WATER POLLUTION, AGRICULTURE, AND THE LAW (OR LACK OF LAW)

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The focus here will be on the federal Clean Water Act and what it does and fails to do to prevent pollution in the Illinois River, its tributaries and the downstream waters it affects.

A. THE SOURCES OF WATER POLLUTION

To understand the problem, it is necessary to review the kinds of pollution entering the Illinois River both directly and through its tributaries. According to public reports available from Illinois EPA and other sources, most of the impairments to the Illinois River and its tributaries are caused by mud (sediment), phosphorus, and habitat loss.[1] Although their effects are less well known, we should probably also consider "emerging pollutants" that include endocrine disrupting chemicals, personal and pharmaceutical products and other forms of pollution that have been shown to be entering our waters in detectible concentrations with uncertain effects.[2] If we look downstream, the science is clear that the Illinois River is a major source of the nitrogen pollution causing the Gulf of Mexico "Dead Zone."[3]

How these pollutants reach the Illinois River and its tributaries is not a mystery. Sediment comes from agriculture and development. Phosphorus and nitrogen come from agriculture, sewage treatment plants, some industries and storm runoff from lawns, golf courses and other places. Habitat loss comes from agricultural ditching and draining of Illinois waters as well as development.[4] Agriculture, along with sewage treatment plants and urban runoff, is also a major source of the emerging pollutants such as the herbicide atrazine and other chemicals used in crop and livestock agriculture.[5]

Looking specifically at nitrogen and phosphorus pollution, a recent government report states that crops contribute 43% of the phosphorus and 66% of the nitrogen to the Gulf of Mexico, while livestock contributes 37% of the phosphorus and 5% of the nitrogen[6]. A study directly focused on

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[1] Illinois Integrated Water Quality Report and Section 303(d)List-2008, (2008) available at www.epa.state.il.us/water/tmdl/303-appendix/2008/2008-final-draft-303d.pdf. Also, the U.S. Army Corps of Engineers, Illinois River Basin, Annual Basin Management Report (Draft Report August 2009) discusses the severe sediment problems in the various watersheds in the Illinois River Basin.

[2] Hawthorne, M. "Drugs in fish: Pharmaceuticals found in fish caught near North Side sewage treatment plant in Chicago area." Chicago Tribune 26 Mar. 2009.; Fahrenthold, D. "No Conclusion on What's Altering Fish." Washington Post 22 April 2009.; Raloff, J. "Antidepressants make for sad fish." Science News, 20 Dec. 2008.

[3] Committee on the Mississippi River and the Clean Water Act, National Research Council. Mississippi River Water Quality and the Clean Water Act: Progress, Challenges, and Opportunities. Washington D.C. National Academies Press, 2008. http://www.nap.edu/catalog.php?record_id=12051

[4] See note 1

[5] See Fahrenthold supra; Steingraber, S., Living Downstream, Vintage Books (1998); Dodds, W.K. Freshwater Ecology, Academic Press (2002) p. 288.

[6] Report of the State-EPA Nutrient Innovations Task Group. An Urgent Call to Action. August 2009, p. 13. http://www.epa.gov/waterscience/criteria/nutrient/nitgreport.pdf

nitrogen and phosphorus pollution from Illinois sources concluded that nitrogen pollution mainly originated with agricultural fertilizer and that agriculture was the source of about half of the phosphorus entering the Illinois River.[7]

In sum, agriculture is a big part of the problem. What is even worse is that agriculture is largely "above the law" when it comes to water pollution.

B. CLEAN WATER ACT

The Clean Water Act ("CWA"), 33 U.S.C. § 1251 et seq. was enacted by Congress in 1972 as an amendment to the Federal Water Pollution Control Act over President Nixon's Veto.[8] The CWA has been "spectacularly successful, dramatically reducing the discharge of raw sewage into our lakes rivers, and streams."[9]

The CWA applies to all "waters of the U.S," the exact meaning of which has become a very hot topic of late given recent Supreme Court decisions that have weakened protection by the CWA of many wetlands and certain ephemeral and intermittent streams.[10] Under the CWA, the waters of the United States were to be "fishable and swimmable" by July 1, 1983. 33 U.S.C.§1251(a)(2).

A critical point here is that the CWA divides pollution into point and non-point sources. Point source pollution, also referred to as a "discharge of pollutants," is defined as "any discernible, confined and discreet conveyance" §502 (14) such as a pipe coming from a factory or sewage treatment plant. Point sources are controlled by the National Pollution Discharge Elimination System (NPDES). One must have a NPDES permit to discharge from a point source. 33 U.S.C. §1311(a). The goal of the CWA (§101(a)(1)) was to eliminate discharges by 1985. "One of the primary objectives of the Act, as stated in section 101, 33 U.S.C. § 1251(a)(1), is to achieve the national goal 'that the discharge of pollutants into navigable waters be eliminated by 1985.'" *In re* Ocoee River Dam No. 2 Hydroelectric Project, 717 F.2d 992, 998 (6th Cir. 1983).

Some people have referred to the approach taken by the CWA to point source pollution as "command and control."[11] The police-state rigor suggested by this phrase is laughable to anyone actually familiar with CWA enforcement, which has been anything but firm.[12] In various ways, Congress, the courts and the Illinois legislature seem to have competed to make the statute as unenforceable as possible through such means as burdensome notice requirements,[13] legal interpretations that handcuff citizen enforcement[14] and statutes that require the Illinois Environmental Protection Agency to go through a long hand-holding process with the violator before it is allowed to refer most cases for prosecution.[15] The combined effect of such provisions is to make it profitable in many cases to violate the law until one is caught and then stall on

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[7] David, M.B and Gentry L.E., "Anthropogenic Inputs of Nitrogen and Phosphorus and Riverine Export for Illinois, USA," J. Environ. Qual. 29:494-508, 501(2000)
[8] Adler, R., Landman, J., Cameron, D., The Clean Water Act 20 Years Later, Island Press (1993) p. 1.
[9] Glendon, R., Unquenchable: America's Water Crisis and What We Can Do About It. Island Press (2009) pp. 210-11.
[10] Rapanos v. United States, 547 U.S. 715 (2006); Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers, 531 U.S. 159 (2001).
[11] Johnson, S.M., "Economics, equity and the environment," ELI (2001) p.1
[12] Duhigg, C. "Clean Water Laws are Neglected, at a Cost in Suffering," New York Times, 13 Sep. 2009.
[13] CWA Section 505(b), 33 U.S.C. §1365(b).
[14] In Gwaltney v. Chesapeake Bay Found., 484 U.S. 49 (1987).
[15] 415 ILCS 5/31(d)

compliance as long as possible.

Nonetheless, much progress has been made on point source pollution since 1972. Mandatory controls on pollution work even though many regulated polluters are allowed to go on polluting without adequate controls for years. Indeed, because so much progress has been made on point source pollution, it has become a theme of many point sources that it is time for environmentalists to leave them alone and deal with non-point pollution.[16]

These claims to innocence by regulated point sources are somewhat exaggerated (as will be discussed below), but the fact remains that to a substantial extent the law has been unwise as a matter of economics (and perhaps fairness) in focusing entirely on point source pollution.

C. NON-POINT WATER POLLUTION

Non-point pollution is basically unregulated by the Clean Water Act. Non-point sources include run-off from agriculture and construction sites in rural areas less than one acre in size.

Under the CWA, many sources of agricultural pollution are not considered point sources. The key section in the CWA on this point states:

> (14) The term ''point source'' means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. *This term does not include agricultural stormwater discharges and return flows from irrigated agriculture.*
> Clean Water Act Section 502(14) (33 U.S.C. §1362(14))
> (emphasis added)

Thus, although field tile drains and many other sources of agricultural water pollution may look like point source pollution, and flow like point source pollution and cause as much environmental damage as point sources, they are not point sources. Because by Congressional definition tile drains are not point sources, pollutants from tile drains are not discharges and are not regulated by the National Pollutant Discharge Elimination System.

D. MUCH PROGRESS COULD BE MADE BY BETTER IMPLEMENTING THE CWA

Before further bemoaning the shortcomings of the CWA, it is important to state that much more progress could be made to prevent pollution in the Illinois River system and the waters below it by better enforcing the current law.

First, traditional point sources like municipal sewage and factories could be regulated better.

For example, point sources are the biggest part of the phosphorus pollution problem in many waters. University of Illinois scientists Mark David and Lowell Gentry have estimated that "47%

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[16] See Report of the State-EPA Nutrient Innovations Task Group, supra note 6 at 33

of the total P [phosphorus] loads in Illinois rivers were from sewerage for 1980 through 1997."[17] There is also reason to believe that point source discharges of phosphorus are actually more harmful to the environment than other phosphorus loadings. As stated in the Minnesota Pollution Control Agency Detailed Assessment of Phosphorus Sources to Minnesota Watersheds, "Phosphorus from point sources may be more bio-available, impacting surface water quality more than a similar amount of non-point source phosphorus that enters the same surface water."[18]

Point sources are also probably the biggest source for pharmaceutical products and other pollutants that now go through the plants without being fully treated.[19] Regarding pathogen pollution, the Metropolitan Water Reclamation District of Greater Chicago still does not disinfect most of the effluent it discharges into the Chicago River waterway system and over 100,000 private discharging systems are illegally pouring essentially untreated sewage into rivers, streams and backyards across the state.[20]

Further, some pollution sources widely assumed to be non-point sources are actually point sources under the law. Stormwater from construction and industrial sites in urban areas is generally considered a point source and is regulated under the NPDES system.[21]

E. WHAT THE CLEAN WATER ACT DOES REGARDING POLLUTION FROM AGRICULTURE: NOT ENOUGH

Even though agricultural stormwater pollution is broadly exempted from the CWA, not all agricultural pollution stands outside the law.

Very large animal feeding operations (AFOs) are treated as point sources. See 40 CFR 122.24. The ones that are so treated are called Concentrated Animal Feeding Operations (CAFOs). Unfortunately, CAFO pollution from animal manure can escape regulation as point source pollution if it is first spread on a farm field. Under current law, this process magically converts manure to agricultural stormwater pollution, even if the phosphorus, pathogens, antibiotics and other pollutants in the manure later reach the water. Waterkeeper Alliance v. EPA, 399 F.3d 486 (2d Cir. 2005).

Pesticides dropped directly in the water, as opposed to being sprayed on a field and later washing into the water, can also be point source pollution. Direct spraying of pesticides into water, even if unintended, is a dry weather discharge but general permits will probably be established that will render this unimportant. National Cotton Council v. EPA (6th Cir. 2009). Other dry weather

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[17] David, M.B and Gentry L.E. supra note 7.

[18] Barr Engineering Co., "Detailed Assessment of Phosphorus Sources to Minnesota Waters," (Feb. 2004) p. 2, available at http://www.pca.state.mn.us/publications/reports/pstudy-section1.pdf

[19] Mendoza, M. "Range of Pharmaceutical in Fish Across U.S." AP 25 March 2009.

[20] Voluminous documentation regarding the MWRDGC's undisinfected discharge is contained in the Illinois Pollution Control Board record in R08-9. The IPCB is now considering whether to require MWRDGC to disinfect like almost all other sewage treatment operators in the state.
The controversy regarding Illinois' failure to regulate small discharging sewage systems has raged in the state legislature, see e.g. H.B. 172, and in debates over Illinois EPA's tardy efforts to regulate such systems. It is clear allowing such systems to continue to go unregulated under the CWA is having a deleterious effect on Illinois waters and public health. See, Mancl, K. and Vollmer, M., "Management of Individual Mechanical Sewage-Treatment Systems: How Much is Needed," Journal of Environmental Health, Vol. 63, 2001 (67% failure rate found in Will County).

[21] 33 U.S.C. § 1342; 40 C.F.R §122.26; http://cfpub.epa.gov/NPDES/stormwater/cgp.cfm.

discharges should also be better regulated under the CWA. Wet application of manure to tile drains that results in a dry weather flow should be regulated as a discharge.

Placing materials into waters of the United States so as to change water bodies physically ("fills") are regulated under Section 404 of the CWA by the Corps of Engineers unless they fall under the exception provided for "normal farming" and "maintenance" activities. 33 U.S.C. §1344(f). Thus, stream channelization projects, such as those that have wrecked streams across Illinois and caused much sedimentation, are regulated by the Corps, or at least are supposed to be.

In the late 1990s, it was thought by some that section 303(d) of the CWA, which provides for Total Maximum Daily Load (TMDL) calculations, might be used to address pollution from agriculture and some agricultural groups sought to spread terror among their members that this would happen. But even if this regulation had happened, agricultural operations would not have had much to worry about. Even the strictest TMDL plan only amounts to a polite request that agriculture operations lessen the water pollution they create. Unless there is a state law that forces reductions in non-point pollution, a TMDL cannot require anyone to do anything. Pronsolino v.Nastri, 291 F. 3d 1123, 1140 (9th Cir. 2002). Regulations proposed by EPA in 2000 under CWA Section 303(d) that were intended to put teeth in the requirement that TMDL plans provide "reasonable assurance" that water bodies would actually be restored were delayed by Congress and ultimately killed by the Bush Administration.[22]

CWA Section 319 requires states to develop plans for controlling non-point pollution, but does not establish mandatory controls. CWA section 319 provides grants to States to address non-point sources, but the grants are nowhere near sufficient to deal with the scope of the problem.

Finally, though the focus here is on the CWA, elements of the federal Farm Bill have certainly provided incentives to wean agricultural operations off some practices that increase pollution. Sodbuster, Swampbuster, and restrictions on using highly erodible lands are some of the most important measures that have been enacted to control water pollution although they generally have been enforced weakly and apply only to operations that receive federal payments.[23]

F. NEW LEGISLATION IS NEEDED TO CONTROL POLLUTION FROM AGRICULTURAL SOURCES

A person with whom I sometimes have the honor to work, Craig Cox, Vice President of the Environmental Working Group, explained eloquently the nature of the problem at the Mississippi River Gulf of Mexico Watershed Nutrient Task Force Public Meeting of September 23, 2009:

> "[W]e have proven conservation practices and systems that could – if effectively applied – take us a long way toward meeting these pressing challenges. Yet after seven decades of conservation programs in the United States, critical conservation

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[22] Copeland, C. "Clean Water Act and Total Maximum Daily Loads (TMDLS) of Pollutants." CRS Report for Congress 13 Feb. 2003. <http://ncseonline.org/NLE/CRSreports/03Apr/97-831.pdf>.

[23] United States Department of Agriculture: Natural Resources Conservation Service. "Highly Erodible Land and Wetland Conservation (HELC/WC) Compliance Provisions." <http://www.nrcs.usda.gov/programs/compliance/index.html>; Perez, Michelle. "Trouble Downstream: Upgrading Conservation Compliance." Environmental Working Group Research Sep. 2007. <http://www.ewg.org/reports/compliance>.

> practices and systems are still used by only a minority of farmers and ranchers. The fundamental barriers to accelerating progress are created by our politics, policies, and institutions, not by a lack of technology…
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> If we take concerted action to improve the effectiveness of federal and state voluntary programs, we will see more results, more quickly. But even the most focused and best-managed voluntary programs will not be sufficient to meet the challenges we face this century. Voluntary programs have inherent weaknesses including: (1) the producers who volunteer are often not the ones who can do the most to solve problems, (2) producers' priorities dominate especially if they are picking up part of the tab, but producer priorities may be different than what needs to be done to solve pressing problems, and (3) programs are designed more to provide equal opportunity for all producers to participate than to wisely direct scarce funding to producers actually who can make the greatest contribution to solving problems. These weaknesses in voluntary programs too often result in random acts of conservation rather than highly focused acts of conservation we urgently need today (Cox 7).[24]

So what is to be done? One possibility, of course is to amend the Clean Water Act to now control unregulated sources of pollution. Obviously, any such step would have to take into account the unique factors relating to agricultural pollution and it would certainly be impossible to treat corn fields in the same manner that sewage treatment plants and refineries are regulated. Some, but far from all, of the regulations now applicable to urban stormwater might be applied to agricultural stormwater.

Another possible approach would be to amend the Clean Water Act to create incentives for states to develop effective programs to control non-point pollution. This approach may have more political appeal and could be fashioned using either sticks against states that failed to act or carrots to states that chose to establish effective controls on pollution from agriculture. See *Pronsolino*, 291 F. 3d at 1141.

With or without amendments to the CWA that create incentives for such programs, Illinois might look to the relatively small number of states that have laws that attempt to control pollution from row crops.[25] States that have laws that cover some aspects of pollution from row crops include California, Oregon, Wisconsin, Delaware, Maryland, and Kentucky.[26]

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[24] Conservation Policy for Challenging Century by Craig Cox, Midwest Vice President, The Environmental Working Group; see also Cox, C. "Gulf Dead Zone Cause and Cure Known, Action Still Required: Remarks and Slides." Sep. 2009. Environmental Working Group Agriculture. http://www.ewg.org/agmag/2009/09/gulf-dead-zone-cause-and-cure-known-action-still-required/.

[25] An Illinois law that has not been badly underutilized – the Rivers, Lakes and Streams Act (615 ILCS 5/4.9 et seq.), might be expanded to cover a number of practices which cause pollution or otherwise harm the "natural conditions" that are supposed to be protected by that law.

[26] Cal. Water Code § 13000 et seq.; Or. Rev. Stat. § 568.900 et seq. (2007); Wis. Admin. Code NR 151; Del. Code Tit. 3, § 2247; Md. Code, Agriculture § 8-801 et seq.; Ky. Rev. Stat. Ann. § 224.71-100 et seq. (2009).

CONCLUSION

The Clean Water Act has been a very successful statute but it has taken us about as far as it can in it current form. Without amending the Act or creating other laws that effectively control what is now treated as non-point pollution by the CWA, further progress will not be made and inevitably water quality will substantially worsen as the population increases. It will not be easy or always politically popular to develop laws and programs to control non-point pollution. However, we do not have the luxury of neglecting critical tasks just because they are difficult.