Fecal Coliform TMDL Implementation: Success Stories in Two Watersheds

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Introduction

Partners

- Research Planning, Inc. (RPI)
- Clemson University Cooperative Extension, Chester and Fairfield Counties

Funding

- Section 319 of the Clean Water Act

Projects

- Implement Total Maximum Daily Loads in two SC Watersheds
Project Goals

Implement Total Maximum Daily Loads for NPS Pollution:

- Fecal Coliform
- Turbidity

Focus on:

- Cost-sharing and community outreach
- Watersheds flow into Catawba River: important recreational area downstream
RPI Participation in Section 319 Grants 2000-2008

- Rocky Creek: 2000-2007
- Big Wateree Creek: 2005-2008
- Little Saluda River: 2000-2004
- Fishing and Tinkers Creeks: 2004-2008
- Allison, Lower Allison, Beaverdam, and Brown Creeks, Calabash Branch: 2005-2009
- Turkey and Bullock Creeks: 2008-2011
South Carolina Watershed Basins
Rocky and Big Wateree Creek Watersheds
Rocky Creek: 2000-2007

Location:
- Catawba River Basin, Chester and Fairfield Counties
- ~ 200 square miles

Participants:
- 12 beef cattle farmers
- 1 horse farmer
- 3 failing septic systems
Rocky Creek Watershed
Big Wateree Creek: 2005-2008

Location:
- Catawba River Basin, Fairfield County
- ~58 square miles

Participants:
- 4 beef cattle farmers
Big Wateree Creek Watershed

Legend
- Water Quality Monitoring Stations
- EPA319_Member
- Participant
  - farmer
  - septic
- Rivers
- Big Wateree Watershed

Big Wateree Creek Watershed BMP Participation

RPI Research Planning, Inc.
Participation Requirements

- Property location within watershed boundaries
- Potential stream impacts by livestock or septic systems
  - Emphasis: Decreasing fecal coliform loadings and turbidity
- Ability to cost-share on BMPs
- Ability to maintain BMPs beyond project
Participation Process

- Initial onsite meeting
- Analysis and ranking of candidate sites
- Generate cost agreement
- Agreement approval
- Begin implementing BMPs
- Periodic site visits
- Quarterly reimbursement
BMPs Implemented

- Exclusion fencing around creeks
- Alternative water systems
- Trampling protection around troughs
- Creek crossings
- Riparian buffers and wildlife habitat
- Waste storage facilities/composting
<table>
<thead>
<tr>
<th>Project</th>
<th># of Farms</th>
<th># of Livestock</th>
<th>Acres</th>
<th>Fencing (LnFt)</th>
<th>Waterlines (LnFt)</th>
<th>Trough (#)</th>
<th>Creek Crossings (#)</th>
<th>Buffer Zones (acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rocky Creek Phase I</td>
<td>5</td>
<td>350</td>
<td>600</td>
<td>57,200</td>
<td>15,200</td>
<td>9</td>
<td>4</td>
<td>36</td>
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<tr>
<td>Rocky Creek Phase II</td>
<td>7</td>
<td>400</td>
<td>1,400</td>
<td>52,600</td>
<td>14,600</td>
<td>31</td>
<td>11</td>
<td>388</td>
</tr>
<tr>
<td>Big Wateree Creek</td>
<td>4</td>
<td>600</td>
<td>2,000</td>
<td>31,800</td>
<td>23,500</td>
<td>36</td>
<td>3</td>
<td>31</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>16</strong></td>
<td><strong>1,350</strong></td>
<td><strong>4,000</strong></td>
<td><strong>141,600</strong></td>
<td><strong>53,300</strong></td>
<td><strong>76</strong></td>
<td><strong>18</strong></td>
<td><strong>455</strong></td>
</tr>
</tbody>
</table>
Sample Farm Layout detailing BMPs
BEFORE: Cattle drinking out of the stream and trampling the banks before BMPs
AFTER: Cow drinking from trough on stabilized geotextile pad and gravel after BMPs
AFTER: New fence excluding cattle from stream
BEFORE: Trampled bank showing signs of erosion before BMPs
AFTER: New creek fence and wildlife buffer
BEFORE: Cow standing in trampled, stagnant pool of water before BMPs
AFTER: Farmer displaying trough with trampling protection to EPA and SC DHEC
Results of Rocky Creek: 2007

SCDHEC reported to EPA that:

“Following these efforts, water quality improvements have been observed at 3 monitoring sites in the watershed. [These 3 stations] have all improved from non-support to partial support”.
Results of Big Watereee Creek: March 2008

SCDHEC reported that:

“Water quality standards have not been exceeded at the water quality monitoring station since February of 2007”.
Benefits to the Landowners and the Community

- Cost-sharing opportunity to improve farm
- Alternative water sources result in healthier livestock
- Cleaner water provides more pristine recreational land in the county
- Relationships between watersheds
- Long term benefits: a legacy for future generations
Community Outreach

- Slide-show presentations
- Farm tours (up to 250+ farmers annually)
- Classroom visits: Enviroscape
- Community events
- 4-H20 program
Water Quality Classroom Exercise
Water Quality Field Trip
Storm Drain Decals

No Dumping / Drains to Creek

Keep Rocky Creek Watershed Clean
Rocky Creek Farm Tour 2006