Nolan Creek/South
Nolan Creek

Assessment of Water Quality
and Watershed Based Planning

Texas Institute for Applied Environmental Research
Stephenville, Texas
&
City of Killeen
Segment 1218
2010 & 2012 Texas Integrated Report

Impaired due to elevated bacteria in two Assessment Units (AUs)

- 1218_02 – South Nolan from Liberty Ditch to confluence with North Nolan/Nolan Creek
- 1218C_01 – Little Nolan Creek

Concerns for elevated nutrients based on screening levels in AU 1218_02
# $E.\ coli$ Assessment

<table>
<thead>
<tr>
<th>2012 303(d) List</th>
<th>Criteria $E.\ coli$ (colonies/100 mL)</th>
<th>Geometric Mean $E.\ coli$ (colonies/100 mL)</th>
<th>Number of Samples Assessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1218_02 South Nolan Creek</td>
<td>126</td>
<td>188</td>
<td>80</td>
</tr>
<tr>
<td>1218C Little Nolan Creek</td>
<td>126</td>
<td>164</td>
<td>14</td>
</tr>
</tbody>
</table>
### Nutrient Concerns 1218_02

<table>
<thead>
<tr>
<th>2012 Report</th>
<th>Screening Level (mg/L)</th>
<th>Mean of Exceed (mg/L)</th>
<th>Number Samples Assessed</th>
<th>Number Samples Exceed</th>
<th>Percent Exceed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrate</td>
<td>1.95</td>
<td>8.09</td>
<td>35</td>
<td>33</td>
<td>94%</td>
</tr>
<tr>
<td>Ortho-P</td>
<td>0.37</td>
<td>1.45</td>
<td>36</td>
<td>33</td>
<td>92%</td>
</tr>
<tr>
<td>Total-P</td>
<td>0.69</td>
<td>2.10</td>
<td>23</td>
<td>13</td>
<td>57%</td>
</tr>
</tbody>
</table>
Nolan Creek/South Nolan Creek Project

- Funded through TCEQ Nonpoint Source 319 Program

- Total project cost
  - Federal - $275,651 (60%)
  - Local Match - $183,767 (40%)
  - Total - $459,418

- Builds upon FY04 319(h) Grant Project
  - Focused on upper 6.9 miles of 1218

- Current project focuses on impaired Assessment Units 1218_02 and 1218C
Timeframe: October 2012 – August 2015

Goals: Provide Stakeholders Watershed Information through

- Building Partnerships
- Water Quality Monitoring
- GIS & Data Inventory
- Modeling (SELECT & LDCs)
- Education/Outreach Activities
- Public Meetings for Project Updates & Stakeholder Input
Progress to Date

- **Building Partnerships**
  - Various meeting with stakeholders & admin groups

- **Water Quality Monitoring**
  - Initiated in May 2013 with approval of QAPP

- **GIS & Data Inventory**
  - On going, draft completed April 2014

- **Modeling (SELECT & LDCs)**
  - Forthcoming, QAPP approved May 2013
Progress to Date

Education/Outreach Activities

- Watershed Stewards Workshop - October 2013
- Texas Stream Team Training - Sep. 14, 2013 and upcoming on May 17, 2014
- Speakers at Public Meetings – Tiffany Morgan, BRA spoke on status of nutrient criteria
- Project website
  http://www.killeentexas.gov/nolancreekwatershed
Progress to Date

- **Public Meetings for Project Updates & Stakeholder Input**
  - Public Participation Plan completed March 2013
  - Fact Sheets Developed
  - Public Meetings held
    - July 31, 2013 – Killeen
    - Sep. 5, 2013 – Harker Heights
    - Jan. 15, 2014 - Killeen
Outreach – Activity and Event Updates

Assessment of Water Quality & Watershed Based Planning for Nolan Creek

Why Nolan Creek?
Portions of Nolan Creek/South Nolan Creek currently do not support its designated uses and needs improving. Cleaner water allows for recreational use such as swimming, fishing, wading, and canoeing. Recreational use of Nolan Creek/South Nolan Creek promotes a stronger economy and healthier lifestyle for area residents.

Here's How YOU can get involved!

Upcoming Events
March 22 & 23: Rainwater Harvesting Seminar (Killeen, Texas)

Upcoming Training Opportunities
May 17: Texas Stream Team Training (Killeen, Texas)

Community Involvement
Nolan Creek Recreational Improvement Project

Contact Information:
Nikki Jackson
TIAER Project Manager
(254) 968-1902; njackson@tiaer.tarleton.edu
Website: www.killeentexas.gov/nolancreekwatershed

Goals for Nolan Creek
To restore good water quality throughout Nolan Creek/South Nolan Creek Watershed and to involve and educate residents on healthy water conservation of their watershed.
Nolan Creek Watershed Fact Sheet

Home Chemical Collection Event

Home Chemical Collection Event on February 15, 2014:

Event information
Read More

Next Meeting

Save the Date: The next Nolan Creek Partnership meeting is tentatively scheduled for late April. Please check the website for details after April 1, 2014.
Read More

Stream Team Core (Basic) Training

May 17, 2014
Bob Gilmore Senior Center
10:00 a.m. - 3:30 p.m.

Event information

Nikki Jackson
Senior Project & Policy Director, TIAER
Nikki Jackson
(254) 968-1902

Join Mailing List

If you would like to receive updates about the progress of the Nolan Creek Watershed Partnership, please email the following information to Nikki Jackson:

- First and last name
- Entity
- Email address
- Phone number
- Street address
- State
- Zip code

Your contact information will not be sold or shared and will only be used to convey Partnership information.

Links

http://www.killeentexas.gov/nolancreekwatershed
Project Monitoring

Monthly Routine
  • 11 Stations

Quarterly Storm
  • 4 Stations

Presenting Preliminary Data -
    May through October 2013
Routine (6 events) & Storm (2 events)
Monthly Routine Monitoring

Field Parameters

- Flow
- Dissolved Oxygen (DO)
- Water Temperature
- Specific Conductance
- pH
Monthly Routine Monitoring

Laboratory Parameters

• Bacteria as *E. coli*
• Nitrite-Nitrogen + Nitrate-Nitrogen (NO$_2$-N+NO$_3$-N)
• Orthophosphate-Phosphorus (PO$_4$-P)
• Total Phosphorus (TP)
• Total Kjeldahl Nitrogen (TKN)
• Total Suspended Solids (TSS)
Quarterly Storm Monitoring

Laboratory Parameters
  • Same as for Routine Monitoring

Field Parameters
  • Flow if safety allows
18828 – South Nolan at 38th St

Automated Sampling Station
Preliminary Routine Data
(6 Monthly Events)

- **E. coli (MPN/100 mL)**

  - Geomean Routine (May-Oct)
  - Primary Contact Recreation Criterion

Data points for different samples, ranging from low to high values, with a dashed line indicating the criterion level.
Preliminary Data Routine vs Storm
(6 Routine & 2 Storm Events)

E. coli (MPN/100 mL)

- Geomean Routine (May-Oct)
- Geomean Storm (Sep & Oct)
- Primary Contact Recreation Criterion
Project Goal

Provide the data needed to remove Nolan Creek/South Nolan Creek from the 303(d) List or allow development of a WPP or TMDL to address the impairment