States Working with Agriculture to Improve Water Quality

Peggy Kirk Hall, The Ohio State University

A Project of the Agricultural & Food Law Consortium
Water Quality: Pressures on States

- Federal Policy
- Interest Groups
- Litigation
- Water Quality Incidents
U.S. EPA and State Nutrient Reductions

An Urgent Call to Action: Report of the State EPA Nutrients Innovations Task Group, Aug. 2009

Working in Partnership with States to Address P and N Pollution through a Framework for State Nutrient Reductions, March 2011

Renewed Call to Action to Reduce Nutrient Pollution and Support for Incremental Actions to Protect Water Quality and Public Health, Sept. 2016
Interest Groups and Litigation

- Competing forces
- New legal strategies
  - Safe Drinking Water Act
  - Resource Conservation Recovery Act
  - CARE v. Cow Palace, Washington
- Challenges to mandatory standards
  - AFBF v. EPA
Water Quality Incidents
Ohio’s Experience

1. Planning efforts
   – Agricultural Nutrients and Water Quality Working Group
   – Ohio Lake Erie Phosphorous Task Force
   – Ohio Nutrient Reduction Strategy
   – National Water Quality Initiative
   – Ohio Clean Lakes Initiative
   – Development of Nutrient Water Quality Standards

2. Mandatory and Voluntary Nutrient Management Plans
Ohio’s Experience: Legislation

1. Fertilizer applicator certification required
   – If applying fertilizer or manure on +50 acres of land for agricultural production.
   – Initial three year period for compliance.
   – Civil suit protection

2. Restrictions on manure and fertilizer applications in Western Lake Erie basin.
   – For frozen or saturated soils.
   – Unless incorporated, injected or applied on growing crop.
   – Penalties for noncompliance.
The Ohio River Basin Water Quality Trading Project

**The Problem**
Excess nutrients in the Ohio River Basin can lead to algal blooms that deplete oxygen and lead to “dead zones.”

**Nutrients come from many sources, such as:**
- Farm runoff from fertilizer and manure
- Urban runoff from stormwater, septic systems, and end-of-pipe dischargers
- Air deposition from cars and other emissions

**A Solution**
Water Quality Trading is a market-based approach to achieving water quality goals by allowing permitted dischargers to generate or purchase pollution reduction credits from another source.

**How It Works**
1. A facility such as a power plant or wastewater treatment plant needs to meet nutrient limits for its water quality permit. Water quality trading is one option.
2. To reduce nutrients in the watershed, Facility A pays Farmer B to do one of a number of things, such as reduce fertilizer use, plant stream side buffers with trees or keep livestock manure from getting into streams. Each conservation practice is verified.
3. Nutrient reductions are quantified as credits (for example equal to one pound of nutrient reduction). Credits are then reviewed and approved by a regulatory agency.
4. Finally, Facility A can use those credits to meet permit requirements.

**Benefits**
Cost-effective pollutant reductions
- Ancillary benefits, such as:
  - Improved soils
  - Carbon sequestration
  - Improved wildlife habitat
  - Additional income to farmers

30% of the nitrogen loading in the larger Mississippi watershed comes from the Ohio River.

**Water Quality Trading Project – Ohio River Basin**
First-of-its-kind interstate program spans Ohio, Indiana, and Kentucky to evaluate the use of trading by industries, utilities, farmers, and others to meet water quality goals while minimizing costs.

Find more information at: wqt.epri.com

**The pilot trading period, from 2013-2015, is expected to reduce nutrients by...**
- 30,000 lbs of Phosphorous
- 66,000 lbs of Nitrogen

That’s equivalent to keeping 2,950 50-lb bags of fertilizer out of the Ohio River.
State Nutrient Reduction Strategies

- Establishing numeric water quality standards
- Identification of priority watersheds
- Task forces, working groups, partnerships
- Nutrient reduction planning
- Outreach and education to agricultural community
- Cost-share incentives to agricultural community
- Laws and regulations
State Agricultural Nutrient Reduction Tools

Point Source Permit Programs
- NPDES
- Add’l State Programs
  - Voluntary
  - Mandatory
  - Safe Harbors, Certainty Agreements

NMP/BMP Plans
- NMP/BMP Plans
  - Voluntary
  - Mandatory
  - Safe Harbors, Certainty Agreements

Cost Share/Tax Credit Practices
- Strip Till/No Till
- Buffer Strips
- Cover Crops
- Nitrificat’n Inhibitors
- Infrastructure

Applicator Certification and Education
- Commercial Applicators
- Farm Operators

Application Restrictions
- Frozen or Saturated Land
- Buffers and Setbacks

Market Based
- Water Quality Trading
Minnesota: Buffers

• Perennial rooted vegetative buffer required for lands adjacent to waters identified in buffer protection zone map.
  – 16.5 to 50 feet, depending upon type of water.
• Farmers may use alternate practices to substitute for buffer requirement.
• Complaint and enforcement process with penalties for non-compliance.
• Cost sharing available.
Maryland: NMP, Restrictions, BMP Incentives

Agricultural Nutrient Management Program
- Nutrient Management Plan requirements, certification and licensing of planners and farmers, transportation and application requirements, on-farm audits, non-compliance penalties.
- Applies to farmers grossing +$2500 a year or livestock producers with +8,000 lbs. live animal weight.

Phosphorus Management Tool Regulations
- Farms with high soil phosphorous levels required to use the tool to identify at-risk fields and implement management practices
- Phosphorous management requirements to phase in by 2022, based on risk.
Maryland: NMP, Restrictions, BMP Incentives

Agricultural Certainty Program

• Farmers receive a 10-year exemption from new environmental laws and regulations in return for installing best management practices to meet local or Chesapeake Bay Total Daily Maximum Load (TMDL) goals ahead of schedule.
Figure 1: Nutrient Management Plans Submitted
(As of June 30, 2015)
- 5,307 Plans Submitted 99%
- 25 Farms Remaining 1%

Total Regulated Farms: 5,332

Figure 2: Annual Implementation Reports Submitted
(As of June 30, 2015)
- 5,366 Reports Submitted 97.7%
- 123 Farms Remaining 2.3%

Total Farms Eligible for AIRS: 5,489

Figure 3: “Random” On-Farm Audits
772 Random Inspections Conducted
(Fiscal Year 2015)
- In Compliance 69%
- Expired Plan 13%
- Incomplete Plan 6%
- No Plan 6%
- Over Application/Timing of Nutrient Application 5%
- Record Keeping/Nutrient Application Setbacks Missing 1%

Source: Maryland Dept. of Agriculture
Nutrient Management Program,
Fiscal Year 2015 Annual Report
Oregon Water Quality Trading Program

• Legislation allows entities regulated under the Clean Water Act to meet pollution control requirements through water quality trading.

• Oregon Department of Environmental Quality may approve water quality trading that:
  – Achieves pollutant reductions and progress towards meeting water quality standards;
  – Reduces the cost of implementing TMDLs;
  – Establishes incentives for voluntary pollutant reductions from point and nonpoint sources within a watershed;
  – Offsets new or increased discharges resulting from growth;
  – Secures long-term improvement in water quality; or
  – Results in demonstrable benefits to water quality or designated uses the water quality standards are intended to protect.
The Role of Non-governmental Activities and Partnerships
### Nutrient Reduction Studies: Impact of On-farm Conservation Practices

<table>
<thead>
<tr>
<th>Researcher</th>
<th>Date</th>
<th>Location</th>
<th>Results</th>
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<tbody>
<tr>
<td>USDA/USGS</td>
<td>June 2016</td>
<td>Upper Mississippi</td>
<td>N reductions of 5—34%</td>
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<td>P reductions of 1—10%</td>
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<td>USDA</td>
<td>March 2016</td>
<td>Western Lake Erie</td>
<td>N reductions of 36%</td>
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<td>P reductions of 75%</td>
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<td>USDA</td>
<td>Dec. 2013</td>
<td>Chesapeake Bay</td>
<td>N reductions of 26%</td>
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<td>P reductions of 46%</td>
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Trends and Outlook

• High need for monitoring and impact data
  – Monitoring and impact costs
• NMPs and BMPs are becoming routine
  – Increased incentives
  – Enforceability issues
  – What is the role of litigation?
• Some movement toward mandatory requirements for nutrient management
• Few “comprehensive programs” at this point = fragmented landscape
Implications for Agricultural Producers

• Who pays?
  – Funding is somewhat strong now…
  – Future of continued funding?

• Needed integration with other ways to reduce, such as increasing use efficiencies.

• Farm management issues with new practices.
  – For example, who manages cover crops and buffers?

• Continuing litigation pressures may impact approaches.
Project Results

Will be available on:

– National Agricultural Law Center website, http://nationalaglawcenter.org
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