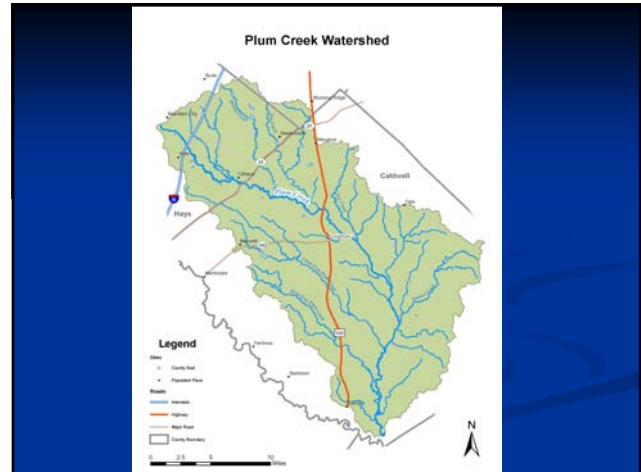


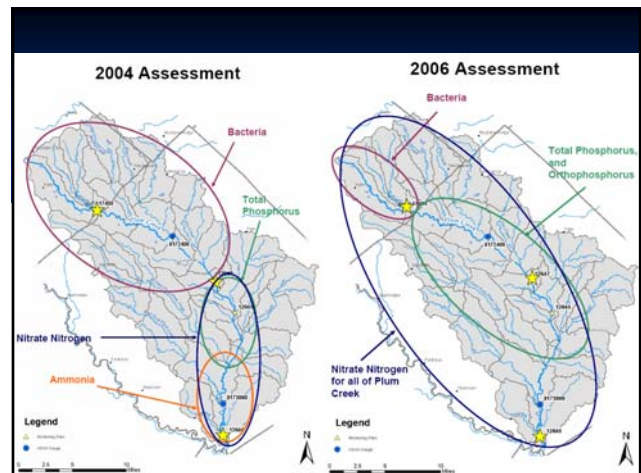
Update and Status of Plum Creek Watershed Protection Plan

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Texas Cooperative Extension



Introduction

- Plum Creek was placed on the State of Texas 2004 303(d) List of Impaired Waters for exceeding the water quality standard for bacteria (e.coli) and does not support its designated use for contact recreation.
- Plum Creek is also listed for elevated nutrient concerns for nitrates, total phosphorous and orthophosphorus. It was listed for ammonia in 2004 but not in 2006.
- Concerns for nutrients date back to the State of Texas 1998 305(b) report, which is a summary of all surface waters in Texas, and concerns for bacteria date back to the 2002 305(b) report.
- Based on monitoring conducted by the GBRA's Clean Rivers Program and the TCEQ, bacteria levels in Plum Creek exceed the stream standard of 126 org./100 ml for contact recreation



Plum Creek Watershed Partnership

- December 15, 2005 - Plum Creek was selected by the Wharton Regional WCSC as the pilot watershed
- April 2006 – Three Public Meetings in Watershed (116)
- May 9, 2006 – First Steering Committee Meeting (49)
- June 20, 2006 – Steering Committee Meeting/Work Groups (42)



Plum Creek Watershed Partnership Meetings

- July 2006 – Five Work Group Meetings
- July 27, 2006 – Watershed Tour (62)
- August 2006 – Selected as Pilot Watershed for Tri-Agency Water Quality Team (EPA, TCEQ, & TSSWCB)
- August 10, 2006 – Second Steering Committee Meeting and Technical Advisory Group Meetings
- September – December 2006 – Alternate months of Five Work Group and Steering Committee Meetings

Plum Creek Watershed Partnership

- January 2007 – Five Work Group Meetings
- February 2007 – Members Review WPP
- March 8, 2007 – Steering Committee Meeting
- April 2007 – Five Work Group Meetings
- May 10, 2007 – Steering Committee Meeting
- June 2007 – Five Work Group Meetings
- July 12, 2007 – Steering Committee Meeting

Plum Creek Watershed Partnership

- August 2007 – Meetings with the Cities in the watershed to discuss implementation strategies.
 - August 13 – Luling
 - August 14 – Umland
 - August 15 – Buda
 - August 17 – Kyle
 - August 22 – Lockhart
- Presentation on Plum Creek and Tour (26) at 15th National NPS Monitoring Conference.
- September 13, 2007 – Steering Committee and Technical Advisory Group Meeting.

USEPA Nine Elements

- Identification of the causes that will need to be controlled to achieve the load reductions (b)
- Estimate of the load reductions expected for the management measures (e)
- Description of management measures that will need to be implemented to achieve the load reductions (b)
- Estimate of technical and financial assistance needed to implement this plan
- Information/education component that will be used to enhance public understanding of this plan
- Schedule for implementing management measures (c)
- Description of interim, measurable milestones for determining whether management measures (e) are being implemented
- Set of criteria that can be used to determine whether load reductions (b) are being achieved
- Monitoring component to evaluate effectiveness of implementation measured against the criteria (h) established

Assessment Tools

- TAMU team from Spatial Sciences Lab and Biological and Agricultural Engineering Dept.
- Load Duration Curves for Bacteria and Nutrients to estimate load reductions
- Spatially-explicit Geographic Information System (GIS) methodology – SELECT
- Soil and Water Assessment Tool - SWAT

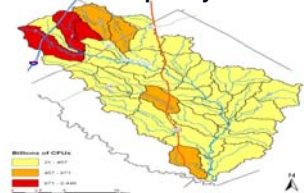


Potential Sources

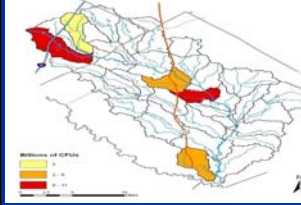
Potential Sources	Bacteria	Nutrients	Other
Septic Systems	X	X	X
<u>Wildlife</u>			
Deer	X	X	
Feral Hogs	X	X	
Cropland		X	
<u>Livestock</u>			
Sheep and Goats	X	X	
Horses	X	X	
Cattle	X	X	
Oil and Gas Production			X
Urban Runoff	X	X	X
Wastewater Treatment Facilities	X	X	

Average Daily Potential *E. coli* Load

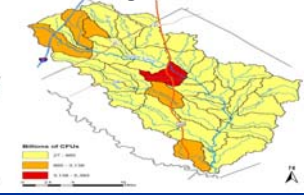
Septic Systems



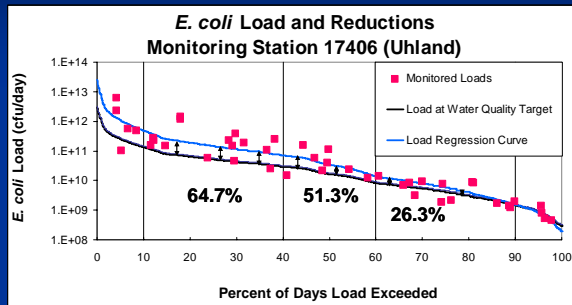
WWTPs



Dogs



Bacteria LDC - Umland



WPP Progress

- Source Identification
- LDCs – Estimate Load reductions
- SELECT - targets management practices
- We have the background, methods of analysis, estimates of pollutants, and pollutant sources
- Currently working on sections for management measures, outreach and education strategy, timeline, measures of success, monitoring plan, technical and financial assistance.

GBRA's Plum Creek Elementary Water Quality Program

- Water quality education and monitoring at 5 elementary schools in the watershed
- Reaching about 760 4th and 5th graders
- Analyzed water from Plum Creek in the classroom 3 times during the past school year
- TCE, GBRA, Plum Creek Watershed Partnership sent home information packets

Exciting Watershed Highlights

- GBRA Plum Creek Elementary will continue this year and also include High School
- Receiving in September \$150,000 for water quality outreach and education from TCEQ Clean Water Act 106 funding
- Receiving additional funding from TSSWCB for one year of targeted monitoring of bacteria and nutrients.
- Receiving funding from TCEQ for 2 Stormwater BMP Demonstrations



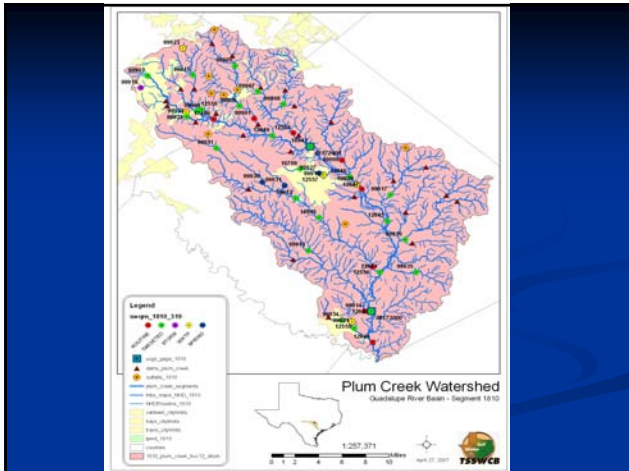
Targeted Monitoring Plan

- Developed by Plum Creek Watershed Partnership, TSSWCB, GBRA and TCE
- Funded by TSSWCB to assist with source identification and WPP development
- Six types of surface water quality monitoring will be conducted including:
 - Routine ambient (8 sites monthly)
 - Targeted watershed (35 sites twice per season, once under dry and once under wet weather conditions)



Targeted Monitoring Plan Continued

- Stormflow (automated stormflow monitoring at 1 urban/residential site during 4 storm events)
- 24-hour DO (at 8 routine sites)
- Effluent (5 WWTPs once per season collecting field, conventional, flow, bacteria and effluent parameter groups)
- Spring flow (3 springs once per season)



Thanks!

Questions?

