
The Case Against Water Quality Trading

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Twelve years ago, the EPA rolled out its controversial Water Quality Trading Policy (Trading Policy or policy), establishing a framework for states to implement trading of pollution credits to achieve water quality goals. So-called “water quality trading,” which some might call “pollution trading,” is a market-driven alternative to the traditional regulatory-mandated programs under the Clean Water Act (CWA or the Act). In the years since this guidance, trading has become particularly enticing both to industries who are looking to avoid more stringent CWA discharge permits and to regulators seeking to reduce pollution from agricultural sources, which have been largely unregulated and remain the largest source of nutrient pollution in U.S. waterways. As of 2008, the World Resources Institute estimates that there were forty-one trading programs that are active or under development. Thirty-two of these involved nonpoint sources, including agricultural operations. In 2013, the U.S. Department of Agriculture (USDA) and Environmental Protection Agency (EPA) announced an expanded partnership to support trading, with the goal that agricultural operations would reduce discharges of nutrients and generate credits to offset such discharges from industrial and municipal facilities.

As non-binding guidance, the EPA’s Trading Policy was not subject to legal challenge. Now, as the policy gets translated into regulatory programs and trading is incorporated into permits—and with increasing popularity—the policy’s underlying premise, that such programs can be established without subverting the CWA, is ripe for review.

After providing a short overview of a few of the CWA’s core provisions and the problems with agricultural pollution, this article argues that trading is fundamentally contrary to the language, structure, and purpose of the CWA. It focuses on those programs most currently in vogue, which allow pollution trading between point sources (where discharges to the water body are through discrete conveyances, such as pipes) and diffuse “nonpoint” agricultural pollution sources. But this argument is not confined to agricultural nonpoint sources. Ultimately, the problem with trading is that it gives up on the Act’s mandate to eliminate all discharges from point sources.

To understand the legality of trading, one first has to understand the history of the CWA. Prior to 1972, states had the primary responsibility for water-pollution control. They were charged with developing water-quality standards. Pollution sources had no mandatory controls, as state standards only expressed desired water-quality conditions. Ultimately, this approach proved unworkable, as any given entity’s pollution was ignored if the receiving water body met the standards. By the time water bodies were in nonattainment, it was too late and difficult to prove which entities were responsible for the pollution.

The 1972 CWA radically revised this approach, seeking to eliminate effluent at its sources. The Act set out “to restore and maintain the chemical, physical and biological integrity of the Nation’s waters” by, in part, eliminating the discharge of pollutants by 1985. Under section 301, any and all pollution discharges were deemed unlawful unless they were made in conformance with the other provisions of the Act, including section 402’s requirement that dischargers first obtain permits, known as National Pollutant Discharge Elimination System (NPDES) permits. The EPA, or states to whom the EPA has delegated regulatory authority, could issue such permits to point sources for a period of five years, and they were to contain effluent limitations based on continually revised pollution-reduction standards, employing the best pollution control technologies on the market. Under the statute’s “anti-backsliding” provisions, subsequent permits could not be issued with weaker limits than issued previously, except in a few exceptional situations. The intent of the NPDES permitting program system was to mandate that all point sources employ the most state-of-the-art pollution control technologies, as they evolved. This “technology-driving” approach was intended to spur the demand for such technologies and spark innovation, reducing pollution-control costs. In this way, NPDES permits were to live up to their name, eliminating discharges, per the Act’s express goal.

Another core provision of the 1972 CWA was in section 303, which recognizes that, while point-source controls under 301 and 402 are necessary, they may not be sufficient for obtaining the Act’s water quality goals. Each state—or to the extent that a state fails to do so, the EPA—is required to adopt comprehensive water quality standards on all waterways based on their designated uses, such as uses for drinking water supplies, recreation, or the protection and propagation of fish, shellfish, and wildlife. Such water quality standards apply to water bodies contaminated by both point and nonpoint sources.

After assessing water quality standards based on the waterway’s designated use, section 303(d) required states to identify those water bodies for which the above-described, technology-based emission limits on point sources are insufficient to meet water quality standards. For these “impaired” waterways, states are to establish Total Daily Maximum Loads (TMDLs), which are subject to the EPA’s ultimate approval. The Act provides no definition of a TMDL, but indicates that they are to be established at levels necessary to implement the applicable water quality standards, with seasonal variations as well as a margin of safety. The EPA’s regulations at 40 C.F.R. § 130.2, state that they are to be the sum of “Load Allocations” and “Wasteload Allocations.” Load Allocations are the maximum pollution that can be discharged by present or future nonpoint sources or natural background sources without exceeding the water quality standards. Wasteload Allocations are the portions from existing and future point sources. As part of their

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continual planning process, states must issue point source effluent limitations and schedules of compliance to bring the water body into compliance with these water quality standards, among other requirements. Under its anti-backsliding provisions, any point source effluent limitation based on a TMDL may only be revised if the cumulative effect of revising all such effluent limitations will assure water-quality-standard attainment. Once the water quality standards are met, such revisions can only occur if in line with anti-degradation policies established by the states.

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In a nutshell, as a result of the TMDL process, NPDES permits for point sources on waterways where technology-based effluent limitations are not otherwise sufficient must contain more stringent effluent limitations. These effluent limitations are based on both present and estimates of future sources of pollution, but they also must be set to achieve water quality. The more a state estimates future growth, the lower the effluent limitation will be for existing sources. And the effluent limitations cannot be revised without adjusting all wasteload allocations or effluent limitations, so that, cumulatively, water quality standards are met. While such effluent limitations are only applicable to point sources of pollution—because TMDLs are also established based on the load allocations from non-point sources—states that estimate growth that would otherwise increase the loads to impaired water bodies are under pressure to reduce the pollution from all sources.

A third core component of the CWA is its public-participation and transparency provisions. Congress explicitly recognized the need for the public to be involved in the development, revision, and enforcement of any regulation, standard effluent limitation, plan, or program established under the Act.

Notwithstanding the broad sweep of the more-than-forty-year-old law, water pollution remains a persistent problem. While the Act's NPDES provisions generally have been successful in forcing point sources to sharply curtail discharges and steadily reduced the percentage of our nation's waterways with poor quality, much more work needs to be done. Close to half of the nation's lakes still do not support healthy biological communities, and more than half of the water in the nation's rivers is in poor condition.

The largest remaining pollution problem in our waterways is nitrogen and phosphorus, also known as nutrient pollution, which increases algae growth and harms water quality, kills fish, and destroys habitats. Agriculture is the single largest

known water-borne source of this pollution—coming from animal waste and other fertilizers irresponsibly applied to farmland or stored in storage ponds, which, when dissolved in rainwater, flows into streams, rivers, and, eventually, into the ocean.

Agricultural pollution control has thus far proven elusive under the CWA. Agricultural operations are largely not regulated under the CWA, and only a small subset is required to get permits. The 1972 Act gave the EPA the authority to issue NPDES permits to larger industrial animal farms, also known as Concentrated Animal Feeding Operations (CAFOs). After a lawsuit, the EPA issued prophylactic regulations in 2003. But the Second Circuit in its *Waterkeeper Alliance v. EPA* decision threw out a number of the rules' provisions, including those that subjected all such operations to a permit unless they could demonstrate that they did not have any potential to discharge. The subsequent, pared-back EPA CAFO rules, which required NPDES permits for operations that proposed to discharge were also ruled extralegal. Now, NPDES permits are only required for such facilities when they actually discharge into waterways.

Meanwhile, language that was asserted into the CWA in 1987, carving out "agricultural stormwater discharges" from the Act's point-source definition, has undermined efforts to control CAFO discharges. The *Waterkeeper* court deferred to the EPA's broad construction of this exception as embodying Congressional intent to not impose liability due to weather-related discharges. The court upheld the EPA's rules that provide CAFOs are not liable for any precipitation-related discharges when the waste is handled in accordance with nutrient management plans. Perhaps the only saving grace from *Waterkeeper* was that the Second Circuit struck down the part of the EPA's rules that had exempted these operations' nutrient management plans from public view, as discussed further below.

In the end, larger agricultural operations that fall within the EPA's definition of CAFO are only liable for discharges if they have failed to first obtain a NPDES permit or blatantly ignore their nutrient management plans. Even then, these operations discharge nutrients. Smaller animal operations are treated as nonpoint sources and do not need NPDES permits. Thus, states must design and enforce their TMDLs to reduce pollution from agricultural sources.

In comes pollution trading. In 2003, the agency put forth its Trading Policy, which specifically calls out nutrient and sediment loading from agriculture as a significant contributor to water quality problems in the Gulf of Mexico and decreased fish populations in the Chesapeake Bay. It encouraged states, interstate agencies, and tribes to develop and implement trading programs under the theory that, by allowing sources to sell credits for reducing emission loads, it incentivizes reductions from those sources with the lowest per-unit control costs. It states that sources could be eligible for credits for achieving pollutant reductions greater than established by wasteload and load allocations (which include agricultural pollution) under TMDLs. While not binding itself, the policy encouraged trading to be established in NPDES permits, but also indicates that permits would not need to be modified to incorporate each individual trade, as long as the public was provided notice and an opportunity to comment or attend a public hearing prior to issuing the permit authorizing trading.

It is perhaps not surprising that agricultural sources, which as discussed above are largely unregulated, could be a primary source of credits within trading programs. Such sources would

be incentivized to reduce their loads by being able to sell their credits to those point sources that do not want to reduce new discharge limitations driven by TMDL wasteload allocations or other permit parameters. According to a 2009 USDA report, some 128 watersheds exist where, if trading were permitted, point sources could rely on credits generated by nonpoint agricultural sources of pollution, because agricultural pollution makes up a large percentage of the load and is not well managed. The Chesapeake Bay Watershed TMDL, one of the nation's largest, assumed that jurisdictions would account for growth with water quality trading and offset programs.

But perhaps states should not be so ebullient over water quality trading. The problem is that, notwithstanding how they are designed to align with the EPA's policy, trading programs simply are not permissible under, or viable to fulfill the mandates of, the CWA.

The biggest issue is that there is no language whatsoever in the Act authorizing pollution trading and, thus, NPDES permitting programs are in contravention of the now-axiomatic principle that an agency can only carry out the specific authority conferred to it by its organic statute.

Pollution trading proponents counter that because the statute does not prescribe the components of the TMDL, other than stating that it should be set at a level necessary to implement the applicable water quality standards, the EPA and the states are given broad discretion to establish trading among sources and nonpoint sources, provided that each point source is below its other effluent limitations.

But any delegation of authority that can be inferred from Congressional silence on prescribing TMDLs is cabined by the far narrower authority of the CWA's NPDES permitting program. The fundamental problem with pollution trading is that the statute mandates that each point source adhere to the strictest discharge limitation in its permit, whether or not total emissions to a water body are below the TMDL. After all, the CWA mandates that NPDES permits adhere to all applicable CWA requirements including those established under Section 301(b)(1)(C), which provides for "any more stringent limitation, including those necessary to meet water quality standards, treatment standards, or schedules of compliance, established pursuant to any State law or regulations . . ." It is beyond reproach that effluent limitations that permit writers derive from TMDLs are supposed to be more stringent limitations than the technology-based effluent limitations. Thus, they must be adhered to by point sources, lest permit writers omit "any" from the statute's mandate that NPDES permits must meet "any more stringent limitation." Indeed, the EPA and states require point sources to meet such limits when no trading is involved. And nothing in this language allows permit writers to issue what is essentially a variance for some facilities based on their ability to buy their way out of compliance.

Moreover, treating those point source effluent limitations derived from TMDLs as nonbinding undermines the CWA NPDES provisions' technology-forcing purposes. The 1972 CWA was significantly different from the prior law in that it made each entity responsible for its own discharges by employing state-of-the-art treatment, even if it led to water that was cleaner than the water quality standards. TMDLs were intended to supplement this approach, allowing further pollution reductions where existing technologies were not up to the task. But Congress was clear that the TMDL process did not supersede the technology-forcing provisions of the Act. With

trading, however, existing technology-based discharge limitations become ossified. There is no demand for better control technologies to meet point sources' more stringent effluent limitations when dischargers can simply purchase credits. Wasteload allocations do not drive up the demand for new controls, spur innovation, or reduce pollution control costs. While proponents might argue that this does not matter—as long as water quality standards are achieved, and the market should define the cheapest way to do so—this subverts Congressional intent that the technology standards constantly be improving under the National Pollutant Discharge Elimination System to move toward Congress's independent goal of eliminating point-source discharges.

Even if pollution-trading programs on their face are not unlawful, trading programs involving agricultural sources are likely to violate the CWA in practice.

Further, pollution trading is contrary to the public participation and transparency provisions of the CWA. The Act defines effluent limitation as "any restriction established by a State or the Administrator on quantities, rates, and concentrations of chemical, physical, biological, and other constituents which are discharged from point sources . . . including schedules of compliance." Thus, even if TMDL-derived pollution limitations for point sources could somehow be construed as something different from binding effluent limitations, those discharge levels sanctioned by the EPA and state under the trading scheme serve as the "discharge limitations"—as the credit purchaser's discharges are limited by the amount of credits it purchases. As indicated above, the EPA's Trading Policy does not require NPDES permits to be modified to incorporate each individual trade. This means point sources' emissions limitations will be dictated on an ad hoc basis by their individual trades, which are not public, as they are not part of the NPDES permit. This leaves the public with no ability to "participate, develop, and enforce" such effluent limitations as is required under the Act. Indeed, this is precisely the reason that the Second Circuit in the *Waterkeeper* decision struck down the portions of the EPA's prior CAFO rules that had required nutrient management plans, which the court found were de facto emission limitations, impermissibly not incorporated into NPDES permits.

Finally, even if pollution-trading programs on their face are not unlawful, trading programs involving agricultural sources are likely to violate the CWA in practice. Pollution trading under a TMDL established under section 303(d) necessarily involves a revision of effluent limitations based on a TMDL or waste load allocation, as point sources are allowed to revise such limitations through their exceedances and purchases of credits. While the EPA does not see this as problematic under

the CWA's backsliding provisions as long as these de facto revisions are offset, the Act still requires that such revisions "assure attainment of the water quality standards." And there are at least six separate reasons why trading programs cannot achieve the CWA requirements for attainment of water quality standards, especially with programs involving exchanges between point to nonpoint agricultural sources.

First, regardless of the sources involved, pollution trading will result in point sources increasing their discharges, thus causing spikes in pollution "hotspots" that will have negative local impacts, disproportionately harming low-income populations that fish and swim in these areas. While the Trading Policy does not talk about hotspots, a recent EPA technical memorandum instructs states crafting their trading programs that "[i]n general, the generator of the credit should be upstream of the buyer or user of the credit, as a way to minimize the risk of water quality impairment in the water between the two sources." Here, the EPA ostensibly recognizes that, even underneath the same TMDL for a waterway or segment, a source increasing its emissions and offsetting them downstream will result in emissions that exceed water quality standards. This is not the only scenario likely to create hotspots, and when pollution spikes exceed water quality standards, they are in violation of the Act.

Second, while at least trades between point sources involve two regulated and, at least theoretically, monitored sources, trades involving nonpoint sources such as agricultural sources are not being regulated or monitored. Thus, the amount of pollution reduced by such sources is inherently uncertain. It is substantially more difficult to require monitoring of agricultural pollutant loads, so they are based on modeled estimates from Best Management Practices (BMPs) where uncertainty is accounted for in the trading ratio. The EPA estimates that in the twenty programs across the country, two-to-one uncertainty ratios are the most widely adopted, but also found uncertainty ratios as high as four-to-one. The greater the ratio is, however, the more costly it will be for point sources to purchase credits, thus undermining the supposed cost-efficiencies established by trading. Thus, it is likely that trading programs seeking to spur trades will underestimate the reductions necessary to achieve water quality standards.

Third, states do not have sufficient tools in place to ensure that BMPs actually reduce the amount of pollution estimated. While the EPA indicates that states are supposed to require verification as part of their trading programs, many do not. In Pennsylvania, for example, a February 2015 assessment of the agricultural sector reveals that its Manure Management Program—which requires BMPs for farms with animal numbers below federal NPDES and state regulatory thresholds for CAFOs—is not only underutilized, but the state also does not collect and approve the mandated manure management plans.

Fourth, because there are high transaction costs for point sources to find nonpoint sources with whom they can trade, pollution-trading programs incentivize the use of aggregators to match up credit sellers and buyers. But such brokerage houses are not regulated and get commissions on trades, meaning that there is a strong incentive for them to generate paper trades regardless of actual water-quality impacts. Recently, an environmental group gave notice of its intent to sue the PPL

Brunner Island power plant for failing to obtain adequate offsets. At least one aggregator, the Red Barn Trading company, was singled out for selling credits that could not be verified.

Fifth, under the EPA's guidance, if trades are going to make any difference, they must occur within the watershed. But this means that there is a small market for trades, which can result in leakage, where pollution reductions are not really occurring, resulting in a net increase in loads. The Brunner Island facility was allegedly buying credits that were generated from the transport of manure from a farm, where there was little evidence of what was occurring with the waste.

Sixth, and finally, under trading programs with nonpoint sources, it is only point sources that are responsible for discharges. This puts the burden on such sources to monitor and enforce private contractual arrangements. Both the credit buyer and seller are more likely to focus on the credit price as opposed to pollution reductions. Assuring compliance without trading has traditionally required point sources to conduct monitoring as a condition of their NPDES permit. Perhaps not surprising, while the EPA's recently issued permit-writers manual mentions techniques such as ambient water quality monitoring as a condition in NPDES permits, the EPA's recent assessment of trading programs in the Chesapeake does not even mention the concept, much less require it.

In 2010, the nonprofit organizations Food & Water Watch and Friends of the Earth sued the EPA for authorizing state trading programs in Appendix S of its Chesapeake Bay Watershed TMDL. Ultimately, a U.S. District Court in the District of Columbia in *Food & Water Watch et al. v. EPA* ruled that the nonprofit organizations did not have standing to pursue their claims, finding that they had not demonstrated that the harms from pollution trading, such as hotspots, were imminent and that the TMDL's references to trading were not final agency action. In doing so, the court indicated that the EPA's "expectations" that states will utilize trading was simply a starting point, leaving states with the final decision as to whether to implement trading or offset programs and whether to approve a specific trade or offset. The court found that there was no indication that "even if offsets are identified and permitted discharges begin, such discharges will not comport with that relevant water segment's TMDL, contain higher pollutants than allowed under the previous permit, or not comport with the CWA."

But the court failed to recognize that even if permit writers under a trading program only issue NPDES permits with lower emissions limitations than point sources' prior technology-based limitations, any EPA-sanctioned trade under a TMDL will still violate the CWA. Chiefly, the language of the CWA does not support a case for EPA-sanctioned trading programs to allow for issuance of NPDES permits with effluent limitations that are greater than water-quality-based limitations on an ad hoc basis, without transparency and public involvement, and contrary to the technology-forcing provisions of the Act.

But the court in the *Food & Water Watch* decision did leave the door open for future lawsuits challenging state trading programs, stating that the remedy lies in challenging trades as they occur on a case-by-case basis. As states move forward with their trading programs, there is more than a good case to be made that trading programs do not meet the mandates of the CWA. 🌳