

THE TEXAS WATER SOURCE

UPDATING NACOGDOCHES, RUSK, SAN AUGUSTINE, & SHELBY CO. FOREST LANDOWNERS ON FORESTRY AND WATER ISSUES

How Much are Trees Worth?

It's easy to figure out how much a tree is worth when it is harvested for lumber, paper, or firewood. But what about when it's still standing tall in the forest, providing shade on sunny days, giving homes to woodland animals, and helping clean the air you breathe and the water you drink? Just how much is that worth? Almost \$93 billion each year, according to a first-of-its-kind study for Texas conducted by Texas A&M Forest Service.

The figure was derived through the *Texas Statewide Assessment of Forest Ecosystem Services*, a compilation of the environmental benefits and their monetary value provided by Texas' more than 60 million acres of forestland.

"Forests provide services that humans can't live without," said For-ester Hughes Simpson, who coordinates the Texas A&M Forest Ser-vice's Water Resources program.

As part of the study, researchers looked at how Texas forests help regulate local climate, protect water resources, purify the air, and im-prove wildlife habitats and species diversity. The researchers also sur-veyed residents across the state to

better understand their thoughts, views, and values of Texas forests.

The five core ecosystem services and their annual, statewide values are listed below:

Climate Regulation, \$4.2 billion/year - the effect forests have on regional and local climates.

Watershed Regulation, \$13.2 billion/year - the ability of forests to provide a continuous, stable supply of clean drinking water.

Biodiversity Services, \$14.8 billion/year - the capacity forests have to promote essential biological diversity and provide sustaina-ble habitats for plants and animals.

Cultural Services, \$60.4 billion/year - the non-material benefits (spiritual enrichment, cognitive de-velopment, reflection, aesthetics) obtained from forest ecosystems.

Air Quality Services, \$190.3 million/year - the ability of forests to remove particulates and other pol-lutants from the air.

The online version of the study - found at TexasForestInfo.com - al-lows residents to see the ecosystem values for their location.

For more information:

- <http://texasforestservicetamu.edu/main/default.aspx?dept=news>
- <http://texasforestinfo.com/>

Your Local Forest Ecosystem Values

Annual values for Nacogdoches/Rusk/San Augustine/Shelby counties:

- Climate Regulation: \$35.0 million
- Watershed Regulation: \$264.0 million
- Biodiversity Services: \$88.2 million

- Cultural Services: \$409.8 million
- Air quality Services: \$339.7 thousand

The value of forest-based ecosystem services in these counties is estimated to be \$2,214.5 per acre, for a total value of approximately \$797.2 million/year.

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*Organization Spotlight***Texas Riparian Association****For more information:**

- <http://texasriparian.org>

The Texas Riparian Association (TRA) is a statewide organization dedicated to improving the quality of life in Texas communities by promoting an appreciation of the benefits of healthy rivers.

The Texas Riparian Association's mission is to improve and enhance the water quality and quantity in Texas's streams by encouraging sustainable and balanced riparian ecosystems for the people and the environment of Texas through the exchange of knowledge and expertise and the dissemination of information.

TRA pursues its mission by identifying and filling information needs, and by communicating with land and water conservation officials, public officials,

landowners, academia, and the people of Texas.

Its Board and Advisory Council consists of natural resource professionals from state and federal agencies, academia, city entities, and other organizations. Annual meetings covering riparian issues and topics have been held around the state.

Education efforts have included workshops and their associated riparian online modules (videos, PowerPoint presentations), online fact sheets ("Riparian Notes"), and other online information. TRA has partnered with the Texas Water Resources Institute to conduct riparian education efforts across the state.

Riparian Education Program**For more information:**

- <http://texasriparian.org>
- <http://www.remarkableriparian.org>
- <http://texasriparian.org/about-tra/what-is-a-riparian-area>
- <http://twri.tamu.edu/>

The Texas Riparian and Stream Ecosystem Education Project is coordinated and conducted by the Texas Water Resources Institute (TWRI) along with many Riparian Education Partners. The Riparian Education Team consists of several state, federal, university, and non-profit professionals

By means of an EPA grant administered by Texas State Soil and Water Conservation Board (TSSWCB), the Riparian Team's plans are to:

- Coordinate and present riparian education programs to landowners and other citizens in targeted priority watersheds.
- Provide web-based riparian information to reach even more audiences, such as students, nature groups, and others.
- Connect landowners with local technical and financial resources to improve management and promote healthy watershed and riparian areas on their land.

- Train agency personnel on proper functioning condition and assessment.
- Conduct statewide riparian conferences.

The program is being modified to meet local needs. Workshops are tailored to the watershed in which they are held, presenting information related to the local conditions, management activities, and conservation practices that can enhance riparian function.

Texas A&M Forest Service is a member of the Riparian Team and is working to adapt and deliver the program in East Texas as well as other parts of the state.

In East Texas, the program will be coordinated in conjunction with the already institutionalized forestry Best Management Practices (BMPs) and forest certification programs to ensure consistency with existing logger training programs.

Healthy Riparian Areas

A riparian area is often described as the “river bank,” but it is much more; it’s the interface between land and water along a body of water.

Dense vegetation (native trees, shrubs and grasses) and an active floodplain are necessary to slow water down (dissipate energy) and trap mobile sediment. Interlaced roots and trapped sediment, rich in water-storing organic material, help to stabilize banks and conserve flood water, delivering it back to the channel in the form of clean base flow.

“Ecosystem Services” - environmental benefits - are provided by healthy riparian areas. These areas:

- Provide habitat (food, shelter, and water) for aquatic and terrestrial organisms.
- Intercept direct solar radiation, create shade, and increase the depth to width ratio to help maintain or restore suitable water temperatures for fish and other aquatic organisms while providing a milder microclimate for wildlife.
- Improve and protect water quality by reducing the amount of sediment and other pollutants (pesticides, organic matter, and nutrients) in surface runoff as well as nutrients and chemicals in shallow ground water flow.
- Provide food in the form of plant debris for aquatic insects which are important food items for fish.
- Help stabilize the channel bed and stream bank and provide room for watercourses to meander.
- Serve as wildlife corridors to provide linkages between existing habitats.
- Clean the air by sequestering and storing atmospheric carbon.

- Catch and store floodwaters, releasing it slowly into streams and recharging groundwater aquifers during drought.

Soil that is rich in organic matter can hold eight times as much water as depleted soils. Proper resource management for riparian health will provide much needed water supplies for future generations.

Where riparian function has become impaired, it is important to recognize any on-going activities that may be hindering recovery and to change or stop them from continuing. Some heavily disturbed areas may require restoration by man in order to speed the natural recovery process.

Activities that can hinder the natural recovery of a riparian area:

- Farming too close to the bank
- Mowing, spraying close to the creek
- Excessive vehicle traffic in creek
- Altered landscapes next to the creek
- Grazing concentrations in creek areas
- Excessive deer, exotics, hogs in creek areas
- Burning in riparian area
- Removal of large dead wood
- Low water dams
- Poorly designed road crossings / bridges
- Excessive recreational foot traffic in creek area
- Excessive alluvial pumping or other withdrawals
- Proliferation of invasive non native species, in some instances

For more information:

- <http://www.hillcountryalliance.org/uploads/HCA/RiparianIP.pdf>
- <http://texasforestservice.tamu.edu/main/article.aspx?id=15306>

Did you know...

Only 1.3% of Texas land surface is riparian, but the health of this land determines quality and quantity of water in 100% of Texas streams.

**Updating Nacogdoches, Rusk, San Augustine, & Shelby
Co. Forest Landowners on Forestry and Water Issues**

Distribution of *The Texas Water Source* is provided free of charge to forest landowners of Nacogdoches, Rusk, San Augustine, and Shelby Counties. Funding has been provided through cooperation of the Environmental Protection Agency (EPA), the Texas State Soil and Water Conservation Board (TSSWCB) and Texas A&M Forest Service (TFS). PLEASE ADVISE US IF YOU WISH FOR YOUR NAME TO BE REMOVED FROM OUR MAILING LIST.

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Groundwater Conservation Districts

Groundwater is a major source of water for Texans. However, in many parts of the state, more groundwater is being used than is being replenished through natural means.

To address this problem, the Texas Legislature has provided a way for groundwater resources to be managed and protected locally through the creation of groundwater conservation districts (GCDs).

In 2011, the County Courts of Shelby, San Augustine, and Sabine Counties independently established citizen study teams to look into the purpose and potential value of GCDs.

The members of these citizen study teams represented agricultural, business, education, municipal, forestry, water districts, large landowners, and retiree interests. In the case of San Augustine County, its 10 members voted unanimously to recommend the creation of a GCD.

SB 1840, creating the Deep East Texas Groundwater Conservation District, was brought before the Texas Legislature. The bill was passed on May 17, 2013; Governor Rick Perry signed the legislation into law on June 14, 2013. Voters will decide the future of this GCD on November 5, 2013.

For more information, go to <http://goo.gl/aBDEcD>.



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