

## Abstracts

Wednesday, April 30

### Session F7: Pollutant Trading: Overviews and Perspectives at Different Scales

8:00 – 9:30 am | Room 231

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#### ***Water Quality Trading in the US: National Overview under the Clean Water Act***

**Bob Rose**

*US Environmental Protection Agency, Washington, D.C.*

##### **Abstract**

Water Quality Trading is the common term used to describe a process by which permitted entities under the US Clean Water Act may apply off-site pollution reductions towards their permit compliance. This paper provides an overview of water quality trading in the US, legal authority under the Clean Water Act, and the role of US Environmental Protection Agency and the states. Challenges and opportunities facing water quality trading going forward will also be discussed. Example water quality trading programs across the US will be presented as way to highlight the extent to which states may and do take fundamentally different approaches. Stakeholder motivation and citizen concerns will be raised as issues necessary for inclusion when considering water quality trading opportunities.

#### ***Point/Nonpoint Water Quality Trading: How Data and Monitoring Can Reduce Market Impediments***

**Marc Ribaud**

*US Dept. of Agriculture, Washington, D.C.*

##### **Abstract**

Water quality trading between point and nonpoint sources is of great interest as an alternative to strict command and control regulations on point sources for achieving water quality goals. The expectation is that trading will reduce the costs of water quality protection, and may speed up compliance. EPA has issued guidance to the States on developing point/nonpoint trading programs, and USDA is encouraging farmer participation. However, existing point/ nonpoint trading programs have resulted in very few trades. Supply side and demand side impediments seem to be preventing trades from occurring in most trading programs. These include uncertainty over the number of discharge allowances different management practices can produce, high transactions costs of identifying trading partners, baseline requirements that eliminate low-cost credits, the reluctance of point sources to trade with unfamiliar agents, and the perception of some farmers that entering contracts with regulated point sources leads to greater scrutiny and potential future regulation. Uncertainty in the amount and timing of abatement delivered by conservation practices at different points in a watershed is a major detriment to trading. Uncertainty in the amount of abatement delivered by conservation measures is often addressed through ad hoc trading ratios that may unnecessarily hinder trading. Time lags in delivery are not considered in trading programs, which can lead to a failure to achieve water quality goals. Improved monitoring and modeling can allow for site-specific trading ratios that favor sites with a higher certainty of performance. A better understanding of lags in delivery can be used to target particular regions for inclusion in trading programs, and allow the design of trading rules that can accommodate lags.

#### ***Nutrient Trading: How Farmers and Chesapeake Bay TMDL Efforts Can Find “Value” in Trading Tool Inventories – A Success Story of the Early Use of the Maryland Nutrient Trading Tool***

**Dana York<sup>1</sup> and Robert Ensor<sup>2</sup>**

<sup>1</sup>*Green Earth Connection LLC, Centreville, Md.*, <sup>2</sup>*Howard Soil Conservation District, Woodbine, Md.*

**Abstract**

Under the Chesapeake Bay’s “pollution diet, each sector, urban and agriculture has a Total Maximum Daily Load (TMDL) baseline to meet. Once baselines are met, when additional growth causes additional pollution, new “best management practices” (BMPs) must be deployed to stay within the TMDL baselines.

The emerging practice of “nutrient trading” allows sectors needing additional BMPs to purchase offset from another sector. This trade provides the purchasing sector with a “credits” that can be used to allow further growth.

In Maryland, the Maryland Department of Agriculture and the Maryland Department of Environment have developed a nutrient trading program, under tight scrutiny and regulation. This allows everyone to be a winner:

- The urban sector can continue to grow and provide funds to implement BMP’s on farms.
- The agriculture sector can receive payments of private money for BMP’s that might not have installed without additional funding; and
- Taxpayers don’t have to pony up additional tax money.

To participate in nutrient trading, agricultural landowners in Maryland must utilize a web-based Maryland Nutrient Trading Tool (MDNTT) to calculate their baseline and credit potential.

In this session, the presenters will share the results of a project conducted by the Howard Soil Conservation District. The objective of the District project was to collect all the BMP data on farms in the Agricultural Preservation Program, to determine individual farm TMDL baselines and potential N and P credits.

Results of the District Project show:

- How the District developed a process to collect farm BMPs through an on farm inventory process with 3rd Party Vendors.
- The Maryland NTT is a new innovative approach to determine if farms meet the TMDL baseline.
- There are numerous BMPs on the Maryland farms, with opportunities and funding for installation of new BMPs, and when evaluated using the MDNTT, show that farms can meet the TMDL baseline and have credits to trade.

Nutrient trading is an exciting development. It can; reward Maryland farmers for good stewardship; help framers understand the nutrient processes on their farm; provide access to significant new sources of annual revenue for farms; and, accelerate BMP implementation in the Bay watershed.

***The Ohio River Basin Water Quality Trading Project***

**Jessica Fox<sup>1</sup> and Greg Youngstrom<sup>2</sup>**

<sup>1</sup>*Electric Power Research Institute, Palo Alto, Calif.*, <sup>2</sup>*Ohio River Valley Water Sanitation Commission, Cincinnati, Oh.*

**Abstract**

Nutrient trading has long been viewed by agricultural, industrial and environmental stakeholders as a possible solution to controlling nutrient pollution on a large scale. Farmers and other nonpoint sources can implement best management practices (BMPs) – such as installing buffer zones, cover crops and other measures – to reduce nutrient pollution at a fraction of the cost and with greater impact than point sources, allowing point sources to offset their nutrient loads by buying credits from farmers could hasten the reduction of nutrients in a watershed.

The Electric Power Research Institute (EPRI) is leading an effort to develop an interstate water quality trading program for the Ohio River Basin. Partners in the effort include American Farmland Trust, the Ohio River Valley Water Sanitation Commission (ORSANCO), and the Ohio Farm Bureau. The project partners are facilitating “pilot trades” of nutrients between point and nonpoint sources, marking the first trades in what could provide a model for dischargers to comply with emerging requirements in many watersheds facing high nutrient levels. If successful, the project could provide a market-based cap-and-trade system to help dischargers comply with the regulatory requirements.

The pilot trades will involve at least three National Pollution Discharge Elimination System (NPDES) permit holders and at least 30 farms implementing agricultural conservation best management practices across Ohio, Indiana, and Kentucky. The pilot trades are expected to result in reductions of up to 66,000 pounds of nitrogen 22,000 pounds of phosphorus over 5 years. The conservation practices have the potential for ecological benefits such as improved wetlands and restored habitats, with the credit trading program offering new revenues for farmers and a potentially cost-effective alternative for power companies and other industries to meet nutrient effluent permit obligations.

Using scientific research and a sophisticated watershed model, this project could result in a multi-industry market that may accelerate water quality improvements in the Ohio River Basin and establish a model for other domestic regional trading markets. EPRI and collaborators began developing its Ohio River Basin nutrient trading program in 2009, with the intention of developing a large-scale, mutually accepted interstate trading market for nutrient reduction credits.