

Trinity River Basin Environmental Restoration Initiative

Background

With growing population and urbanization as well as changing land uses, the need for watershed management ensuring water quality and adequate water supplies is vital. Watershed management through water modeling and water conservation education are some the most cost-effective practices available to ensure a safe and reliable public water supply. Watershed modeling is a holistic approach defined by hydrologic boundaries and integrates water quality impacts from varying sources, runoff, stormwater, erosion and nutrient and sediment transport.

Objectives

- Assist the Tarrant Regional Water District (TRWD) by assembling information on water quality and pollution loads for its reservoirs and watersheds.
- Analyze the effectiveness and feasibility of alternative management practices and structures.
- Provide public educational programs to educate stakeholders about efficiently utilizing water and ways in which to conserve to insure adequate supplies for continued growth.

Approach

Two primary research goals include modeling the effects of land use change on sediment and nutrient delivery to reservoirs and urban water conservation education. Researchers will assess effects of urbanization and other land use changes on sediment and nutrient delivery to all major reservoirs in the Trinity River Basin including Bridgeport, Eagle Mountain, Ray Roberts, Lake Lavon, Lewisville Lake, Cedar Creek, Richland Chambers, Navarro Mills, Bardwell, Ray Hubbard, Benbrook, and Pool Reservoirs using the Soil and Water Assessment Tool (SWAT) model. The effects of urbanization and practices designed to reduce stormwater runoff and soil and stream bank erosion, on sediment and nutrient loading to the reservoirs will be predicted. The modeling activities will provide tools to help managers identify specific projects needed to protect the watershed, maintain reservoir capacity and improve water quality. Once completed this could serve as a model for the remainder of the basin and the rest of the state. Researchers will partner State, Federal and local agencies and stakeholder groups to educate the public to conserve water supplies in the Dallas-Fort Worth Metroplex. Focus of the program is to educate a broad section of youth and adults in the DFW Metroplex about the importance of urban landscape management to increase conservation, improve water quality and improve the quality of life.

Partners

The program will work with cooperating groups who will work together to educate a broad cross section of the general public in the Dallas-Fort Worth Metroplex about the importance of urban landscape management and environmental infrastructure for water conservation.

- North Central Texas Council of Governments
- Texas State Soil & Water Conservation Board
- Texas Master Gardeners Association
- University of Texas – Arlington
- Regional Water Planning Groups
- Botanical Research Institute of Texas
- Texas AgriLife Research, BREC
- USDA-ARS, Temple

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