Pace Environmental Law Review

Volume 32
Issue 2 *Reconceptualizing the Future of Environmental Law*
Spring 2015

Article 8

April 2015

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Margot J. Pollans
Pace University School of Law, mpollans@law.pace.edu

ARTICLE

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MARGOT J. POLLANS*

At 2 AM on August 2, 2014, the Ohio Environmental Protection Agency issued the following warning to the citizens of Toledo: "Do Not Drink."[1] The Ohio City's tap water was contaminated with microcystin, a toxin that can cause diarrhea, vomiting, and abnormal liver function.[2] The source was an algal bloom in Lake Erie resulting from high levels of agricultural fertilizers and animal waste.[3] For three days, Toledo residents drank only bottled water.

This is just one of many similar examples of agricultural contamination of urban drinking water supplies. Creating a physical connection between urban and rural communities, this pollution highlights the need for an environmentally-minded and systems-based food and agriculture law.

Despite over forty years of extensive federal regulation of water pollution, agricultural waste, most of which enters drinking water as "nonpoint source pollution," remains a significant threat to safe drinking water as well as aquatic ecosystems. Climate

* Teaching Fellow. UCLA School of Law, Resnick Program for Food Law and Policy, 2013-15. Assistant Professor of Law, Pace Law School, 2015- . Thanks to Jason Czarnezki and Ann Carlson for their helpful comments.

1. Codi Kozacek, *Seven Ohio Drinking Water Sources Don't Meet State Water Quality Standards for Toxic* Algae, CIRCLE OF BLUE (Aug. 25, 2014, 4:58 PM), http://www.circleofblue.org/waternews/2014/world/seven-ohio-drinking-water-sources-dont-meet-state-water-quality-standards-toxic-algae/, *archived at* http://perma.cc/8DBW-T6DR.

2. *Id.*

3. *Id.*

change threatens to exacerbate this threat.[4] Furthermore, the Clean Water Act's failure to address these harms is well documented.[5] The Act provides no federally enforceable mechanism for mitigating nonpoint source pollution. Many have proposed solutions including radical amendments of the statute itself, aggressive state action to fill the gap, and expansion of the United States Department of Agriculture's conservation programs which pay farmers to change their practices to reduce water contamination.[6]

As a component of food law, the Clean Water Act's failure to address agricultural water pollution must be understood as a back drop to a companion federal statute: the Safe Drinking Water Act (SDWA).[7] The SDWA requires the Environmental Protection Agency (EPA) to set drinking water standards for harmful contaminants, and it requires that public water utilities meet those standards either through water filtration and treatment, or through source water protection.[8]

The SDWA is widely attacked, particularly by local government officials, as an unfunded mandate imposing

4. Robert W. Adler, *Agriculture and Water Quality: A Climate-Integrated Perspective*, 37 VT. L. REV. 847, 875 (2013) (describing how climate change might affect existing water quality problems).

5. *See, e.g.*, J.B. Ruhl, *Farms, Their Environmental Harms, and Environmental Law*, 27 ECOLOGY L.Q. 263, 298-304 (2000).

6. *See id.*; Robert W. Adler, *Addressing Barriers to Watershed Protection*, 25 ENVTL. L. 973 (1995); Terence J. Centner, *Nutrient Pollution from Land Applications of Manure: Discerning a Remedy for Pollution*, 21 STAN. L. & POL'Y REV. 213 (2010); John R. Nolon, *In Praise of Parochialism: The Advent of Local Environmental Law*, 26 HARV. ENVTL. L. REV. 365, 413-16 (2002); J.B. Ruhl & James Salzman, *Climate Change, Dead Zones, and Massive Problems in the Administrative State: A Guide for Whittling Away*, 98 CALIF. L. REV. 59 (2010); David Zaring, Note, *Agriculture, Nonpoint Source Pollution, and Regulatory Control: The Clean Water Act's Bleak Present and Future*, 20 HARV. ENVTL. L. REV. 515, 524-25 (1996).

7. Safe Drinking Water Act, 42 U.S.C. §§ 300f to 300j-26 (2012).

8. *Id.* § 300g-1 (mandating that the EPA set national drinking water standards); *id.* § 300g-2 (delegating primary enforcement authority to the states). Public water utilities are utilities that provide water to at least twenty-five people or have at least fifteen service connections. *Id.* § 300f(4). The statutory requirements thus do not apply to wells or to very small drinking water systems.

excessive, and often unjustified, costs on local governments.[9] Critics argue that its uniform and risk-averse requirements reflect the need to devolve authority to states to engage in more location-specific standard setting. Proponents argue that the cost and complexity of risk assessment combined with the need to provide uniformly clean water to all, justify federal intervention.[10]

This debate, which focuses on the SDWA in isolation from the Clean Water Act, misses a central flaw in the structure of the SDWA. As implemented by the EPA and the states, the SDWA assigns primary responsibility for provision of clean water to municipal and regional water utilities that often have little or no control over drinking water sources.

Where point source pollution is the primary threat to safe water, this allocation is reasonable. Water utilities are simply providing a backstop to ensure that water, whose content is often already heavily policed under the Clean Water Act, is safe to drink.

By contrast, where the primary threat to safe drinking water is nonpoint source pollution, water utilities provide what is often the first line of defense. Of the nearly ninety pollutants for which the EPA sets SDWA standards, at least twenty-four enter

9. Scott D. Laufenberg, *The Struggle of Cities to Implement the Safe Drinking Water Act in the Context of Intergovernmental Relations*, 3 DRAKE J. AGRIC. L. 495, 499 (1998) (observing that the SDWA can be extremely burdensome for municipalities adjacent to agricultural communities); David L. Markell, *The Role of Local Governments in Environmental Regulation: Shoring Up Our Federal System*, 44 SYRACUSE L. REV. 895, 898-90 (1993) (describing concern that the SDWA fails to prioritize among various risks); Jeffrey Marks, *The Role of Federal Environmental Mandates in Intergovernmental Relations*, 20 ENVIRONS ENVTL. L. & POL'Y J. 17, 23 (1996) (observing that many local officials have called for increased local flexibility in standard setting and explaining that tension arises when federal financial support does not keep up with rising compliance costs); Rena I. Steinzor, *Unfunded Environmental Mandates and the "New (New) Federalism": Devolution, Revolution, or Reform?*, 81 MINN. L. REV. 97, 202 (1996) (arguing that the SDWA regulations do not allow adequate tailoring to local conditions or adequate assessment of compliance feasibility).

10. *See, e.g.*, Steinzor, *supra* note 9, at 140, 171-73 (noting that cities and counties identify the SDWA as one of the most expensive federal mandates but expressing concern that "unrestricted devolution of fundamental regulatory decisions to the local level" could result in massive inequality in availability of safe drinking water).

waterways through agricultural nonpoint source pollution.[11] The list includes pesticides, herbicides, nitrates, and microbial contaminants from animal waste.[12] Without independent source controls, water utilities must engage in burdensome cleanup in order to meet SDWA standards.[13]

Taken together, the Clean Water Act and the SDWA thus assign primary responsibility for nonpoint source pollution cleanup to water utilities. Although both statutes envision a role for states in establishing source control programs, neither statute mandates such controls, and many states have declined to develop robust programs.[14] In the remainder of this essay, I will draw three conclusions about this dynamic.

First, in the long run, particularly if predictions are correct that climate change will exacerbate the risk of drinking water contamination from agricultural pollutants, the dynamic described in the preceding paragraphs could serve as an

11. EPA, 816-F-09-004, NAT'L PRIMARY DRINKING WATER REGULATIONS (2009), *available at* http://water.epa.gov/drink/contaminants/upload/mcl.pdf, *archived at* http://perma.cc/4MQQ-Q7V5. The Twenty-four pollutants are those identified by the EPA as entering drinking water from agricultural-related runoff. ENVTL. WORKING GRP., DRINKING WATER POLLUTION HAS MANY SOURCES (2009), *available at* http://www.ewg.org/tap-water/sourcesofwaterpollution.php, *archived at* http://perma.cc/KC8W-BWEJ. The Environmental Working Group (EWG) identifies a total of ninety-seven agricultural-related contaminants in drinking water. Of these, thirty-five are regulated. For those thirty-five, EWG found that 127 million people had been exposed to levels exceeding EPA guidelines. *Id. See also* Ronald Munger et al., *Intrauterine Growth Retardation in Iowa Communities with Herbicide-Contaminated Drinking Water Supplies*, 105 ENVTL. HEALTH PERSP. 308 (1997), *available at* http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1470002/pdf/envhper00316-0054.pdf, *archived at* http://perma.cc/6PAR-6ETM (discussing pesticide contamination in humans).

12. *See* EPA, *supra* note 11.

13. For instance, following a cryptosporidium outbreak in 1993, the Milwaukee Water Works invested eighty-nine million dollars for capital improvements to its water filtration systems. Don Behm, *Milwaukee Marks 20 Years Since Cryptosporidium Outbreak*, MILWAUKEE J. SENTINEL, Apr. 6, 2013, http://www.jsonline.com/news/milwaukee/milwaukee-marks-20-years-since-cryptosporidium-outbreak-099dio5-201783191.html, *archived at* http://perma.cc/HWH3-GUAM. *See infra* notes 16, 21-25, and accompanying text (discussing the potential for water utilities to engage in source control).

14. *See, e.g.*, Adler, *supra* note 4, at 855-56 (noting that while there are some watershed specific success stories the overall picture is bleak). *See also* Clean Water Act, 33 U.S.C. § 1342(b) (2012); 42 U.S.C. § 300g-2.

important catalyst for change.[15] As filtration and treatment costs rise, water utilities and the state agencies overseeing them will continue to seek alternative approaches, including using litigation to reallocate mitigation costs from municipal ratepayers to farmers.[16] They may also put pressure on state governments to develop more comprehensive nonpoint source pollution regulatory programs. Public support for such efforts may also increase in response to high salience contamination events, such as the Toledo incident described above. In other words, this type of extremely costly and public pollution in urban areas creates a constituency for environmental protection that may not have existed before.

Second, the failure to regulate nonpoint source pollution creates an arbitrary assignment of pollution abatement costs. The extent to which a water utility provides the first line of defense or merely end-of-line finishing cleanup depends on the nature of the pollution source.[17] Those within the direct ambit of agricultural

15. *See* Adler, *supra* note 4, at 875 (describing the potential effects of climate change on drinking water).

16. The Clean Water Act preempts interstate nuisance suits under federal common law. Milwaukee v. Illinois, 451 U.S. 304 (1981) (holding that the Clean Water Act preempted interstate nuisance claims under federal common law). But, water utilities can still bring suit under state common law. Int'l Paper Co. v. Ouellette, 479 U.S. 481 (1987). Interstate suits, by state or private parties, can also be brought under state law provided that they are brought under the law of the source state. *Id.* (holding that the Clean Water Act preempted the common law of an affected state where that state, or a citizen of that state, attempts to impose liability on a point source in another state). In *City of Tulsa v. Tyson Foods, Inc.*, Tulsa sued various poultry processors claiming that poultry waste from factory farms was contaminating the drinking water supply. City of Tulsa v. Tyson Foods, Inc., 258 F. Supp. 2d 1263 (N.D. Okla. 2003), *vacated*, No. 01-CV-0900EA(C), 2003 U.S. Dist. LEXIS 23416 (N.D. Okla. July 16, 2003). The City of Des Moines also made a recent creative attempt to sue its neighboring agricultural communities under the Clean Water Act, attempting to characterize some agricultural pollution as a point source. Notice of Intent to Sue from William Stowe, Bd. of Water Works Trs. of the City of Des Moines, Iowa, to Rick Hecht, Chairperson of the Sac Cnty. Bd. of Supervisors, Gary Nicholson, Chairperson of the Calhoun Cnty. Bd. of Supervisors, Dale Arends, Chairperson of the Buena Vista Cnty. Bd. of Supervisors (Jan. 9, 2014) at 7, *available at* http://www.circleofblue.org/waternews/wp-content/uploads/2015/01/DMWW notice-of-intent-to-sue-2.pdf, *archived at* http://perma.cc/D4EC-AUSK (attempting to characterize tile drainage as a point source). The Iowa notice of intent to sue also alleged Iowa common law nuisance and trespass claims. *Id.*

17. Of course, other factors affect the scope of cleanup necessary to meet SDWA standards. A utility whose source water has many point sources may face

water pollution must take on this extra cost; utilities outside that ambit need not. This concern is a more specific variation of the general concern that the statute imposes uniform standards on utilities facing highly variable compliance costs.[18] Indeed, this is a standard critique of many types of uniform federal regulations.[19]

What is different and particularly troublesome here is that the variation stems from underlying disparate application of the "polluter pays" principle. Because a large category of polluters are not responsible for the costs of the water pollution they cause, a subset of water utilities are saddled with extra costs. Ratepayers ultimately bear the burden of this arbitrary allocation of costs. Although there is some federal and state financial assistance, a substantial portion of increased compliance costs falls to water users.[20]

This allocation of responsibility is often inefficient. In some cases, it is less costly to control the source than it is to filter or treat at the tap, particularly where increased contamination

a larger burden than one with fewer, even if all those sources are complying with their Clean Water Act obligations. Likewise, a utility that relies heavily on groundwater, which is generally not directly policed under the Clean Water Act, may face similar problems. *See* JAMES SALZMAN, DRINKING WATER: A HISTORY 127-31 (2013) (describing the threat of fracking).

18. In the context of the SDWA, proponents of less uniform regulations believe that the statute imposes costly obligations whether or not they are relevant to different regions. Some also believe that localities should have the leeway to opt for lower safety standards if that is their preference.

19. *See* NICOLE V. CRAIN & W. MARK CRAIN, THE IMPACT OF REGULATORY COSTS ON SMALL FIRMS 7 (2010); Ashlea Ebeling, *The Other Federal Budget*, FORBES (Oct. 1, 2003, 11:20 AM), http://www.forbes.com/2003/10/01/cz_ae_1001beltway.html, *archived at* http://perma.cc/ZZ8D-YV7V; Jim Tankersley, *Report: New Regulations Cost $216B and 87 Million Hours of Paperwork. What do they reap?*, WASH. POST (Jan. 14, 2013), http://www.washingtonpost.com/blogs/wonkblog/wp/2013/01/14/report-new-regulations-cost-216-billion-and-87-million-hours-of-paperwork/, *archived at* http://perma.cc/D59T-S8AX.

20. *See, e.g., Funding Sources*, EPA, http://water.epa.gov/lawsregs/rulesregs/sdwa/arsenic/funding.cfm (last updated Mar. 6, 2012), *archived at* http://perma.cc/B7NS-XFBX. Rate increases also depend on the size of a water district. A 1990s EPA study on water utility financial capacity revealed that for large systems, compliance required increasing average annual rates by about three dollars per household; for smaller systems, the average increase was $145. Steinzor, *supra* note 9, at 208-09.

necessitates building entirely new treatment facilities.[21] In theory, if a water utility determines that source protection is cheaper than building or renovating a treatment or filtration facility, it should engage in Coasian bargaining and pay for protection rather than build or renovate the treatment or filtration facility.[22] Some water utilities are able to take control of their source water via land purchase or through green payments to land owners to reduce their pollution.[23] New York City is one of the best examples of a large urban water system that has successfully protected its source waters and does not filter its water.[24] But for many municipalities and water utilities the transaction costs to take control of source water are simply too high. These transaction costs may include, among others, difficulty identifying sources, lack of political will at the state level to develop nonpoint source pollution controls, lack of will

21. *See, e.g.*, Mark D. Hoffer, *The New York City Watershed Memorandum of Agreement: Forging a Partnership to Protect Water Quality*, 18 U. BALTIMORE J. ENVTL. L. 17 (2010); Stephanie Perez, Note and Comment, *New York City's Drinking Water—Champagne or Beer?*, 12 PACE ENVTL. L. REV. 859 (1995).

22. *See generally* James M. Buchanan, *The Coase Theorem and the Theory of the State*, 13 NAT. RESOURCES J. 579 (1973).

23. The 1996 Amendments to the SDWA acknowledged the importance of source water protection and created a mechanism for water utilities to engage in source control as an alternative to filtration and treatment. Safe Drinking Water Act Amendments of 1996, Pub. L. No. 104-182 (1996) (codified as amended in throughout title 42 of the U.S. Code). Filtration avoidance is available where the utility demonstrates adequate ownership or control over the source watershed: "[t]he public water system must demonstrate through ownership and/or written agreements with landowners within the watershed that it can control all human activities which may have an adverse impact on the microbiological quality of the source water." 40 C.F.R. § 141.71(b)(iv)(2)(iii) (2015). Filtration avoidance is also a possibility where a utility relies on water from "uninhabited, undeveloped watersheds in consolidated ownership, and having control over access to, and activities in, those watersheds." 42 U.S.C. § 300g-1(b)(7)(C)(v) (2012).

24. *See, e.g.*, *About Watershed Protection*, NYC ENVTL. PROT., http://www.nyc.gov/html/dep/html/watershed_protection/about.shtml (last visited Feb, 27, 2015), *archived at* http://perma.cc/ZQ5X-BMTR; *New York City Water Supply*, N.Y. STATE DEP'T OF ENVTL. CONSERVATION, http://www.dec.ny.gov/lands/25599.html (last visited Feb. 27, 2015), *archived at* http://perma.cc/ZM3P-M7M6.

among polluters to engage in negotiation, or lack of expertise at the public water utility about source control options.[25]

The ancillary benefits of prevention at the source—beyond safer drinking water—also sway this cost benefit analysis. Prevention at the source protects aquatic ecosystems, creating benefits for biodiversity, the recreation industry, the fishing industry, and for agriculture itself where pollution affects sources of irrigation water.[26] Agricultural nonpoint source pollution generates numerous environmental and human health costs. The SDWA mitigates only one of those costs.

Finally, as the title of this essay suggests, the interaction between the two statutes must be understood in the broader context of the food system. Water is food too. I mean this in the literal sense: the Food Drug and Cosmetic Act defines food as "articles used for food or drink for man or other animals."[27] But, water is often excluded from discussions about the importance of protecting our food system. The agriculture industry has been very successful at curbing federal environmental regulation.[28] Among the industry's wide-ranging rhetoric is the argument that meager regulation generates the benefit of cheap food, which we all enjoy. But letting farmers off the hook in the name of cheap

25. Even New York City would likely not be able to achieve the level of source control it now enjoys had it not taken significant steps to obtain that control over a century ago. In the late nineteenth century, the City annexed lands and protected large swaths of land for watershed protection at a time when there was widespread support for this kind of aggressive step to protect the City's economic competitiveness and with little resistance from the surrounding territories. *See generally* MATTHEW GANDY, CONCRETE AND CLAY: REWORKING NATURE IN NEW YORK CITY 18-23 (2003) (retelling the history of New York City's water infrastructure and the political context's that made its development possible). Given changed political circumstances this model would be difficult, if not impossible, to replicate today.

26. *See* MARC O. RIBAUDO ET AL., ECONOMICS OF WATER QUALITY PROTECTION FROM NONPOINT SOURCES: THEORY AND PRACTICE 23-25 (1999), *available at* http://www.ers.usda.gov/media/1385896/aer782.pdf, *archived at* http://perma.cc/79YA-87W7.

27. 21 U.S.C. § 321(f)(1). While the EPA regulates tap water through the SDWA, the Food and Drug Administration regulates bottle water as a food pursuant to the Food Drug and Cosmetic Act (FDCA).

28. *See* MEGAN STUBBS, CONG. RESEARCH SERV., R41622, ENVIRONMENTAL REGULATION AND AGRICULTURE 15 (2014), *available at* http://fas.org/sgp/crs/misc/R41622.pdf, *archived at* http://perma.cc/L539-5Q6X.

food is less justifiable, if it was ever justifiable, if the spillover cost is expensive water.[29]

Even worse, the interplay between the Clean Water Act and the SDWA pits cities against agricultural areas, and residential communities against farmers. Although some urban water utilities and environmental protection agencies have or could enter into cooperative relationships with their rural hinterlands, others will take a more antagonistic path.[30] This antagonism perpetuates the perception of an urban/rural dichotomy and obscures the mutually dependent relationship between the two that is the basis of a healthy food system.[31]

To return to the theme of this symposium, reconceptualizing the future of environmental law, the dynamic between the SDWA and the Clean Water Act highlights the need for a systems approach to thinking about environmental regulation of the food system.[32] Water is an environmental system in physical space. It feeds farms (as irrigation water), it collects their pollution (from irrigation and stormwater runoff), and it feeds municipalities (as drinking water). This system crosses political jurisdictions. A regulatory system that creates antagonism across jurisdictions makes this physical system more difficult to manage.[33]

29. Another way to think about this is that water contamination is itself a food safety issue. Water safety law thus suffers from a similar critical flaw with the recent food safety modernization. Neither statute adequately addresses sources of cross contamination. Just as the SDWA provides no mechanism to address nonpoint source pollution, the Food Safety Modernization Act provides inadequate mechanisms to protect leafy greens and other fresh produce from contaminated runoff from concentrated animal feeding operations. 42 U.S.C. § 300f-g; FDA Food Safety Modernization Act, Pub. L. No. 111-353, 124 Stat. 3885 (codified as amended throughout title 21 of the U.S. Code).

30. *See supra* text accompanying note 16.

31. WILLIAM CRONON, NATURE'S METROPOLIS: CHICAGO AND THE GREAT WEST, at xiv-xv (1992).

32. *See, e.g.*, Jody Freeman & Daniel A. Farber, *Modular Environmental Regulation*, 54 DUKE L.J. 795 (2005) (calling for "a high degree of flexible coordination across government agencies as well as between public agencies and private actors" to allow for creative and bigger picture problem solving).

33. Many scholars have recognized the mismatch between environmental systems and political systems and have considered how political systems should approach environmental regulation in light of both this fact and the fact that environmental systems themselves are extraordinarily complex. *See, e.g.*, J.B. Ruhl, *Thinking of Environmental Law as a Complex Adaptive System: How to*

Access to safe drinking water is nearly ubiquitous in this country. Efficient (as in cost minimizing) preservation of this resource requires reconciliation of the various statutory schemes that govern the resource and the various political jurisdictions that manage it. Food Law, as an outgrowth of environmental law, among other things, provides a useful lens through which to approach this reconciliation. As an emerging discipline, Food Law invites a fresh examination of water as a complex element of the food system, drawing together what otherwise might be disparate environmental law questions related to equitable access to safe drinking water, preservation of aquatic ecosystems, and transitions to sustainable agriculture.

Clean up the Environment by Making a Mess of Environmental Law, 34 HOUS. L. REV. 933, 981 (1997).