Monitoring Water Quality in the Leon River Watershed

Background

The Watershed Assessment component of the Conservation Effects Assessment Project (CEAP) aims to complement the National Assessment by collecting datasets for analysis and modeling. The Leon River Watershed in Central Texas (HUA 12070201) feeds Lake Belton and supplies more than 250,000 residents with water resources. As part of the assessment, Texas AgriLife Research, Blackland Research and Extension Center (BREC) installed and maintains two main-stem river sampling sites located near Hamilton and Gatesville, and USDA-ARS installed and maintains nine field-scale and small watershed sites in the watershed. Both water quality and quantity are measured under base flow and storm flow conditions. The dataset will be used to develop and calibrate pollutant loading components of several models including: EPIC, APEX, and SWAT.

Watershed Characteristics

1. The watershed encompasses 607,600 Ha above the Gatesville monitoring location.
2. Soils are generally classified as Alfisols. Upper portion of watershed - loamy fine sand and sand, lower portion of watershed- clay and clay loam.
3. Land Use: 68% Rangeland/Pasture; 11% agricultural cropland; 21% other (brush, urban)
4. 55 permitted dairy farms with 66,000 dairy cattle.
5. Flow records dating back to 1925 (USGS).

Action

1. Provide data collected from a range of scales (edge-of-field to river basin) to the CEAP National Assessment.
2. Quantify the effects of NRCS conservation practices (nutrient management, prescribed grazing, brush management, and grassed waterways) on soil quality, water quality, and hydrology.
3. Water quality samples are analyzed for NO_3-N, NH_4-N, PO_4-P, sediment (as total suspended solids), and particulate N and P.

Partners

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