Buck Creek Monitoring Project

Clean Water Act §319(h) Nonpoint Source Grant provided by TSSWCB

Buck Creek Watershed Partnership Stakeholder Meeting
August 25, 2011
Wellington, TX
How we got here:

- Every 5 years Clean Rivers Program tests public access sites. Red River Authority of Texas, USGS, and TCEQ do much of the testing. Areas are rotated every 5 years.
- Buck Creek was tested from 1996 to 2001. 21 samples were taken at the Hwy 83 bridge. Sampling once per quarter. (During a lengthy drought)
- Buck Creek failed to meet E. coli standards with a geometric mean of more than 126 cfu’s.
- Buck Creek was listed as Bacterially impaired by TCEQ
- Local SWCD’s wanted more data.
- Texas AgriLife Research was approached and proposed the first monitoring study in 2003.
Water Quality Assessment

• Beginning in May 2004, water quality data were collected by Texas AgriLife Research-Vernon Water Quality Lab through TSSWCB Project 03-07

• Sampling continued in November 2007 through TSSWCB Project 06-11 and concluded in July 2009

• Sampling illustrated that bacteria levels in the creek were within the state’s standard, but still periodically elevated

• As a result, the development of the Buck Creek WPP has continued
Purpose of Interim Monitoring

• To provide additional water quality monitoring data in support of future WPP implementation

• Provides a baseline of data to assess future WPP implementation success

• Provide data illustrating that groundwater is the primary source of nitrate in Buck Creek
Project Overview

- Texas AgriLife Research-Vernon Water Quality Lab: currently monitors 7 sites in watershed once per month

- Each 100 mL sample is checked for E.coli & Nitrates—currently on the list of concerns

- Maintain interaction with members of the Buck Creek Watershed Partnership
### Historical Sampling

<table>
<thead>
<tr>
<th>Year</th>
<th># Samples</th>
<th>Geo. Mean</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>E. coli</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>14</td>
<td>156</td>
<td>NS</td>
</tr>
<tr>
<td>2004</td>
<td>18</td>
<td>309</td>
<td>NS</td>
</tr>
<tr>
<td>2010_01</td>
<td>257*</td>
<td>97.6</td>
<td>MEETS</td>
</tr>
<tr>
<td>2010_02</td>
<td>192*</td>
<td>44.2</td>
<td>MEETS</td>
</tr>
<tr>
<td>Nitrate</td>
<td></td>
<td>Average</td>
<td>Screening Level: 1.95 mg/L</td>
</tr>
<tr>
<td>2010</td>
<td>9</td>
<td>3.86</td>
<td>CS</td>
</tr>
</tbody>
</table>

*Samples collected 12/01/01-11/30/08*
Why Worry with Nitrates?

• Nitrate screening level in surface water is 1.95 mg/L
• State is very likely to create nutrient standards within next 3 years; this will include nitrates
• Buck Creek watershed overlays the Blaine and Seymour Aquifers- noted for high Nitrate levels
• Nitrates can also come from fertilizers, rain- esp. during lightning storms, decaying humus
Figure 1. Distribution of NO$_3$-N in groundwater in Texas (TWDB Data).
What’s Next for Buck Creek?

• Continue monitoring: currently planned through June 2012
• Nitrate data from TWDB, Well data, sampling of creek to request variance for Buck Creek
• Finish WPP: Lucas will talk about this next
• Continue connection with Stakeholders
• Final Report that summarizes monitoring results
What can YOU do?

• Work with us to finish the Buck Creek WPP
• Keep Buck Creek off the list in upcoming years by voluntarily implementing the WPP
  – Report illegal dumping of Wastes
  – Reduce the feral hog population
  – Upgrade septic systems
• Keep up the good work!!!!
  – Remain involved in the Buck Creek Watershed Partnership
  – Attend a Watershed Stewards Class near you!
Cooperating Agencies:

- TSSWCB: Clean Water Act §319(h) Nonpoint Source Grant
- Donley County SWCD
- Hall-Childress SWCD
- Salt Fork SWCD
- Red River Authority of Texas
- USDA-APHIS: Canyon, Austin
- Texas Water Resources Institute (TWRI)
- Texas Parks and Wildlife Dept.
- Texas AgriLife Extension: Collingsworth Co, Vernon
- Texas AgriLife Research: Vernon, El Paso, Amarillo
- Texas Water Development Board
- Mesquite GCD