

THE TEXAS WATER SOURCE

UPDATING ANDERSON, FREESTONE, HENDERSON, HOUSTON, & LEON COUNTY FOREST LANDOWNERS
ON FORESTRY AND WATER ISSUES

After the Floods—Caring for Damaged Trees

With all the rain and flooding we have been experiencing in East Texas, there have been some obvious and some not-so-obvious tree health problems, not to mention all the hazards involving trees.

One thing to look for: If a mature tree is leaning more than 30 degrees or has uprooted with more than 3 inches of its roots exposed, it should be assessed by a Certified Arborist for possible removal.

If you are still in the process of cleaning up downed trees and limbs, remember to minimize soil disturbance. Put down 6–8 inches of mulch before heavy equipment operates over root systems; a layer of plywood on the mulch adds extra protection. Spread the mulch out

after the work is completed, no more than 2 inches deep.

For the trees that “survived” the flooding and heavy rains, there are some things you can do to help ensure their recovery. For one thing, you should remove any deposited soil that has accumulated under the tree canopy to prevent further damage to root systems.

If possible, aerate the soil—perforate with small holes to allow air, water, and nutrients to penetrate the roots while being careful not to damage tree roots.

Also, prune ends off of broken branches. Paint all wounds on oak trees. Restoration pruning may be needed over the next 5-10 years.

For more information:

- <https://tfsweb.tamu.edu/content/article.aspx?id=21926>
- <http://tfsweb.tamu.edu/afterthestorm/canmytreebesaved/>
- Find an ISA Certified Arborist at www.isatexas.com

New Online Tool for Landowners

Want to put in a road on your land? Protect your water resources? Enhance wildlife, harvest trees, or clear vegetation? Texas A&M Forest Service’s newest online tool, *Plan My Land Operation*, is designed to help you protect your property and ensure sustainability as you begin your next land improvement project.

Geared toward landowners, contractors, and land managers, *Plan My Land Operation* is key to planning any improvement to your land. This tool helps you plan and layout your project based on your specific terrain, soil, and water resources.

As a user, you can quickly map a

property boundary, identify sensitive areas, place a buffer around critical features, and determine things needed like the proper size culvert.

A unique feature of the *Plan My Land Operation* tool is that it is also useful to hikers and outdoor enthusiasts. Users can map out their trail and it will show the distance, elevation and slope of that trail. While full capability of the tool is statewide, this function is available nationwide.

Plan My Land Operation is the newest online tool added to an already extensive lineup of interactive online tools located at <http://texasforestinfor.com>.

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Organization Spotlight

Texas Parks and Wildlife Department

For more information:

- <http://tpwd.texas.gov/landwater/>

Besides working for and with Texans on land-dwelling wildlife species and their habitat, Texas Parks and Wildlife Department (TPWD) also works closely with aquatic species and habitats.

TPWD has an Inland Fisheries Division and a Coastal Fisheries Division. They have a hand in all types of water bodies and aspects of fresh and salt water habitats such as lakes, ponds, rivers, streams, wetlands, estuaries, bays, the Gulf, and even artificial reefs.

Not only are they involved in recreational activities on and in the water (boating, fishing, etc.) but they also deal with many issues that affect these waters, such as nuisance vegetation,

exotic and invasive species, wetlands, water quantity, and water quality.

The multi-disciplinary Water Quantity Program works with local, state, and federal agencies and a variety of stakeholders to ensure that the needs of fish, wildlife, and aquatic resources are addressed in water use planning, permitting, and development activities throughout the state.

The Water Quality Program works with local, state, and federal agencies to ensure that the needs of fish, wildlife, and aquatic resources are considered in water quality planning and permitting activities at both statewide and local levels.

Filtering Water Nature's Way

For more information:

- <http://goo.gl/YqQDGu>
- <http://www.trwd.com/wetlands>
- http://www.txstep.org/presentations/fw_03_13_richland_creek_wma.pdf

Richland Creek Wildlife Management Area (WMA) is located along the Trinity River in Freestone and Navarro counties, approximately 80 miles downstream of the D/FW Metroplex. Its goal is to conserve and enhance 14,238 acres of remaining Trinity River bottomland for wildlife habitat and public recreation. Bottomland hardwood areas are critical because of their importance in flood control, water filtration, and wildlife habitat.

TPWD partnered with Tarrant Regional Water District (TRWD) on a project designed to provide a reliable water supply to the D/FW Metroplex without construction of a new reservoir. The 2,000-acre George W. Shannon Wetlands Water Recycling Facility supplies millions of gallons of water every day to the Fort Worth region by cleaning nutrient-rich Trinity River water using the natural filtering process of wetlands. This project harnesses the ecological function of wetlands for the benefit of mankind by helping to meet our needs for clean water. Not only is this project an innovative, environmen-

tally friendly method of water supply, it is also cost effective. An economic analysis by TRWD shows that the development of wetlands for water filtration costs half as much as new reservoir construction would.

Water is pumped from the Trinity River into shallow wetland cells growing native wetland vegetation beneficial to migratory waterfowl and shorebirds, as well as wading birds and a variety of mammal species. The wetland vegetation utilizes the nutrients in the water, efficiently removing approximately 95% of river sediment, 55% of nitrogen, and 40% of phosphorus during much of the year. After filtering, the water is pumped into Richland Chambers Reservoir adjacent to Richland Creek WMA. The water from Richland Chambers is utilized as a water supply source for TRWD customers, including the cities of Fort Worth, Mansfield, Arlington, and the Trinity River Authority. The water eventually returns to the Trinity River via wastewater treatment plants, where the recycling process begins again.

Goin' with the Flow

Streamflow, or discharge, is the volume of water that moves over a designated point over a fixed period of time; a function of water volume and velocity. It is often expressed as cubic feet per second (ft³/sec, or cfs).

The flow of a stream is directly related to the amount of water moving off the watershed into the stream channel. The main influence on streamflow is precipitation runoff in the watershed. Rainfall causes rivers to rise, and a river can rise even if the only rain is far up in the watershed. This is another reminder that how we manage our lands, soil, and waterflow upstream affects those downstream from us.

The size of a river is highly dependent on the size of its watershed. Large rivers have watersheds with lots of surface area; small rivers and streams have smaller watersheds.

Likewise, different size rivers react differently to storms and rainfall. Large rivers rise and fall slower and at a slow-

er rate than small rivers. Large rivers may take days to rise and fall, and flooding can last for a number of days.

In a small watershed, a storm can cause 100 times as much water to flow by each minute as during normal flow periods, but this smaller river or stream will rise and fall possibly in a matter of minutes and hours. Thus, flood waters from a large river take longer to recede than floods of smaller streams.

Flow affects the amount of silt and sediment carried by the stream. Sediment introduced to quiet, slow-flowing streams will settle quickly to the stream bottom. Fast moving streams will keep sediment suspended longer in the water column.

Streamflow also changes during different seasons of the year, decreasing during the summer months when evaporation rates are high and shoreline vegetation is actively growing and removing water from the ground.

For more information:

- <http://water.epa.gov/type/rsl/monitoring/vms51.cfm>
- <http://water.usgs.gov/edu/watercycle/streamflow.html>

Did you know...

Stream stage (also called stage or gage height) is the water level above some arbitrary point (often close to the streambed) in the river and is commonly measured in feet.

Great Trinity Forest

Speaking of upstream . . .

Have you heard of the Great Trinity Forest? This long-overlooked environmental resource is now almost exclusively owned by the City of Dallas.

The care and management of the land rests with the City. The Great Trinity Forest is home to groves of urban bottomland hardwood trees and covers 6,000 acres.

This forest is part of the Trinity River Corridor Project's environmental and recreational charter. The Trinity River Corridor Project is the most complex and the largest urban development effort undertaken by the City of Dallas. This multi-generational project provides critical flood protection, trans-

portation improvements, recreational amenities, environmental restoration/preservation, and economic development for the Trinity River Corridor, which covers 20 miles or 10,000 acres.

The City of Dallas Trinity Watershed Management department received the John P. Ivey Higher Standards Award from the Texas Floodplain Management Association (TFMA) in Dallas in April 2015. This award is given to the community that shows consistent leadership with respect to promoting sound flood management policy through implementation of flood protection strategies above and beyond the minimum Federal Emergency Management Agency (FEMA) requirements.

For more information:

- <http://www.trinityrivercorridor.com/recreation/great-trinity-forest.html>

Updating Anderson, Freestone, Henderson, Houston, & Leon County Forest Landowners on Forestry and Water Issues

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The Texas A&M Forest Service is an Affirmative Action/Equal Opportunity Employer committed to Excellence Through Diversity.

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Trinity River Interactive Maps

Interested in seeing the water levels and stream flow for the Trinity River in your area? Follow this link to the Trinity River Authority interactive map:

<http://www.trinityra.org/lake-river-data.htm>

The Texas Parks and Wildlife website has an interactive map that lets you view the names and boundaries of your local watersheds and sub-watersheds. Go to:

<http://tpwd.texas.gov/education/water-education/Watershed%20Viewer>

The Trinity River Information Management System site provides data access and mapping for projects designed to address water quality, hydrology, floodplain management, wetland restoration, bottomland hardwood establishment, and wildlife habitat management in the Trinity River Basin:

<http://trims.tamu.edu>

