

## riparian and stream ecosystem education program

[texasriparian.org](http://texasriparian.org)

Texas has more than 200,000 miles of streams and riparian areas—the green vegetation zones along streams, rivers and lakes—that provide great economic, social, cultural and environmental value to the state. These ecosystems play an important part in the water issues that face Texans today and in the future.

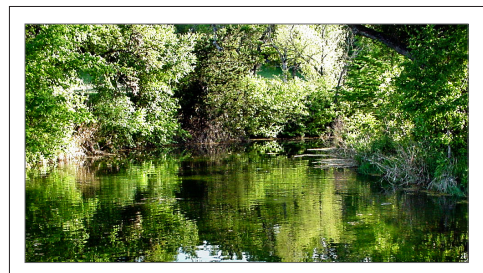
Management of watersheds, riparian areas and streams directly influences water quality and quantity, peak and base flow rates of streams and rivers, and recharge to aquifers and lakes. For example, how much rainfall runs off and how fast it runs off the land depend on the amount and type of vegetation, soil type, slope, intensity and duration of rainfall and land management. Properly functioning riparian areas are highly beneficial buffer zones that provide recreation, fish and wildlife habitat, increased water supply and improved water quality by filtering debris and pollution. A healthy watershed maintains high quality water for aquatic ecosystems, downstream users and coastal wetlands and estuaries.

Riparian and stream ecosystem degradation is common in Texas rural and municipal landscapes due to natural and human-induced disturbances. Increases in human population along with industrial, commercial and residential development place heavy demands on stream corridors. In many cases, riparian areas are purposely degraded or channelized to allow stormwater to move quickly downstream to reduce local flooding. These degraded and/or

channelized riparian areas reduce the recharge of groundwater and base flow and increase the frequency of flooding. Excessive flows from poor management upstream can degrade otherwise healthy riparian zones downstream. Many cities have found that improving creek and floodplain protection is needed to prevent unsustainable public expense to maintain drainage infrastructure.

It is important to monitor the health of streams to protect, maintain and restore healthy riparian and stream ecosystems in Texas. Proper management, protection and restoration of riparian areas will decrease bacteria, nutrient and sediment loadings to water bodies; lower instream temperatures; improve dissolved oxygen levels; and stabilize banks, reducing erosion and protecting ownership boundaries and land values. Healthy riparian areas will also have fewer invasions of exotic undesirable riparian species, improved aquatic habitat and improved fish and aquatic communities.

Riparian education programs are needed to improve the management of these sensitive and vital ecosystems. Through the ***Texas Riparian and Stream Ecosystem***



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**Education Program**, partners and staff will deliver educational workshops about the nature and function of riparian zones and vegetation. The workshops will also cover local technical resources and best management practices (BMPs). Through education, landowners and other citizens can improve their management of riparian and stream ecosystems, which will reduce nonpoint source pollution (NPS) and provide tremendous ecosystem service benefits and direct economic benefits to communities.

## Objectives

- Promote healthy watersheds and improve water quality through riparian and stream ecosystem education programs with a focus on priority watersheds
- Increase citizen awareness, understanding and knowledge of the nature and function of riparian zones, their benefits and BMPs to protect them and minimize NPS pollution
- Enhance interactive learning opportunities for riparian education across the state and establish a larger, more informed citizen base working to improve and protect local riparian and stream ecosystems
- Connect landowners with local technical and financial resources to improve management and promote healthy watersheds and riparian areas on their land

## Collaborators

- Texas Water Resources Institute
- Texas State Soil and Water Conservation Board
- Texas Riparian Association
- Texas A&M Forest Service
- Texas Parks and Wildlife Department
- USDA Natural Resources Conservation Service
- Nueces River Authority
- Texas A&M AgriLife Research, Ecosystem Science and Management Department
- Texas Tech University Llano River Field Station

## Funding Agencies

- Texas State Soil and Water Conservation Board
- U.S. Environmental Protection Agency



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