

arroyo colorado watershed protection

arroyocolorado.org



The Arroyo Colorado, an ancient channel of the Rio Grande, flows 90 miles through Hidalgo, Cameron and Willacy counties in the Lower Rio Grande Valley of Texas. Water flow in the Arroyo Colorado is sustained by wastewater discharges, agricultural

irrigation return flows, urban runoff and base flows from shallow groundwater. Elevated levels of fecal coliform bacteria and low dissolved oxygen have severely impacted recreational use of the lower Arroyo Colorado for fishing and swimming. In 2002 the Texas Commission on Environmental Quality determined in a Total Maximum Daily Load study that a 90 percent reduction of nutrients and biochemical oxygen demand was needed to achieve healthy waters.

The Arroyo Colorado Watershed Partnership was established to help restore the watershed and in 2007 the partnership published the Arroyo Colorado Watershed Protection Plan that identified and addressed impairments and concerns in the watershed.

The Texas Water Resources Institute is currently coordinating six projects directed toward implementing the watershed protection plan (WPP) and restoring the arroyo. For more information, visit the website at arroyocolorado.org.

Arroyo Colorado WPP Implementation

This project is continuing the work outlined in the Arroyo Colorado Watershed Protection Plan, one of the first completed WPPs in Texas. A watershed coordinator coordinates and tracks implementation measures described in the WPP and seeks additional funding to continue watershed protection efforts.

Objectives

- Publicize and build awareness of the watershed improvement efforts
- Link partners and projects to available funding sources
- Analyze all available water quality monitoring data to document changes in the pollutant loading, water quality and habitat during plan implementation

Agricultural Nonpoint Source Assessment

The project is better characterizing agricultural runoff in the Arroyo Colorado, assessing and demonstrating the effects of best management practices (BMPs) implementation at the field and sub-watershed level and measuring progress toward meeting WPP goals.

Objectives

- Investigate site-specific differences and temporal variation of water quality in drainage from agricultural production areas
- Update the land use/land cover map to better reflect current land usage
- Perform a complete historical data review and analysis to determine efficacy of agricultural BMPs implemented in the watershed

Integrated Farm Management Education

This project is implementing an innovative education program for agricultural producers focusing on integrated farm management systems (whole system approach). Texas AgriLife Extension Service is hosting educational meetings and producing educational materials on the adoption of proper pesticide application safety practices; an integrated



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farm management system approach; and water quality management plans and cost-share programs to implement management practices.

Objectives

- Enhance awareness of pesticide-related water quality issues facing the Lower Rio Grande Valley and encourage producers to use lower risk pesticides in production practices
- Implement an integrated pest management (IPM) education program through education programs, newsletters and fact sheets
- Encourage producers to adopt an integrated farm management system, including pesticide, nutrient, irrigation and production management practices

Pesticide Education in the Coastal Zone of the Arroyo Colorado Watershed

This project is implementing an educational program for agricultural producers and turfgrass producers, including those managing athletic fields such as school district personnel. The agricultural effort is an integrated farm management program focused on pesticide education and proper nutrient management for Cameron and Willacy counties and the urban effort teaches turf producers and managers better skills for nutrient, pesticide and irrigation management.

Objectives

- Supplement Integrated Farm Management System education programs
- Conduct turfgrass production and management education program

Enhancing Water Quality and Dredged Material for the Port of Harlingen (Phase I)

The project is the first phase in constructing a wetland to remove nutrients from spoils dredged from the turning basin at the Port of Harlingen, Texas.

Objectives

- Develop an ecological and hydrological site assessment, land survey and conceptual plan for the design of the site components

PSAs for the Arroyo Colorado Watershed

The project is developing and distributing television public service announcements (PSAs), which will educate watershed residents about local water quality issues and proper use of land and water resources.

Project Accomplishments

- More than 23,700 individuals have viewed the watershed demonstration model
- Approximately 5,000 agriculture producers have attended educational meetings and workshops
- The 2009 soil testing campaign brought in 337 soil samples
- An updated land use/land cover map was released

Collaborators

- Arroyo Colorado Watershed Partnership
- Texas AgriLife Extension Service
- Texas AgriLife Research
- Texas Water Resources Institute
- Texas A&M University – Kingsville
- Texas A&M University Spatial Sciences Laboratory
- USDA Natural Resources Conservation Service
- University of Texas at Brownsville
- University of Texas at Arlington
- Allen Plummer and Associates

Funding Agencies

- Texas State Soil and Water Conservation Board
- Texas Commission on Environmental Quality
- Texas General Land Office
- U.S. Environmental Protection Agency



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