35, § 2.1 (citing GAO, ANIMAL AGRICULTURE: INFORMATION ON WASTE MANAGEMENT AND WATER QUALITY ISSUES (1995)). In 2001, the EPA asserts that only 376,000 AFOs existed in 1997. EPA Proposed Rule, *supra* note 2, at 2984.

have been revised or expanded in the past few years.[91] A study of state legislative efforts between 1994 and 1998 showed a trend of more stringent animal manure management legislation intended to reduce pollutants from this sector of agriculture.[92] Due to major new state regulations, state governments have already responded to much of the reported pollution

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91. For recent regulations adopted by major beef cow, hog, dairy cow, and poultry producing states, see ALA. ADMIN. CODE r. 335-6-7-.26 (2000) (detailing provisions for AFOs and CAFOs that were effective November 30, 2000), *available at* http://www.alabamaadministrativecode.state.al.us/docs/adem/6ADEM7.htm (last visited Oct. 19, 2002); Ark. Pollution Control and Ecology Comm'n Regulation 5 (delineating liquid animal waste management systems regulations effective March 23, 2000), *available at* http://www.adeq.state.ar.us/regs/files/reg05_final_000323.pdf (last visited Oct. 19, 2002); CAL. CODE REGS. tit. 27, § 22560 (1999) (prescribing statewide minimum standards for discharges of animal waste at confined animal facilities operative July 18, 1997), *available at* http://ccr.oal.ca.gov (last visited Oct. 19, 2002); GA. COMP. R. & REGS. r. 391-3-6.20 (2002) (delineating more exacting regulations for swine in June 2001), *available at* http://www.dnr.state.ga.us/dnr/environ/rules_files/exist_files/391-3-6.pdf (last visited Oct. 19, 2002); ILL. ADMIN. CODE tit. 35, §§ 506.101-506.704 (2001) (detailing animal waste regulations effective November 12, 1998), *available at* http://www.ipcb.state.il.us/Archive/dscgi/ds.py/Get/File-12092 (last visited Oct. 19, 2002); IND. ADMIN. CODE tit. 327, r. 16-1-1 to 16-12-3 (2001) (adding provisions for confined animal operations on Feb. 8, 2002), *available at* http://www.ai.org/legislative/iac/title327.html (last visited Oct. 19, 2002); IOWA ADMIN. CODE r. 567-65.1 (2001) (setting forth the current rules with an effective date of July 11, 2001 and objecting to the use of emergency rulemaking that delays manure management plans), *available at* http://www.state.ia.us/epd/wastewtr/feedlot/567-65.pdf (last visited Oct. 19, 2002); KAN. ADMIN. REGS. 28-18a (2001) (delineating new rules for swine effective January 15, 1999), *available at* http://www.kdhe.state.ks.us/pdf/regs/28-18a.pdf (last visited Oct. 19, 2002); MINN. R. 7020.0350 (2000) (establishing new registration requirements taking effect after January 1, 2002), *available at* http://www.revisor.leg.state.mn.us/arule/7020/0350.html (last visited Oct. 19, 2002); MISS. CODE ANN. § 49-17-29 (Supp. 2002) (revising requirements for pollution permits), *available at* http://198.187.128.12/mississippi/lpext.dll?f=template&fn=fs-main.htm&2.0 (last visited Oct. 19, 2002); MO. CODE REGS. ANN. tit. 10 § 20-14.010 to .030 (2001) (amending rules for CAFOs effective July 30, 2001), *available at* http://www.sos.state.mo. us/adrules/csr/current/10csr/10c20-14.pdf (last visited Oct. 19, 2002); NEB. ADMIN. CODE. 130-1, 3, 15 (2001) (adopting revised rules pertaining to livestock waste control on June 18, 2001), *available at* http://www.deq.state.ne.us/RuleAndR.nsf/pages/130-TOC (last visited Oct. 19, 2002); N.Y. Dep't Envtl. Conserv. General Permit GP-99-01 (modification adopted October 12, 2001, setting criteria for CAFO permits effective July 1, 1999), *available at* http://www.dec.state.nt.us/website/dow/finalperm.pdf (last visited Oct. 19, 2002); N.C. ADMIN. CODE tit. 15A, r. 08F.0301 (Aug. 1998) (setting forth a classification system for animal waste management systems effective August 1, 1998), *available at* http://ncrules.state.nc.us/ncadministrativ_/title15a environ_/chapter08waterp_/default.htm (last visited Oct. 19, 2002); OKLA. ADMIN. CODE §§ 35-17.3 to 17.5 (2000) (prescribing rules whereby poultry operations must register by January 1, 1999), *available at* http://www.state.ok.us/~okag/main/srvs/ agform/prules.pdf (last visited Oct. 25, 2002); 25 PA. CODE § 92.5a (2000) (setting forth a CAFO permit application schedule effective November 18, 2000), *available at* http://www.pacode.com/secure/ data/025/chapter92/S92.5a.html (last visited Oct. 19. 2002); 30 TEX. ADMIN. CODE § 321.33 (2002) (setting forth revised authorization requirements for CAFOs that were effective July 23, 1999), *available at* http://info.sos.state.tx.us/pub/plsql/readtac$ext.viewtac (last visited Oct. 19, 2002); WIS. ADMIN. CODE § 243 (1997) (publishing corrections regarding animal waste management in August 1997), *available at* http://www.legis.state.wi.us/rsb/code/nr/nr243.pdf (last visited Oct. 19, 2002).

92. Metcalfe, *supra* note 12, at 528 (summarizing a frequency plot showing higher stringency of manure management in animal producing states).

observed in the early 1990s that is currently serving as a justification for further federal regulations.

B. States Reporting Agricultural Data

The Appendices of the *National Inventory* disclose the sources of data supporting the Proposed Rule.[93] Appendix A lists twenty states reporting data concerning whether agriculture has impaired water quality;[94] therefore, the Proposed Rule does not consider any data on agriculture's role in impaired water quality from thirty states.[95] There is no data from Georgia, Illinois, Indiana, Iowa, Minnesota, Missouri, New York, North Carolina, Pennsylvania, Texas, and Wisconsin,[96] states with significant concentrations of confined cows, hogs, and poultry.[97] Of the six states with the largest numbers of hogs and dairy cows, five failed to provide information supporting the fact that AFOs are responsible for the impairment of water.[98]

This suggests that the data from the *National Inventory* may markedly underestimate the number of river miles impaired by animals and their waste.[99] However, in other areas, the data may overestimate the number of river miles impaired by AFOs due to the cessation of animal production by individual operators. Possibly one-fourth of the AFOs of the early 1990s are no longer in business.[100] It is illogical to assume that the

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93. EPA Proposed Rule, *supra* note 2, at 2973 tbl.4-2.

94. NATIONAL WATER QUALITY INVENTORY, *supra* note 3, at app. A-3f.

95. *See id.* States not reporting data on agriculture include: Alabama, Alaska, Connecticut, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kentucky, Maryland, Massachusetts, Minnesota, Mississippi, Missouri, Montana, New Jersey, New York, North Carolina, North Dakota, Ohio, Pennsylvania, Rhode Island, South Carolina, Texas, Virginia, Washington, West Virginia, and Wisconsin. *Id.*

96. *Id.*

97. Data reported in the U.S. Department of Agriculture's publication *Agricultural Statistics* tell us which states have the greatest numbers of various types of livestock. AGRICULTURAL STATISTICS 2001, *supra* note 6. Texas, Kansas, Nebraska, Oklahoma, California, and Missouri have the most cattle. *Id.* at VII-2 tbl.7-3. In terms of hog numbers, Iowa, North Carolina, Minnesota, Illinois, Indiana, and Missouri are the six leading states. *Id.* at VII-18 tbl.7-26. For dairy cow numbers, California, Wisconsin, New York, Pennsylvania, Minnesota, and Texas have the most animals. *Id.* at VIII-2 tbl.8-2. Georgia, Arkansas, Alabama, Mississippi, North Carolina, and Texas have the greatest numbers of broilers. *Id.* at VIII-40 tbl.8-51. *See supra* note 91 for the regulatory provisions adopted by these states.

98. NATIONAL WATER QUALITY INVENTORY, *supra* note 3, at app. A-3f. The appendix does not report data for Iowa, North Carolina, Minnesota, Illinois, and Indiana, the top five hog producing states. *Id.* There are no reported data for Wisconsin, New York, Pennsylvania, Minnesota, and Texas, five of the six top dairy states. *Id.*

99. The data may also underestimate other sources of pollutants. *Id.*

100. See *supra* note 89–90 and accompanying text.

cessation of business at these AFOs had no effect on at least some of the reported water impairment.

The question is whether the data are representative of the thirty states that failed to report their own information. Do the data fairly represent the sources of impairment of our country's water resources? If the reporting states have their own AFO regulations that are either more or less stringent than the states not reporting, the data used for the Proposed Rule may not be representative. Given that many livestock producing states have moved to more stringent AFO regulations than exist in other states, it is possible that the data may overestimate water impairment by AFOs.

C. How Impairment was Measured

The major justification for the Proposed Rule is that data from the *National Inventory* enumerate the number of impaired river and stream miles.[101] The reported data were gathered from twenty-three percent of the assessed river mileage and were subsequently assumed to be representative of all other rivers.[102] This means that more than three-fourths of our country's river miles were never assessed for the data employed to justify the Proposed Rule. As already mentioned, the data used to justify the Rule totally omitted agricultural impairment from thirty states due to the absence of any reported data.[103] The relevance of the data is further compromised by the fact that some of the reporting states only evaluated a small percentage of their waters.[104]

The *National Inventory* reports percentages of impaired river miles by different sources of pollutants.[105] Since waters are impaired by more than one source, the percentages of impaired river miles for all of the categories total more than 100 percent.[106] Agricultural sources are reported as impairing approximately sixty percent of the impaired waters, which is equivalent to twenty percent of assessed river miles.[107] Of the agriculturally impaired river mileage, AFOs account for sixteen percent of

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101. EPA Proposed Rule, *supra* note 2, at 2973. For simplicity, these will be referred to as river miles.

102. *Id.*

103. *See supra* notes 95–98 and accompanying text.

104. *See infra* note 124 and accompanying text.

105. NATIONAL WATER QUALITY INVENTORY, *supra* note 3, at 62, app.A-5.

106. *Id.* at 62.

107. *Id.* at 62, 64. It is estimated that 35% of the 840,402 assessed river miles are impaired and that agriculture impairs 170,750 of these impaired miles, or about 20% of the assessed river and stream miles. *Id.*

the total.[108] Given these reported data, AFOs contribute to the impairment of about 3.3 percent of the river miles.[109]

Another observation of the *National Inventory* data reveals that AFOs impair fewer waters than other listed agricultural sources. Nonirrigated crop production was found to contribute to the impairment of twenty-seven percent of the river miles impaired by agriculture; irrigated agriculture contributed eighteen percent; and range and pasture grazing impaired seventeen percent.[110]

States reporting impaired waters by AFOs are listed in Appendix A of the *National Inventory*.[111] Only nineteen states reported that they had rivers and streams impaired by AFOs.[112] Thus, the question that remains is whether the data from these nineteen states is representative. Are these data illustrative of impaired waters in the remaining states? Do these data accurately represent pollution from AFOs?

Nutrients are one of the primary sources of impairment associated with CAFOs.[113] The documentation for the Proposed Rule notes that nutrients are the leading pollutants for lakes, ponds, and reservoirs.[114] Because CAFOs have a potential to discharge nitrogen and phosphorus, the Proposed Rule discusses their presence and their discharge into waters and implies that nutrients from AFOs are also problem.[115] Again, information reported by the *National Inventory* provided the basis for the submitted revisions.[116] Based on information from sixteen states,[117] the Environmental Assessment accompanying the Proposed Rule notes that AFOs are estimated to affect four percent of our country's lakes, ponds and reservoirs impaired by agriculture.[118] Given the assessed lake

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108. *Id.* at 65.

109. *See id.* at 62, 65. Of the 840,402 assessed river and stream miles, AFOs impaired 27,751 miles or 3.3%. *Id.*

110. *Id.* at 65.

111. *Id.* at app.A-5.

112. *Id.* The states were California, Illinois, Kansas, Kentucky, Louisiana, Maine, Michigan, Mississippi, Montana, New Hampshire, New Jersey, North Dakota, Ohio, Oklahoma, Rhode Island, Tennessee, Texas, West Virginia, and Wisconsin. *Id.* The Environmental Assessment reports that the information on impaired rivers and streams came from twenty-eight states. OFFICE OF WATER, U.S. EPA, ENVIRONMENTAL ASSESSMENT OF PROPOSED REVISIONS TO THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM REGULATION AND THE EFFLUENT GUIDELINES FOR CONCENTRATED ANIMAL FEEDING OPERATIONS (2001) 4-2 ex.4-3 [hereinafter ENVIRONMENTAL ASSESSMENT], *available at* http://www.epa.gov/ost/guide/cafo/pdf/EnvAssessPt2of2.pdf (last visited Oct. 19, 2002).

113. EPA Proposed Rule, *supra* note 2, at 2976.

114. *Id.*

115. *Id.*

116. *Id.*

117. ENVIRONMENTAL ASSESSMENT, *supra* note 112.

118. *Id.*

acreage, the *National Inventory* reports that AFOs impair approximately one-half of one percent of our nation's lake acreage.[119]

While the *National Inventory* reports that many states observed nutrient pollution as a general problem impairing water quality, just ten states reported phosphorus and nitrogen pollution.[120] Only one of the reporting states has significant numbers of livestock.[121] The same data show that rivers and streams sampled at urban sites had higher median concentrations of phosphorus than at agricultural sites.[122] How should these data be reconciled with concerns about phosphorus pollution from AFOs? Do these data show that AFOs are a major source of phosphorus and nitrogen pollution, or might they be interpreted to suggest that more attention is needed to reduce urban sources of phosphorus?

Equally significant is the quantity of the data reported by states listed in the Appendices of the *National Inventory*.[123] Are there enough data to develop reliable inferences? Looking at the total river miles assessed by individual states, the *National Inventory* notes that California's data come from only eight percent of its river miles while the Texas data come from seven percent.[124] With no data from over ninety percent of the river miles in these two states, can meaningful pollution statistics be inferred? Likewise, in regards to the data reporting the leading pollution sources impairing rivers and streams, the *National Inventory* reports that forty-four percent of the AFO total comes from Mississippi.[125] Should these data be interpreted to assume that AFO pollution is only a localized problem rather than a national problem? Can the incomplete data reporting water impairment by AFOs support any meaningful conclusions?

D. Regulation of Off-site Application of Manure

One of the provisions of the Proposed Rule addresses the issue of manure being transported from CAFOs to off-site fields.[126] The EPA proposes to strictly regulate potential pollutant discharges that may result

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119. NATIONAL WATER QUALITY INVENTORY, *supra* note 3, at 87, 92. Of the 17.4 million lake acres assessed, AFOs impaired 99,936 acres or 0.57%. *Id.*

120. *Id.* at app.A-4. These states were Arizona, Florida, Idaho, Iowa, Louisiana, Minnesota, Nevada, New Jersey, New Mexico, and West Virginia. *Id.*

121. Minnesota is an important dairy state, and also has considerable numbers of hogs and poultry. AGRICULTURAL STATISTICS 2001, *supra* note 6, at VII-18, VIII-2, & VIII-40.

122. NATIONAL WATER QUALITY INVENTORY, *supra* note 3, at 67 fig.2.

123. *See id.* at app.A-1 to A-5. The percentage of stream miles that were assessed is noted for individual states. *Id.* at app.A-1.

124. *Id.*

125. *Id.* at app.A-5. Only nineteen states reported data for the AFO category. *Id.*

126. EPA Proposed Rule, *supra* note 2, at 3000, 3029-32.

from the application of manure to land.[127] The EPA justifies the increased regulation of potential pollution sources by correlating too much manure on fields with livestock concentrations and impaired waters.[128] Under the Proposed Rule, landowners who do not own or operate a CAFO, but receive manure from CAFOs, could be required to obtain certification; therefore, CAFO operators transferring manure off-site would have an obligation to transport to certified landowners.[129] An alternative option would impose record keeping obligations on CAFO operators and provide information to manure recipients.[130]

An analysis of the data supporting this suggested revision discloses a preliminary issue concerning the absence of evidence. The documentation for the Proposed Rule noted that there is no reported data relating water impairment to the application of manure.[131] Thus, it may be argued that there is insufficient evidence to justify the propounded change.

Both the current regulations and the Proposed Rule regulate the application of manure on lands that are part of a CAFO because CAFOs are point-sources.[132] One court concluded that, as a matter of law, a CAFO includes the fields outside of the animal confinement area to which animal wastes are applied if they are owned or operated by the same person.[133] Moreover, a CAFO includes "not only the ground where the animals are confined but also the lagoons and systems used to transfer the animal wastes to the lagoons as well as equipment which distributes and/or applies the animal wastes produced at the confinement area to fields outside the animal confinement area."[134]

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127. *Id.* at 3029.

128. *Id.*

129. *Id.* at 3000.

130. *Id.* This would include maintaining records on the amounts of manure transferred and supplying recipients with information regarding the proper manure management and nutrient testing. *Id.* The EPA also delineated another possibility whereby recipients of off-site transfers of CAFO-generated manure would not be considered CAFOs if they had a certified comprehensive nutrient management plan and were implementing it. *Id.*

131. *Id.* at 2973 ("Impairment due specifically to land application of manure was not reported.").

132. *See* 33 U.S.C. § 1362 (14) (2000) (defining point-sources to include CAFOs).

133. Cmty. Ass'n for Restoration of the Env't v. Henry Bosma Dairy, 65 F. Supp. 2d 1129, 1133 (E.D. Wash. 1999) (finding that point-sources included "the milk production area, cow pens, feeding area, truck wash area, calf pens, and fields therein on which manure is stored and any ditches therein").

134. Cmty. Ass'n for Restoration of the Env't v. Sid Koopman Dairy, 54 F. Supp. 2d 976, 981 (E.D. Wash. 1999). The court opined that the extent to which the defendants' lands were point-sources was a question of fact for the trial court. *Id.* at 982. More recently, a district court found that "[e]xcluding parts of the waste management system from the definition of a CAFO by limiting the CAFO area to the land underneath the feeding areas would compromise the goals of the [Clean Water Act] by allowing widespread pollution by industrial feedlots pumping waste into other areas of their

Conversely, off-site landowners receiving manure from a production facility are different. They are neither an owner nor an operator of a CAFO, so they are not within the definition of a point-source.[135] Rather, they are receiving a product produced at a point-source that has the potential to cause a discharge. This situation is no different from farmers or homeowners receiving commercial fertilizer from a fertilizer plant. While Congress has regulated CAFOs and fertilizer plants through regulations governing their discharges,[136] Congress has not regulated the owners of fields that are not connected or related to the CAFO or fertilizer plant.

IV. ANALYZING THE EVIDENCE

The EPA is using an informal rulemaking process to advance its provisions for the regulation of additional wastes generated by AFOs.[137] While the details of final agency action are not yet available, the data cited for the Proposed Rule may be evaluated to gain insights on the sufficiency of the evidence. The Proposed Rule raises an issue concerning the sufficiency of evidence cited in support of the new provisions. Do the data show impairment of water quality by AFOs that justify the revised provisions?

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farms." Water Keeper Alliance, Inc. v. Smithfield Foods Inc., 53 ERC 1508, 1511 (E.D.N.C. Sept. 20, 2001). The court found that a CAFO encompasses the entire process of running the operation, not simply the areas where animals are confined. *Id.*

135. *See* 40 C.F.R. § 122.2 (2001) (defining owners and operators of facilities and activities subject to NPDES permits). Because the properties of off-site recipients of manure are not point-sources, they are not subject to the point-source provisions requiring an NPDES permit. *See id.* § 122.3 (delineating that pollutants from nonpoint-source agricultural activities, including stormwater run-off, do not require NPDES permits).

136. *See id.* § 122.23 (regulating CAFOs); *id.* pt. 418 (delineating requirements for fertilizer manufacturing); *see also* Concerned Area Residents for the Env't v. Southview Farms, 34 F.3d 114, 118 (2d Cir. 1994) (finding discharge from a CAFO).

137. The rulemaking procedure for the Proposed Rule does not include a required hearing, so that § 553 of the Administrative Procedure Act is inapplicable. *See* 5 U.S.C. § 553(b)(3)(B) (2000) (providing that § 553 is inapplicable when the agency, for good cause, finds that formal rulemaking under that section is impractical, unnecessary, or contrary to the public interest); *see, e.g.*, Louisiana *ex rel* Guste, 853 F.2d 322, 326 n.7, 327–67 (5th Cir. 1988) (finding that a challenge to a regulation promulgated under informal rulemaking could not be reviewed under the "substantial evidence" standard of 5 U.S.C. § 706(2)(E) but rather under the arbitrary and capricious standard of 5 U.S.C. § 706(2)(A) (citing F.C.C. v. Nat'l Citizens Comm. for Broadcasting, 436 U.S. 775, 803–04 (1978))).

A. Review Under the Administrative Procedure Act

Any final action by the EPA may be reviewed under the Administrative Procedure Act[138] unless it is committed under agency discretion or is otherwise precluded.[139] When elements of the Proposed Rule become final, two separate sections of the Act might offer a basis to evaluate the evidence. First, section 706(2)(A) of the Act provides that agency action shall be set aside if it is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law."[140] Second, some agency decisions that are unsupported by "substantial evidence" may be set aside pursuant to section 706(2)(E).[141] Courts have found that these two standards are distinct,[142] and that the Administrative Procedure Act intended one or the other to apply, but not both.[143] Decisions reviewable under the "substantial evidence" provision of the Act involve trial-type adversarial hearings and formal rulemaking.[144] The Proposed Rule does not fall within this category.[145] Rather, the arbitrary and capricious standard of review of agency action forms the avenue that may be employed to review the Proposed Rule.

Whenever the judiciary reviews a final rule, the starting point is consideration of the agency's construction of the applicable legislation.[146] Has Congress already spoken to the question at issue?[147] For a final

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138. 5 U.S.C. § 704 (2000).

139. *See, e.g.*, Citizens to Preserve Overton Park, Inc. v. Volpe, 401 U.S. 402, 410 (1971) (enunciating the reviewability of agency action except where precluded).

140. 5 U.S.C. § 706(2)(A) (2000).

141. *Id.* § 706(2)(E).

142. *See, e.g.*, *In re* Zurko, 142 F.3d 1447, 1450 (Fed. Cir. 1998), *rev'd on other grounds*, 527 U.S. 150 (1999) (evaluating whether the "arbitrary and capricious" [5 U.S.C. § 706(2)(A)] or the "substantial evidence" [5 U.S.C. § 706(2)(E)] standard applied).

143. *See, e.g.*, *In re* Gartside, 203 F.3d 1305, 1313 (Fed. Cir. 2000) (concluding that one or the other of the standards applied).

144. 5 U.S.C. § 706(2)(E) (2000); *see, e.g.*, Aircraft Owners & Pilots Ass'n v. FAA, 600 F.2d 965, 969–70 (D.C. Cir. 1979) (finding that there was no trial-type adversarial hearings so the "substantial evidence" standard did not apply); *In re Gartside*, 203 F.3d at 1313 (determining whether the applicable statute provided review of the decision so that the "substantial evidence" standard would apply).

145. *See, e.g.*, *In re Gartside*, 203 F.3d at 1313 (finding that the "substantial evidence" standard did apply); Welch Foods Inc. v. Borough of North East, 2001 U.S. Dist. LEXIS 3293 at *11–12 (W.D. Pa. Feb. 22, 2001) (finding the "substantial evidence" standard not to apply to the review of an action by the EPA because the agency had not engaged in formal rulemaking nor an adjudication required by statute).

146. *See, e.g.*, Friends of the Boundary Waters Wilderness v. Domback, 164 F.3d 1115, 1121 (8th Cir. 1999) (establishing that the starting point for a review of agency action is the agency's construction of the statute).

147. *See, e.g.*, Chevron U.S.A. Inc. v. NRDC, 467 U.S. 837, 842–43 (1984) (delineating the procedure for reviewing agency action).

CAFO rule, the inquiry will involve the intent of Congress in regulating point-source pollution under the Clean Water Act.[148] If Congress's intent is clear, both the agency and the courts must give effect to the stated intent.[149] If a statute is silent or ambiguous with respect to an issue, an agency may act within a permissible construction of the statutory command.[150]

Federal law currently classifies CAFOs as point-sources of pollution.[151] The Proposed Rule seeks to expand the scope of this command to address other existing pollution problems. The suggested provisions modify the methodology used to denote CAFOs and their activities to provide greater oversight of activities that are deemed to be impairing our waters.[152]

B. Documenting Arbitrariness or Capriciousness

When reviewing agency action, courts will accord substantial deference to the agency's interpretation of the applicable federal statute and its regulations.[153] Agency action is entitled to a presumption of validity.[154] Courts do not second-guess agency action and do not substitute their opinions of the evidence for those of the agency.[155] Even when a court disagrees with the agency's conclusions, it cannot substitute

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148. 33 U.S.C. §§ 1311, 1342 (2000) (prohibiting discharges of pollutants and delineating a permit system for point-source discharges).

149. *See, e.g.*, *Friends of the Boundary Waters Wilderness*, 164 F.3d at 1121 (holding that inquiry into Congressional intent ends if the intent is clear).

150. *See, e.g.*, *Chevron U.S.A. Inc.*, 467 U.S. at 843 (commenting that when the statute is silent with respect to a specific issue, the question for the court is whether the agency's resolution is "based on a permissible construction of the statute").

151. 33 U.S.C. § 1362(14) (2000).

152. EPA Proposed Rule, *supra* note 2, at 3135 (delineating new provisions to be set forth in 40 C.F.R. § 122.23(a)(3) expanding the AFOs that are to be designated as CAFOs).

153. *See, e.g.*, Smiley v. Citibank, 517 U.S. 735, 739 (1996) (noting the Court's practice of deferring to "reasonable judgments of agencies with regard to the meaning of ambiguous terms in statutes"); Erie-Niagara Rail Steering Comm. v. Surface Transp. Bd., 247 F.3d 437, 441, 448 (2d Cir. 2001) (finding no abuse of discretion in denying more extensive remedies); *Friends of the Boundary Waters Wilderness*, 164 F.3d at 1121 (complying with precedents that defer to the interpretations of statutes and regulations by agencies).

154. *See, e.g.*, Associated Fisheries of Me., Inc. v. Daley, 127 F.3d 104, 109 (1st Cir. 1997) (observing that judicial review is narrow).

155. *See, e.g.*, SEC v. Chenery Corp., 332 U.S. 194, 196 (1947) ("If those grounds [for the agency's decision] are inadequate or improper, the court is powerless to affirm the administrative action by substituting what it considers to be a more adequate or proper basis."). *But cf.* Bell Petroleum Servs., Inc. v. Sequa Corp., 3 F.3d 889, 905 (5th Cir. 1993) (rejecting an EPA decision to implement an alternate water supply system under the Comprehensive Environmental Response, Compensation and Liability Act despite the narrow standard that rejects second-guessing).

its judgment for that of the agency.[156] Because of this deference, the arbitrary and capricious standard tends to be lenient on the agency.[157] Appellate courts scrutinize agency action to determine whether the record reveals a rational basis for the decision.[158] Whenever an agency explains its course of inquiry, analysis, and reasoning in a manner that shows a rational connection between its decision-making process and its ultimate decision, its resolution will not be disturbed.[159] Courts must defer to an agency's decision within its area of expertise.[160] A policy choice that "conform[s] to . . . minimal standards of rationality" will be upheld.[161]

Agency action might be considered arbitrary or capricious for several different reasons. One of the most obvious reasons is where the agency fails to consider all relevant facts.[162] Alternatively, the agency may have no evidence[163] or the record may not support the action.[164] Another

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156. *See, e.g.*, *Associated Fisheries of Me., Inc.*, 127 F.3d at 109 (noting that policy choices are to be made by agencies). *But cf.* Rauenhorst v. United States, 95 F.3d 715, 718–19, 723 (8th Cir. 1996) (finding that the agency had failed to articulate a satisfactory explanation for its action).

157. *See, e.g.*, Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co., 463 U.S. 29, 43 (1983) (observing that the scope of review of agency action under the arbitrary and capricious standard is narrow). *But cf. Bell Petroleum Services, Inc.*, 3 F.3d at 905 (finding that despite a narrow scope of review, the decision by the EPA was arbitrary and capricious due to the absence of evidence).

158. *See, e.g.*, Am. Petroleum Inst. v. United States, 216 F.3d 50, 58 (D.C. Cir. 2000) (reversing an agency decision because the agency had failed to provide a rational explanation for its decision); Trinity Am. Corp. v. United States, 150 F.3d 389, 395 (4th Cir. 1998) (noting the need to scrutinize the record to discern a rational basis for an agency decision).

159. *See, e.g.*, Allied Local and Reg'l Mfrs. Caucus v. EPA, 215 F.3d 61, 68 (D.C. Cir. 2000), *cert. denied* 121 S. Ct. 1956 (2001) (noting the need to affirm when a rational connection is shown between the facts found and choices made); *Trinity Am. Corp.*, 150 F.3d at 396 (noting that the record provided evidence by which the agency could rationally reach its conclusion).

160. *See, e.g.*, Mausolf v. Babbit, 125 F.3d 661, 667 (8th Cir. 1997) (expounding the difficult burden of overcoming agency action).

161. Envtl. Defense Fund v. EPA, 210 F.3d 396, 402 (D.C. Cir. 2000) (citation omitted) (upholding a final determination by the EPA not to add fourteen solvent wastes to a list of hazardous wastes as a "reasonable methodology").

162. *See, e.g.*, Fla. Power & Light Co. v. Lorion, 470 U.S. 729, 744 (1985) (remarking that a record does not support agency action if the agency has not considered all relevant factors); Pac. Coast Fed'n of Fishermen's Ass'ns v. Nat'l Marine Fisheries Serv., 253 F.3d 1137, 1143 (9th Cir. 2001) (noting that failure to consider all relevant factors is a basis to find an agency action arbitrary and capricious); Associated Fisheries of Me., Inc v. Daley, 127 F.3d 104, 109 (1st Cir. 1997) (observing that failure of an agency to consider all pertinent evidence may serve as a basis to find agency action arbitrary and capricious); Rauenhorst v. United States, 95 F.3d 715, 719 (8th Cir. 1996) (commenting that an agency must examine all relevant data).

163. *See, e.g.*, County of Los Angeles v. Shalala, 192 F.3d 1005, 1021 (D.C. Cir. 1999) (analyzing the contention that the agency had no data supporting its action); Bell Petroleum Servs., Inc. v. Sequa Corp., 3 F.3d 889, 906 (5th Cir. 1993) (reversing the implementation of an alternate water supply due to there being no evidence that anyone was drinking the contaminated water).

164. *See, e.g.*, *Pac. Coast Fed'n of Fishermen's Ass'ns*, 253 F.3d at 1143 (citing the reasons to find an agency action invalid as an abuse of discretion, including where the decision runs counter to the evidence or is so implausible that it could not be the product of agency expertise); W.R. Grace & Co. v.

ground for overturning an agency action is where the evidence shows that the agency relied on improper factors.[165] Given the complex nature of many regulations and unanswered questions about their scope, agencies may mistakenly depend on evidence that is not appropriate. Alternatively, an agency may be careless and employ a deficient record so that the reviewing court cannot evaluate the challenged agency action.[166] Such action cannot stand. Finally, orders that cannot be sustained for the reasons stated by the agency will not be upheld.[167] Such orders might include agency decisions that have no rational explanation,[168] require broad inferential leaps of logic,[169] or lack reasoned decision making.[170] Courts are not required to search records for support for an agency's action; rather, the agency's decision should be readily apparent.[171]

The question of whether the agency has supplied a rational basis for its decision is determined from the record.[172] The agency's action must

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United States, 261 F.3d 330, 338 (3d Cir. 2001) (noting that an agency order must be remanded if the order is not supported by the record).

165. *See, e.g.*, Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto Ins. Co., 463 U.S. 29, 43 (1983) (observing that reliance on factors which Congress has not intended an agency to consider would require reversal of an agency rule); *Associated Fisheries of Me., Inc.*, 127 F.3d at 109 (noting the impropriety of relying on improper factors); Southwestern Penn. Growth Alliance v. Browner, 121 F.3d 106, 111 (3d Cir. 1997) (citing to *Motor Vehicle Mfrs. Ass'n*, 463 U.S. at 43 for the rule that reliance on factors not intended as a basis for an agency determination render the decision arbitrary).

166. *See, e.g., Fla. Power & Light Co.*, 470 U.S. at 744 (noting that agency action will be set aside if the reviewing court cannot evaluate the challenged action on the basis of the record before it); Air Transp. Ass'n of Can. v. FAA, 254 F.3d 271, 279 (D.C. Cir. 2001) (finding that the agency had failed to provide any record justification for the proposition used in its determination); U.S. Telecom Ass'n v. FCC, 227 F.3d 450, 461–62 (D.C. Cir. 2000) (finding that the record failed to show how the choice was made resulting in the order under review).

167. *See, e.g.*, AT&T Corp. v. FCC, 236 F.3d 729, 736 (D.C. Cir. 2001) (finding that the failure of the agency to articulate purported deficiencies in its order meant there was no basis for upholding the agency's decision).

168. *See, e.g., Motor Vehicle Mfrs. Ass'n*, 463 U.S. at 43 (noting that agency rules cannot be upheld if the explanation was "so implausible that it could not be ascribed to a difference in view or the product of agency expertise"); *Pac. Coast Fed'n of Fishermen's Ass'ns*, 253 F.3d at 1143 (noting that agency actions that are so implausible that they cannot be the product of agency expertise are an abuse of discretion); American Petroleum Inst. v. United States, 216 F.3d 50, 58 (D.C. Cir. 2000) (finding the absence of a rational explanation for an agency decision required remand).

169. *See, e.g., W.R. Grace & Co.*, 261 F.3d at 338 (taking a hard stand against imprudent agency action); Columbia Falls Alum. Co. v. EPA, 139 F.3d 914, 923 (D.C. Cir. 1998) (observing that "an agency's use of a model is arbitrary if that model 'bears no rational relationship to the reality it purports to represent'" (quoting Am. Iron & Steel Inst. v. EPA, 115 F.3d 979, 1005 (D.C. Cir. 1997))).

170. *See, e.g., U.S. Telecom Ass'n*, 227 F.3d at 463 (finding that "hand-wringing" and worrying were insufficient to support an agency order).

171. *See, e.g., W.R. Grace & Co.*, 261 F.3d at 340 (finding the record did not readily provide a rational basis for the agency's order).

172. *See, e.g.*, Tex. Oil & Gas Ass'n v. Marathon Oil Co., 161 F.3d 923, 934 (5th Cir. 1998) (observing that the record needs to reveal the rational basis for the agency decision).

bear a rational relationship to the statutory purposes.[173] There must also be a "rational connection between the facts found and the choices made."[174] While statements recording an agency's conclusion are necessary, additional documentation of reasons for the findings are needed to survive a challenge of arbitrariness.[175] A rational basis requires a defensible explanation for the selected course of action.[176]

V. EVIDENCE SUGGESTING DEPARTURES FROM RATIONALITY

The data referenced as supporting the Proposed Rule are quite incomplete. Only twenty states reported agricultural data and even fewer provided data on nutrient impairment.[177] The documentation suggests that only about three percent of the river and stream miles and less than one percent of the acreage of our lakes are adversely impacted by AFOs.[178] Much of the data is ten years old and the location, size and practices of many AFOs have changed considerably since it was collected.[179]

Different, yet reasonable, interpretations of these data are possible. While the data are not overly supportive of a conclusion that AFOs are a major contributor to our nation's impaired streams, they do not necessarily render the EPA's potential action arbitrary and capricious.[180] Rather, these imperfect data delineate a pollution problem that can be addressed pursuant to the dictates of the Clean Water Act through further regulations.[181] Imperfect or incomplete data can justify agency action.[182] Given the deference accorded agency action, the data provide a

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173. *Tex. Oil & Gas Ass'n*, 161 F.3d at 934 (delineating the rational relationship standard).

174. *U.S. Telecom Ass'n*, 227 F.3d at 462 (quoting *Motor Vehicle Mfrs. Ass'n*, 463 U.S. at 43); *see also* Burlington Truck Lines, Inc. v. United States, 371 U.S. 156, 168 (1962) (espousing the requirement of a rational connection between the facts and the choice made); GTE Serv. Corp. v. FCC, 205 F.3d 416, 421 (D.C. Cir. 2000) (citing *Burlington Truck Lines, Inc.*, 371 U.S. at 168).

175. *See, e.g., W.R. Grace & Co.*, 261 F.3d at 342 (finding a conclusory statement was insufficient to show a rational explanation for the selected action).

176. *Id.*

177. *See supra* notes 95 & 113–119 and accompanying text.

178. *See supra* notes 105–109, 117–119 and accompanying text. Of course, these figures are undoubtedly low due to the fact that there was no data from thirty states. NATIONAL WATER QUALITY INVENTORY, *supra* note 3, at app.A-5.

179. *See supra* notes 85–92 and accompanying text.

180. *See* Tex. Oil & Gas Ass'n v. Marathon Oil Co,. 161 F.3d 923, 935 (5th Cir. 1998) (finding that the imperfect information did not render the agency's decision arbitrary and capricious).

181. The Proposed Rule lists 33 U.S.C. §§ 1311, 1314, 1316, 1317, 1318, 1342, and 1361 (2000) as authority. EPA Proposed Rule, *supra* note 2, at 2961–62.

182. *See, e.g.*, Sierra Club v. United States, 167 F.3d 658, 662 (D.C. Cir. 1999) (noting that the incompleteness of data does not matter if it is irrelevant); Mt. Diablo Hosp. v. Shalala, 3 F.3d 1226, 1233 (9th Cir. 1993) (upholding agency action where one imperfect database was chosen over a second that was less complete).

justification for the Proposed Rule, so long as the EPA has not been inattentive to the total development of the record and has not deviated from procedural requirements.[183]

The character of the prescribed data and the ambiguous information delineated in the record suggest three arguments for contending that various provisions of the Proposed Rule fall short of complying with the dictates of the Administrative Procedure Act.[184] First, it might be contended that in developing the Proposed Rule the EPA has neglected to fully consider all of the relevant facts. Second, it may be asserted that the referenced data do not accurately reflect current conditions involving the impairment of water by AFOs. Finally, it might be argued that there is inadequate justification for the recommended off-site manure transfer provisions. Under any one of these arguments, components of the Proposed Rule might be found arbitrary and capricious.

A. Consideration of All Relevant Facts

The documentation of pollution problems notes that the nutrients are the major cause of water impairment from AFOs.[185] For agriculture, the data indicate that irrigated and non-irrigated cropland, as well as range and pasture grazing, impair greater percentages of our river miles than AFOs.[186] Fertilizer from cropland, manure from grazing areas, and phosphorus from urban sources impair many of the same waters attributed to AFOs.[187] Moreover, the documentation alludes to greater concentrations of phosphorus in urban waters than in rural waters.[188] This suggests that urban sources and fertilizer might generate more phosphorus pollution than AFOs.

A full consideration of these data raises the question of whether the EPA sufficiently considered all of the relevant facts regarding the sources of water impairment by nutrients.[189] The question remains as to whether

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183. *See supra* notes 153–161 and accompanying text.

184. *See* 5 U.S.C. § 706(2)(A) (2000) (providing that agency "actions, findings, and conclusions" may be set aside when found, upon review, to be "arbitrary, capricious, and abuse of discretion, or otherwise not in accordance with law").

185. EPA Proposed Rule, *supra* note 2, at 2976.

186. NATIONAL WATER QUALITY INVENTORY, *supra* note 3, at 65.

187. *Id.* at 64–66. The statistics on percentages of river miles being impaired by AFOs includes miles that are also impaired by other sources. *Id.*

188. *Id.* at 67.

189. *See, e.g.*, Petroleum Communications, Inc. v. FCC, 22 F.3d 1164, 1172 (D.C. Cir. 1994) (approving of judicial intervention "to ensure that [an] agency has 'examine[d] the relevant data and articulate[d] a satisfactory explanation for its action'" (quoting *Motor Vehicle Mfrs. Ass'n*, 463 U.S. at 43)).

the documentation for the Proposed Rule sets out a satisfactory justification for subjecting AFOs to new regulations while other sources of impairment are not addressed. Although a government is not precluded from setting different discharge limits for different point-sources,[190] has the EPA adequately justified the propounded regulation of AFOs while not acting to counter other sources of indistinguishable pollutants impairing the same waters?[191] Why is the EPA focusing on AFOs rather than the sources of phosphorus impairing urban waters?

Judicial precedents affirm the need to consider all relevant facts.[192] Courts have found that agencies should consider options prior to exercising their discretion.[193] For example, the Supreme Court noted that if an agency failed to address an option, the agency would not be able to submit any reasons for foregoing the option.[194] Whenever an agency fails to consider all relevant options in the development of a rule, it lacks a rational basis for its determination.[195]

The Proposed Rule seeks to address the impairment of waters by phosphorus and other nutrients. Although the EPA has noted that there are other significant sources of nutrients, the agency has not considered abating phosphorus pollution from these sources. There is no meaningful evaluation of phosphorus pollutant sources in the EPA's formation of its new regulations for CAFOs. In the development provisions governing CAFOs, can a rational basis exist for the EPA's Proposed Rule if there has been inadequate consideration of these other phosphorus sources? Given existing case law, the documentation for the Proposed Rule may need to be revised to fully address these other sources before selecting provisions to address nutrient pollution from AFOs.

B. Data Referenced are Not Reflective of Current Conditions

The issue presented by the Proposed Rule is whether the referenced data reflect current conditions in our country. Do they provide a good

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190. *See, e.g.*, Texas Oil & Gas Ass'n v. Marathon Oil Co., 161 F.3d 923, 938 (5th Cir. 1998) (noting that, in the absence of a contrary intent by Congress, the EPA could "set different limits for different point-sources within the same category or subcategory when circumstances so warrant").

191. *See, e.g.*, Leather Indus. of Am. v. EPA, 40 F.3d 392, 403 (D.C. Cir. 1994) (observing that an agency must justify different treatment for different parties).

192. *See supra* note 162 and accompanying text.

193. *See, e.g.*, Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto Ins. Co., 463 U.S. 29, 48 (1983) (finding that the agency had not considered the possibility of an airbag standard so rescission of the passive restraint standard was arbitrary and capricious).

194. *Id.* at 50 (noting that whenever an agency failed to consider a possibility, it could not submit any reasons for rejecting the possibility).

195. *Id.*

proxy for the waters that are being impaired by AFOs?[196] Changes in CAFO operational procedures, achieved under more stringent state regulations, suggest that data gathered in the early 1990s on the impairment of waters from animal wastes do not constitute an accurate assessment of pollution sources. The data fail to reflect the enlargement of facilities over the past ten years, the fact that some of the expanded operations have already been subjected to regulations as CAFOs, the likelihood that 100,000 AFOs may have gone out of business, and the possibility that up to eighty percent of the CAFOs have not secured required NPDES permits.[197]

Furthermore, the referenced data do not take into account the practices and regulatory controls that states have implemented in the last five years.[198] Many AFOs have recently come under the aegis of state regulatory controls that have mandated new procedures and practices to reduce nutrient pollution. Given the changes in location of AFOs and the new regulations governing these operations, the documentation for the Proposed Rule may not succinctly establish that the referenced data are representative of the current impairment of waters by AFOs. The EPA's assumed impairment of water quality by AFOs may be quite different from actual impairment.

The referenced data present the question of whether the assumptions drawn by the EPA are justified.[199] The possibility exists that there is no rational basis for the regulation of additional numbers of AFOs because the EPA has not adequately explained how its outdated data can serve as a proxy for current water impairment.[200] The EPA's use of its water impairment evidence should be found to be arbitrary if it "bears no rational relationship to the reality it purports to represent."[201]

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196. *See, e.g.*, Sierra Club v. United States, 167 F.3d 658, 663 (D.C. Cir. 1998) (finding that the use of data for agency action is permissible so long as the data allows a reasonable inference of the specifications being considered); *see also supra* notes 86–90 and accompanying text.

197. While the EPA admitted that about 80% of CAFOs were not permitted, its economic analysis assumed all CAFOs were permitted. EPA Proposed Rule, *supra* note 2, at 3080 (observing that only 2,500 out of 12,700 CAFOs have obtained coverage under NPDES permits). The EPA's unsupported assumption supports the deduction that the referenced data and conclusions are not reflective of current conditions.

198. *See supra* notes 91–92 and accompanying text.

199. *See, e.g.*, Leather Indus. of Am. Inc. v. EPA, 40 F.3d 392, 403 (D.C. Cir. 1994) (finding no rational basis where an assumption was not shown to bear a rational relationship to actuality).

200. *See, e.g.*, Alvarado Cmty. Hosp. v. Shalala, 155 F.3d 1115, 1122 (9th Cir. 1998) (finding that the absence of a rationale for the selection of particular data over other data amounted to an abuse of discretion); Columbia Falls Alum. Co. v. EPA, 139 F.3d 914, 923 (D.C. Cir. 1998) (finding no rational relationship between a model and a treatment standard so that the use of the model was arbitrary).

201. *Columbia Falls Alum. Co.*, 139 F.3d. at 923 (quoting Am. Iron & Steel Inst. v. EPA, 115 F.3d 979, 1005 (D.C. Cir. 1997) (noting the arbitrariness of the use of a model that fails to delineate the

C. Regulating Off-site Manure Transfers

The Proposed Rule delineates options for regulating the off-site transfer of manure.[202] This measure is being advanced despite no reported data relating water impairment to the application of manure.[203] While other documentation accompanying the Proposed Rule may advance support for the regulation of this activity, the question that may be asked is whether the measure is arbitrary. Established case law is rather explicit; courts must undo agency action where the record belies the agency's conclusion.[204] If there is no scientific evidence in the record to support the Proposed Rule, it is arbitrary and capricious.[205]

The categorization of an operation as a CAFO brings the entire farm under the aegis of discharge provisions for point-sources, but this classification does not include fields owned by other persons.[206] The application of manure and fertilizer on properties other than CAFOs is governed by nonpoint-source pollution provisions.[207] Fields receiving too much manure or fertilizer may have discharges but they are not discharges from point-sources.[208] Discharges from nonpoint-sources are not directly prohibited by the Clean Water Act.[209] Thus, the Act does appear to embody authority that would allow the EPA to require certification of off-

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reality it professes to represent); *see also Sierra Club*, 167 F.3d at 662 (stating that in the absence of a rational relationship between a model and what it purports to represent is a basis for rejecting an agency's choice (citing *Columbia Falls Alum. Co.*, 139 F.3d at 923)).

202. EPA Proposed Rule, *supra* note 2, at 2973.

203. *Id.*

204. *See, e.g.*, County of Los Angeles v. Shalala, 192 F.3d 1005, 1023 (D.C. Cir. 1999) (remanding the issue due to the inadequacy of the justification); Bell Petroleum Servs., Inc. v. Sequa Corp., 3 F.3d 889, 905 (5th Cir. 1993) (finding an agency decision to be arbitrary and capricious due to the absence of knowledge necessary for a rational and informed decision).

205. *See, e.g.*, Pac. Coast Fed'n of Fishermen's Ass'ns v. Nat'l Marine Fisheries Serv., 253 F.3d 1137, 1140, 1146 (9th Cir. 2001) (finding that the federal government acted arbitrarily and capriciously in reaching its conclusion regarding the effects of proposed timber sales on the existence of endangered species).

206. *See* Cmty. Ass'n for Restoration of the Env't v. Henry Bosma Dairy, 65 F. Supp. 2d 1129, 1133 (E.D. Wash. 1999); Water Keeper Alliance, Inc. v. Smithfield Foods Inc., 53 ERC 1508, 1511 (E.D.N.C. Sept. 20, 2001).

207. *See* 40 C.F.R. § 122.3 (2000); *see also* Concerned Area Residents for the Env't v. Southview Farms, 34 F.3d 114, 120 (2d Cir. 1994) (agreeing that agricultural stormwater run-off constitutes nonpoint-source pollution exempt from the Clean Water Act).

208. *See* Or. Natural Desert Ass'n v. Dombeck, 172 F.3d 1092, 1096 (9th Cir. 1998) (observing that run-off from agriculture and animal grazing are nonpoint discharges that were not regulated by provisions of the Clean Water Act).

209. *See, e.g.*, Am. Wildlands v. Browner, 260 F.3d 1192, 1194 (10th Cir. 2001) (commenting that the EPA does not have authority to control nonpoint-source discharges through the permitting process); *Or. Natural Desert Ass'n*, 172 F.3d at 1096 (observing that discharges from nonpoint-sources are not directly prohibited by the Clean Water Act).

site recipients of manure. An inability to require certification does not mean that off-site recipients of manure cannot be regulated. States may enact more definitive provisions regulating waters, including groundwater.[210] Alternatively, states may establish more stringent effluent limitations.[211] Wisconsin, for example, has adopted a regulatory scheme that applies to discharges of pollutants from both on-site and off-site manure application.[212]

VI. CONCLUDING COMMENTS

Agricultural producers have responsibilities to keep pollutants out of water bodies. Over the past several years, many AFOs have been subjected to additional state controls, reporting requirements, and penalties. Through new technology and improved management practices, AFOs have made impressive progress in reducing contaminants that previously had impaired water bodies. These endeavors, however, are not enough. Additional efforts are needed to help our country meet its water quality goals.

A. Regulating Discharges

Under the Clean Water Act, the EPA can enact regulations to address discharges from point-sources.[213] CAFOs are point-sources and the EPA can develop further regulations to deal with pollution from these sources. Impairment of waters by AFOs, however, is not a part of point-source pollution. This impairment results from nonpoint-source pollution over which the states have regulatory authority.[214] The Clean Water Act contains no authority for the EPA to establish permit conditions for the regulation of nonpoint-source pollution.[215]

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210. *See* WIS. STAT. ANN. § 283.01(20) (West 1999) (defining waters of the state to include groundwater); *see also* Maple Leaf Farms, Inc. v. Wis. DNR, 633 N.W.2d 720, 725 (Wis. Ct. App. 2001) (finding that Wisconsin law goes beyond federal law and addresses the protection of groundwater).

211. *See* WIS. STAT. ANN. § 283.13(5) (West Supp. 2001) (allowing the establishment of more stringent effluent limitations); *see also Maple Leaf Farms, Inc.*, 633 N.W.2d at 727 (finding that Wisconsin law allows preventive environmental practices that sanction the regulation of manure).

212. *See Maple Leaf Farms, Inc.*, 633 N.W.2d at 727 (concluding that the state had chosen to regulate the off-site application of manure from CAFOs).

213. *See* 33 U.S.C. § 1362(14) (2000) (defining point-sources to include CAFOs).

214. *See, e.g., Or. Natural Desert Ass'n*, 172 F.3d at 1097 (recognizing the separate treatment of point- and nonpoint- source pollution); *see also* Pronsolino v. Nastri, 291 F.3d 1123, 1136 (2002) (finding that states have authority to regulating nonpoint-source pollution through total maximum daily loads).

215. *See, e.g.*, Am. Wildlands v. Browner, 260 F.3d 1192, 1194 (10th Cir. 2001) (concluding the

The Proposed Rule delineates a variety of provisions that may be incorporated into a final rule. Whatever provisions are incorporated into the final rule will be accorded a strong presumption of validity. Yet deference given to an agency's action does not allow the agency to forego the delineation of relevant evidence. The EPA has a responsibility to fully comply with the requirements of the Administrative Procedure Act. If the EPA has failed to consider all relevant facts or to show that its referenced data are reflective of current conditions, its action in delineating a new rule is arbitrary and capricious.[216] If individual provisions of the final rule have no evidentiary basis or are contrary to law, such provisions cannot stand and would need to be vacated or remanded.

While the EPA may be able to revise its documentation for a final rule to overcome these contentions, the imperfections accompanying the advocated revisions invoke a more profound query. Is the EPA judiciously marshaling governmental and private resources in its efforts to address our impaired waters? Are the suggested provisions of the Proposed Rule a balanced response to nutrient pollution? Although the arbitrary and capricious standard of the Administrative Procedure Act is not bound by a fairness directive, Americans might exhort policy makers to address all nutrient pollution rather than target one individual sector.

B. Regulate Pollution, Not Businesses

Despite years of experience with overly-costly point-source pollution abatement efforts, our governments are not heeding the economic lessons gained from their experiences. Point-source pollution regulations have shown it to be wasteful for governments to foist unnecessary expenses on persons who are not creating pollution. Yet that is exactly what governmental regulators are doing in their responses to animal waste. Rather than using technology and science to identify polluters and control actual pollution, the regulations restrain businesses. Regulators are subjugating CAFOs to permitting prerequisites, paperwork, and pollution-prevention projects based upon numbers of animals without considering whether they are part of a pollution problem.

The issue is not how many CAFOs the federal government regulates nor how much manure it monitors. The issue is reducing pollutants entering our waters to achieve mandated water quality goals. Deficiencies

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EPA lacked authority to regulate nonpoint-source discharges); *Or. Natural Desert Ass'n.* 172 F.3d at 1096 (concluding from earlier precedents that the Clean Water Act only banned discharges from point-sources and that "[n]onpoint-source pollution is not regulated directly by the Act").

216. *See supra* notes 185–201 and accompanying text.

in the enforcement of existing regulations and inadequacies with data suggest that the Proposed Rule is not specifically directed towards enumerated pollution problems. While the size of an AFO may matter, location is equally important. In some locales, more exacting regulations are needed; in other areas, there is no need for additional regulations.

Rather than deploying broad regulations to counter potential pollution, the government might draw upon information of impaired waters and identifiable sources of pollutants to devise point-source regulations directed toward actual pollution problems. Under the Clean Water Act, the federal government regulates discharges, not point-sources.[217] Until regulatory proscriptions match production facilities with impaired waters and watersheds, governments are regulating categories of business operations instead of pollution problems. Our country has the technological prowess to develop a more definitive set of regulations that would address current discharges rather than foisting permit requirements on broad categories of potential discharge sources.

C. Developing a Broader Approach to Nutrient Pollution

Our country has taken great steps to achieve fairness in the regulation of people and businesses. A significant environmental justice movement has illuminated important issues concerning discrimination against people of color and other minorities.[218] Another issue of fairness involves treating different sources of pollution equitably. Proposed AFO regulations raise significant questions about whether wastewater treatment

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217. *See supra* note 48. In reviewing evidence to establish a violation of the Clean Water Act's NPDES permit requirement, a court noted that there first must be a discharge. Headwaters Inc. v. Talent Irrigation Dist., 243 F.3d 526, 532 (9th Cir. 2000) (finding the plaintiffs had submitted evidence to support a finding that a discharge had occurred).

218. *See* Vicki Been, *Environmental Justice*, *in* P. ROHAN, ZONING AND LAND USE CONTROLS, Ch. 25D.02 (1995) (surveying the environmental justice literature); Charles Lee, *Toxic Waste and Race in the United States*, *in* RACE AND INCIDENCE OF ENVIRONMENTAL HAZARDS: A TIME FOR DISCOURSE 10, 12–14 (Bunyan Bryant & Paul Mohai eds., 1992) (reviewing data and findings related to environmental discrimination); Douglas L. Anderton et al., *Environmental Equity: The Demographics of Dumping*, 31 DEMOGRAPHY 229 (1994) (analyzing disproportionate exposures to environmental risks among different economic and racial populations); Vicki Been, *Locally Undesirable Land Uses in Minority Neighborhoods: Disproportionate Siting or Market Dynamics*, 103 YALE L.J. 1383, 1384 (1994) (analyzing discrimination based on race and income); Terence J. Centner et al., *Environmental Justice and Toxic Releases: Establishing Evidence of Discriminatory Effect Based on Race and Not Income*, 3 WIS. ENVTL L.J. 119, 120 (1996); Kelly M. Colquette & Elizabeth A. Robertson, *Environmental Racism: The Causes, Consequences, and Commendations*, 5 TUL. ENVTL. L.J. 153, 206 (1991) (analyzing discrimination involving hazardous waste facilities located near people with low incomes); Mariá Ramirez Fisher, *On the Road from Environmental Racism to Environmental Justice*, 5 VILL. ENVTL. L.J. 449, 449–50 (1994) (defining environmental racism).

plants, urban runoff, storm sewers, construction sites, over-fertilized suburban lawns, and golf courses are being treated in a similar manner.[219] Perhaps there are there more equitable solutions for responding to nutrient pollution.

While agriculture occupies more land area than urban and suburban sites, possibly causing it to generate more contaminants, this does not justify treating agriculture more harshly than other sources of pollutants. On a per acre basis, golf courses, construction sites, and highway projects may generate more pollutants than agriculture.[220] Moreover, non-agricultural sites may contribute more harmful pollution. For example, oil, petroleum products, and pet feces commonly pollute our waterways through highways, parking lots, and other paved areas.[221]

As far as point-sources are concerned, many combined sewer systems overflow untreated human waste into rivers and lakes when there are heavy rains.[222] Can we reconcile provisions sanctioning municipal overflows while holding CAFOs to a "zero discharge" standard[223] and while commercial fertilizers continue to pollute unabated? Similar standards should be employed for all sources. By using indicators on the origin of waste products, we can discern the sources of pollutants. With the identification of sources, we can develop even-handed provisions to prevent nutrients from damaging our environment.

Given our knowledge that phosphorus and nitrogen are often a problem, we might attempt to devise a more comprehensive program that regulates all the sources of a particular pollutant. Drawing from pesticide collection programs,[224] one solution is to employ a nutrient tax applying to all sources. The tax would be based on nutrient releases into the

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219. The appendices to the *National Water Quality Inventory* note that several significant agricultural states reported more sites impairing water quality from urban runoff and storm sewers than AFOs. NATIONAL WATER QUALITY INVENTORY, *supra* note 3, at app. A-5. The following important livestock states reported more water impairment from urban runoff and storm sewer sites than AFOs: Alabama (305 to 0); California (1,822 to 88); Illinois (1,865 to 124); Minnesota (2,887 to 0); Missouri (44 to 0); New York (93 to 0); North Carolina (700 to 0); Pennsylvania (424 to 0); Texas (777 to 154). *Id.*

220. The EPA reported that total phosphorus levels in about half of the urban streams ranked among the highest in its study. *Id.* at 67.

220. The Victoria Policy Institute, *Transportation Cost and Benefit Analysis: Techniques, Estimates and Implications*, *at* http://www.vtpi.org/tca/tca0515.pdf (last visited Oct. 25, 2002).

222. Peter J. Howe, *$45m Project Won't Stem Pollution* , Boston Globe, Jun. 16, 1998 at A1 (detailing Boston's longstanding problem with human waste overflowing into the Charles River from combined waste and storm sewers).

223. EPA Proposed Rule, *supra* note 2, at 3059.

224. Terence J. Centner & Lewell F. Gunter, *Financing the Disposal of Unwanted Agricultural Pesticides*, 25 ENV'T INT'L 635 (1999), *available at* http://www.sciencedirect.com/science (last visited Sept. 9, 2002) (discussing how states used a pesticide tax to fund remedial programs).

environment. Funds collected from nutrient taxes could be used to finance pollution reduction incentive programs, invest in technology for reducing nutrient contamination, or subsidize remedial measures for reducing concentrations of nutrients. Through consideration of regulatory options other than additional point-source regulations, governments, federal and state, may be able to devise a more successful comprehensive program to address sources of water pollution.