



# Putting Dollars to Work

*319(h) projects help control nonpoint source pollution in Texas*

**P**rotection of our water resources is one of the most significant environmental challenges of the new millennium. Nonpoint source (NPS) pollution (pollution from rain or snowmelt runoff containing natural and man-made pollutants) from urban and agricultural activities represents a major pollution source.

Congress enacted Section 319(h) of the Clean Water Act in 1987, establishing a national program to control nonpoint sources of water pollution. Through Section 319(h), the Environmental Protection Agency provides federal funds to states for the development and implementation of the state's Nonpoint Source Management Program. The 319(h) funding in Texas is divided between the Texas Commission on Environmental Quality (TCEQ) and Texas State Soil and Water Conservation Board (TSSWCB).

Kevin Wagner, project manager for Texas Water Resources Institute's 319(h) projects, said the long-term goal of the state's NPS pollution program is to protect and restore water quality from NPS pollution through assessment of pollution sources, implementation of improved management practices and education.

(Above) The Pecos River in West Texas is the focus of one of TWRI's nonpoint source pollution projects.


TWRI, in collaboration with TCEQ, TSSWCB and other groups and agencies, manages several projects designed to reduce pollution in priority areas.

## Current TWRI-led 319(h) projects

### *Evaluation of Best Management Practices in the Arroyo Colorado Watershed*

This project helps restore the Arroyo Colorado, the most important stream draining the delta formed by the Rio Grande in South Texas. The program will educate farmers on how to produce crops while managing their land to reduce the potential for NPS pollution. The project also supports and promotes associated programs that implement best management practices (BMPs) related to water quality protection.

### *Seymour Aquifer Water Quality Improvement Project*

This project provides water quality education to increase farmers' awareness and use of irrigation and nutrient BMPs to help reduce the nitrate levels in the aquifer. This project also estimates the reductions 

in nitrate concentrations resulting from ongoing BMP efforts and provides an analysis of additional measures needed to achieve water quality standards in the aquifer.

### ***The Impact of Proper Organic Fertilizer Management in Production of Agriculture***

The Leon River Basin is adjacent to the Bosque River Basin, where excess nutrients have impaired water quality. Because the Leon River Basin contains similar nutrient sources, stakeholders in the Leon River watershed are paying careful attention to emerging water quality issues. Agriculture has the potential to contribute to the problems of excessive nutrients and bacteria in surface water, especially if recommended management practices are not used. This project assesses the effectiveness of BMPs then educates farmers to facilitate BMP implementation.

### ***Buck Creek Watershed Water Quality Sampling/Assessment Project***

This project monitors 12 different sites on Buck Creek to determine the extent to which bacteria are present. If these data demonstrate the need for an assessment of total maximum daily loads, experts in bacterial source tracking will help plan and implement appropriate follow-up.

### ***Dairy Compost Utilization***

This project addresses the elevated concentrations of ammonia, nitrogen, phosphorus and fecal bacteria found in parts of the North Bosque River, Upper North Bosque River and Leon River. Texas A&M agricultural scientists are working with composters and the dairy industry in Central Texas to expand the marketing of dairy compost in this area. TCEQ is providing incentive payments to state agencies, local governments and other public entities to expand purchases of their dairy compost. The project is also providing research data and education demonstrations on dairy compost usage, emphasizing cost-effectiveness, product safety and environmental sustainability.

### ***Improving Water Quality by Developing, Implementing and Field Testing Innovative Methods***

In this project researchers identify, evaluate, and field-test new technologies for reducing high levels of phosphorus in runoff from dairies. Once these assess-

ments are completed, project members will communicate the results to dairy managers and other stakeholders, who can implement the proven technologies to reduce water pollution by dairy wastes.

### ***Watershed Protection Plan Development for the Pecos River***

Flows of the Pecos River have dwindled due to man-induced causes. This project evaluates the physical features of the Pecos River Basin, educates rural and urban stakeholders on water quality and quantity issues and develops a watershed protection plan for part of the river basin.

### ***Texas Phosphorus Index***

The Texas Phosphorus Index relies on a number of factors including soil testing, fertilizer application rates, and whether phosphorus is applied near streams to provide a basic assessment of the sources of phosphorus in water bodies. The index also helps predict phosphorus and nutrient runoff. The Texas Phosphorus Index 319(h) projects evaluate the ability of the index to estimate phosphorus losses in different field conditions. Researchers then develop recommendations to improve the index.

## Other TAMU water-related 319(h) projects

### ***Texas Watershed Steward Program***

This pilot project will develop a community-based water quality curriculum to increase local stakeholder involvement in watershed protection programs. The curriculum will increase local understanding of the forces that can adversely impact water resources and the tools to prevent them, including effective watershed plans.

### ***Texas Stewards of Ag-land Resources: T-STAR***

This project develops and tests the education component of the T-STAR program in a pilot watershed. The T-STAR program provides agricultural producers and related industry with a combination of production and environmental training to better manage and protect their land and water resources. 