

ARTICLES

Pesticides, Water Quality, and the Public Trust Doctrine

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Summary

The public trust doctrine is an ancient legal principle undergoing a modern resurgence. Under it, governments hold certain natural resources in trust for the benefit of present and future generations, and have a judicially enforceable legal obligation to protect trust resources and the public's interest in them. This Article argues that courts could use the public trust doctrine to enforce regulation of water pollution caused by pesticides because the current regulatory framework is insufficient to protect human health, the environment, wildlife, or water quality. The author also argues that the federal environmental statutes regulating pesticides do not preempt the public trust doctrine, at least when the claim is brought under state law.

I. Introduction

Americans apply over one-half billion pounds of pesticides each year—80% of which is for agricultural purposes, to increase crop production and reduce insect-borne diseases.¹ A recent study of major rivers and streams by the U.S. Geological Survey (USGS) detected one or more pesticides in over 90% of the surface waters sampled and in one-third of major aquifers.² Federal regulation of pesticides under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)³ is not based on human health or safety⁴; instead, FIFRA uses a risk-benefit approach that allows the U.S. Environmental Protection Agency (EPA) to register pesticides that offer sufficient economic benefits.⁵ Federal regulation of discharges to water under the Clean Water Act (CWA)⁶ divides the sources of water pollution into point sources and nonpoint sources, regulating only point source discharges. The source of pollution is irrelevant, however, to the environment and to the wildlife it reaches. If pesticide regulation were instead based on the adverse effects it causes to public natural resources, water quality would improve and stabilize throughout the United States.

Both point source and nonpoint source discharges of pesticides adversely affect water quality and wildlife. Until 2009, EPA exempted certain point source discharges of pesticides applied directly to waters of the United States⁷ from national pollutant discharge elimination system (NPDES) permitting requirements if the applicator used the pesticide in compliance with FIFRA. The U.S. Court of Appeals for

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1. U.S. GEOLOGICAL SURVEY (USGS), PESTICIDES IN U.S. STREAMS AND RIVERS: OCCURRENCE AND TRENDS DURING 1992–2011 (2014) [hereinafter USGS STUDY]; Press Release, USGS, 20-Year Study Shows Levels of Pesticides Still a Concern for Aquatic Life in U.S. Rivers and Streams (Sept. 11, 2014) [hereinafter USGS Press Release], available at <http://www.usgs.gov/newsroom/article.asp?ID=3997#>.
2. USGS STUDY, *supra* note 1. The study tested water samples for pesticides and pesticide degradates, also known as pesticide breakdown products, the still-toxic compounds that break down in the environment until eventually reaching undetectable levels. *Id.* Budget constraints limited the monitoring to fewer than one-half of the more than 400 pesticides used in agriculture. USGS Press Release, *supra* note 1.
3. 7 U.S.C. §§136–136y (2012), ELR STAT. FIFRA §§2–35.
4. NORTHWEST COAL. FOR ALTERNATIVES TO PESTICIDES, NO GUARANTEE OF SAFETY 1 (2002) [hereinafter NO GUARANTEE OF SAFETY], available at <http://www.pesticide.org/get-the-facts/ncap-publications-and-reports/general-reports-and-publications/journal-of-pesticide-reform/journal-of-pesticide-reform-articles/eparegis.pdf>.
5. *Id.*
6. 33 U.S.C. §§1251–1387 (2012), ELR STAT. FWPCA §§101–607.
7. These discharges included applications of pesticides on, over, or near jurisdictional waters for the purpose of pest control. *National Cotton Council of Am., Inc. v. U.S. EPA*, 553 F.3d 927, 931–32, 39 ELR 20006 (6th Cir. 2009), *reh'g denied* (2009), *cert. denied*, 130 S. Ct. 1505 (2010) (*citing* 40 C.F.R. §122.3(h)).

the Sixth Circuit struck down EPA's exemption in *National Cotton Council of America, Inc. v. U.S. Environmental Protection Agency*.⁸ The Obama Administration chose not to appeal, and the U.S. Supreme Court denied the industry's petition for certiorari, effectively making a significant number of point source pesticide discharges nationwide newly subject to NPDES permit requirements.⁹ According to EPA calculations, the *National Cotton Council* ruling will increase by 65% the annual number of total discharges subject to CWA jurisdiction.¹⁰

In response to the Sixth Circuit's decision, in 2011, EPA issued the Pesticide General Permit (PGP)¹¹ to regulate without individual permit requirements most direct-to-water pesticide discharges.¹² As discussed below, it is quite uncertain whether discharges subject to this general permit will actually protect water quality or wildlife. Further, industry groups have backed several bills in the U.S. Congress to negate *National Cotton Council* and remove the need for a PGP.¹³ Uncertainty also surrounds other point source discharges of pesticides, such as some aerial sprays, which are currently considered a point source and therefore subject to CWA permit requirements, but only in the U.S. Court of Appeals for the Ninth Circuit.¹⁴

8. *National Cotton Council*, 553 F.3d 927.

9. See Charles Franklin, *FIFRA v. The Courts: Redefining Federal Pesticide Policy, One Case at a Time*, 26 NAT. RESOURCES & ENV'T 18, 19 (Summer 2011); Elisabeth A. Holmes & Charles M. Tebbutt, *Power, Politics, and Poison: The Story Behind National Cotton Council of America v. U.S. EPA*, 41 ELR 10946 (Oct. 2011).

10. Brandon W. Neuschafer, *Expanding Regulation of Pesticide Applications Under the Clean Water Act*, 26 NAT. RESOURCES & ENV'T 23, 23 (2011).

11. Final National Pollutant Discharge Elimination System (NPDES) Pesticide General Permit for Point Source Discharges From the Application of Pesticides, 76 Fed. Reg. 68750 (Nov. 7, 2011).

12. U.S. EPA, Pesticide General Permit (PGP) for Discharges From the Application of Pesticides 2011 [hereinafter PGP], available at http://www.epa.gov/npdes/pubs/final_pgp.pdf. The permit provides coverage for four "pesticide use patterns": mosquito and other flying insect pest control; weed and algae pest control; animal pest control; and forest canopy pest control. *Id.* §1.1.1. When operators satisfy its terms, the PGP authorizes eligible point source discharges under the CWA. *Id.* at 1 ("In compliance with the [CWA], any Operator of a point source discharge of pollutants (i.e., discharge) resulting from the application of pesticides and eligible for permit coverage under Part 1.1 . . . is authorized to discharge to Waters of the United States in accordance with the requirements of this permit.").

13. See, e.g., To Amend the Federal Insecticide, Fungicide, and Rodenticide Act to Improve the Use of Certain Registered Pesticides, H.R. 6087, 111th Cong. §2 (2010); A Bill to Amend the Federal Insecticide, Fungicide, and Rodenticide Act to Improve the Use of Certain Registered Pesticides, S. 3735, 111th Cong. §2 (2010).

14. See, e.g., League of Wilderness Defenders/Blue Mountains Biodiversity Project v. Forsgren, 309 F.3d 1181, 1190 (9th Cir. 2002) (holding that the U.S. Forest Service's aerial pesticide spraying over forests and streams was a point source discharge requiring an NPDES permit, because the discharge "clearly meets the statutory definition of a point source" and allowing EPA to define it as nonpoint source would "contravene the intent of Congress"). See *infra* notes 116–18 and accompanying text for a brief discussion of aerial pesticide spraying. Aerial sprays that meet one of the four pesticide use patterns would be covered under the PGP. See PGP, *supra* note 12, §1.1.1.

A 2012 report by the Congressional Research Service estimates that nonpoint source pollution "represents more than 50% of the nation's remaining water pollution problems."¹⁵ Operators¹⁶ typically apply pesticides over large areas, meaning that most pesticide discharges are nonpoint source discharges because they do not originate from a "confined and discrete conveyance."¹⁷ The result is the same even when excess amounts of pesticides reach jurisdictional waters via runoff; this regulatory gap occurs because the CWA defines "point source" to exclude "agricultural stormwater discharges and return flows from irrigated agriculture."¹⁸ Ultimately, these jurisdictional limits in the CWA prevent the statute from achieving its stated goals¹⁹ of "restor[ing] and maintain[ing] the chemical, physical, and biological integrity of the Nation's waters."²⁰

In 1987, Congress recognized the problem of nonpoint source pollution when it amended the CWA, effectively codifying states' existing police power authority to control sources of runoff, including agricultural pollution.²¹ However, state-developed controls authorized by CWA §319 are voluntary and yield mixed results,²² and states face enormous political pressure from the agricultural industry, which vigorously resists attempts to regulate nonpoint source pollution.²³

Courts are less burdened by political pressure and lobbying than are legislatures and agencies, at both the federal and state levels. The public trust doctrine empowers members of the public²⁴ to seek protection for public resources

15. See CLAUDIA COPELAND, CONG. RESEARCH SERV., RL30030, CLEAN WATER ACT: A SUMMARY OF THE LAW 4 (2012), available at http://aquadoc.typepad.com/files/cwa_summary_crs_nov2012-1.pdf.

16. See *infra* Part II.B., for the definition of an "operator."

17. 33 U.S.C. §1362(14) (2012).

18. *Id.*

19. See Jan G. Laitos & Heidi Ruckriegle, *The Clean Water Act and the Challenge of Agricultural Pollution*, 37 VT. L. REV. 1033, 1035–38 (2013):

Since agriculture is exempt from most CWA controls . . . pollution-causing agricultural activities are classified as unregulated nonpoint sources. A regulatory gap is thereby created: The CWA specifies technology-based solutions to industrial discharges and sewage effluent from discrete point source conveyances, but it provides no direct mechanisms to control the agriculture-based nonpoint source pollution entering "waters of the United States."

20. 33 U.S.C. §1251(a).

21. 33 U.S.C. §1329 (2012).

22. See Robert W. Adler, *Water Quality and Agriculture: Assessing Alternative Futures*, 25 ENVIRON. L. & POL'Y J. 77, 80 (2002); Véronique Jarrell-King, *Wildlife, Water Quality, and the Public Trust Doctrine: A Means of Enforcing Agricultural Nonpoint Source Pollution Management Plans*, 23 VILL. ENVTL. L.J. 1, 19 (2012) (noting the "lack of consequences for failure to comply with §319").

23. Jarrell-King, *supra* note 22.

24. Standing can limit an individual's ability as a beneficiary of the trust to sue under the public trust doctrine. *Compare Marks v. Whitney*, 6 Cal. 3d 251, 261–62, 2 ELR 20049 (Cal. 1971) (determining that the plaintiff had standing "as a member of the general public"), with *Robinson v. Kunach*, 251 N.W.2d 449, 455, 7 ELR 20365 (Wis. 1977) (limiting public trust standing to plaintiffs with statutory permission to assert the trust).

in courts, by requiring the government to manage certain resources as a trustee for the benefit of present and future generations.²⁵ The doctrine is a “fundamental doctrine in American property law”²⁶ that, at least in some states, “is so entrenched as to be immune from legislative abolition.”²⁷ Historically, American courts associated the scope of the public trust doctrine with the beds of navigable waters and the waters and shoreline below the ordinary high watermark, but its full potential is clearly much greater.²⁸

In his influential article on the public trust doctrine, the late Prof. Joseph Sax suggested that “the delicate mixture of procedural and substantive protections which the courts have applied in conventional public trust cases would be equally applicable and equally appropriate in controversies involving . . . the dissemination of pesticides,” among others.²⁹ In the famous *Mono Lake* case, the Supreme Court of California expanded the public trust doctrine to include water rights, as well as all actions that affect navigable waters.³⁰ A court following *Mono Lake*’s reasoning and scope therefore could decide that the scope of the doctrine includes pesticide pollution of navigable waters resulting from either point or nonpoint source discharges.

This Article examines pesticide pollution of navigable waters, and analyzes how the public trust doctrine could protect water quality and wildlife by filling the regulatory gaps in federal environmental statutes. Part II provides background on the public trust doctrine and the current federal regulatory framework for application of pesticides. Part III argues that federal environmental statutes do not preempt the public trust doctrine’s regulation of pesticides, because it is a state common-law doctrine expressly saved by the saving clauses in the CWA and FIFRA. Part IV describes the regulatory system’s failures to protect water quality, human health, and the environment from point source and nonpoint source pesticide pollution.

Part V then explains how courts following *Mono Lake* could invoke the public trust doctrine to regulate certain uses of pesticides that are currently unregulated and to help protect water quality from pesticides. The Article concludes that courts in these jurisdictions could determine that states have a duty to protect the waters and wildlife

within their state from pesticide pollution because those vital resources are currently insufficiently protected, and that states must consider effects on trust resources when implementing federal statutes regulating pesticides.

II. Background

The public trust doctrine is an ancient principle of law that recognizes that governments hold certain public natural resources in trust for the benefit of present and future generations. The trustee must protect these natural resources and the corresponding public interest. The public trust doctrine starkly contrasts with current federal regulation of pesticides under the CWA and FIFRA.

A. The Public Trust Doctrine

The public trust doctrine arose in Roman law, resurfaced in medieval English common law, and entered American jurisprudence in the 19th century.³¹ According to its original Roman principles, the law of nature establishes public rights in water and other basic natural resources.³² This natural law principle protected public rights in fishing and navigation in rivers, riverbanks, the sea, and seashore.³³

In the United States, the public trust doctrine functions as a public property doctrine, where the government is trustee³⁴ of certain resources with a duty to manage them for the benefit of present and future generations: the trust’s beneficiaries.³⁵ The trust resources include—at a minimum—the navigable waters existing within the state upon statehood, and the submerged lands underneath them.³⁶ Many states have expanded the geographic scope of their trusts far beyond this narrow historical limitation.³⁷

Further, some states have expanded the traditional list of recognized trust uses. The public trust doctrine does not protect all possible uses that members of the public might make of any given trust resource, so a beneficiary must allege that the trustee is failing to protect or preserve a particular enforceable trust use. The “classic” list of purposes and activities that the public trust doctrine protects includes commerce, navigation, and fishing.³⁸ The Supreme Court, in *Illinois Central R.R. Co. v. Illinois*, described the

25. See, e.g., In re Water Use Permit Applications, Petitions for Interim Instream Flow Standard Amendments, and Petitions for Water Reservations for the Waiahole Ditch Combined Contested Case Hearing, 9 P.3d 409, 441–42, 451 (Haw. 2000) [hereinafter *Waiahole Ditch*].

26. Harrison C. Dunning, *The Public Trust: A Fundamental Doctrine of American Property Law*, 19 ENVTL. L. 515, 516 (1989) (describing states’ development of the public trust doctrine).

27. *Id.* (noting that those states treat the public trust doctrine as “an implied constitutional doctrine”); see, e.g., *San Carlos Apache Tribe v. Superior Court*, 972 P.2d 179, 199 (Ariz. 1999) (holding unconstitutional state legislation that would have prevented consideration of the public trust doctrine in water rights adjudications).

28. Joseph L. Sax, *The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention*, 68 MICH. L. REV. 471, 556 (1970).

29. *Id.* at 556–57.

30. *National Audubon Soc’y v. Superior Court of Alpine Cnty.*, 658 P.2d 709, 721, 13 ELR 20272 (Cal. 1983) (*Mono Lake*); Michael C. Blumm & Rachel D. Guthrie, *Internationalizing the Public Trust Doctrine: Natural Law and Constitutional and Statutory Approaches to Fulfilling the Saxion Vision*, 45 U.C. DAVIS L. REV. 741, 747 (2012).

31. MICHAEL C. BLUMM & MARY CHRISTINA WOOD, *THE PUBLIC TRUST DOCTRINE IN ENVIRONMENTAL AND NATURAL RESOURCES LAW* 3 (2013).

32. Steven W. Turnbull, *The Public Trust Doctrine: Accommodating the Public Need Within Constitutional Bounds—Orion Corp. v. State*, 109 Wash. 2d 621, 747 P.2d 1062 [18 ELR 20697] (1987), cert. denied, 108 S. Ct. 1996 (1988), 63 WASH. L. REV. 1087, 1089 (1988).

33. *Id.*

34. Specifically, the legislature is the trustee, agencies within the executive branch have trust obligations as agents of the legislature, and courts are enforcers of the trust. BLUMM & WOOD, *supra* note 31, at 5–6.

35. *Id.* at 3.

36. *Id.* at 7 (“[W]hat is generally thought of as the ‘traditional public trust’ . . . concerns primarily submerged lands and navigable waterways.”).

37. *Id.*

38. Ralph W. Johnson, *Water Pollution and the Public Trust Doctrine*, 19 ENVTL. L. 485, 495 (1989); see also *Illinois Cent. R.R. Co. v. Illinois*, 146 U.S. 387, 457 (1892).

public's property interest as "a title held in trust for the people of the State that they may enjoy the navigation of the waters, carry in commerce over them, and have liberty of fishing therein freed from the obstruction or interference of private parties."³⁹ Some courts have expanded the once rather exclusive list of navigation, commerce, and fishing to a nearly open-ended array of trust purposes.

The New Jersey Supreme Court in 1972 noted that "[o]ther states have readily extended the [public trust] doctrine, beyond the original purposes of navigation and fishing, to cover other public uses, and especially recreational uses."⁴⁰ In an often-quoted passage, the court stated, "[t]he public trust doctrine, like all common law principles, should not be considered fixed or static, but should be molded and extended to meet changing conditions and needs of the public it was created to benefit."⁴¹

The California Supreme Court discussed this issue extensively in *Marks v. Whitney*, stating that public trust easements "are traditionally defined in terms of navigation, commerce and fisheries. They have been held to include the right to fish, hunt, bathe, swim, to use for boating and general recreation purposes . . . and to use the bottom of the navigable waters for anchoring, standing, or other purposes."⁴² The court noted that "[t]he public uses to which tidelands are subject are sufficiently flexible to encompass changing public needs."⁴³

The same court, 12 years later in the *Mono Lake* decision, reaffirmed its previous list of interests, and extended the public trust doctrine's protection to public uses for ecology, recreation, and aesthetics.⁴⁴ The California Supreme Court described the objective of the public trust doctrine as "evol[ing] in tandem with the changing public perception of the values and uses of waterways."⁴⁵ The court stated that Los Angeles' diversion of freshwater streams from a saline lake imperiled "both the scenic beauty and the ecological values of Mono Lake," and effectively ruled that the public trust doctrine protects the public's interest in water quality by requiring the state to reconsider its water allocation in light of its trust duty.⁴⁶ The court noted that "[t]he human and environmental uses of Mono Lake—uses protected by the public trust doctrine—deserve to be

taken into account."⁴⁷ Three years later, a California court of appeal recognized this effect, and ruled that the state could modify water rights under the public trust doctrine if necessary for preservation of water quality.⁴⁸

Other states are beginning to understand the public trust doctrine as evolving to encompass changing public values and uses. States recognizing ecological values or water quality as a protected public trust use include California,⁴⁹ Hawaii,⁵⁰ and Pennsylvania.⁵¹ Even in those jurisdictions, however, the government's duty is not absolute.⁵² Courts following *Mono Lake* recognize competing state interests in preserving and promoting the use of natural resources, and provide guidelines for state agencies in making decisions affecting trust resources.⁵³

When planning and allocating trust resources, the state has an affirmative duty to consider public trust uses, as well as a duty to protect those uses whenever feasible.⁵⁴ However, as the California court said in *Mono Lake*:

As a matter of practical necessity the state may have to approve appropriations despite foreseeable harm to public trust uses. In so doing, however, the state must bear in mind its duty as trustee to consider the effect of the taking on the public trust . . . and to preserve, so far as consistent with the public interest, the uses protected by the trust.⁵⁵

Thus, the state has discretion when making decisions affecting trust resources or uses, but the state is constrained by its trust duties and its decisions are subject to judicial review. *Mono Lake* also held that states may always reconsider past decisions affecting public trust values in light of new information or in response to current needs.⁵⁶ The Hawaii Supreme Court affirmed the state agency's effective use of a higher level of scrutiny when reviewing private commercial uses.⁵⁷

39. 146 U.S. at 452.

40. *Borough of Neptune City v. Borough of Avon-by-the-Sea*, 294 A.2d 47, 55, 2 ELR 20519 (N.J. 1972).

41. *Id.* at 54.

42. 6 Cal. 3d 251, 259, 2 ELR 20049 (Cal. 1971).

43. *Id.*

44. *National Audubon Soc'y v. Superior Court of Alpine Cnty.*, 33 Cal. 3d 419, 434, 13 ELR 20272 (Cal. 1983) (*Mono Lake*); Donn W. Furman, *Poisoned Waters: An Examination of Agricultural Water Pollution*, 3 SAN JOAQUIN AGRIC. L. REV. 99, 144 (1993).

45. *Mono Lake*, 33 Cal. 3d at 434.

46. *Id.* at 432, 452 (determining that the public trust doctrine and California's appropriative water systems are integrated and requiring the state water board to consider impacts on trust resources when making allocation decisions, reversing the superior court's entry of summary judgment against the plaintiffs and its conclusion that the public trust doctrine is "subsumed in the water rights system of the state"); see Johnson, *supra* note 38, at 497; see also Turnbull, *supra* note 32 ("Applying the court's reasoning, a state might permissibly prohibit any land use having a deleterious impact on public trust interests.").

47. *Mono Lake*, 33 Cal. 3d at 452 (emphasis added).

48. *United States v. State Water Res. Control Bd.*, 227 Cal. Rptr. 161 (Cal. Ct. App. 1986); BLUMM & WOOD, *supra* note 31, at 166.

49. *Mono Lake*, 33 Cal. 3d at 434–35.

50. *Waiahole Ditch*, 9 P.3d 409, 465 (Haw. 2000).

51. *Robinson Twp., Washington Cnty. v. Pennsylvania*, 83 A.3d 901, 953, 43 ELR 20276 (Pa. 2013).

52. See, e.g., *Mono Lake*, 33 Cal. 3d at 441:

[T]he public trust is more than an affirmation of state power to use public property for public purposes. It is an affirmation of the duty of the state to protect the people's common heritage of streams, lakes, marshlands and tidelands, surrendering that right of protection only in rare cases when the abandonment of that right is consistent with the purposes of the trust.

53. See *id.* at 454–55.

54. *Id.* at 446.

55. *Id.* at 446–47.

56. *Id.* at 447; see also Robert H. Smith, *Livestock Production: The Unsustainable Environmental and Economic Effects of an Industry Out of Control*, 4 BUFF. ENVTL. L.J. 45, 83 (1996) (stating that the public trust doctrine's "application has potentially sweeping effects since even existing water permits or rights could be revoked in order to prevent violation of the public trust").

57. *Waiahole Ditch*, 9 P.3d 409, 454 (Haw. 2000) (stating that the practical effect of this conclusion is to place the burden on "those seeking or approving such uses to justify them in light of the purposes protected by the trust").

B. Regulation of Pesticide Water Pollution Under the CWA and FIFRA

The story of the environmental movement's involvement with pesticides—and according to some, the modern environmental movement itself—frequently begins with Rachel Carson's 1962 book *Silent Spring*.⁵⁸ By revealing the serious environmental harms of dichlorodiphenyltrichloroethane (DDT), she “is often credited with awakening a broad-scale public consciousness about environmental concerns.”⁵⁹ She helped prompt congressional legislation in the early 1970s, at a time when Congress passed many of the sweeping environmental statutes that make up the framework of current environmental law.⁶⁰

The CWA primarily addresses discharges of pollutants⁶¹ into waters of the United States and identifies the elimination of such discharges as a national goal.⁶² The CWA divides pollutant discharges into point sources⁶³ and non-point sources, and regulates only the former. The statutory definition of “pollutant” includes, *inter alia*, “chemical wastes” and “biological materials.”⁶⁴ The Supreme Court has held that the statutory list is not exhaustive, and that courts should interpret “pollutant” broadly.⁶⁵ The CWA establishes national effluent standards to regulate discharges into waters of the United States and creates exceptions in certain situations for individual discharges.⁶⁶

EPA or an authorized state agency regulates these individual exceptions for pollutant discharges through NPDES permits.⁶⁷ Before granting a permit, the authorized agency must consider local environmental conditions and determine that the discharge's effect on the area's water quality

will not be too extensive.⁶⁸ However, since 1979, EPA and states have used general permits, which often authorize a great number of sources that discharge into many different water bodies.⁶⁹ As discussed below, until 2007, EPA regulations required pesticide dischargers to seek individual NPDES permits.

The goal of FIFRA is to protect the environment and human health from the potential harms of pesticides,⁷⁰ regulating their use and sale⁷¹ through a uniform pesticide labeling system that indicates government approval for specified uses.⁷² EPA extensively reviews nearly every chemical pesticide and has exclusive federal authority over the approval and registration of commercially used pesticides.⁷³ FIFRA requires EPA to consider the effects of pesticides before approving them, directing it to determine, among other things, whether a pesticide “will perform its intended function without unreasonable adverse effects on the environment,” and whether “when used in accordance with widespread and commonly recognized practice [the pesticide] will not generally cause unreasonably adverse effects on the environment.”⁷⁴ However, this standard is generic and does not account for context, such as the local environment, as Prof. Jeffrey G. Miller explained in a 2014 article in the *Environmental Law Reporter (ELR)*.⁷⁵ Further, courts defer to EPA's determination if it is supported by a rational basis.⁷⁶ This

58. See, e.g., Richard O. Brooks & Ross A. Virginia, *Series Editors' Preface*, in MARY JANE ANGELO, *THE LAW AND ECOLOGY OF PESTICIDES AND PEST MANAGEMENT* xiii (Richard O. Brooks & Ross A. Virginia eds., 2013) (stating that the fundamental insights of Rachel Carson's book helped prompt Congress' gradual adoption of environmental laws); Zygmunt J.B. Plater, *From the Beginning, A Fundamental Shift of Paradigms: A Theory and Short History of Environmental Law*, 27 LOY. L.A. L. REV. 981, 981 (1994) (“First, the basic analytical approach and policy values underlying environmental law came from a fundamental paradigm shift born of Rachel Carson in 1961, perhaps assisted unwittingly by Ronald Coase, redefining the scope of how societal governance decisions should be made.”).

59. Elizabeth Magill, *Standing for the Public: A Lost History*, 95 VA. L. REV. 1131, 1183 (2009).

60. *Id.* at 1184 (“In 1972, the EPA banned the use of Rachel Carson's target—DDT—and Congress passed more landmark legislation, including the Clean Water Act, important amendments to the federal pesticide law, and the Consumer Product Safety Act . . .” (footnotes omitted)).

61. The CWA's definition of “discharge of pollutants” includes “any addition of any pollutant to navigable waters from any point source.” 33 U.S.C. §1362(12).

62. 33 U.S.C. §1251(a). “Waters of the United States” is one jurisdictional boundary of the CWA, meaning that discharges of pollutants to nonjurisdictional waters are unregulated.

63. The CWA defines “point source” as a “confined and discrete conveyance.” *Id.* §1362(14). Nonpoint sources are all other sources of pollution.

64. *Id.* §1362(6).

65. National Cotton Council of Am., Inc. v. U.S. EPA, 553 F.3d 927, 930, 39 ELR 20006 (6th Cir. 2009), *reh'g denied* (2009), *cert. denied*, 130 S. Ct. 1505 (2010) (citing *Rapanos v. United States*, 547 U.S. 715, 724, 36 ELR 20116 (2006)).

66. See 33 U.S.C. §§1312(a), 1312(b)(2), 1344, 1374.

67. See *id.* §1344(e); see also *League of Wilderness Defenders/Blue Mountains Biodiversity Project v. Forsgren*, 309 F.3d 1181, 1184 (9th Cir. 2002) (analyzing when NPDES permits are statutorily required).

68. See, e.g., *Headwaters, Inc. v. Talent Irrigation Dist.*, 243 F.3d 526, 530, 31 ELR 20535 (9th Cir. 2001). See also Meghan Rhatigan, *Legislation Overlap: Should the Clean Water Act or the Federal Insecticide, Fungicide and Rodenticide Act Prevail When Pesticides End Up in U.S. Waters?*, 79 NOTRE DAME L. REV. 2183, 2185 (2004).

69. U.S. EPA, *NPDES General Permit Inventory*, <http://cfpub.epa.gov/npdes/permitissuance/genpermits.cfm>; see Jeffrey M. Gaba, *Generally Illegal: NPDES General Permits Under the Clean Water Act*, 31 HARV. ENVTL. L. REV. 409, 410–11, 472 (2007) (arguing that general NPDES permits are illegal, and that “EPA has expanded its reliance on general permits over the years without, it appears, addressing the substantial legal and policy issues that are implicated by their use”). General permits “cover categories of point sources having common elements . . . that discharge the same types of wastes. General permits allow the permitting authority to allocate resources efficiently, especially when there is potentially a large number of permittees, and to provide timely permit coverage.” CLAUDIA COPELAND, CONG. RESEARCH SERV., RL32884, PESTICIDE USE AND WATER QUALITY: ARE THE LAWS COMPLEMENTARY OR IN CONFLICT? 12 (2012).

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

71. 7 U.S.C. §136a(a) (2012); *Headwaters*, 243 F.3d at 530.

72. 7 U.S.C. §136a(c)(9), (d) (2012).

73. Franklin, *supra* note 9, at 18 (stating that “virtually every chemical marketed as a pesticide must undergo pre-market review and registration by EPA” and describing FIFRA's pesticide regulatory system as “tightly controlled”).

74. 7 U.S.C. §136a(c)(5) (2012); Interim Statement and Guidance on Application of Pesticides to Waters of the United States in Compliance With FIFRA, 68 Fed. Reg. 48385 (Aug. 13, 2003).

75. Jeffrey G. Miller, *Plain Meaning, Precedent, and Metaphysics: Interpreting the “Addition” Element of the Clean Water Act Offense*, 44 ELR 10770, 10798 (Sept. 2014):

The CWA and FIFRA do not perform the same functions in protecting the environment. Under FIFRA, EPA registers pesticides for uses and applications that will not result in “unreasonable effects on the environment,” including water. By its nature, EPA's determination in the registration process is whether a pesticide will have unreasonable effects on water *generally*, rather than on particular water bodies, for it is not clear [during FIFRA registration] to what water bodies pesticides will be applied . . .

(emphasis added) (citation omitted).

76. See *Northwest Coal. for Alternatives to Pesticides v. U.S. EPA*, 544 F.3d 1043, 1045, 1053 (9th Cir. 2008) (remanding to EPA for failure to ade-

unreasonableness standard is FIFRA's only substantive environmental safeguard.⁷⁷

Taken together, the CWA and FIFRA have “contrast-ing objectives.”⁷⁸ The CWA requires permits for the discharge of pollutants into waterways, but FIFRA requires compliance only with a label approved by EPA.⁷⁹ Prof. Karl Coplan has noted that “[i]n contrast to the CWA approach to NPDES permitting, which requires all permits to ensure that discharges will not violate water quality standards, FIFRA specifically contemplates that adverse environmental effects will occur when FIFRA-registered pesticides are used as directed, or used in accordance with common practice.”⁸⁰ The CWA seeks to eliminate water pollution, but EPA's interpretation and implementation of FIFRA is as a method for approving the sale and use of pesticides.⁸¹

EPA initially attempted to accommodate the CWA and FIFRA's competing purposes, but in 2007, it issued a final rule exempting applications of pesticides in, on, or near jurisdictional waters from NPDES permit requirements, when the applicator acted in accordance with FIFRA.⁸² “For nearly thirty years prior to the adoption of the [f]inal [r]ule, pesticide labels issued under the FIFRA were required to contain a notice stating that the pesticide could not be ‘discharge[d] into lakes, streams, ponds, or public waters unless in accordance with an NPDES permit.’”⁸³ The policy change was based on EPA's revised interpretation of the CWA.⁸⁴ The issue first arose over environmental groups' challenges to weed control in irrigation ditches

and pesticide spraying for silvicultural pest control on U.S. Forest Service lands,⁸⁵ then “subsequently drew more attention in connection with efforts by public health officials throughout the country to combat mosquito-borne illnesses such as West Nile virus.”⁸⁶

In *National Cotton Council*, both environmental and industry groups challenged the exemption as beyond EPA's interpretive authority.⁸⁷ EPA defended by arguing that the text of the CWA is ambiguous as applied to pesticides, and that EPA reasonably determined that FIFRA-compliant applications of pesticides are not discharges of “pollutants.”⁸⁸ Industry groups and environmental organizations brought separate challenges directly in 11 circuit courts; the Judicial Panel on Multidistrict Litigation consolidated the petitions for review in the Sixth Circuit.⁸⁹ The court heard the case under the CWA's grant of original jurisdiction in federal circuit courts for issuances or denials of NPDES permits.⁹⁰

After reviewing the regulatory framework for pesticide discharges historically and under the new exemption, the Sixth Circuit struck down the rule under *Chevron* step one,⁹¹ holding that pesticides are unambiguously “pollutants” within the meaning of the CWA.⁹² The court ruled that the CWA's text requires permits for discharges of biological and chemical pesticides that leave a residue in water, when the discharges are made in, over, or near waters of the United States.⁹³ The court found that the necessary point source discharge existed because the CWA “provides that residual and excess chemical pesticides are added to the water by a ‘point source,’”⁹⁴ combined with EPA's inter-

quately explain its basis for its “unreasonable adverse effects” determination).

77. See Mary Jane Angelo, *Corn, Carbon, and Conservation: Rethinking U.S. Agricultural Policy in a Changing Global Environment*, 17 GEO. MASON L. REV. 593, 616 (2010) (“[FIFRA's] primary substantive criterion is that a pesticide may be registered only if its use will not cause an ‘unreasonable adverse effect on the environment.’”).

78. Kelly C. Connelly, *Pesticides and Permits: Clean Water Act v. Federal Insecticide, Fungicide, and Rodenticide Act*, 8 GREAT PLAINS NAT. RES. J. 35, 35 (2003).

79. *Id.* at 35–36; see also Miller, *supra* note 75.

80. Karl S. Coplan, *Citizen Litigants Citizen Regulators: Four Cases Where Citizens Suits Drove Development of Clean Water Law*, 25 COLO. NAT. RES., ENERGY & ENVTL. L. REV. 61, 100 (2014) (describing how the Oregon case *Headwaters, Inc. v. Talent Irrigation Dist.*, 243 F.3d 526, 31 ELR 20535 (9th Cir. 2001), eventually led to the Sixth Circuit's major decision in *National Cotton Council of Am., Inc. v. U.S. EPA*, 553 F.3d 927, 39 ELR 20006 (6th Cir. 2009), *reh'g denied* (2009), *cert. denied*, 130 S. Ct. 1505 (2010)).

81. See Mary Jane Angelo, *Corn, Carbon, and Conservation: Rethinking U.S. Agricultural Policy in a Changing Global Environment*, 17 GEO. MASON L. REV. 593, 616–20 (2010) (explaining FIFRA's registration process); Mary Jane Angelo, *The Killing Fields: Reducing the Casualties in the Battle Between U.S. Species Protection Law and U.S. Pesticide Law*, 32 HARV. ENVTL. L. REV. 95, 135–44 (2008) (arguing that EPA's interpretation of FIFRA as requiring a cost-benefit analysis conflicts with its duties under other federal environmental statutes).

82. *National Cotton Council*, 553 F.3d at 929.

83. *Id.* at 931 (citing EPA's Policy and Criteria Notice 2180.1 (1977)) (stating further that “[d]espite amendments made to the FIFRA's labeling requirements over the years, pesticide labels have always included a notice about the necessity of obtaining an NPDES permit”); see also Coplan, *supra* note 80, at 101–02.

84. *National Cotton Council*, 553 F.3d at 932:

The EPA concedes that pesticide residue (unlike pesticides generally) is a pollutant under the [CWA] Nonetheless, the EPA contends that pesticide residue is not subject to the NPDES permitting program because “at the time of discharge to a water of the United States, the material in the discharge must be both a pollut-

ant, and from a point source” . . . [and] by the time it becomes a pollutant it is no longer from a “point source.”

In other words, EPA argued that at the time of discharge from a point source, a pesticide is not a pollutant, and that excess pesticides or pesticide residues do not exist until after the discharge is complete, by which time EPA treats them as nonpoint source pollutants. CLAUDIA COPELAND, *supra* note 69, at 9–10. The Sixth Circuit “rejected EPA's attempt to ‘inject[] a temporal requirement to the “discharge of a pollutant,”’ concluding that such an interpretation is unsupported by the CWA, and is also contrary to the purpose of the permitting program.” *Id.* at 10 (quoting *National Cotton Council*, 553 F.3d at 939).

85. *Headwaters, Inc.*, 243 F.3d at 528–29; see CLAUDIA COPELAND, *supra* note 69, at 1–2.

86. CLAUDIA COPELAND, *supra* note 69, at 2.

87. *National Cotton Council*, 553 F.3d at 929.

88. *Id.* at 929–30, 934.

89. *Id.* at 932.

90. 33 U.S.C. §1369(b)(1)(F); *National Cotton Council*, 553 F.3d at 933.

91. *Chevron U.S.A., Inc. v. Natural Res. Def. Council, Inc.*, 467 U.S. 837, 842, 14 ELR 20507 (1984):

When a court reviews an agency's construction of the statute which it administers, it is confronted with two questions. First, always, is the question whether Congress has directly spoken to the precise question at issue. If the intent of Congress is clear, that is the end of the matter [Second,] is whether the agency's [action] is based on a permissible construction of the statute.

92. *National Cotton Council*, 553 F.3d at 930–33, 935–40 (interpreting the statutory terms “chemical waste” and “biological materials” and determining that the plain language of the CWA's definition of “point source” unambiguously includes chemical and biological pesticides, and that pesticide residues and excess pesticides constitute point source pollution).

93. *Id.* at 940; Heather Marie McCarthy Radcliffe, *Pesticides and Farmers: Life After National Cotton Council of America v. EPA*, 20 SAN JOAQUIN AGRIC. L. REV. 151, 152–53 (2011).

94. *National Cotton Council*, 553 F.3d at 940.

pretation that “[p]oint sources need only convey pollutants into navigable waters to be subject to the [CWA].”⁹⁵ Accordingly, the court vacated EPA’s rule.⁹⁶

The Supreme Court denied the industry’s petition for certiorari, effectively making a significant number of point source pesticide discharges nationwide newly subject to NPDES permit requirements.⁹⁷ In 2011, in response to the Sixth Circuit’s decision and the Supreme Court’s denial of review, EPA issued the PGP to regulate the four most common purposes for direct-to-water pesticide discharges: mosquito and other flying insect pest control; weed and algae pest control; animal pest control; and forest canopy pest control.⁹⁸ EPA estimated that the court’s ruling affected approximately 5.6 million pesticide applications annually,⁹⁹ and sought to regulate these discharges without requiring individual NPDES permits in all instances.

The PGP is a lengthy document that applies in locations where EPA is the NPDES permitting authority.¹⁰⁰ Under the CWA’s system of cooperative federalism, states have the option to administer the NPDES program in their state and issue NPDES permits, subject to EPA review.¹⁰¹ EPA-issued general permits, including the PGP, authorize discharges in the four states and certain federal areas where EPA is the NPDES permitting authority.¹⁰² In all other states, the state—or the state agency to which it has delegated the authority—has power to issue general NPDES permits.¹⁰³ All 46 authorized states have developed and issued general pesticide permits equivalent to the PGP,¹⁰⁴ using the federal PGP as a model.¹⁰⁵ Many of these are practically indistinguishable from EPA’s, although others contain provisions that vary widely in restrictiveness.¹⁰⁶ For purposes of simplifying the analysis below, the federal PGP and state equivalents are treated

as identical because of substantial similarities in terms, content, and scope.

The federal PGP covers approximately 500 different pesticide active ingredients.¹⁰⁷ When operators satisfy its terms, the PGP covers their point source discharges and authorizes them under the CWA without the need for individual permits.¹⁰⁸ Operators under the PGP are:

[A] variety of entities, including agricultural interests involved in crop and timber tract production, forest nurseries, and operating irrigation systems; pesticide and agricultural chemical manufacturing; mosquito or other vector control districts and commercial applicators that service them; utilities . . . ; and government agencies and departments engaged in air and water resource management and conservation.¹⁰⁹

The PGP imposes three main substantive duties on operators: (1) they must minimize pesticide discharges to waters using practices such as applying the lowest effective quantity for controlling the target pest; (2) they must prepare pesticide discharge management plans to record their pest management practices; and (3) they must monitor the treatment area for observable adverse effects.¹¹⁰

The PGPs are politically controversial, particularly in the agriculture community.¹¹¹ Industry groups have backed several bills in Congress to negate the *National Cotton Council* decision and remove the necessity of PGPs,¹¹² calling into question the longevity of even the minimal environmental protections EPA created. Early versions would have amended the CWA, but bills introduced in the 111th Congress would have amended FIFRA by, for example, “exempt[ing] FIFRA-authorized activities from permits required by other federal environmental laws (including the CWA), other federal non-environmental permits or licenses, as well as state or local laws and ordinances.”¹¹³ A subsequent provision that would have overturned the *National Cotton Council* decision passed the U.S. House of Representatives in the 112th Congress in 2012.¹¹⁴

There are some point source discharges of pesticides that the PGPs do not authorize, such as discharges that are likely to adversely affect threatened or endangered spe-

95. *Id.* (citing 73 Fed. Reg. 33703 (June 13, 2008)).

96. *Id.*

97. Franklin, *supra* note 9, at 19; Elisabeth A. Holmes & Charles M. Tebbutt, *Power, Politics, and Poison: The Story Behind National Cotton Council of America v. U.S. EPA*, 41 ELR 10946, 10946 (Oct. 2011).

98. PGP, *supra* note 12. A discharge must qualify as one of these four “pesticide use patterns” to be covered by the PGP. *Id.* §1.1.1.

99. CLAUDIA COPELAND, *supra* note 69, at 12.

100. *Id.* at 12–13. Including appendices, the PGP is 174 pages long. See PGP, *supra* note 12.

101. 33 U.S.C. §1342(d)(2) (2012); see WILLIAM H. RODGERS JR., 2 ENVTL. L. §4:26 (West 2014).

102. U.S. EPA, *NPDES General Permit Inventory*, <http://cfpub.epa.gov/npdes/permitissuance/genpermits.cfm>. These areas are the states of Idaho, Massachusetts, New Hampshire, and New Mexico, as well as Washington, D.C., and certain other federal lands. *Id.*

103. *Id.* For EPA’s specific regulatory requirements for general permits, see 40 C.F.R. §122.28 (2014). See also Gaba, *supra* note 69, at 424–28 (describing the current regulatory requirements of general NPDES permits).

104. CropLife America, *Summary of EPA’s Final Clean Water Act National Pollutant Discharge Elimination System (NPDES) Pesticide General Permit (PGP) 2* (2011), <http://www.aquatics.org/npdes/NPDES%20CLA%20Analysis-%20Summary%20of%20PGP%20Dec%202011.pdf>. EPA has 90 days upon receipt to review, make objections to, and make recommendations on proposed state permits, including general permits. 33 U.S.C. §1342(d)(2) (2012); 40 C.F.R. §123.44(a)(1)–(2) (2014).

105. CLAUDIA COPELAND, *supra* note 69, at 12–13.

106. CropLife America, *supra* note 104.

107. CLAUDIA COPELAND, *supra* note 69, at 12.

108. *Id.* at 1 (“In compliance with the [CWA], any Operator of a point source discharge of pollutants (i.e., discharge) resulting from the application of pesticides and eligible for permit coverage under Part 1.1 . . . is authorized to discharge to Waters of the United States in accordance with the requirements of this permit.”).

109. *Id.* at 12.

110. *Id.*; see also PGP, *supra* note 12.

111. CLAUDIA COPELAND, *supra* note 69, at 15–16.

112. See, e.g., To Amend the Federal Insecticide, Fungicide, and Rodenticide Act to Improve the Use of Certain Registered Pesticides, H.R. 6087, 111th Cong. §2 (2010); A Bill to Amend the Federal Insecticide, Fungicide, and Rodenticide Act to Improve the Use of Certain Registered Pesticides, S. 3735, 111th Cong. §2 (2010).

113. CLAUDIA COPELAND, *supra* note 69, at 15.

114. *Id.* at 16. The provision was included in the House’s 2012 Farm Bill, but was not in the version passed by the U.S. Senate. *Id.*

cies under the Endangered Species Act (ESA),¹¹⁵ and aerial spraying when not used for one of the four use patterns in the PGP such as forest canopy pest control. In a 2002 case, the Ninth Circuit held that the U.S. Forest Service's aerial pesticide spraying over forests and streams was a point source discharge requiring an NPDES permit because the pesticide application "clearly meets the statutory definition of a point source."¹¹⁶ The following year, EPA's General Counsel issued a legal memorandum to officials located in states within the Ninth Circuit, explaining his disagreement with the court's holding.¹¹⁷ Thus, outside of the Ninth Circuit, aerial pesticide spraying remains unregulated by either the CWA or FIFRA.¹¹⁸

Most applications of pesticides are in fact nonpoint source pollution, because operators usually apply pesticides over large tracts of land, meaning that any resulting water pollution does not originate from a "confined and discrete conveyance"¹¹⁹ and making the CWA's point source regulations and technology-based requirements inapplicable. Nor is the CWA triggered when runoff takes excess amounts to jurisdictional waters, because the statute defines "point source" to exclude "agricultural stormwater discharges and return flows from irrigated agriculture."¹²⁰ Thus, FIFRA's "unreasonable adverse effects" standard is the only direct federal protection for the environment from nonpoint source pesticide discharges. Its statutory definition provides some guidance by requiring EPA to take into account the economic, social, and health benefits of pesticide use and to weigh these benefits when determining whether its projected adverse environmental impacts are "unreasonable."¹²¹

Congress acknowledged the nonpoint source pollution regulatory gap when it amended the CWA in 1987, specifically reminding states of their police power authority to control nonpoint source pollution.¹²² Congress authorized a state-run system to control sources of runoff, including agricultural pollution, by enacting a new nonpoint source pollution control provision, §319.¹²³ The provision required states to prepare comprehensive assessments of nonpoint source pollution throughout the state and, where possible,

on an individual watershed basis.¹²⁴ Once the state has identified the problems, §319 requires it to prepare and implement comprehensive nonpoint source pollution control plans to address them.¹²⁵

However, the only consequence for a state's failure to submit both the §319(a) report and the §319(b) management program is that the state is ineligible for federal funding to implement its nonpoint source pollution management plan.¹²⁶ Effectively, therefore, "[s]tate-developed controls [pursuant to §319] remain largely voluntary, although there has been a minor trend toward state adoption of enforceable controls."¹²⁷ The counterweight against states adopting §319 plans and receiving federal funding is the enormous political pressure from the agricultural industry, which vigorously resists attempts to regulate nonpoint source pollution.¹²⁸

III. The Public Trust Doctrine, the CWA, and FIFRA

In a public trust case similar to the hypothetical ones discussed below in Part V, the party opposing application of the public trust doctrine to pesticide use may argue that the doctrine is federally preempted or "displaced" by the CWA or FIFRA. This argument would likely posit that the public trust doctrine works best when there is no regulatory system in place, and that federal environmental statutes occupy the field of pesticide water pollution.

Federal preemption is based on the Supremacy Clause of the U.S. Constitution,¹²⁹ which "invalidates state laws that 'interfere with, or are contrary to,' federal law."¹³⁰ The Tenth Amendment vests in the states all powers not provided to the federal government.¹³¹ The Supreme Court's preemption jurisprudence recognizes the competing values of federal authority and "the interest of avoiding unin-

115. *Id.* at 13. The ESA is codified at 16 U.S.C. §§1531–1544, ELR STAT. ESA §§2–18.

116. *See, e.g.,* League of Wilderness Defenders/Blue Mountains Biodiversity Project v. Forsgren, 309 F.3d 1181, 1190 (9th Cir. 2002) (stating that to allow EPA to define the spraying as nonpoint source would "contravene the intent of Congress").

117. CLAUDIA COPELAND, *supra* note 69, at 5 (citing Robert Fabricant, EPA General Counsel, *Interpretive Statement and Guidance Addressing Effect of Ninth Circuit Decision in League of Wilderness Defenders v. Forsgren on Application of Pesticides and Fire Retardants* (2003)). The Fabricant memorandum stated that even within the Ninth Circuit, "EPA would not acquiesce to the ruling in the case of materials other than pesticides (such as those used for fire control), or in circumstances where pesticides are not applied directly over and into waters of the United States." *Id.*

118. *Id.*

119. 33 U.S.C. §1362(14) (2012).

120. *Id.*

121. Coplan, *supra* note 80, at 100.

122. 33 U.S.C. §1329.

123. *Id.*; *see also* Adler, *supra* note 22.

124. 33 U.S.C. §1329(a) ("The Governor of each State shall, after notice and opportunity for public comment, prepare and submit to the [EPA] Administrator for approval, a report [containing the information listed]."). If a state failed to submit a report, Congress authorized EPA to prepare a report for that state. *Id.* §1329(d)(3).

125. *Id.* §1329(b).

126. *Id.* §1329(h)(1).

127. Adler, *supra* note 22 (assessing the legal and regulatory approaches to agricultural water pollution and suggesting options for reducing agricultural pollution); *see also* Jarrell-King, *supra* note 22, at 19 (describing a lack of sufficient funding for §319 programs, as well as a lack of consequences for states' failures to comply with the provision and little incentives for farmers to voluntarily participate).

128. *See* Jarrell-King, *supra* note 22, at 21:

[T]he strength of the agricultural lobbying sector allows it to place considerable pressure on legislators to prevent legislation running counter to the interests of its constituents. With threats of financial repercussions and political turmoil, states are often forced to create toothless pollution control plans or, worse yet, none at all.

(citations omitted).

129. U.S. CONST. art. VI, cl. 2 ("The laws of the United States are the supreme law of the land.").

130. *Hillsborough Cnty., Fla. v. Automated Med. Lab., Inc.*, 471 U.S. 707, 712 (1985) (citations omitted).

131. U.S. CONST. amend. X ("The powers not delegated to the United States by the Constitution, nor prohibited by it to the states, are reserved to the states respectively, or to the people.").

tended encroachment on the authority of the [s]tates.”¹³² Congress can expressly preempt state laws, but the lack of an express provision does not prevent a statute from implicitly preempting state laws.¹³³

There are two common types of implied preemption.¹³⁴ The first is conflict preemption, where the state action makes it “impossible for a private party to comply with both state and federal requirements,”¹³⁵ or the state action “stands as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress.”¹³⁶ The second is field preemption, where the state action occurs in a field that Congress “intended federal law to occupy . . . exclusively.”¹³⁷ Saving clauses are express provisions that operate to prevent a statute from having preemptive effect.¹³⁸ The Supreme Court has explained that “the ultimate touchstone” in every preemption analysis is congressional intent.¹³⁹ In addition to vertical preemption—federal law over state law—some federal laws can preempt other federal law, a principle known as horizontal preemption or displacement.¹⁴⁰

A The Public Trust Doctrine

A court performing a preemption analysis of state public trust doctrine must first determine the specific origins of the doctrine in that state. The analysis may depend on whether the public trust doctrine is characterized as having constitutional underpinnings, being rooted in natural law, or originating in common law or statute. However, that distinction may not matter, according to the late Prof. Ralph W. Johnson:

In general, state attempts to protect public trust resources are not likely to encounter many preemption problems. The U.S. Supreme Court maintains a presumption against federal preemption when federal legislation enters an area of traditional state power. The public trust doctrine, which protects local public interests and the environment, is a doctrine grounded in property law which is an area traditionally governed by the states. Furthermore, the federal government’s efforts to protect the environment have generally stressed the importance

of a collaborative effort between the states and the federal government.¹⁴¹

This prediction was made over 20 years ago, but the underlying principles have not changed.

If public trust is characterized as a federal common-law doctrine, the argument becomes stronger that federal statutes regulate the entire field and displace public trust suits.¹⁴² Although the Supreme Court declared in *Erie R.R. Co. v. Tompkins* in 1938 that “[t]here is no federal general common law,”¹⁴³ since then, “it has become clear that this statement is not completely accurate.”¹⁴⁴ Federal courts may create “specialized” federal common law.¹⁴⁵ “The role of federal common law is very narrow and is subject to the paramount authority of Congress. Where a congressional scheme speaks directly to a question which would otherwise be answered by federal common law, federal legislation preempts federal common law.”¹⁴⁶ This presumption alone would likely be sufficient for federal environmental statutes to displace a federal public trust cause of action.

In *American Electric Power Co. v. Connecticut*, in an analogous context, the Supreme Court held that “the Clean Air Act and the EPA actions it authorizes displace any federal common law right to seek abatement of carbon-dioxide emissions from fossil-fuel fired power plants.”¹⁴⁷ The plaintiffs argued that federal common law was not displaced until EPA actually exercises its regulatory authority, but the Supreme Court said “[t]he critical point is that Congress delegated to EPA the decision whether and how to regulate carbon-dioxide emissions from power plants: the delegation is what displaces federal common law.”¹⁴⁸ This reasoning could be fatal to the possibility of bringing pesticides within a federal public trust doctrine’s reach,¹⁴⁹ but it is distinguishable in a public trust case based on state law for three reasons.

141. Ralph W. Johnson et al., *The Public Trust Doctrine and Coastal Zone Management in Washington State*, 67 WASH. L. REV. 521, 591 (1992) (citations omitted).

142. See *District of Columbia v. Air Florida, Inc.*, 750 F.2d 1077, 1085 n.43 (D.C. Cir. 1984) (affirming the dismissal of a city’s lawsuit against a commercial airline seeking to recover the costs of emergency services and clean-up after a plane crash, stating:

We emphasize that we imply no opinion regarding either the applicability of the public trust doctrine to the federal government or the appropriateness of using the doctrine to afford trustees a means for recovering from tortfeasors the cost of restoring public waters to their pre-injury condition. . . . [W]e think that there is an issue whether Congress has preempted some or all of the field which a federal common-law public trust doctrine would occupy.)

143. 304 U.S. 64, 78 (1938) (“Except in matters governed by the Federal Constitution or by Acts of Congress, the law to be applied in any case is the law of the State.”).

144. 19 FED. PRAC. & PROC. JURIS. §4514 (2d ed. 2014).

145. *Id.*

146. *Air Florida*, 750 F.2d at 1085 (quotations omitted).

147. 564 U.S. ___, 131 S. Ct. 2527, 2537, 41 ELR 20210 (2011) (denying plaintiffs’ federal common-law nuisance claim, but remanding for consideration of whether a claim is available under state nuisance law).

148. *Id.* at 2538.

149. See *Alec L. et al. v. Jackson*, 863 F. Supp. 2d 11, 16, 42 ELR 20115 (D.D.C. 2012) (holding that the public trust doctrine is a matter of state law, dismissing the plaintiffs’ complaint alleging violations of the public trust doctrine by federal agencies, and viewing “as distinctions without a difference” that plaintiffs’ attempts to limit *American Electric Power* to its facts by distinguishing nuisance common law from the public trust doctrine); Andrew J. Marks, *Climate Change Lawsuits Under the Public Trust Doctrine in the Wake*

132. *CSX Transp., Inc. v. Easterwood*, 507 U.S. 658, 663–64 (1993); see also *Rice v. Santa Fe Elevator Corp.*, 331 U.S. 218, 230 (1947) (“[W]e start with the assumption that the historic police powers of the States were not to be superseded by the Federal Act unless that was the clear and manifest purpose of Congress.”); Ann M. Lininger, *Narrowing the Preemptive Scope of the Clean Water Act as a Means of Enhancing Environmental Protection*, 20 HARV. ENVTL. L. REV. 165, 170 (1996).

133. See *Preemption as Purposivism’s Last Refuge*, 126 HARV. L. REV. 1056, 1057 (2013).

134. See, e.g., *id.*

135. *English v. General Elec. Co.*, 496 U.S. 72, 79 (1990).

136. *Geier v. American Honda Motor Co.*, 529 U.S. 861, 873 (2000) (quoting *Hines v. Davidowitz*, 312 U.S. 52, 67 (1941)) (quotations omitted).

137. *Freightliner Corp. v. Myrick*, 514 U.S. 280, 287 (1995).

138. But even a saving clause does not preclude the possibility of implied federal preemption. See *supra* note 133.

139. *Wyeth v. Levine*, 555 U.S. 555, 564 (2009) (quoting *Medtronic, Inc. v. Lohr*, 518 U.S. 470, 485 (1996)) (internal quotations omitted).

140. See Samuel Issacharoff & Catherine M. Sharkey, *Backdoor Federalization*, 53 UCLA L. REV. 1353, 1370 (2006).

First, the Supreme Court is less willing to find vertical preemption than it is to find displacement.¹⁵⁰ A plaintiff could argue that the public trust doctrine requires states to have the ability to prevent effects on trust resources, and that Congress did not intend to divest states of this power when enacting the environmental statutes because of the statutes' saving clauses and cooperative federalism systems.¹⁵¹

Second, the Court itself distinguished EPA's regulatory systems under the CWA and the Clean Air Act (CAA) in dictum in *American Electric Power Co.*, stating, "Congress could hardly preemptively prohibit every discharge of carbon dioxide unless covered by a permit. After all, we each emit carbon dioxide merely by breathing."¹⁵² A plaintiff could argue that public trust remedies affecting pesticide water pollution will affect only the state or a small number of individual dischargers, rather than potentially every citizen, as the Court feared.

Third, the public trust is in an area of traditional state power, whether viewed as property law¹⁵³ or as comparable to police powers.¹⁵⁴ A plaintiff can cite the Court's long-standing presumption against federal preemption of state law in areas of traditional state powers, as well as the government's general emphasis on federal and state collaboration in protecting the environment,¹⁵⁵ in arguing that federal environmental statutes do not preempt public trust claims.¹⁵⁶

B. The CWA

The CWA, in addition to its noteworthy cooperative federalism approach,¹⁵⁷ contains two provisions involving inde-

pendent state regulation.¹⁵⁸ The first provision preserves states' existing police power authority and jurisdiction over state waters, as well as their right to adopt stricter limitations on individual discharges.¹⁵⁹ The text of §510 reads:

Except as expressly provided in this chapter, nothing in this chapter shall (1) preclude or deny the right of any State . . . to adopt or enforce (A) any standard or limitation respecting discharges of pollutants, or (B) any requirement respecting control or abatement of pollution; . . . or (2) be construed as impairing or in any manner affecting any right or jurisdiction of the States with respect to the waters (including boundary waters) of such States.¹⁶⁰

The second provision is a part of the citizen suit clause, and states: "Nothing in this section shall restrict any right which any person (or class of persons) may have under any statute or common law to seek enforcement of any effluent standard or limitation or to seek any other relief (including relief against the Administrator or a State agency)."¹⁶¹ These two provisions together constitute the CWA's saving clause.¹⁶²

In *International Paper Co. v. Ouellette*, the Supreme Court held that the CWA preempted Vermont's state common-law doctrine of nuisance with respect to effluent discharges into Lake Champlain originating from another state.¹⁶³ The issue for the Court was "whether the [CWA] pre-empts a common-law nuisance suit filed in a Vermont court under Vermont law, when the source of the alleged injury is located in New York."¹⁶⁴ Reversing in part the U.S. Court of Appeals for the Second Circuit—which had held that the CWA's saving clauses acting together preserved Vermont's ability to apply common law—the Court held that the CWA "pre-empts state law to the extent that the state law is applied to an out-of-state point source."¹⁶⁵

But on the issue of whether the CWA occupied the entire field of pollution regulation, the Court importantly noted that the existence of a saving clause in the CWA "negates the inference that Congress 'left no room' for state causes of action."¹⁶⁶ In this case, however, the Court's recognition that state causes of action could remain valid did not help the environmental plaintiff. Relying on conflict preemption instead of field preemption, the Court determined that state nuisance law "stands as an obstacle to the full implementation of the CWA," because applying Vermont's state common law in the New York-based case would "have the potential to undermine [the CWA's]

of AEP v. Connecticut, 13 No. 1 ABA ENVTL. LITIG. & TOXIC TORT COMM. NEWSL. 10, 13 (2011) ("[T]he public trust cases filed in state court rely on the doctrine under state law rather than federal common law . . . [and] may yet survive.").

150. James Flynn, *Climate of Confusion: Climate Change Litigation in the Wake of American Electric Power v. Connecticut*, 29 GA. ST. U. L. REV. 823, 850 (2013) (noting the requirement of a finding of manifest congressional intent to preempt state law).

151. See *infra* Parts III.B. & C.

152. *American Elec. Power Co.*, 131 S. Ct. at 2538; Flynn, *supra* note 150, at 852 (describing the slippery-slope argument that greenhouse gas emissions differ from water pollution because every citizen could be subject to air pollution lawsuits and that "one amicus brief for the petitioners suggested that an affirmative ruling by the Court would 'permit literally anyone alleging climate change-based damages to sue any entity or natural person in the world'" (citing Brief Amicus Curiae of the Chamber of Commerce of the United States of America in Support of Petitioners 5–6, *American Elec. Power Co. v. Connecticut*, 131 S. Ct. 2527 (2011) (No. 10-174), 2011 WL 396512 at *5)). The CAA is codified at 42 U.S.C. §§7401–7671q, ELR STAT. CAA §§101–618.

153. See Johnson et al., *supra* note 141, at 591.

154. Donna Jalbert Patalano, *Police Power and the Public Trust: Prescriptive Zoning Through the Conflation of Two Ancient Doctrines*, 28 B.C. ENVTL. AFF. L. REV. 683, 683–84 (2001) (describing the public trust doctrine and the police power as bearing "a close relation" and as sharing a "close historical affinity").

155. See Johnson et al., *supra* note 141, at 591 (citing 33 U.S.C. §1251(b), *Askew v. American Waterways Operators, Inc.*, 411 U.S. 325, 3 ELR 20362 (1973)).

156. See, e.g., *Napier v. Atlantic Coast Line R.R. Co.*, 272 U.S. 605, 611 (1926) ("The intention of Congress to exclude states from exerting their police power must be clearly manifested."); see also note 130 and accompanying text.

157. See, e.g., Johnson et al., *supra* note 141, at 591.

158. See *International Paper Co. v. Ouellette*, 479 U.S. 481, 485, 17 ELR 20327 (1987); see also *supra* note 133, at 1059.

159. 33 U.S.C. §1370 (2012).

160. *Id.*

161. *Id.* §1365(e).

162. See, e.g., 479 U.S. at 485 (referring to CWA §§505(e) and 510 in stating that "[t]he District Court held that these two provisions (together, 'the saving clause') made it clear that federal law did not pre-empt entirely the rights of [s]tates to control pollution").

163. *International Paper Co.*, 479 U.S. at 494, 496.

164. *Id.* at 483.

165. *Id.* at 500.

166. *Id.* at 492; see also *supra* note 133, at 1059.

regulatory structure.”¹⁶⁷ Finding that the language of §510, read together with the citizen suit provision, §505, arguably limits the clause’s effect “to discharges flowing *directly* into a State’s own waters, *i.e.*, discharges from within the State,”¹⁶⁸ the Court determined that §510 “does not preclude pre-emption of the law of an affected [*i.e.*, downstream] State.”¹⁶⁹ In other words, the CWA saving clause will not save a state law cause of action from being preempted where the discharge point and the downstream effect are in different states.

Public trust plaintiffs can take advantage of the CWA’s saving clause and avoid an *Ouellette*-like conflict preemption result by filing the lawsuit in the state where the pollution occurred, under that state’s common law. The Court in *Ouellette* specifically noted:

[N]othing in the [CWA] bars aggrieved individuals from bringing a state nuisance claim pursuant to the law of the *source* State. By its terms the CWA allows States such as New York to impose higher standards on their own point sources, and in *Milwaukee v. Illinois*, 451 U.S. 304 (1981)] we recognized that this authority may include the right to impose higher common-law as well as higher statutory restrictions.¹⁷⁰

Further, public trust plaintiffs can rely on Justice Lewis Powell’s indication for the majority that the existence of the CWA’s saving clause would defeat a broad claim of field preemption.

In the case of point source pollution, a court would need to determine whether the PGP leaves room for the public trust doctrine. The federal PGP contains a saving clause titled “Other Federal and State Laws”:

Operators must comply with all other applicable federal and state laws and regulations that pertain to the application of pesticides. For example, this permit does not negate the requirements under [FIFRA] Additionally, other laws and regulations might apply to certain activities that are also covered under this permit (*e.g.*, United States Coast Guard regulations).¹⁷¹

167. 479 U.S. at 494, 496;

In determining whether Vermont nuisance law ‘stands as an obstacle’ to the full implementation of the CWA, it is not enough to say that the ultimate goal of both federal and state law is to eliminate water pollution. A state law also is pre-empted if it interferes with the methods by which the federal statute was designed to reach this goal. In this case the application of Vermont law against IPC would allow respondents to circumvent the NPDES permit system, thereby upsetting the balance of public and private interests so carefully addressed by the Act.

(citation omitted).

168. *Id.* at 493;

Section 505(e) merely says that “[n]othing in this section,” *i.e.*, the citizen-suit provisions, shall affect an injured party’s right to seek relief under state law; it does not purport to preclude pre-emption of state law by other provisions of the Act. Section 510, moreover, preserves the authority of a State “with respect to the waters (including boundary waters) of such Stat[e].”

169. *Id.*

170. *Id.* at 497.

171. PGP, *supra* note 12, §1.5.

This language appears sufficiently broad to preserve state common law. The plaintiff would argue that the public trust doctrine is an aspect of state law and it pertains to the application of pesticides.

In the nonpoint source pollution context, the late Prof. Johnson asked and answered, “[w]hy rely on the public trust doctrine for nonpoint pollution control when the nation has a comprehensive national water pollution control system in place? The answer is that the national system has been ineffective in controlling nonpoint pollution.”¹⁷² He further noted that CWA §319 “call[s] for still more study and conferences on nonpoint pollution, eventually aimed at providing some control. Meanwhile, agricultural and other nonpoint pollution problems worsen. Not surprisingly, the courts are being asked to plug this gap in the nation’s pollution control program, often with the public trust doctrine.”¹⁷³ The public trust doctrine can provide enhanced protection for the environment without upsetting the existing environmental regulatory framework.

C. FIFRA

FIFRA’s one-time stranglehold over the area of pesticide regulation is loosening as against other federal statutes and state laws.¹⁷⁴ Even without any major revisions to FIFRA’s text, lately, “third-party plaintiffs have used other environmental statutes and legal principles to effect dramatic changes in federal pesticide policy through the courts.”¹⁷⁵ Section 24 of FIFRA¹⁷⁶ gives states regulatory control over some aspects of the sale and use of federally registered pesticides.¹⁷⁷ Under §24(b), known as the preemption clause,¹⁷⁸ state authority is controlling as long as it does not impose any “requirements for labeling or packing in addition to or different from those required” by FIFRA.¹⁷⁹

In *Bates v. Dow AgroSciences LLC* in 2005, the Supreme Court reversed the U.S. Court of Appeals for the Fifth Circuit’s ruling that FIFRA expressly preempted farmers’ claims for crop damages resulting from a new herbicide.¹⁸⁰ The Court for the first time addressed the scope of FIFRA preemption as applied to state-law claims

172. Johnson, *supra* note 38, at 490.

173. *Id.* at 491.

174. See Franklin, *supra* note 9, at 18 (stating that in the first decade of the 21st century, “federal courts have rendered significant decisions subjecting FIFRA registrations to the procedural and substantive requirements of the [CWA] and [the ESA]. Federal courts have also increased pesticide manufacturers’ exposure to state product liability laws that interpret federal labeling decisions narrowly or disregard the federal label altogether”).

175. *Id.*

176. 7 U.S.C. §136v (2012).

177. Elizabeth C. Brown et al., *A Practitioner’s Guide to the Federal Insecticide, Fungicide, and Rodenticide Act*, in PESTICIDE REGULATION DESKBOOK 3, 78 (Env’tl. Law Inst. et al. eds., 2001).

178. DAVID M. WHITACRE & SHANE A. ANDERSON, DEFENDING PESTICIDES IN LITIGATION §6.2, at 122 (2014) (stating that §24(b) “has provided agricultural chemical manufacturers a strong defense to claims challenging the adequacy of their products’ labeling, warning, instructions, and packaging”).

179. 7 U.S.C. §136v(b); see Courtney T. Joiner, *Bates v. Dow Agrosciences LLC: The Beginning of the End of the “Era of Irresponsibility,”* 33 S.U. L. REV. 361, 368 (2006).

180. 544 U.S. 431, 436, 454, 35 ELR 20087 (2005).

related to pesticides.¹⁸¹ The Court held that FIFRA preempts state statutes or common-law rules only if two conditions are met: first, the state law or rule must affect labeling or packaging requirements; and second, it must be “in addition to or different from” FIFRA requirements.¹⁸² Further, the Court also determined that FIFRA does not expressly preempt causes of action for defective design and manufacture, negligent testing, or breach of express warranty, because none of those claims “require that manufacturers label or package their products in any particular way.”¹⁸³

The *Bates* opinion speaks directly to product liability claims rather than environmentally motivated causes of action, but its language substantially decreases the likelihood of a court determining that FIFRA preempts the public trust doctrine.

Until *Bates*, federal and state court decisions had been fairly consistent in holding that [Section 24](b) preempted any state law claim that directly or indirectly attacked the adequacy of the warnings on the EPA-approved pesticide label, no matter how the plaintiff chose to couch her claim. . . . One of the routine tests used by courts in looking at whether a particular claim was preempted was whether one could reasonably foresee that the pesticide “manufacturer, in seeking to avoid liability for the error, would choose to alter the product or the label.”¹⁸⁴

A court using the altered-label test likely would have dismissed a public trust cause of action relating to pesticides because a ruling favorable to the plaintiffs could reasonably and foreseeably lead the pesticide manufacturer to change the label, for example, to warn operators not to discharge in ways that would adversely affect trust uses in a trust resource. But now, under *Bates*, a public trust plaintiff can argue that the claim is not preempted by FIFRA because the public trust doctrine does not require a particular label for pesticides.

IV. The Regulatory System's Failures to Protect the Environment From Pesticides

Pesticide pollution enters waterways and decreases water quality throughout the country. Pesticides also threaten

aquatic wildlife¹⁸⁵ and can disrupt aquatic ecosystems. The CWA's statutory exemptions partially cause these concerns, and the PGP is unlikely to significantly improve them.

A. Water Quality Issues

Federal agencies are beginning to acknowledge that the CWA has been ineffective in improving the nation's water quality. EPA's 2013 assessment of national water quality reported that more than one-half of the waters studied do not meet the applicable state water quality standards for their designated uses, such as drinking, fishing, or swimming.¹⁸⁶ The report identified nonpoint source pollution, including agricultural runoff, as a leading cause of impairment of water quality.¹⁸⁷ According to a survey of EPA's pesticide registrations by the Northwest Coalition for Alternatives to Pesticides,¹⁸⁸ the Agency believed that almost 20% of the pesticides it registered had chemical characteristics that made the pesticides likely to contaminate water.¹⁸⁹

A comprehensive nationwide study conducted by the USGS from 1992 to 2011 concluded that pesticides pose a concern for many of the nation's rivers and streams in agricultural and urban areas.¹⁹⁰ The report found that pesticide levels seldom exceeded human health benchmarks, but that the levels in some waterways occurred at concentrations that pose a concern for aquatic life.¹⁹¹ Additionally, the U.S. Government Accountability Office recently examined EPA's total maximum daily load (TMDL) program, concluding that the Agency should revise its TMDL regulations and that Congress should consider revising the CWA to better address nonpoint source pollution.¹⁹² These studies indicate that the current regulatory framework at the federal and state levels is insufficient to protect water quality.

185. This Article refers to wildlife's trust *uses*, such as fishing and ecological services, in navigable waters. However, at least 47 states use trust or similar language to describe state sovereign ownership of wildlife, making wildlife also a trust *resource*. Michael C. Blumm & Aurora Paulsen, *The Public Trust in Wildlife*, 6 UTAH L. REV. 1437, 1440–42 (2013).

186. U.S. EPA, *National Summary of State Information*, http://ofmpub.epa.gov/waters10/attains_nation_cy.control; see U.S. GOV'T ACCOUNTABILITY OFFICE, CLEAN WATER ACT: CHANGES NEEDED IF KEY EPA PROGRAM IS TO HELP FULFILL THE NATION'S WATER QUALITY GOALS 1 (2013) [hereinafter GAO REPORT], available at <http://www.gao.gov/assets/660/659496.pdf>.

187. GAO REPORT, *supra* note 186, at 1–2; see also Adler, *supra* note 22, at 81–82 (noting that in 2002, “[t]he five most recent biennial national water quality reports issued by EPA show little overall change in the degree to which U.S. waterways support designated uses such as swimming, fishing, and protection of aquatic life” and that the reports “continue to identify agriculture as a principal source of impairment”).

188. The Coalition surveyed 41 conventional pesticides that EPA registered between 1997 and 2001. See NO GUARANTEE OF SAFETY, *supra* note 4, at 4 (arguing that FIFRA registration is cumbersome and expensive yet is not protective of human or environmental health).

189. *Id.*

190. USGS Press Release, *supra* note 1 (describing EPA's report as showing that “more water bodies that have been assessed are not meeting water quality standards than at any time in the past”).

191. *Id.*

192. GAO REPORT, *supra* note 186.

181. See WHITACRE & ANDERSON, *supra* note 178, §6.2, at 123, 129 (stating that the Court “scaled back express FIFRA preemption to some extent” but “declined to address the extent to which FIFRA may impliedly preempt the *Bates* plaintiffs' tort claims”).

182. *Bates*, 544 U.S. at 444; WHITACRE & ANDERSON, *supra* note 178, §6.2, at 123.

183. *Bates*, 544 U.S. at 444 (“[P]etitioners' claims for defective design, defective manufacture, negligent testing, and breach of express warranty are not preempted.”); WHITACRE & ANDERSON, *supra* note 178, §6.2, at 124.

184. WHITACRE & ANDERSON, *supra* note 178, §6.2, at 124 (citing *Worm v. American Cyanamid Co.*, 5 F.3d 744, 747–48, 24 ELR 20120 (4th Cir. 1993)).

B. Harm to Nontarget Species

The adverse ecological effects of pesticides differ from other kinds of environmental harm because pesticides are inherently intended to kill organisms in the environment, disrupt ecological systems, and reduce species biodiversity.¹⁹³ The permitting agency and courts will not treat all harm to wildlife as negative environmental effects, because harm to pests—the target species—is the applicator's legitimate purpose. But many, if not all, pesticides reach nontarget species,¹⁹⁴ sometimes causing large fish die-off events¹⁹⁵ or harming species listed as endangered or threatened under the ESA.¹⁹⁶

Pesticides also travel through organisms up the food chain through bioaccumulation, whereby living creatures can store and accumulate pesticides,¹⁹⁷ thus enabling pesticides to harm nontarget species, potentially including humans, without direct contact.¹⁹⁸ This threat does not apparently affect EPA's registration process, however. FIFRA's risk-benefit approach allows EPA to register hazardous pesticides if they confer enough economic benefits. Threat of harm to humans is not a factor to be considered, meaning that federal pesticide law is not based on human health or safety.¹⁹⁹

Almost one-quarter of the EPA-registered pesticides in the survey by the Northwest Coalition for Alternatives to Pesticides adversely affected birds, and almost one-half were moderately or highly toxic to fish.²⁰⁰ The USGS reported that a majority of the streams it sampled contained levels of one or more pesticides in excess of the EPA guideline for protection of aquatic life.²⁰¹ These findings reflect the current regulatory regime's systemic failure to protect wildlife, specifically nontarget species, from pesticides.

C. Statutory Exemptions and the Pesticide General Permit

The CWA's built-in limitations create regulatory gaps that perpetuate the water quality and wildlife problems that federal agencies are observing. Congress exempted from the NPDES permit program return flows from irrigated agriculture and agricultural stormwater discharges, leaving such regulation to states.²⁰² Congress left regulation of nonpoint sources to states, but as EPA recognized, "it is hard to establish a cause and effect relationship between many nonpoint sources and particular water quality problems."²⁰³ Although individual causation chains may be difficult to establish, by most accounts, nonpoint sources combine to cause most of the nation's remaining water pollution problems.²⁰⁴ Based on the results, the current regulatory system inadequately protects and preserves the nation's water quality and wildlife.

The PGP's are unlikely to significantly improve these results. As general permits, they cover a wide number of sources that discharge into many different water bodies over large areas.²⁰⁵ This broad scope is incompatible with the site-specific assessments necessary to ensure that discharges will comply with applicable water quality standards.²⁰⁶ Under the federal PGP, eligible operators obtain CWA authorization by submitting a notice of intent, complying with applicable technology-based limits and water quality standards, and satisfying the monitoring provisions.²⁰⁷ The PGP's technology-based effluent limitations are a series of "Pest Management Measures" designed "to minimize the discharge of pesticides to Waters of the United States."²⁰⁸ The water quality-based effluent limitation merely requires operators to "control discharges as necessary to meet applicable numeric and narrative state or tribal water quality standards."²⁰⁹ This restriction places great significance on the stringency of state-set water quality standards, determined by the legislature or a state agency. Overall, the provisions of the

193. William Vorley & Dennis Keeney, *The Greening of Industry Versus Greenwash: Introducing a Case Study*, in *BUGS IN THE SYSTEM: REDESIGNING THE PESTICIDE INDUSTRY FOR SUSTAINABLE AGRICULTURE* 1, 2 (William Vorley & Dennis Keeney eds., 1998).

194. MARY JANE ANGELO, *THE LAW AND ECOLOGY OF PESTICIDES AND PEST MANAGEMENT* 86 (Richard O. Brooks & Ross A. Virginia eds., 2013).

195. Coplan, *supra* note 80, at 101 ("Pesticide contaminated runoff from agricultural pesticide use has been associated with several fish die-off incidents" (footnotes omitted)).

196. See Bernalyn D. McGaughey et al., *The Endangered Species Act: Interfacing With Agricultural and Natural Ecosystems*, in *PESTICIDE REGULATION AND THE ENDANGERED SPECIES ACT* 48 (Kenneth D. Racke et al. eds., 2012).

197. Extension Toxicology Network, *Movement of Pesticides in the Environment*, <http://pmep.cce.cornell.edu/profiles/extoxnet/TIB/movement.html> ("Registered pesticides are not without their risks.").

198. NO GUARANTEE OF SAFETY, *supra* note 4, at 4, 6; see also CLAUDIA COPELAND, *supra* note 69, at 1 ("Recent studies suggest that some pesticides can disrupt endocrine systems and affect reproduction by interfering with natural hormones.").

199. NO GUARANTEE OF SAFETY, *supra* note 4, at 1.

200. *Id.* at 4.

201. CLAUDIA COPELAND, *supra* note 69, at 1 (referring to USGS STUDY, *supra* note 1).

202. See Furman, *supra* note 44, at 115 (discussing the agricultural wastewater exemption).

203. U.S. EPA, REPORT TO CONGRESS: NONPOINT SOURCE POLLUTION IN THE UNITED STATES 1-17 (1984). EPA also noted that nonpoint source pesticide runoff often reaches surface water. *Id.* at 2-11.

204. See David Zaring, *Agriculture, Nonpoint Source Pollution, and Regulatory Control: The Clean Water Act's Bleak Present and Future*, 20 HARV. ENVTL. L. REV. 515, 517 (1996) ("Nonpoint sources have been blamed for sixty-five to seventy-five percent of the pollution in the nation's most polluted waters, but all the surface waters of the country have suffered from nonpoint source problems."); see also Jarrell-King, *supra* note 22, at 21 ("The shortcomings of §319 have left the American public to suffer the consequences of a nearly unregulated agricultural nonpoint source water pollution predicament.").

205. See Gaba, *supra* note 69, at 411 (arguing that general permits are illegal and fail to meet the CWA's substantive requirements).

206. *Id.*

207. PGP, *supra* note 12, at 2-1 to 4-1.

208. *Id.* §2.1, at 2-1; cf. Gaba, *supra* note 69, at 433 ("Many general permits purport to meet [the technology-based effluent limitations] requirement by having permittees develop their own effluent limitations based on 'best management practices' that are neither reviewed nor approved by the permit writer.").

209. PGP, *supra* note 12, §3.0, at 3-1.

general permits, standing alone, are unlikely to improve water quality.

V. The Public Trust Doctrine and Pesticides

Unlike the statutes discussed above, the public trust doctrine contains no permit shields, no agricultural and silvicultural exemption, and no defense of compliance with a federal label. It is an ancient body of law that recognizes individual rights to healthy rivers, streams, and lakes.²¹⁰ The doctrine “bridges the gap between regulation and unreasonable use of public resources.”²¹¹ Further, it has several potential applications in the pesticide context:

Whether the public trust doctrine is seen as substantive law establishing a “bottom line” for water quality, as providing a “hard look” standard of review for the courts, or embodying ongoing authority to reconsider uses of water, concerned citizens should push the outer limits of the doctrine to restore a common heritage of clean water and to prevent further degradation by agricultural pollution.²¹²

This section focuses on the public trust doctrine as a substantive body of law and its ability to influence water quality by requiring a minimum level of state protection. For the greatest chances of success, a plaintiff should bring such a case in a jurisdiction following *Mono Lake*—such as California, Hawaii, or Pennsylvania—because in those jurisdictions a plaintiff must prove only that a navigable water body is adversely affected, without needing to show that the activity in fact occurs on or in the water. The following analysis assumes that the reviewing court follows *Mono Lake*.

A. Application of the Public Trust Doctrine to Pesticides

The public trust doctrine applies when a protected trust use is imperiled in a particular trust resource. As discussed above, pesticides pollute waterways, causing water quality issues and posing concerns for wildlife. “The public trust doctrine is on its firmest historical footing when protecting public uses of navigable waters for navigation, commerce, and fisheries. The traditional use most impacted by agricultural water pollution is fishing.”²¹³ The expanded uses that a plaintiff could allege pesticide pollution adversely affects include recreation, public health, ecosystem function, environmental health, and water quality: “Protection of fisheries necessarily implied protection of water quality, but . . . courts have increasingly identified water quality as

a separate or specific, rather than derivative, interest protected by the public trust doctrine.”²¹⁴

Plaintiffs, as beneficiaries of the trust, on behalf of themselves and future generations, can allege that the state²¹⁵—the trustee—failed its legal duty to protect multiple trust uses from pesticide water pollution, causing damage to the corpus of the trust—the water resources of the state or a particular water body. A court following *Mono Lake* would recognize the state’s duty as sovereign to exercise continuous supervision and control over the navigable waters within the state and the lands beneath those waters.²¹⁶

B. Functions of the Public Trust Doctrine’s Regulation of Pesticides

Only certain state actions concerning pesticides that implicate the public trust doctrine are judicially reviewable, and plaintiffs have limited available legal remedies. Because the public trust imposes an affirmative duty on states, a plaintiff could point to the state’s inaction concerning pesticides and the environment, and argue that the state has failed to fulfill its trust obligations. A plaintiff could also challenge a specific state action as inconsistent with or insufficient to fulfill the state’s public trust duties. The potentially actionable state acts or omissions are: (1) the state’s issuance of a pesticide discharge permit, either individual or general; (2) the state’s filing of its comprehensive nonpoint source pollution control plan under CWA §319; and (3) the state’s decisions regarding water quality and impaired water bodies under CWA §303(d).²¹⁷ When reviewing state action, a court will balance the interests in preserving and promoting use of natural resources, and determine whether the action was consistent with the state’s trust duties.²¹⁸

A public trust plaintiff could challenge a state’s issuance of its PGP as inconsistent with the state’s duty to protect trust resources for the benefit of present and future generations. The maximum term for any NPDES permit, including general permits, is five years.²¹⁹ Each time the state seeks to renew or revise its PGP, the public trust doctrine arguably requires the state to consider effects on trust uses and resources, and the state’s failure to fulfill this obligation is judicially reviewable. Under *Mono Lake*’s reasoning, however, a plaintiff would not even need to wait until the state proposes to renew or revise the general permit. In that case, the California Supreme Court recognized the state’s power to reconsider past decisions that affect trust resources, even if previous decisions were appropriately

210. See, e.g., Furman, *supra* note 44, at 149.

211. *Id.* (arguing for the public trust doctrine’s extension through litigation to protect water quality, particularly from agricultural water pollution).

212. *Id.* at 154.

213. *Id.* at 153 (noting that the public trust doctrine “expressly recognizes that the public has a vested right in water clean enough to maintain fisheries in navigable waters—a right antecedent to uses that now degrade public waters”).

214. Johnson, *supra* note 38, at 487.

215. Although the public trust doctrine has been historically “assumed to be primarily applicable to states,” Prof. Mary Christina Wood has argued that its roots in sovereign power “are equally applicable to the federal government and local governments.” Mary Christina Wood, “You Can’t Negotiate With a Beetle”: *Environmental Law for a New Ecological Age*, 50 NAT. RES. J. 167, 203 (2010).

216. National Audubon Soc’y v. Superior Court of Alpine Cnty., 33 Cal. 3d 419, 425, 13 ELR 2072 (Cal. 1983) (*Mono Lake*).

217. 33 U.S.C. §1313(d).

218. See *Mono Lake*, 33 Cal. 3d at 445.

219. 33 U.S.C. §1342(b)(1)(B).

“made after due consideration of [the] effect on the public trust.”²²⁰ The plaintiff’s requested relief would be a judicial decree ordering the state to reconsider its issuance of the PGP, in light of its affirmative public trust obligations.

A public trust plaintiff could also challenge individual NPDES permits to discharge pesticides.²²¹ This is a more typical public trust case because it is more fact-oriented: The court could balance the potential permittee’s proposed use against the alleged damage to specific trust uses in an identifiable trust resource that would result from permitted discharges. However, few environmental organizations have the financial means for repeatedly suing over individual permits, especially because the public trust doctrine, as a common-law rule, does not allow successful plaintiffs to recover attorneys fees available under many of the statutory environmental laws.

The next challengeable state action relating to pesticides is the state’s issuance and implementation of its §319 nonpoint source pollution control plan.²²² A plaintiff’s fundamental argument would be that the state failed its duty as trustee to consider the public’s interests in fishing and ecological function in the state’s water resources when developing and implementing its regional water quality control plan.²²³ The plaintiff would have to establish that the state’s nonpoint source pollution control plan inadequately addresses the threats that pesticide pollution causes to water quality and wildlife. The court could order the state to reconsider its plan following full consideration of the effects on trust resources.

The third major type of action relating to pesticides that implicates the public trust doctrine is a state’s decisions relating to water quality and waters it designates as “impaired” within the meaning of §303 of the CWA. Section 303 requires states to set water quality standards for water bodies within the state and to “establish a priority ranking for such waters, taking into account the severity of the pollution and the uses to be made of such waters.”²²⁴ For those water bodies that the state lists as impaired, §303(d) requires the state to create a TMDL for quantifiable pollutants.²²⁵ As described in a treatise:

A TMDL defines the specified maximum amount of a pollutant that can be discharged or “loaded” into the waters at issue from all combined sources. Thus, a TMDL represents the cumulative total of all “load allocations” that are in turn the best estimates of the discrete loading attributed to nonpoint sources, natural background sources, and individual wasteload allocations (WLAs), that is, specific portions of the total load allocated to individual point sources.²²⁶

This provision of the CWA therefore transcends the point source/nonpoint source dichotomy. For water bodies impaired by pesticide pollution, the state must calculate the total amount of pesticides already present in and foreseeably discharged into the relevant water body from all combined sources.²²⁷ The Ninth Circuit concluded that §303 required states to list impaired water bodies even when the sole source of impairment was nonpoint source pollution from agricultural runoff.²²⁸

A public trust plaintiff has at least three potential causes of action against the state in the §303 context. The plaintiff could: (1) sue for a listing decision such as failing to list a water body as impaired or delisting a water body impaired by pesticide pollution; (2) allege that even though the state properly listed an impaired water body, the state failed to adequately protect it from pesticide pollution; and (3) challenge the state’s issuance of water quality standards as providing inadequate environmental protections.

When challenging a listing decision, the plaintiff will allege that a particular water body or watershed is impaired by pesticide pollution, and that the state must consider its trust responsibility when making the decision. Once the water body is listed, a plaintiff could still allege that its TMDL for pesticides is insufficiently stringent, and that the state must set the TMDL at a level that will protect trust resources and preserve them for the benefit of future generations. Finally, when suing the state for inadequate water quality standards, a public trust plaintiff will argue that the public trust doctrine requires a minimum level of water quality sufficient for trust uses, and that the state failed to meet this threshold.²²⁹

C. Remedies Available to Public Trust Plaintiffs

The public trust would have little significance if the state’s obligations were not judicially enforceable by trust benefi-

220. *Mono Lake*, 33 Cal. 3d at 447.

221. These permits are necessary for point source pesticide discharges that do not fit the criteria necessary for coverage under the state’s general permit, such as direct-to-water discharges for purposes other than one of the four pesticide use patterns in the federal PGP.

222. See *supra* text accompanying notes 122–28 for discussion of nonpoint source pollution control plans. For an analysis of a public trust challenge in the agricultural nonpoint source pollution context as it relates to wildlife and water quality, see Jarrell-King, *supra* note 22, at 24 (concluding that members of the public should turn to the public trust doctrine to “require state and local agencies to protect the public’s interests in wildlife and water quality dependent public trust uses when developing, regulating, and reevaluating nonpoint source pollution control plans under §319 of the CWA”).

223. See Jarrell-King, *supra* note 22, at 22.

224. 33 U.S.C. §1313(a), (d)(1)(A) (2012).

225. *Id.* §1313(d)(1)(C):

Each State shall establish for the waters identified in paragraph (1) (A) of this subsection, and in accordance with the priority ranking, the total maximum daily load, for those pollutants which the Administrator identifies under section 1314(a)(2) of this title as suitable for such calculation. Such load shall be established at a level necessary to implement the applicable water quality standards with

seasonal variations and a margin of safety which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality.

226. Eric M. Larsson & Jill M. Marks, *Construction and Application of Clean Water Act’s Total Maximum Daily Loads (TMDLs) Requirement for Waters Failing to Achieve Water Quality Standards Under 33 U.S.C.A. §1313(d)*, 53 A.L.R. FED. 2d 1, §2 (2011).

227. See *id.*

228. *Pronsolino v. Nastri*, 291 F.3d 1123, 1140–41 (9th Cir. 2002) (determining that listings under §303(d)(1) and TMDL requirements apply to waters subject only to nonpoint source pollution); see also Larsson & Marks, *supra* note 226, §5; Jarrell-King, *supra* note 22, at 20.

229. This challenge could be brought at any time, but at a minimum, §303 requires states to review their water quality standards every three years. 33 U.S.C. §1313(c).

ciaries.²³⁰ This is especially important in the current era of statutory environmental law.²³¹ According to Prof. Mary Wood, “Modern-day bureaucrats and politicians no longer see themselves as trustees of public property and resources. They view their roles as political decision-makers, vested with statutory discretion to allow damage to natural assets belonging to the public.”²³² Courts, on the other hand, have “retreat[ed] from their meaningful role. Courts today render decisions under statutory law that rank fairly insignificant in the broad scheme of mounting ecological threats.”²³³ With federal and state agencies making the bulk of decisions affecting the environment, and the institutionalization in state courts of the *Chevron* or agency deference doctrine²³⁴ that precludes courts from substituting their judgment for that of a government agency²³⁵ (particularly for decisions of a technical or scientific nature²³⁶), courts have taken a back seat in shaping environmental policy.²³⁷

Legislative remands²³⁸ and agency remands²³⁹ are the judicial remedies most likely to be available to public trust plaintiffs seeking to protect waters from pesticides. Professor Sax discussed the importance of remanding cases to a legislature or agency when their actions were ineffective to satisfy their public trust duties.²⁴⁰ Of the challenges identi-

fied in Part V.B. above, the relevant government body could be either the state legislature or any number of state agencies, such as departments of agriculture, water, or wildlife. Courts are likely to send the matter back for further consideration at the agency level in light of the public trust, rather than fashioning a specific type of relief or ordering particular state action.

VI. Conclusion

The recent developments in pesticide regulation following the *National Cotton Council* decision indicate that pesticide pollution remains a serious environmental concern, and that ongoing regulatory disputes are imminent at both the state and federal levels. Courts are less susceptible to political influence than are legislators and regulators, and will continue to play key roles in shaping environmental policies in the United States.

The current U.S. system regulating pesticides is not based on human health or safety, and inadequately protects vital natural resources, particularly water quality and wildlife, from pesticide pollution. Courts that follow *Mono Lake* could look to the public trust doctrine as a potential solution to that problem. These courts could determine that states have an affirmative duty under the public trust doctrine to protect water quality and wildlife from pesticide pollution whenever feasible, and that states must consider effects on trust resources when implementing federal statutes regulating pesticides. A judicial determination of this sort would not interfere with federal environmental statutes such as the CWA or FIFRA, in part because the public trust doctrine falls within an area of traditional state powers.

230. See MARY CHRISTINA WOOD, NATURE'S TRUST: ENVIRONMENTAL LAW FOR A NEW ECOLOGICAL AGE 230 (2014) [hereinafter NATURE'S TRUST]:

The cornerstone of any trust lies in judicial enforcement. . . . Judge Learned Hand once stated that courts must have the ability to enforce fiduciary obligations, or what claimed to be a trust would amount to no more than a “precatory admonition.” Yet, by nearly all appearances, environmental law has degenerated into this.

(citing *Stix v. Commissioner*, 152 F.2d 562, 563 (2d Cir. 1945)) (footnote omitted).

231. See *id.* (“[T]he modern statutory era of environmental law in the United States postured courts in a way that caused them to retreat from their meaningful role.”).

232. Wood, *supra* note 215, at 202; see also NATURE'S TRUST, *supra* note 230 (“Government trustees today enjoy nearly unchecked control over [n]ature without the concomitant restraint and enforcement that a public trust demands.”).

233. NATURE'S TRUST, *supra* note 230 (suggesting “Nature’s Trust,” which would revive courts’ roles as a coequal branch of government able to enforce the other branches’ sovereign duties over public resources).

234. See William R. Andersen, *Chevron in the States: An Assessment and a Proposal*, 58 ADMIN. L. REV. 1017, 1017–18 (2006) (concluding that states should adopt statutory reforms because “some of the same problems of indeterminacy and confusion plaguing the federal *Chevron* doctrine also exist at the state level”).

235. *Chevron U.S.A., Inc. v. Natural Res. Def. Council*, 467 U.S. 837, 844, 14 ELR 20507 (1984); *Motor Vehicle Mfrs. Ass’n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43, 13 ELR 20672 (1983). For a critique of the agency deference doctrine, see NATURE'S TRUST, *supra* note 230, at 235–38.

236. See NATURE'S TRUST, *supra* note 230, at 235 (describing “most environmental decisions” as being of a technical or scientific nature).

237. *Id.* at 235–36.

238. BLUMM & WOOD, *supra* note 31, at 38 (referring to the legislative remand as “theoretically a democracy-forcing measure”).

239. *Id.* (noting that in statutory environmental cases, courts use agency remands to return matters to the agency for re-determination using proper procedures).

240. See Sax, *supra* note 28, at 560:

[S]elf-interested and powerful minorities often have an undue influence on the public resource decisions of legislative and administrative bodies and cause those bodies to ignore broadly based public interests. Thus, the function which the courts must perform, and have been performing, is to promote equality of political power for a disorganized and diffuse majority by remanding appropriate cases to the legislature after public opinion has been aroused.