

# north central texas water quality

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Water quality in North Central Texas reservoirs is a growing concern with major problems of sediment and nutrient loading. Six of the major reservoirs in the Trinity River Basin managed by Tarrant Regional Water District now serve 1.6 million people across 11 counties and are threatened by point and nonpoint source pollution.

Through the **Water Quality Education and Planning for North Central Texas** project, the Texas Water Resources Institute and Texas AgriLife Extension Service are collaborating with Tarrant Regional Water District (TRWD), Texas A&M Spatial Sciences Laboratory and the Texas Commission on Environmental Quality to conduct watershed planning, educational programs and water modeling to ensure high-quality water for Tarrant County and surrounding counties. This program is helping to slow or reverse the decline in lake water quality and provide a prototype for other regions of the state and nation.

The project has generated substantial support from state agencies, including the Texas State Soil and Water Conservation Board to implement best management practices in the Cedar Creek watershed and the Texas Water Development Board to assess the effects of urbanization on streambank erosion and sedimentation of 25 major reservoirs in the Upper Trinity River Basin.

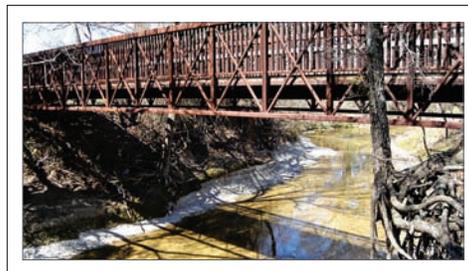
TRWD's ultimate goal is to accommodate a growing population and increased urbanization without sacrificing water quality. With the watershed management plan, TRWD can use scientifically based methods not only to identify sources for water quality impairment, but also to evaluate the costs and benefits of addressing these sources. This watershed management plan will produce useful planning tools for TRWD as well as other entities.

## Objectives

- Continue an intensive water quality education and stakeholder involvement program to help landowners, homeowners, businesses and municipalities reduce point and nonpoint source pollution
- Use hydrologic and water quality models to assess pollution sources and the benefits and costs of management practices designed to improve water quality
- Produce analyses and educational programs needed by TRWD to ensure high-quality source water for Tarrant and surrounding counties and allow the water district and cooperating local organizations and agencies to implement cost-effective programs for the region

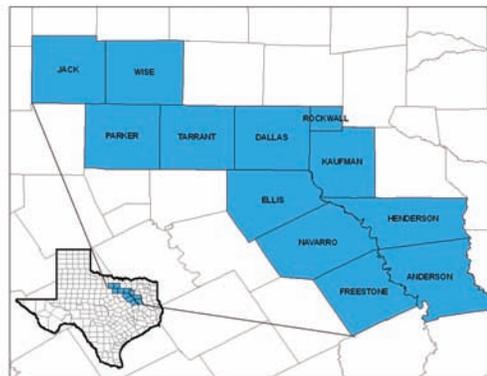
## Accomplishments

- Presented draft of the Cedar Creek Reservoir Watershed Protection Plan to stakeholders
- Conducted more than 90 educational programs dealing with watershed management and water quality for more than 9,000 school-age children and 1,100 adults
- Published an educational bulletin on stormwater management to inform communities about water quality improvement strategies



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- Completed the calibration and validation of a water quality model to evaluate water quality improvement needs and strategies for the Cedar Creek Reservoir, Eagle Mountain Lake and Richland Chambers Reservoir watersheds
- Developed alternative strategies for water quality improvement for the Cedar Creek Reservoir watershed; model estimates show a need for a 35 percent reduction in sediment and nutrient loadings into the reservoir
- Created a curriculum guide that demonstrates the effects of soil erosion and sediment transport in the region; used in conjunction with the demonstration stream trailers to illustrate to youth and adults the importance of watershed management
- Published a series of water quality fact sheets pertaining to specific issues in the region, namely, nutrient and sediment loadings, bacteria, urban and agricultural nonpoint sources and landscaping chemicals
- Used an economic model to quantify the costs and benefits of identified water quality improvement strategies to look at reducing nutrient and sediment loadings in the Cedar Creek Reservoir watershed



## Collaborators

- Tarrant Regional Water District
- Texas Water Resources Institute
- Texas AgriLife Extension Service
- Texas A&M University Spatial Sciences Laboratory
- USDA Natural Resources Conservation Service

## Funding Agency

- USDA Natural Resources Conservation Service

