



Tarleton State University
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Smith Creek

Recreational Use Attainability Analysis Overview

Texas Institute for Applied Environmental Research
Stephenville, Texas



March 6, 2014



Project Partners

- Texas State Soil and Water Conservation Board (TSSWCB)
- Texas Institute for Applied Environmental Research (TIAER)



TSSWCB

- Provide state oversight
- Management and coordination of project activities
 - Project partners
 - Texas Commission on Environmental Quality (TCEQ)
- Provide project funding



TIAER

- Project administration
- Develop & maintain stakeholder relations
- Perform RUAA survey activities
- GIS inventory
- Facilitate meetings
- Develop final technical reports



Importance of Being a Stakeholder

- Stakeholders:
 - Make and implement decisions
 - Affected by decisions made
 - Participate in the implementation planning process



Who is a Stakeholder?

- Landowners
- Citizens
- Citizen Groups
- Local Representatives
- Local Governmental entities (cities, counties, Soil and Water Conservation Districts)
- Non-Governmental Organizations



Why We Are Here

- EPA – Clean Water Act
 - November, 1972
- TCEQ – Texas Integrated Water Quality Report
 - Texas 303 (d) List
 - Smith Creek (2006)



Bacteria Impairment

- Smith Creek currently does not meet the water quality standard for primary contact recreation
 - Due to elevated levels of bacteria, *E. coli*.
 - Requires action to meet the standards that are set by the State of Texas and EPA.
 - Geometric mean should not exceed 126 cfu/ 100ml

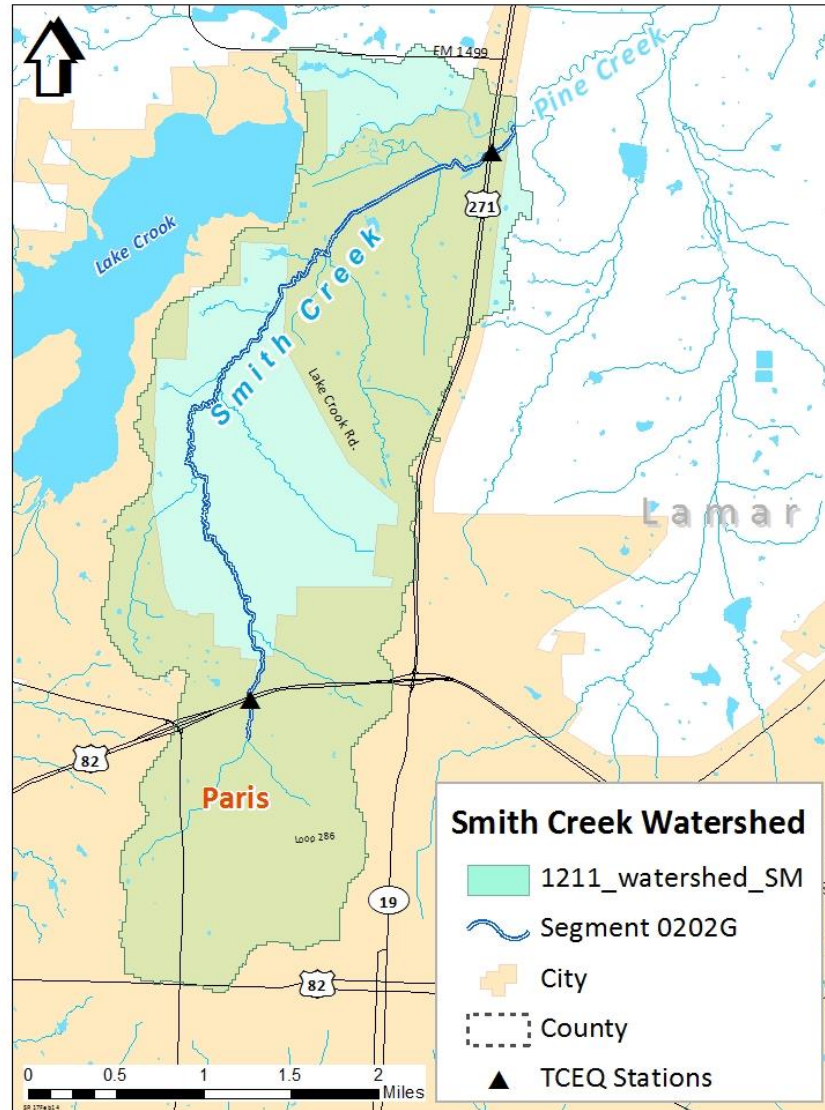


Impaired Stream Segments

- Smith Creek (0202G) is impaired for primary contact recreation
 - 2006 Texas Water Quality 303(d) List
 - Bacteria
 - Current Geometric mean = 987 cfu/ 100mL



Water Quality Monitoring Locations for Smith Creek



Water Quality Monitoring Locations for Smith Creek

Site Description

Smith Creek at Hwy 82/271 upstream – TCEQ 21027

Smith Creek at Hwy 271 – TCEQ 17044





RUAA

- One method for removing Smith Creek from the impaired list for bacteria
 - Assess recreational use to determine if standard is appropriate
 - Recreational use attainability analysis (RUAA)





Purpose of RUAA

- To determine if primary contact recreation is occurring, or if another recreational use category may be more appropriate.



RUAA Use Categories

- **Primary Contact Recreation** – 126 cfu/100mL
 - Activities that are presumed to involve a significant risk of ingestion of water
 - (e.g. wading by children, swimming, water skiing, diving, tubing, surfing, and the following white water activities: kayaking, canoeing, and rafting).
- **Secondary Contact Recreation 1** – 630 cfu/100mL
 - Activities that commonly occur but have limited body contact incidental to shoreline activity
 - Wading by adults, fishing, canoeing
 - Activities are presumed to pose a less significant risk of water ingestion than primary contact recreation but more than secondary contact recreation 2.



RUAA Use Categories

- **Secondary Contact Recreation 2** – 1030 cfu/100 mL
 - These activities occur less frequently than secondary contact recreation 1 due to physical characteristics of the water body or limited public access.
- **Noncontact Recreation** – 2060 cfu / 100 mL
 - Activities that do not involve a significant risk of water ingestion, such as those with limited body contact incidental to shoreline activity, including birding, hiking, and biking.



RUAA Components

- **Historical Information Review**- to document past recreational uses
- **Interviews**- to obtain feedback on current and past recreational uses from stakeholders
- **Field Surveys**- to document current stream conditions and uses





RUAA Components

Historical Information Review

- November 28, 1975 – Present
 - Any documentation of recreational use of Smith Creek
 - Newspaper clippings or other publications
 - Historical or Museum Records
 - Personal pictures or letters



RUAA Components

Stakeholder Interviews

- Document use of the creeks from individuals
 - Conducted during field surveys (if individuals are encountered)
 - Streamside landowners
 - Local residents
 - Other users
 - Interviews can be anonymous and conducted by phone, USPS mail, or email.



RUAA Components

Field Surveys

- Goal: 3 site for every 5 miles
 - At each site:
 - 300 meter reach traversed
 - Document
 - Stream characteristics that may promote or hinder recreational use
 - Observations of direct use or signs of recreational use
 - Interviews with individuals



RUAA Components

- 2 Field Surveys Conducted

- Base Flow Conditions

1. Sustained typical dry warm-weather flow
2. Between rainfall events

- Periods of Likely Use (May-Sept)

Air Temperature > 70°F

1. Spring Break
2. Weekends
3. Holidays
4. Summer



RUAA Components

- Field Data Sheets:
 - Stream characteristics
 - Current weather conditions & daily conditions for the previous month
 - Riparian zone, ease of bank access, dominant substrate
 - Document recreation observed (if any)
 - Stream and pool measurements



RUAA Components

- Field Photographic Records
 - Each Survey Site
 - Upstream
 - Left
 - Right Bank
 - Downstream
 - At 30, 150, 300 M

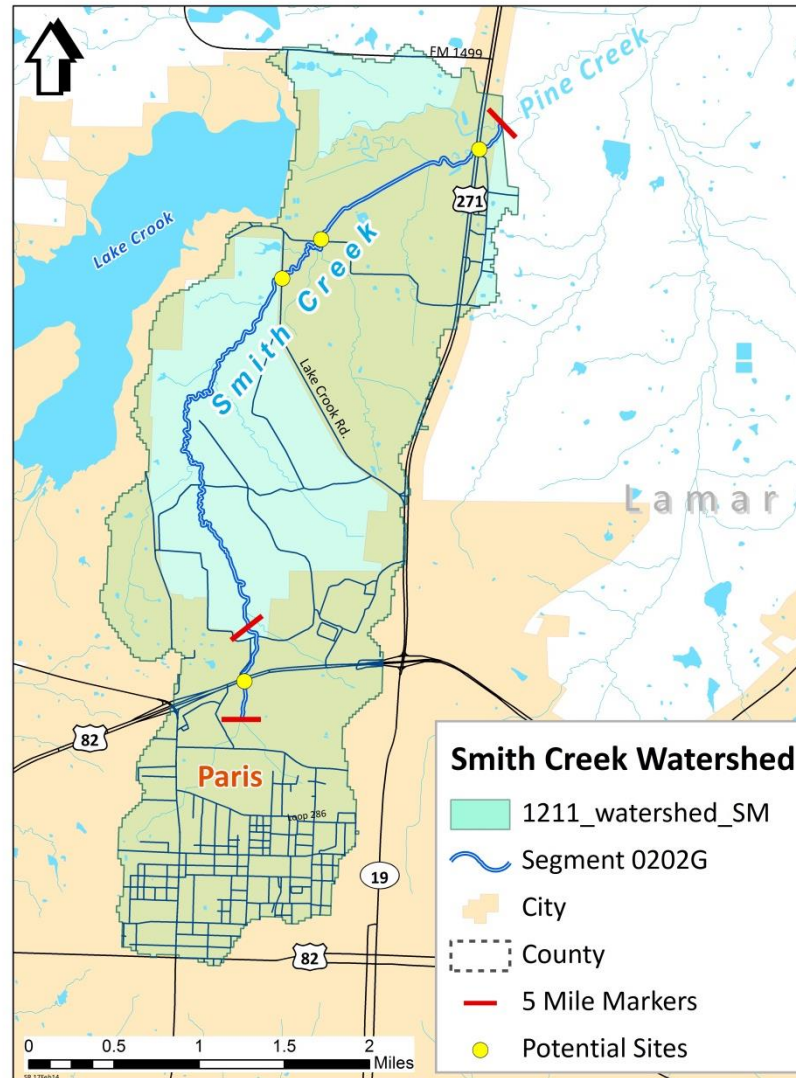


Site Selection for RUAA

- Currently proposed sites represent public road crossings, many of which are fenced
- Seeking Landowner permission to access points above and below road crossing and additional points on the creek
- Need stakeholder input on site selection and additional sites



Proposed Survey Sites for Smith Creek



Proposed Survey Sites for Smith Creek

Site Description

Smith Creek at Hwy 82/271 upstream – TCEQ 21027

Smith Creek at Old Lake Crook Rd

Smith Creek at Old Lake Crook Rd

Smith Creek at HWY 271 – TCEQ 17044



RUAA Site Selection Guidelines

- Identify areas where the water body is:
 - Accessible to the public
 - Has a high potential for recreational use
 - Road crossings
 - Public lands
 - Parks
 - Populated areas
- Characterize the full waterbody reach





RUAA Site Selection Guidelines

- Goal for RUAA Survey
 - 3 sites for every 5 miles of stream
- Smith Creek is about 6 river miles long
 - Goal: 3 sites





Time Frame

- Proposed Field Survey Dates
 - May 20 – 25, 2014
 - July 15 – 19, 2014Or
 - June 16 – 21, 2014
 - August 11 – 16, 2014



Questions on RUAA Overview?

Project Website:

<http://tiaer.tarleton.edu/ruaa/smith-creek.html>

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