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Prairie Creek, Kickapoo Creek in Henderson County, the Neches River Above Lake Palestine, Mud Creek, and West Mud Creek

Recreational Use Attainability Analysis Overview

Texas Institute for Applied Environmental Research
Stephenville, Texas

June 26, 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



Purpose of RUAA

- To determine if primary contact recreation is the correct use or if another recreational use category may be more appropriate.
 - Assess if the recreational standard is appropriate
 - Recreational use attainability analysis (RUAA)



Bacteria Impairment

- Prairie Creek, Kickapoo Creek in Henderson County, Mud Creek, West Mud Creek and the Neches River Above Lake Palestine are not meeting 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



RUAA Use Categories

- **Primary Contact Recreation** – 126 cfu/ 100 mL
- **Secondary Contact Recreation 1** – 630 cfu/ 100 mL
- **Secondary Contact Recreation 2** – 1030 cfu/ 100 mL
- **Noncontact Recreation** – 2060 cfu 100/ mL



Impaired Stream Segments

- Prairie Creek, Kickapoo Creek in Henderson County, the Neches River Above Lake Palestine, Mud Creek, and West Mud Creek are listed as impaired for primary contact recreation
- Prairie Creek (0606A)
 - 2002 Texas Water Quality 303(d) List
 - Bacteria
 - » Current Geometric mean = 165 cfu/ 100mL (0606A_01)
 - » Current Geometric mean = 138 cfu/ 100 mL (0606A_03)
- Kickapoo Creek in Henderson County (0605A)
 - 2000 Texas Water Quality 303(d) List
 - Bacteria
 - » Current Geometric mean = 253 cfu/100 mL



Impaired Stream Segments

- The Neches River Above Lake Palestine (0606)
 - 2008 Texas Water Quality 303(d) List
 - Bacteria
 - » Current Geometric mean = 229 cfu/100mL
- Mud Creek (0611C)
 - 2002 Texas Water Quality 303(d) List
 - Bacteria
 - » Current Geometric mean = 184 cfu/ 100mL (0611C_01)
 - » Current Geometric mean = 151 cfu/ 100mL (0611C_02)
- West Mud Creek (0611D)
 - 2010 Texas Water Quality 303(d) List
 - Bacteria
 - » Current Geometric mean = 187 cfu/ 100mL (0611D_01)
 - » Current Geometric mean = 258 cfu/ 100mL (0606A_02)



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

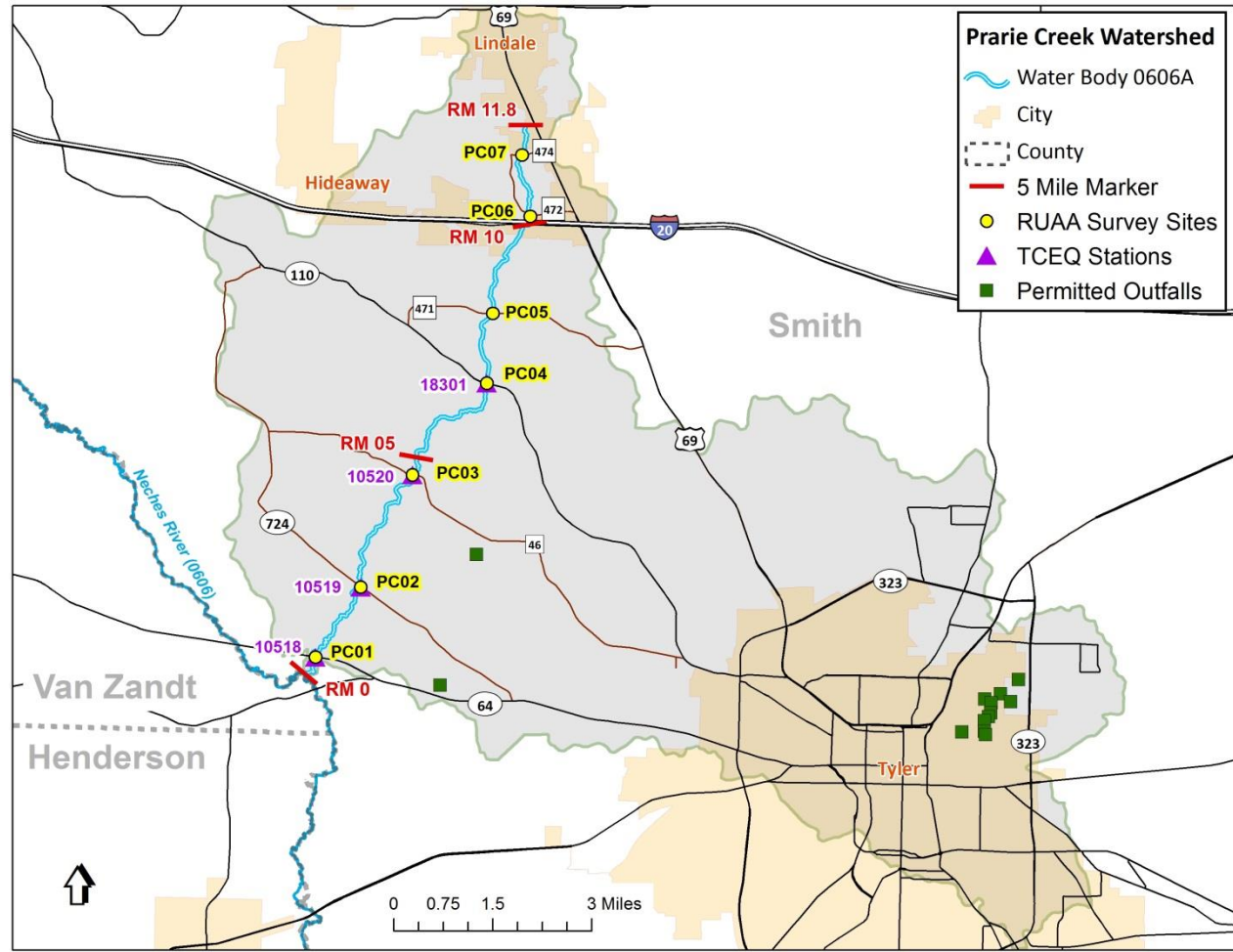


RUAA Survey Sites

- Prairie Creek
 - 7 RUAA Survey Sites
- Kickapoo Creek in Henderson County
 - 19 RUAA Survey Sites
- The Neches River Above Lake Palestine
 - 18 RUAA Survey Sites
- Mud Creek
 - 21 RUAA Survey Sites
- West Mud Creek
 - 12 RUAA Survey Sites



RUAA Survey Sites for Prairie Creek



First RUAA Survey-Prairie Creek



Up Stream at 150m at PC01



Trot Line at PC01

First RUAA Survey-Prairie Creek



Right Bank at 150m at PC02



Down Stream at 300m at PC02

First RUAA Survey-Prairie Creek



Logjam at 225m at PC03



Down Stream at 0m PC04

First RUAA Survey-Prairie Creek



Down Stream at 0m at PC05



Down Stream at 300m PC05

First RUAA Survey-Prairie Creek

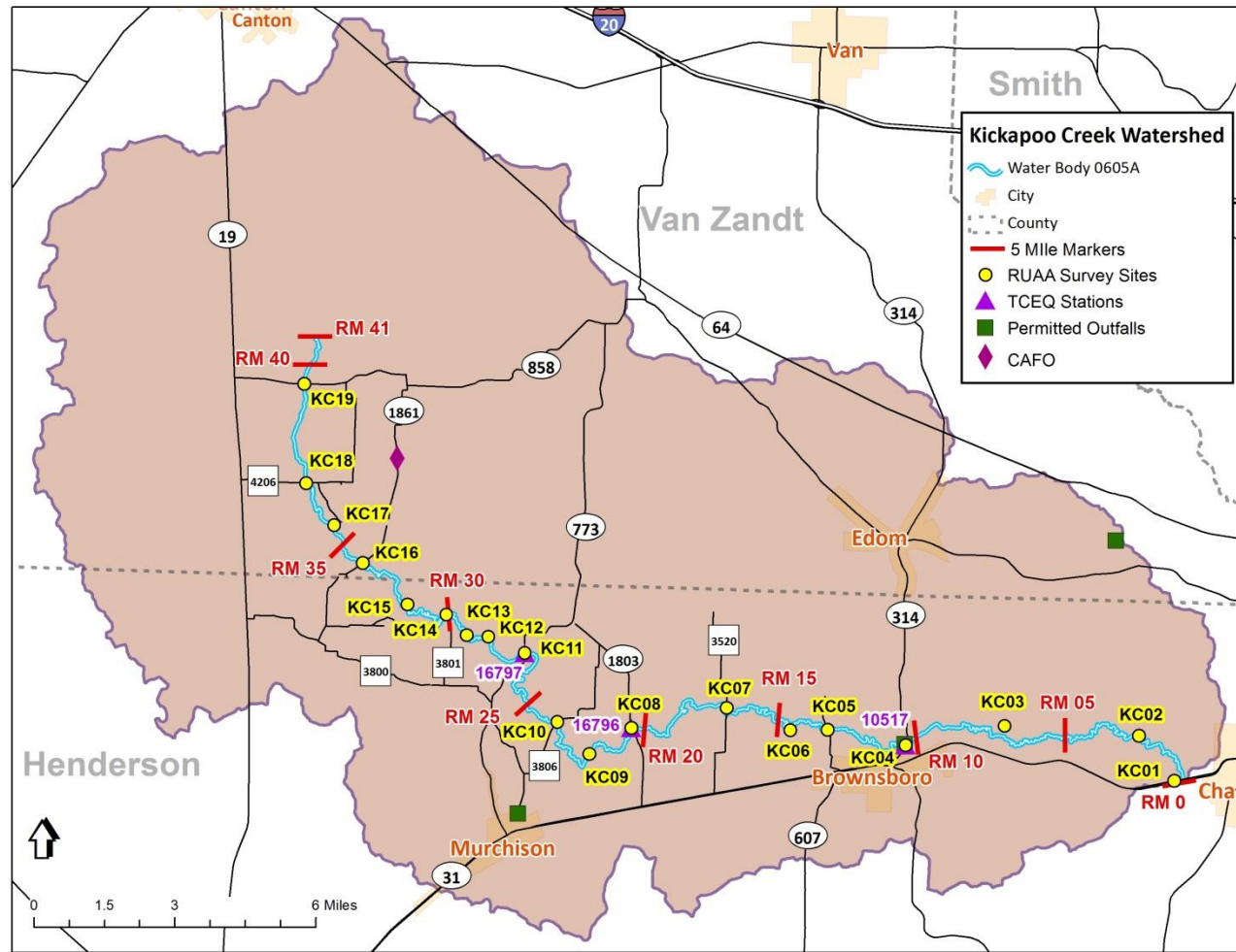


Down Stream at 300m at PC06

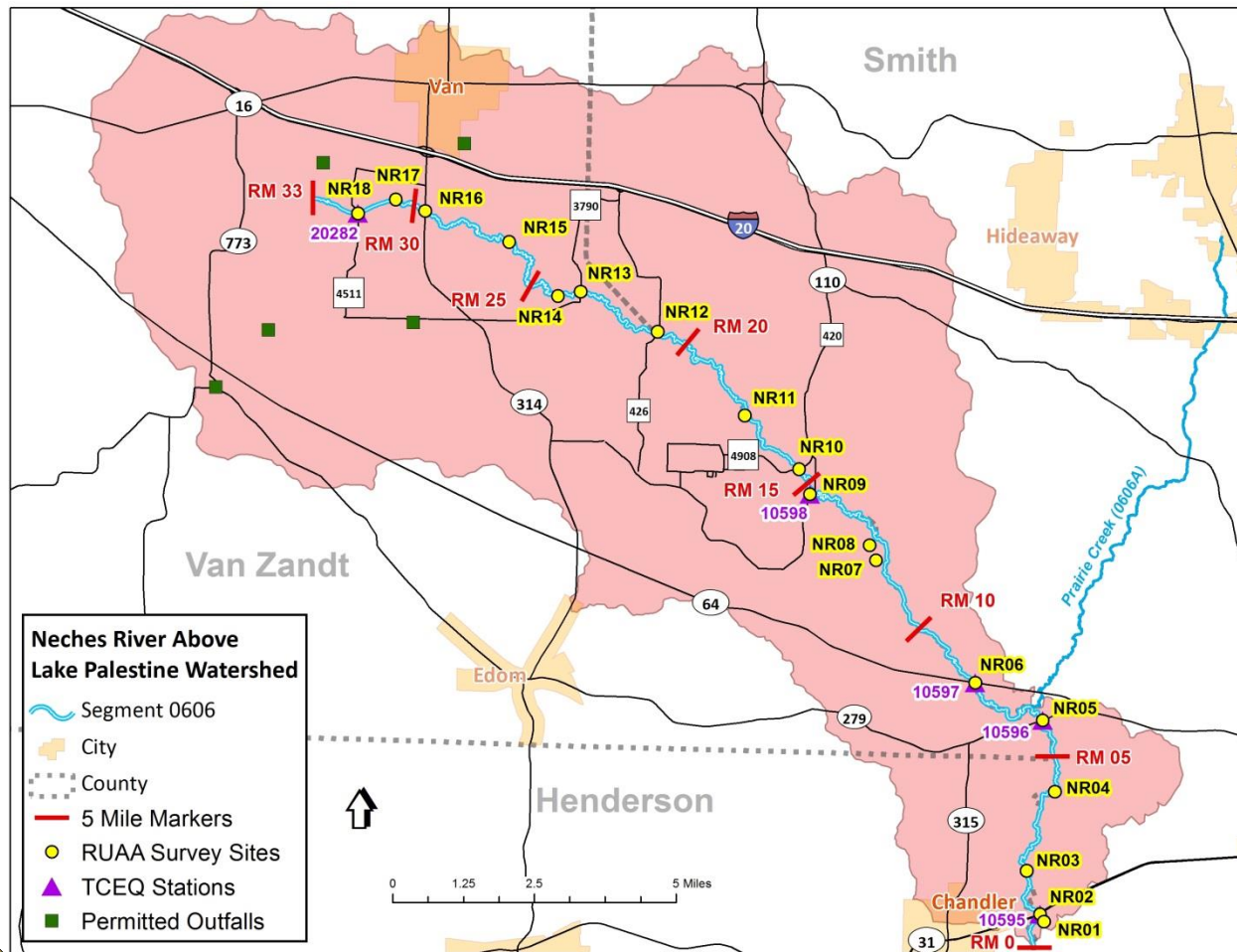


Trail from School at PC07

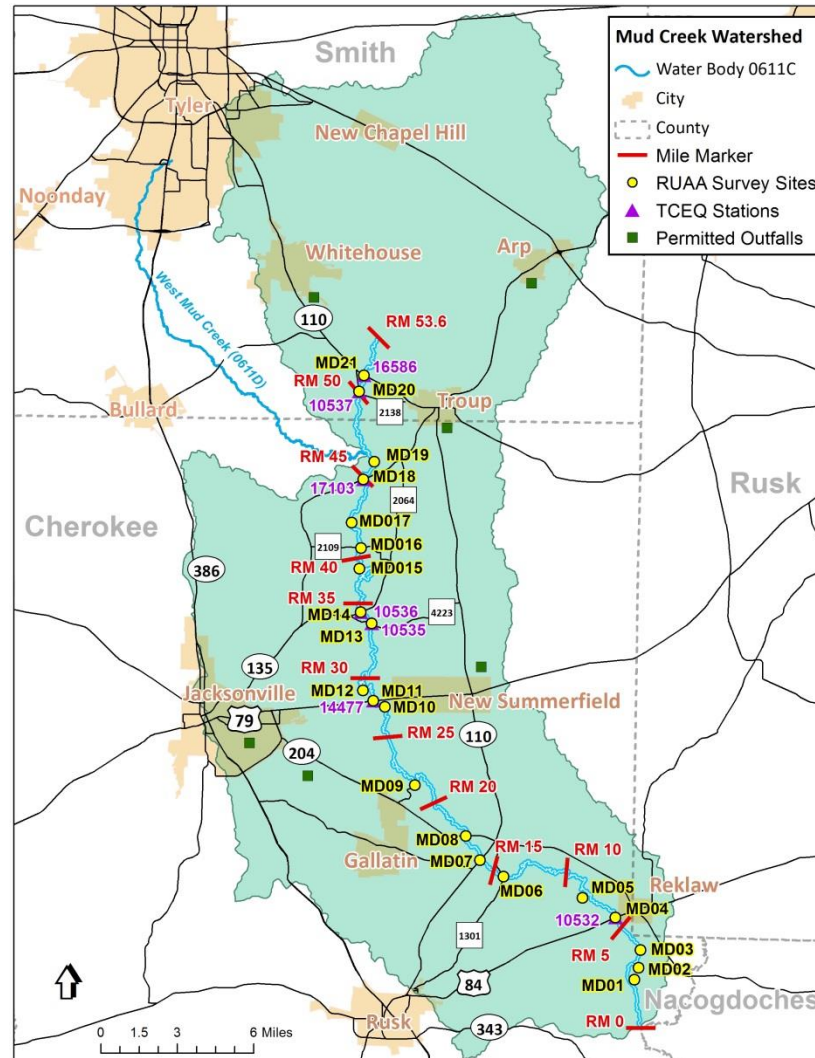
RUAA Survey Sites for Kickapoo Creek in Henderson County



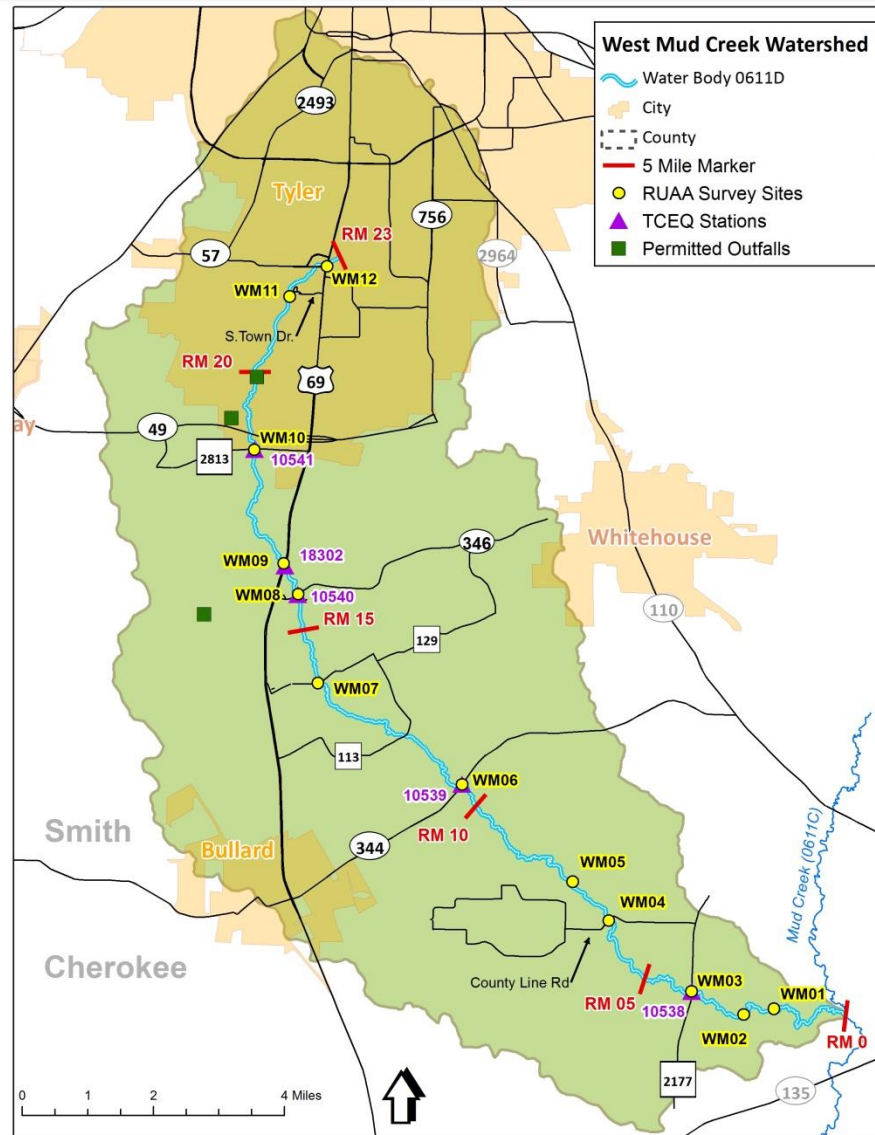
RUAA Survey Sites for the Neches River Above Lake Palestine



RUAA Survey Sites for Mud Creek



RUAA Survey Sites for West Mud Creek



First RUAA Survey- West Mud Creek



Up Stream at 0m at WM01



Snake in Beaver Dam at WM01

First RUAA Survey- West Mud Creek



Down Stream at 300m at WM02



Obstruction at WM02

First RUAA Survey- West Mud Creek



Boat Entrance at WM03



Right Bank at 300m at WM04

First RUAA Survey- West Mud Creek



Poor Access at WM07



Down Stream at 150m at WM10

First RUAA Survey- West Mud Creek



Inner Tube at WM11



Up Stream at 150m at WM12

Time Frame

- Proposed Field Survey Dates
 - June 26 – June 30, 2014
 - Kickapoo Creek in Henderson County & The Neches River Above Lake Palestine
 - July 26 – July 30, 2014
 - West Mud Creek, Prairie Creek, Mud Creek
 - August 23 – 27, 2014
 - Kickapoo Creek in Henderson County & The Neches River Above Lake Palestine



Questions on RUAA Overview?

Project Website:

<http://tiaer.tarleton.edu/ruaa/index.html>

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