

R.D. Harmel¹, R.L. Haney¹, K.N. Potter¹, D.W. Hoffman², J.E. Wolfe², C.H. Green¹, J.G. Arnold¹, C.W. Richardson¹, and T. Dybala³

¹USDA-ARS, Temple TX ²Blackland Research & Extension Center, Temple TX ³USDA-NRCS, Temple TX



Watershed Characteristics

- Leon River drains into Lake Belton, which provides drinking water to Temple, Belton, and surrounding communities
- 607,600 ha watershed above the USGS gauge at Gatesville, TX
- Soils: Upper portion of watershed - loamy fine sand and sand, Lower portion of watershed- clay and clay loam, generally classified as Alfisols.
- Land Use: 68% Rangeland/Pasture; 11% agricultural cropland; 21% other (brush, urban, water)
- 55 permitted dairy farms and 66,000 dairy cattle
- Flow records dating back to 1925 (USGS)



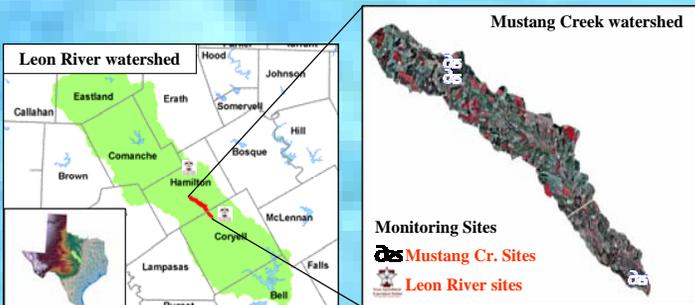
Water Quality/Hydrology Data Collection

Parameters

flow
dissolved nutrients
(NO₃-N, NH₄-N, PO₄-P)
particulate N, P
suspended sediment
bacteria
DO, temp., cond., pH

Method

continuous (ISCO)
storm (ISCO), baseflow (grab)
storm (ISCO)
storm (ISCO)
bi-weekly (grab)
bi-weekly (grab)



Monitoring Sites

Sites	Size	Land Use
Three field plots	2-3 ac	Cultivated
Two field plots	1 ac	Pasture
Field	41 ac	Cultivated (litter app)
Mustang at 3340	3625 ac	Mixed
Mustang at Dam	13605 ac	Mixed
Leon River	1900 sq mi	Mixed
Leon River	2300 sq mi	Mixed

Approach

Soil Properties

- Determine for range of manure management and tillage practices
- Provide a basis for computer simulation modeling and/or verify model results

Water Quality/Hydrology

- Watersheds with a wide range of sizes are being studied to examine scale impacts and transport mechanisms
- Paired watersheds have been established to determine the field-scale effects of selected management practices

Objectives

Major Objective: Quantify effects of NRCS conservation practices on soil quality, water quality, and hydrology.

Management Practices:

- Nutrient Management (590)
- Prescribed Grazing (528A)
- Brush Management (314)
- Grassed Waterway (412)



Project Timeline

- 2004 - Scouted sites, developed initial stage vs. Q relationships, started grab sampling, tested equipment, installed sites
- 2005 - Finished site installation, collected background data
- 2006 - Implement alternative fertilizer treatments (dairy manure, commercial)
- 2007-2009 - Produce a high-quality data set
 - to support CEAP National Assessment
 - to understand the effects of conservation practices

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