

NUTRIENT TRADING IN MARYLAND

By Gary Antonides



For many years, Maryland and other states have been trying to get farmers to use more “Best Management Practices” (BMPs) to reduce the amount of nitrogen and phosphorous that runs off with rainwater into our waterways. Decades of efforts with voluntary programs met with little progress, but now, under the U.S. Environmental Protection Agency’s mandatory Total Maximum Daily Load (TMDL) requirements, progress is being made in the Chesapeake Bay and other bodies of water. Details of how the TMDLs are met are left to the state, and each state has its own challenges in implementing policies that will satisfy the requirements. Pennsylvania is the most problematic because it has so much farm land that drains into the Susquehanna River and thence into the Bay, and because it has not committed sufficient resources to meet the requirements.

One of the practices implemented in Maryland, Virginia, and Pennsylvania is the Nutrient Trading Program. http://mda.maryland.gov/Documents/ag_brief/AgBrief_NutrientTrading.pdf describes Maryland’s Program. Maryland farmers, wastewater treatment plants, and stormwater systems must all control the amount of nutrients that run from their operations into the Chesapeake Bay watershed. If a farm has met the requirements for nutrient reduction called for by the TMDL for the watershed segment where the farm is located, it can choose to implement additional BMPs to reduce nutrient run off even more and generate credits for doing so. The farmer can then sell those credits to an entity that is having difficulty meeting its nutrient reduction obligations. The price of the credits is based on market prices. This buying and selling of credits is called nutrient trading, and it can provide farmers with a new source of revenue. The Maryland Department of Agriculture (MDA) and the Maryland Department of the Environment (MDE) are responsible for developing a comprehensive nutrient trading policy and administering the Maryland Nutrient Trading Program. Trades can take place between “Point sources,” usually wastewater treatment plants, and “Nonpoint sources,” such as agriculture and stormwater. Maryland’s regulations divide the state into three large trading zones (Potomac River watershed, Patuxent River watershed, and the rest of the Bay watershed in Maryland). Trading must be done within the zones.

The BMPs that can be used to generate credits include planting cover crops, reducing fertilizer applications, fencing cattle out of streams, and installing grass or forest buffers and wetlands. These practices must satisfy USDA’s specifications, and be inspected and certified. Each Soil Conservation District in Maryland has personnel who are trained to use a web-based calculation tool, www.mdnutrienttrading.com (now under construction), and can perform on-farm assessments of credit generation capacity for farmers. BMPs will be verified annually by a third-party to ensure the practice is being maintained. All trades must result in a net decrease in nutrient loads. Approved credits can be posted on the Nutrient Trading Program’s Marketplace and Trading Registry.

It is anticipated that many buyers of the credits generated by farmers will include wastewater treatment plants, developers, and local jurisdictions who may find it less expensive to pay for credits than to install BMPs themselves. <http://www.baltimoresun.com/news/maryland/environment/bs-md-nutrient-trading-20171011-story.html>, October 15, 2017, by Pamela Wood reports that supporters of nutrient trading, also called water-quality trading, say that, when done properly, the practice uses market forces to achieve environmental benefits. “It’s a very important step, and it’s a necessary step,” said state Environment Secretary Ben Grumbles.

Nutrient trading aims to address the fact that some cleanup projects are much more expensive than others. Projects on farms, such as planting cover crops in the winter or adding trees along farm streams, are less expensive than, for example, upgrading a sewage-treatment plant. Up until now, however, agricultural operations such as factory farms have largely been left unregulated, and only a small subset has to get permits under the Clean Water Act.

The proposed regulations will be reviewed by a joint Senate-House of Delegates committee and will be subject to a public comment period after that.

Gov. Larry Hogan has been a proponent of water-quality trading and last year proposed an ambitious plan to use \$10 million to start a trading program. After limited interest from environmentalists and farmers, he reduced his proposal to a \$2.5 million annual grant program for certain innovative pollution-fighting practices.

Not everyone is completely happy with the concept of nutrient trading. Officials with the Chesapeake Bay Foundation (CBF) said the regulations are an important step, but have some flaws. For example, credits can be traded anywhere within the three large regions, creating the possibility that polluters in one area could buy a lot of credits from areas across the bay, allowing high pollution in that area. Doug Myers, from the CBF, said they are also concerned that the regulations allowing for credit trading between states are “way too premature.”



<https://www.foodandwaterwatch.org/insight/case-against-water-quality-trading>, Dec. 10, 2015, by Zach Corrigan, says that water quality trading undermines the Clean Water Act (CWA) and should be illegal, and that the Act does not allow pollution trading at the expense of tried-and-true methods for reducing water pollution (issuing and enforcing permits).

CWA permits have been largely successful in curtailing pollution from industrial or point sources, but much more work is needed to clean up our non-point sources, including runoff from farms. Agriculture is the single largest source of pollution. In 2003, the EPA endorsed pollution trading, in part, to get at this pollution. What the EPA neglected, says Corrigan, is that pollution trading is not permissible under the Clean Water Act and it kicks the can down the road, banking on an illusory regime. Nothing in the statute allows facilities to buy their way out of compliance.

Food & Water Watch maintains that that pollution trading will result in point sources increasing their discharges, thus causing spikes in pollution, or “hotspots” that will have negative local impacts. Since these sources are typically located in low-income communities, these discharges disproportionately harm the waters where the neediest fish and swim. The supposed offsets are to come from agricultural sources, which are not usually even regulated. Thus, the amount of pollution reduced by such sources is inherently uncertain. Also, states do not have sufficient tools to ensure that agricultural BMPs actually reduce pollution. Last, pollution trading incentivizes the use of brokerage houses that are not regulated and get commissions on trades, meaning they have a strong incentive to generate paper trades regardless of actual pollution reductions.

In 2010, Food & Water Watch and Friends of the Earth sued the EPA for authorizing state trading programs for the Chesapeake Bay Watershed. A federal district court dismissed the case on procedural grounds, but left the door open for future suits. Meanwhile, states move forward with their trading programs.

<http://www.progressivereform.org/chesbaynutrienttrading.cfm>, “Nutrient Trading for the Chesapeake Bay” says that the Maryland proposed regulations for nutrient trading, issued in December 2017, are flawed. According to an in-depth analysis by the Center for Progressive Reform’s Evan Isaacson and the Environment Integrity Project’s Abel Russ, Maryland’s rule-writers lost sight of the goal. They warn that “Trading programs are only a means to an end. The end is clean water, not establishing a high-volume trading market. If the rules are drawn poorly, they could facilitate an increase in pollution.” The report, [Trading Away Clean Water Progress in Maryland](#), identifies three major failings in the state’s proposed regulations:

Hot Spots: By dividing the state into three very large trading zones, it allows the sale of credits in such a way that pollution will end up being concentrated in particular parts of the state, which often affect the most vulnerable communities.

Paper Credits: The rules allow wastewater treatment plants to get credits for pollution reductions that are already in place, so the “pollution savings” will be on paper only.

Unaccounted Uncertainty. One lesson from other trading markets is that, for a variety of reasons, real pollution reductions are likely to be smaller than projected. Most trading programs (and EPA guidance) account for that by requiring buyers of credits to buy credits for twice as much pollution as they need to reduce. Maryland ignored this in its new regulations.

Nutrient Tax. Instead of nutrient trading, it would be possible to implement a nutrient tax. This would be similar to the way carbon is treated in some jurisdictions. Carbon taxes can be instead of or in addition to carbon trading programs. This type of tax is a “Pigovian” tax - a tax on any market activity that generates costs not included in the market price. Ideally, the tax is set equal to the social and other non-included costs.

<http://greedgreengrains.blogspot.com/2013/04/how-farmers-could-benefit-from.html>, “How farmers could benefit from fertilizer taxes,” April 24, 2013 by [Michael Roberts](#) advocates a nutrient tax. Since some of the worst water quality problems result from nutrient leaching and runoff from agricultural lands, and even though there have been efforts to

deal with these problems over the years, water quality continues to decline in the Mississippi, the Gulf of Mexico, and the Chesapeake, the Great Lakes, and countless other water bodies. One obvious remedy would be to tax fertilizer. Better would be to tax runoff and leaching directly, but that's practically impossible.

Politically powerful farmers would fight a tax, but demand for agricultural commodities is nearly constant regardless of prices, so food prices would probably go up enough to compensate for the tax. Other taxes could be reduced to compensate.

Some economists propose fertilizer taxes on a graduated scale. If fertilizer is applied at a sufficiently low rate, no tax would be levied, but the tax would then rise sharply with higher application levels (which causes most of the runoff and leaching). This would be harder to monitor, but would hit the biggest fertilizer users the hardest.

Hopefully, the induced rise in commodity prices would more than compensate farmers for the fertilizer taxes they would have to pay under the graduated tax system, and their profits would go up. Farmers may get on board with a tax if it benefits them.