Rainbow Spring
BMAP
Litigation

“Whiskey is for drinking; water is for fighting over.” – Mark Twain
Water Quality

- Water Quality is regulated by the Florida Department of Environmental Protection
- The principle mechanism for monitoring and improving water quality is the Total Maximum Daily Load process
Total Maximum Daily Load Process

- Assess the state’s waters for nutrient pollution
- List waters that do not meet water quality standards
- Identify pollution sources by category and determine reduction necessary
- Draft and adopt Basin Management Action Plan
- Implement Basin Management Action Plan
- Evaluate Progress (5-year increments)
 Basin Management Action Plans

- Once a water is found to be impaired, DEP develops and adopts a Basin Management Action Plan (BMAP)
- The BMAP should include sufficient projects and practices capable of reaching the TMDL target
- For most waters, the presence of a BMAP does prohibit activities which pollute water
- In 2016, legislation was passed requiring the adoption of BMAPs for every impaired Outstanding Florida Spring
- Outstanding Florida Springs received some level of additional protections prohibiting certain land uses in priority focus areas
  - No new septic tanks on small lots
  - No new conventional wastewater treatment facilities
  - New Ag operations must adopt best management practices
Outstanding Florida Springs BMAPs

- OFS = All historic 1st magnitude springs, plus DeLeon, Peacock, Poe, Rock, Wekiva, and Gemini

- 24 of 30 OFS were found to be impaired

- 13 draft Basin Management Action Plans were developed covering the 24 OFS
• Rainbow Springs and Silver Springs were combined into a single Basin Management Action Plan.

• The Silver Springs BMAP area is 989 square miles.

• The Rainbow Springs BMAP area is 679 square miles.

• I-75 was chosen as a dividing line between the two basins, although this does not reflect the hydrology of the basin.
• Rainbow Springs Priority Focus Area (area within the orange line on the map) are based on Marion County’s Primary Protection Zones

• Additional protections are required within the Priority Focus Area

  • No new septic tanks on small lots
  • No new conventional wastewater treatment facilities
  • New Ag operations must adopt best management practices
Loading to Groundwater By Source in Silver Springs
Loading to Groundwater By Source in Rainbow Springs

- Cattle Farms: 25%
- Horse Farms: 16%
- Septic Systems: 20%
- Farm Fertilizer: 12%
- Urban Turfgrass Fertilizer: 9%
- Misc Livestock Waste: 1%
- ATM: 11%
- WWTF: 2%
## Sources of Nitrogen

<table>
<thead>
<tr>
<th>Spring System</th>
<th>Livestock Waste (horse/cattle)</th>
<th>Septic Systems</th>
<th>Urban Fertilizer</th>
<th>Farm Fertilizer</th>
<th>WWTF</th>
<th>Atmospheric deposition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rainbow Springs</td>
<td>42%</td>
<td>20%</td>
<td>13%</td>
<td>12%</td>
<td>2%</td>
<td>11%</td>
</tr>
<tr>
<td>Silver Springs</td>
<td>29%</td>
<td>29%</td>
<td>20%</td>
<td>7%</td>
<td>5%</td>
<td>10%</td>
</tr>
</tbody>
</table>
The BMAP for Silver/Rainbow, like many of the other OFS BMAPs, falls far short of what is necessary to protect the springs and rivers or required under the law.

Many of the plans, even if fully funded and implemented, would only reduce nitrogen pollution by a small fraction of what is necessary.

<table>
<thead>
<tr>
<th>Spring System</th>
<th>Current Nitrogen Load</th>
<th>TMDL</th>
<th>Required Reduction</th>
<th>Base Credits</th>
<th>&quot;Beyond BMPs&quot;</th>
<th>Total Credits</th>
<th>Deficit(3)</th>
<th>Deficit (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rainbow</td>
<td>2,198,348</td>
<td>414,741</td>
<td>1,783,607</td>
<td><strong>321,681</strong></td>
<td>19,009 – 95,046</td>
<td>340,689 – 508,644</td>
<td>1,274,963 - 1,442,918</td>
<td><strong>71% - 82%</strong></td>
</tr>
<tr>
<td>Santa Fe</td>
<td>2,851,342</td>
<td>997,970</td>
<td>1,853,372</td>
<td><strong>473,889</strong></td>
<td>154,849 – 774,222</td>
<td>628,738 - 1,248,134</td>
<td>605,238 - 1,224,634</td>
<td><strong>75%</strong></td>
</tr>
<tr>
<td>Suwannee</td>
<td>3,127,729</td>
<td>918,463</td>
<td>4,075,935</td>
<td><strong>1,961,537</strong></td>
<td>579,498 - 2,897,490</td>
<td>2,541,035 – 4,859,027</td>
<td>0 - 1,534,900</td>
<td><strong>52%</strong></td>
</tr>
</tbody>
</table>
# Rainbow Spring N Reduction Projects

<table>
<thead>
<tr>
<th>Nitrogen Source</th>
<th>Credits to Ground-water (lb-N/yr)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSTDS</td>
<td>199,154 – 291,071</td>
<td>Septic tank enhancement or upgrade</td>
</tr>
<tr>
<td>Urban Fertilizer</td>
<td>12,108</td>
<td>Educational program</td>
</tr>
<tr>
<td>Farm BMPs</td>
<td>28,514</td>
<td>15% credit from 100% implementation</td>
</tr>
<tr>
<td>Livestock Waste BMP</td>
<td>65,024</td>
<td>10% credit from 100% implementation</td>
</tr>
<tr>
<td>Sports Fertilizer</td>
<td>5,610</td>
<td>BMPs</td>
</tr>
<tr>
<td>WWTF Projects</td>
<td>11,272</td>
<td>WWTF Upgrade projects</td>
</tr>
<tr>
<td><strong>Real Estimated Total</strong></td>
<td><strong>321,680 – 413,598</strong></td>
<td>Credit shortfall: <strong>1,461,927 (82%)</strong></td>
</tr>
<tr>
<td>“Advanced” BMPs (not in law)</td>
<td>19,009 – 95,046</td>
<td>Assumed 10% to 50% reduction in Ag</td>
</tr>
<tr>
<td><strong>Imaginary Estimated Total</strong></td>
<td><strong>340,689 – 508,644</strong></td>
<td>Total reduction needed: <strong>1,783,607</strong></td>
</tr>
</tbody>
</table>
## Silver Springs N Reduction Projects

<table>
<thead>
<tr>
<th>Nitrogen Source</th>
<th>Credits to Groundwater (lb-N/yr)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSTDS</td>
<td>313-865 – 458,461</td>
<td>Septic tank enhancement or upgrade</td>
</tr>
<tr>
<td>Urban Fertilizer</td>
<td>17,236</td>
<td>Educational program</td>
</tr>
<tr>
<td>Farm BMPs</td>
<td>44,967</td>
<td>15% credit from 100% implementation</td>
</tr>
<tr>
<td>Livestock Waste BMP</td>
<td>46,949</td>
<td>10% credit from 100% implementation</td>
</tr>
<tr>
<td>Sports Fertilizer</td>
<td>16,880</td>
<td>BMPs</td>
</tr>
<tr>
<td>WWTF Projects</td>
<td>47,667</td>
<td>WWTF Upgrade projects</td>
</tr>
<tr>
<td><strong>Real Estimated Total</strong></td>
<td><strong>487,563 – 632,159</strong></td>
<td><strong>Credit shortfall: 442,572 (48%)</strong></td>
</tr>
<tr>
<td>“Advanced” BMPs (not in law)</td>
<td>11,912 – 59,560</td>
<td>Assumed 10% to 50% reduction in Ag</td>
</tr>
<tr>
<td><strong>Imaginary Estimated Total</strong></td>
<td><strong>499,475 – 691,719</strong></td>
<td><strong>Total reduction needed: 930,135</strong></td>
</tr>
</tbody>
</table>
Outstanding Florida Springs BMAPs

- Agriculture is responsible for twice as much nitrogen loading to impaired OFS as wastewater treatment facilities, septic tanks, and urban fertilizer combined.
- Ag pollution is unregulated.
- Automatic assumption of compliance for agreeing to use “best management practices” (BMPs).
- BMPs are ineffective in reducing pollution, even when properly used.

### Agricultural Nitrogen (N) Loading and Reductions (in lbs-N/year) for Santa Fe Basin

<table>
<thead>
<tr>
<th>BMAP Area</th>
<th>Lbs N from Ag</th>
<th>Reduction achievable from BMPs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rainbow</td>
<td>840,327</td>
<td>93,538 (11%)</td>
</tr>
<tr>
<td></td>
<td>(54%)</td>
<td></td>
</tr>
<tr>
<td>Silver</td>
<td>588,606</td>
<td>91,916 (15%)</td>
</tr>
<tr>
<td></td>
<td>(36%)</td>
<td></td>
</tr>
</tbody>
</table>
Outstanding Florida Springs BMAPs

- Existing Ag Best Management Practices only reduce agricultural loading by 10%-15% even if implemented across 100% of farms and ranches
- Need Advanced Ag Best Management Practices

Springs will not recover unless agriculture is required to do its part to reduce nitrogen pollution.
Outstanding Florida Springs BMAPs

• The Florida Legislatures refusal to regulate agriculture pollution means the cost for reducing water pollution is shifted to homeowners and local government

• Because agriculture is only responsible for adopting no cost best management practices, DEP will require every single property with a septic tank in the entirety of the Silver Springs and Rainbow Spring basin to upgrade or connect to sewer

  - Ag accounts for 54% of loading but only 29% of remediation in Rainbow basin

  - Septic tanks account for 20% of loading but 64% of remediation in Rainbow basin

• No analysis of the cost effectiveness of remediating agricultural vs. septic pollution

• There are approximately 100,000 septic tanks in the Silver Springs and Rainbow Springs Basin, at an average cost of $15,000 per tank it will cost $1.5 billion to remediate septic tanks in this one BMAP

  - Total state annual springs funding across all Springs is $50 million

• Both Springs systems are projected to still be heavily polluted even after fully addressing septic tank pollution
BMAP Challenges

- FSC Member groups participated in the BMAP process for numerous OFS
- BMAPs were originally required to be adopted by July 2018
- Adoption delayed for six months at request of Home Builders Assoc.
- Plans were adopted by DEP in January 2019
- On January 4th, seven FSC member groups challenged five of the adopted BMAPs (light green) covering 15 OFS
- First BMAP challenges in Florida history
BMAP Challenges

- The five BMAPs were selected because they fail to meet the most basic requirements of law, including identifying projects to meet state water quality goals
- Common defects in the plans:
  - Failing to meet water quality goals
  - Questionable modeling
  - Inadequate clean-up plans for septic tanks
  - Failure to account for future growth
  - And failure to include legislatively mandated details about corrective projects

<table>
<thead>
<tr>
<th>BMAP</th>
<th>FSC Organizational Challengers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Santa Fe River</td>
<td>Ichetucknee Alliance; Our Santa Fe River</td>
</tr>
<tr>
<td>Silver Springs &amp; Rainbow Springs</td>
<td>Rainbow River Conservation ; Silver Springs Alliance</td>
</tr>
<tr>
<td>Suwannee River</td>
<td>Sierra Club (Suwannee – St. Johns Group)</td>
</tr>
<tr>
<td>Volusia Blue Spring</td>
<td>Save the Manatee Club</td>
</tr>
<tr>
<td>Wekiwa &amp; Rock Spring</td>
<td>Friends of the Wekiva River</td>
</tr>
</tbody>
</table>
Hearing Currently Underway in Tallahassee

- FSC has taken responsibility for case management and fundraising
  - Retained attorneys John Thomas, Terrell Arline, Doug MacLaughlin and Anne Harvey
  - Recruited and prepared five expert witnesses on septic tanks, hydrology, water quality restoration, fate and transport of nitrogen, agricultural pollution and best management practices

- Hearing scheduled through November 22\textsuperscript{nd}
- Ruling expected in early 2020
What Happens When We Win

- DEP is required to redo the BMAPs to
  - Meet water quality goals
  - Address future growth
  - Fix major errors in estimating loading from existing septic tanks and benefits from septic tank remediation
  - Develop effective management practices for agriculture and ensure they have the most up to date information from DACS
  - Follow the law for Outstanding Florida Springs

- Puts Rainbow Springs on a Path to Meet Water Quality Goals Within 20 Years
How FSC is Making Progress in 2019/2020

- FSC brings together springs and water focused groups from across the state to increase our effectiveness and relative power
- Lobbying for improved BMAPs, MFLs, and the development of advanced best management practices
- Filing legal challenges to MFLs and BMAPs that are not protective of water resources and violate statute
- Supporting candidates for water management district governing board seats
- Running aggressive advocacy campaigns on key issues
- Informing the public and decisionmaker
- Opposing water use permit like Nestle in impaired areas
What You Can Do Now

• 33% of nitrogen loading in the Rainbow basin is from septic tanks and urban and sports fertilizer - do what you can to minimize your personal nitrogen loading

• However, individually there is little we can do to address the largest sources of nitrogen pollution without uniting together

• Support environmental groups that share your priorities

• Contact your Legislators and advocate for advanced agricultural best management practices and more funding for land conservation

• Attend water management district meetings

• Join the Florida Springs Council and participate in our advocacy campaigns and events

• Donate expertise or money to one of our legal or legislative campaigns
www.floridaspringscouncil.org