Attoyac Bayou Watershed Partnership Meeting Minutes

December 8, 2011
Nacogdoches County Farm Bureau Conference Facility
6:00 PM
29 people attending

All presentations summarized below are available on the project website at:
http://attoyac.tamu.edu/meetings

6:00 PM: Mr. Anthony Castilaw, CES: Meeting Opening and Introductions

- Welcomed everyone to the meeting and thanked them for their attendance
- Reiterated the need for continued stakeholder participation and support
- Highlighted the local emphasis in watershed protection plans and how the project team is working for the watershed partnership to craft the WPP into what they want it to be

6:05 PM: Mr. Brian Sims, ANRA: Water Quality Monitoring Update

Presentation #1 on Project Website

Monitoring Update:
- Analysis being done on to measure Ammonia, Nitrate+Nitrite-Nitrogen, Dissolved Orthophosphorus, Total Phosphorus, Total Suspended Solids and E. coli

- data collected on the Bayou and the Creeks is submitted to TCEQ for inclusion in their Surface Water Quality Management Information System (SWQMIS)
  - instructions to access this data can be found on the project website at:
    http://twri.tamu.edu/resources/swqmis-instructions

- data analysis thus far has shown that water quality has been quite variable for most parameters

- R² – (R squared, or best fit lines) were added to the E. coli data in this presentation to show the trend in E. coli levels over the monitoring period. A R² value of 1 means that the trend line perfectly fits the data set and that you should be able to accurately predict the next value that will be measured. A R² value of 0 means that the trend line does not fit the data well at all and that the next value measured cannot be predicted with any confidence.
- In the data presented, the $R^2$ lines are strongly influenced by extreme values periodically recorded

- the water quality standard for E. coli is a geometric mean of 126 colonies of bacteria per 100 mL of water
  - Site 10636: Attoyac Bayou @ SH 21 – currently above the standard: 158.9
  - Site 15253: Attoyac Bayou @ SH 7 – currently above the standard: 154.0
  - Site 16076: Attoyac Bayou @ US 59 – currently above the standard: 158.4
  - Site 16083: Waffelow Creek @ FM 95 – currently meets the standard: 85.3
  - Site 16084: Terrapin Creek @ FM 95 – currently above the standard: 175.3
  - Site 20841: Attoyac Bayou @ FM 138 – currently above the standard: 218.5
  - Site 20842: Attoyac Bayou @ US 84 – currently meets the standard: 40.3
  - Site 20843: Naconiche Creek @ FM 95 – currently above the standard: 168.2
  - Site 20844: Big Iron Ore Creek @ FM 354 – currently above the standard: 334.7
  - Site 20845: West Creek @ CR 2913 – currently above the standard: 187.1

- drought has certainly been influencing monitored instream water quality; this can especially be seen the elevated nutrient levels recorded this summer

- the monitoring site at US84 has been constantly pooled due to restrictions in the channel. Monitoring at this site has continued, but it is noted in the data record and the data analysis report that this site is pooled with no flow.

- data records will be submitted to TCEQ and they will determine the usability of these data for water body assessment

- in light of the current drought conditions, TCEQ has actually issued some interim monitoring guidance on additional data to record throughout the duration of the drought

- additionally, TCEQ is meeting next week with water quality data collectors and analysts state-wide to discuss how best to utilize data collected during the drought

Questions and Answers
Q: have any changes in water quality been observed that are a result of hydro-fracking in the watershed?
A: not that we have seen. Typically a spike in chlorides would be seen if oil & gas operations are directly polluting a waterbody. We haven’t seen that here or anywhere else with in the river basin.

6:30 PM: Mr. Lucas Gregory, TWRI: Population Density Estimates and Fecal Loading /Production Rates

Presentation #2 on Project Website

Density Estimates and their Sources
- animal/human density estimates are needed to predict bacteria loading in the watershed to the best of our ability

- these density estimates, paired with the landuse/landcover map are integral pieces of data needed to make a good estimate of bacteria contributions

- estimates for cattle, deer, dogs, feral hogs, horses, poultry and septic systems will be made
- multiple sources of data were used to come up with some preliminary estimates; the sources used include: local, regional, state and national datasets derived from councils of government, AgriLife Extension, IRNR, NRCS, TPWD, TWRI, USDA

- results from the landowner survey conducted during the September 22 meeting were presented alongside the published data and other estimates

- watershed partnership members were asked to choose a number of animals/OSSFs in the watershed to model as well as their associated fecal production and fecal coliform production rates

**Numbers Selected for Modeling Purposes by Watershed Stakeholders:**

Cattle: 23,646  
Deer: 7,547  
Dogs: 11,285  
Feral Hogs: 10,155  
Horses: 587  
Hunting Camps: 125  
Disposal Method: Straight Pipe  
Location: Forests  
Septic Systems: 6,624  
Septic System Failure Rates across the watershed: 50% due to age of most houses in watershed  
Poultry Numbers: 12,620,404

Q: how are poultry numbers modeled?  
A: The numbers of chickens really aren’t modeled, but rather an attempt to model the amount of chicken litter is made; however, this is an educated best guess. We will illustrate how this is done at the next meeting

**Fecal coliform numbers and fecal production rates selected by Watershed Stakeholders:**

- Fecal coliform to E. coli conversion rate of 0.63 was selected and is based on the ratio between the E. coli and fecal coliform standards

<table>
<thead>
<tr>
<th>Animal/ Source</th>
<th>Fecal coliform density (cfu/g)</th>
<th>Fecal production (lbs/AU/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td>2.3E+05</td>
<td>82</td>
</tr>
<tr>
<td>Deer</td>
<td>2.2E+06</td>
<td>15</td>
</tr>
<tr>
<td>Dogs</td>
<td>5.0E+09 cfu/day per dog</td>
<td></td>
</tr>
<tr>
<td>Feral Hogs</td>
<td>4.05E+05</td>
<td>65</td>
</tr>
<tr>
<td>Horses</td>
<td>1.26E+04</td>
<td>51</td>
</tr>
<tr>
<td>Poultry</td>
<td>1.3E+06</td>
<td>82</td>
</tr>
<tr>
<td>Failing Septics</td>
<td>1.0E+07</td>
<td>70 gallons effluent/person/day</td>
</tr>
<tr>
<td>WWTFs</td>
<td>25cfu/100ml</td>
<td>50% of permitted effluent discharge</td>
</tr>
</tbody>
</table>

7:30 PM: Mr. Neil Boitnott, CES: Watershed Protection Plan Development

*Presentation #3 on Project Website*

**What is a WPP:** voluntary, holistic approach to watershed management developed by stakeholders  
- WPPs are built upon 9 key elements described in EPA Handbook for Developing WPPs
Steps to Develop a WPP:
- Build Partnerships
- Characterize the Watershed
- Set Goals and Identify Solutions
- Design Implementation Program
- Implement Plan
- Measure Progress and Make Adjustments
- Improve the Plan

**This is an iterative process that builds on lessons learned throughout the entire process**

Where Are We Now?
- Currently at the end of the Watershed Characterization Phase
- beginning to develop components of the WPP

What is in a WPP?
- Typical introductory material
- Watershed Overview:
  - boundaries, characteristic, history, uses, etc.
- Watershed Management Approach Description:
  - impacts of a watershed on water quality, adaptive management strategy, etc.
- Watershed Analysis Results:
  - water quality monitoring, BST, SELECT modeling, LDCs
- Watershed Concerns:
  - sources of pollution, where critical areas are, needed load reductions, management measures needed
- Measures of Success:
  - how will progress in achieving water quality goals be measured
- Implementation Goals and Strategies:
  - define implementation goals and strategies and milestones

*Above all, the WPP includes what the stakeholders want it to include.

Next Meeting: Thursday, March 8th at 6 p.m. at the Nacogdoches County Farm Bureau Conference Facility