TMDLs and the Shenandoah Valley's Agricultural Community: Balancing Costs and Benefits of Conservation

Nesha McRae
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Balancing Costs and Benefits of Conservation

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VA Dept. of Conservation and Recreation

Photos: Mike Phillips (left and right)
Total Maximum Daily Loads (TMDLs) in Virginia

- Targeted watershed restoration for impaired waters
- 3 step process
  - TMDL Study
  - Implementation Plan
  - Implementation
- Legal background
- Voluntary implementation
TMDLs and Shenandoah Valley Farmers...like oil and water?

- The Valley’s Farming Community: independent, steeped in tradition, many experiencing declining cash returns

- Total Maximum Daily Loads: a legally mandated process used by the government to clean up impaired waterways
Finding Common Ground

- Public participation is critical
  - Strong sense of community = active participation
  - SCALE is important
- Soil and fertilizer are valuable resources
What do we need from farmers?

- Livestock exclusion
- Stream buffers
- Soil conservation
  - Conservation tillage
  - Cover crops
- Prescribed grazing
- Manure storage
How does this impact their bottom line?

- Economic benefits of some BMPs are clear
  - Rotational grazing
    - $419M spent on feed in 2007
  - Cover crops: $30/acre
- Others are more complex...
  - Loss of land in buffers vs. cost share payments and bank stabilization
  - Fence maintenance vs. improved herd health
  - Nutrient management and manure application
Accounting for Costs and Benefits in Plan Development

- Community water quality goals versus TMDLs
- Cost effective BMPs
- Accounting for existing BMPs (including voluntary)
- Outreach recommendations
  - Peer to peer discussions
  - Farmer testimonials
Accounting for Costs and Benefits in Implementation

- Funding projects
  - Staff
  - Cost share
- Increasing flexibility
  - Shenandoah RC&D Flexible Fencing
  - Changes to state cost share program
- Promoting economic benefits
“I have seen weight gain increases of 5-10% over 9-10 months since removing my beef cattle from the stream and providing water from springs and wells.”

Scott Campbell
Augusta County

Increased weight-gain translates into more money per head (Table 1).

Table 1. Example of increased revenue due to installing off-stream waterers.

<table>
<thead>
<tr>
<th>Typical calf sale weight</th>
<th>Additional weight gain due to off-stream waterer</th>
<th>Price</th>
<th>Increased revenue due to off-stream waterer</th>
</tr>
</thead>
<tbody>
<tr>
<td>500 lb/calf</td>
<td>5 % or 25 lb</td>
<td>$0.60 per lb</td>
<td>$15 per calf</td>
</tr>
</tbody>
</table>
What the Future Holds for TMDLs and Agriculture

- Marketing conservation to the consumer
- Ecosystems services
- Chesapeake Bay TMDL
  - VA estimated cost of full implementation > $7B
  - Implementation of agricultural BMPs to remain voluntary
  - Potential for regulatory approach exists