Chesapeake Bay and New York State
Water Quality and the Potential for Future Regulations

Presented by
Jim Curatolo, Watershed Coordinator
Upper Susquehanna Coalition
Coalition of 14 Counties in NY and PA formed in 1992 7500 sq. mi.

Headwaters of the Susquehanna River

All USC counties agreed to “work on water quality projects of mutual interest”

Includes staff from County Water Quality Committees, Soil and Water Districts, County Planners, Cooperative Extension, Town Supervisors, County Health, Local Lake Associations
Land Use in the USC

69% Forest  28% Agriculture  1% Residential  1% Open Water
0.5% Commercial/Industrial  0.5% Wetlands
The Chesapeake Bay Watershed:
Covers 64,000 sq mi
Includes 6 states and Washington D.C.
New York contains the headwaters of the Chesapeake Bay
Chesapeake Bay Program

In 1983 a multi-state partnership formed to work toward a voluntary restoration of the Bay.

The original Program Members are EPA, D.C., PA, VA, MD.

NY, WV, DE signed an agreement in 2000 to help with water quality aspects of the Program.
Chesapeake Bay Program

Under the Federal Clean Water Act the Bay is considered “impaired waters” and the Chesapeake Bay Program began to address that issue.

Info Source: Chesapeake Bay Program
The entire watershed contributes nutrients and sediments that lead to the impairment of the Bay.

Info Source: Chesapeake Bay Program
Why is this important to New Yorkers?

• A recent lawsuit has resulted in a court order to cleanup the Bay. This lawsuit will require EPA to enact a Total Maximum Daily Load (TMDL) for the Chesapeake Bay and its Watershed, including NY by 2011.

• The TMDL sets a maximum limit for pollutant levels in a Waterbody and these levels are reached and maintained through permits and other regulatory means.

• Municipalities, businesses, farmers, residents and others who produce sediment or nutrients could be affected.

• Regulations could impact the Local Economy
What are the pollutants of concern for the Chesapeake Bay and their major sources?

Pollutants:
- NITROGEN -
- PHOSPHORUS -
- SEDIMENT -

Sources:
- Urban runoff, sewage treatment plants, septic systems
- Runoff from agricultural operations
- Runoff from forests

Info Source: Chesapeake Bay Program
Bay Program Watershed Model Loads

Chesapeake Bay Program Watershed Model Output Data at:
http://www.chesapeakebay.net/tribtools.htm


- Detailed loads and landuse acreage by model state-segment and source
- Summary loads and landuse acreage for the following:
  - Chesapeake Bay-wide
  - Chesapeake Bay-wide by specific source
  - Chesapeake Bay-wide by general source
  - By jurisdiction
  - By major basin
  - By jurisdiction-basin
BAY MODEL

And then a miracle occurs

Cap Load Allocations

of

data

$$$$$$

Cap Load
Allocations

BAY MODEL

And then a miracle occurs

Cap Load
Allocations

of

data

$$$$$$
Sediment Loads Delivered to the Chesapeake Bay by Jurisdiction

- PA: 1.112 million tons/year, 22%
- VA: 2.379 million tons/year, 47%
- MD: 1.011 million tons/year, 20%
- NY: 0.341 million tons/year, 7%
- WV: 0.145 million tons/year, 3%
- DE: 0.055 million tons/year, 1%
- DC: 0.006 million tons/year, >1%

Info Source: Chesapeake Bay Program
Nitrogen Loads Delivered to the Chesapeake Bay by Jurisdiction

Info Source: Chesapeake Bay Program
Phosphorus Loads Delivered to the Chesapeake Bay by Jurisdiction

Info Source: Chesapeake Bay Program
New York Goals developed by the CBP, based on Computer Model and Water Sampling Information
New York Manure Nitrogen Generation

<table>
<thead>
<tr>
<th>Year</th>
<th>Beef (million lbs/year)</th>
<th>Dairy (million lbs/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1982</td>
<td>20.64</td>
<td></td>
</tr>
<tr>
<td>1985</td>
<td>17.90</td>
<td></td>
</tr>
<tr>
<td>1987</td>
<td>16.07</td>
<td></td>
</tr>
<tr>
<td>1992</td>
<td>15.43</td>
<td></td>
</tr>
<tr>
<td>1997</td>
<td>14.53</td>
<td>26.77</td>
</tr>
<tr>
<td>2000</td>
<td>14.53</td>
<td>25.19</td>
</tr>
<tr>
<td>2002</td>
<td>14.53</td>
<td>24.19</td>
</tr>
<tr>
<td>2010</td>
<td>14.53</td>
<td>20.58</td>
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</table>
New York Nitrogen Excretions to Pasture

Manure Nitrogen to Pasture

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount (million lbs/year)</th>
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</thead>
<tbody>
<tr>
<td>1985</td>
<td>21.98</td>
</tr>
<tr>
<td>2000</td>
<td>16.66</td>
</tr>
<tr>
<td>2002</td>
<td>16.46</td>
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</tbody>
</table>
New York Phosphorus Applications to Agriculture

Pound-per-Acre Phosphorus Applications to Cropland

- 1985: 27.85
- 2000: 26.25
- 2002: 26.15

Pound-per-Acre Phosphorus Excretions to Pasture

- 1985: 19.64
- 2000: 19.64
- 2002: 20.64
New York Nonpoint Source BMP Implementation Levels

- Conservation/Farm Plans
- Nutrient Management Plan Applications (Crop)
- Conservation Tillage
- Cover Crops
- Urban Stormwater Management
- Urban Nutrient Management

2002 Implementation
Available Implementation Acres
New York Nonpoint Source BMP Implementation Levels

- **2002 Implementation**
- **Available Implementation Acres**

<table>
<thead>
<tr>
<th>Method</th>
<th>2002 Implementation</th>
<th>Available Implementation Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land Retirement (Agriculture)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Off-stream watering w/ fencing &amp; rotational grazing</td>
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<td></td>
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<tr>
<td>Stream protection w/ fencing w/ off-stream watering</td>
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<td></td>
</tr>
<tr>
<td>Off-stream watering without fencing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Riparian Forest Buffers (Agriculture)</td>
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<td></td>
</tr>
<tr>
<td>Riparian Grass Buffers (Agriculture)</td>
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Tributary Strategy to meet allocations and avoid a regulatory approach

• Ensure Bay Model data input is accurate
• Document past practices
• List practices that will reasonably be expected to be implemented
• Describe suite of additional practices that best meets NY’s needs beyond
• Describe Innovative additional practices
• Describe Really Innovative funding sources
Tributary Strategy Support

• Three Work Groups formed:
  • Outreach
  • Scientific Support
  • Tributary Development

Scientific Support:
1. Open committee
2. Provide technical information for strategy development
3. A platform for research/studies on real time issue
Questions

• Does the Bay Model data correctly describe NY?
• How do we ensure we have documented all past BMPs?
• Can we quantify additional nutrient reduction activities?
• What are the best BMPs?
  – Reduction efficiency
  – Cost
  – Ease of operation
  – Chance for funding
  – Multiple benefits
More Information?

Upper Susquehanna Coalition
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Chesapeake Bay Program
Web Site: www.chesapeakebay.net