



## The Reverchon Naturalist

*Recognizing the work of French botanist Julien Reverchon, who began collecting throughout the North-Central Texas area in 1876, and all the botanists/naturalists who have followed ...*

### Dr. Torrey Misses One

Story by Gregory Huber, USDA-NRCS  
Odessa, Texas

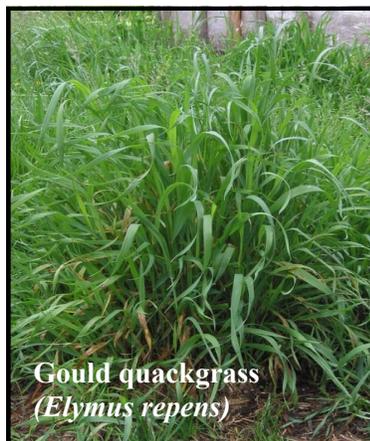
Dr. John Torrey was one of the foremost systematic botanists of his time. He taught chemistry and botany at the College of Physicians and Surgeons in New York. He was a contemporary of Asa Gray at Harvard and George Englemann in St. Louis. He was widely published and described many of the plant collections that were made in the western United States, especially those made during U.S. Army Topographical Engineers exploring expeditions. There is so much more that could be said of Dr. Torrey and the botanical work he accomplished, but the point of this article is that even the master gets “stumped” once in a while.

As noted in a previous article in The Reverchon Naturalist (July/August 2011), Dr. Torrey’s identification of *Triticum repens* is probably in error. It is highly unlikely that this plant would have been on the Red River in 1852. Upon realizing that *Triticum repens* is a synonym for *Elymus repens* or quackgrass, a noxious weed that is native to Europe, the writer promptly called Steve Nelle, NRCS wildlife biologist in San Angelo, and asked if this made any sense. Nelle allowed that if the writer had discovered the first pre-settlement noxious weed infestation, he would probably be famous in the very small circle of people who are actually interested in that sort of information. Roughly interpreted, that means no, it does not make sense.

Perusal of Correll and Johnston’s *Manual of Vascular Plants of Texas*, and accompanied by much page turning on both ends of the phone line caused both individuals to realize that quackgrass doesn’t seem to occur in Texas. Nelle did notice that *Elymus* and *Agro-*

*pyron* are right next to each other in the plant key. A quick web search conducted by Nelle yielded information to the effect that quackgrass and western wheatgrass are easily confused, and that both species had been in the genus *Elytrigia* at one time. In fact, further investigation shows that western wheatgrass has gone through several name changes, and was not a named species until around 1900 or so. It was originally named *Agropyron molle* by F. L. Scribner and J. G. Smith, and then a fellow named Rydberg out of Colorado named it *Agropyron smithii*. F. W. Gould put it in the genus *Elymus*, and since the 1980s, when it was *Agropyron* again; it has been to *Elytrigia* (courtesy of a Russian agrostologist named Nevskii) and presently, according to the USDA-NRCS Plants Database, it is *Pascopyrum smithii* (Rydb.) A. Love.

It is interesting that Dr. Torrey did not catch this one. He named several new species of grasses, *Poa arachnifera* in this 1852 collection, *Bouteloua curtispindula* in the U.S.-Mexico Boundary Survey collection, and certainly there were others. Western wheatgrass makes a lot of sense in this case.



Gould quackgrass  
(*Elymus repens*)



Flower Spike

This photo shows Gould quackgrass, left, that is an invasive, noxious weed with its flower spike, above. (Photos courtesy of Wikipedia)

# See You Down the Road

By Ricky Linex  
NRCS Wildlife Biologist  
Weatherford, Texas

## Anniversaries come and go but do we remember the message?

Two quotes that I have long used with landowners and managers when discussing land care tie in with our current drought repercussions. The author of the first quote is unknown, “Man - despite his artistic pretensions, his sophistication and his many accomplishments - owes his existence to a six inch layer of topsoil, and the fact that it rains.”

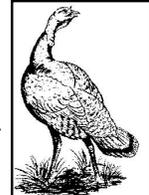
The second quote reads “The history of every nation is eventually written in the way in which it cares for its soil.” This was part of a statement made by President Franklin D. Roosevelt upon signing the Soil Conservation and Domestic Allotment Act on March 1, 1936. The Soil Conservation Service, now the Natural Resources Conservation Service, began in 1935 as a federal agency to help landowners reclaim drought stricken and eroded land during the Dust Bowl years of the 1930s. Roosevelt’s quote is nearing the end of the 75<sup>th</sup> anniversary that it was first stated. Grand announcements are issued for many anniversaries but we quickly forget and move on to the next topic de jour. The need for soil and water conservation should be on everyone’s mind every day.

Protecting our natural resources is paramount in having a healthy nation. We can’t digest the green vegetation that grows across our lands, but utilizing different classes of livestock to harvest this forage gives us an excellent food supply. Protecting this green resource and the soil in which it grows must come first. Livestock can always be replaced, but converting overused and poor quality grazing land into good to excellent quality land is a slow, slow process. Our lands need rainfall and rest, a full-growing season in 2012 should be the minimum with some pastures needing a longer period of rest to fully recover. Do your part to protect our nation’s precious resources. After all, it takes up to 500 years to replace an inch of topsoil.



### **Wildlife Conservation Grants Available for High School Students**

Here at The Reverchon Naturalist, we wanted to send information about a wildlife conservation grant opportunity for high school students. We would love to know if it was possible to reach your student base with the opportunity, in order to reach environmentally-conscious youth—**APPLY BY FEBRUARY 1, 2012.**



The **Student Wildlife Conservation Grants** are offered by our Planet Connect (<http://planetconnect.org/>) program, a youth engagement initiative of the National Environmental Education Foundation (<http://www.neefusa.org/>). We are offering high school students grants of \$1,000 - this funding will give grantees the opportunity to implement wildlife conservation projects in their schools or communities focused on wildlife conservation or natural resources. To learn more, please visit the grant web page, located here: <http://planetconnect.org/2012wcgrants>

## White Tridens (*Tridens albescens*)

*Story by Znobia Wootan  
Native American Seed Company  
Junction, Texas*

**W**hite Tridens (*Tridens albescens*) can be seen growing in ditches and lowland areas across Texas, and is the most drought tolerant of the wetland species. It has a fibrous root system that makes it a great species to plant around stock tanks, along with seeps and slopes for erosion control. Amazingly, it is found in all of the Texas eco-regions: Trans-Pecos, High plains, Rolling Plains, Edwards Plateau, South Texas Plains, Cross Timbers and Prairies, Blackland Prairies, Post Oak Savannah, Gulf Prairies & Marshes, and occasional in the Piney Woods. The micro-habitat of occasional/seasonal standing water appears more important than total average rainfall per year or specific soil type.

It is a warm-season perennial that can reproduce by tillers as well as seeds. It is an early bloomer and seed production can begin when it has as little as five leaf blades present, and will continue through to frost. The seeds are generally white with a reddish or purplish tinge. They are also small with a one-half pound able to cover an acre giving this species of grass a high economic value. With its characteristic traits of early and continuous seed production and high economic value, White Tridens is invaluable as a restoration grass species. Another characteristic is its fragrant odor that some describe as a sour odor but not unpleasant.

It is speculated that this unique fragrance is the source of attraction for numerous bugs and ants that are seen here, on the farm, visiting the White Tridens plot. The harvester ants are very fond of these nutritional seeds. Some insects found in the White Tridens have never been seen in any other plot on the farm; therefore, leading one to believe that this grass species is providing a unique substance necessary for their existence. When found on the range it is considered an indicator of a healthy habitat and is technically labeled an increaser. Horses and cattle will graze it but it is not a preferred species. Being a small to mid-size grass, White Tridens often gets overlooked but it is a necessary functioning piece of a healthy range/prairie habitat. *(Photos courtesy of Native American Seed Company)*



**White Tridens**  
*(Tridens albescens)*



*White Tridens' seed production, above, is a favorable characteristic of this native grass as the seeds make a good food source for wildlife. White Tridens, left, are invaluable as a restoration grass species.*

## Historic Soils Documentation in Texas

Story by John Sacket III, Soil Survey Project Leader  
USDA-NRCS, Stephenville, Texas

For those who might be wondering, yes soil scientists read *The Reverchon Naturalist*. I think it is a nice tribute to the early explorers and naturalists, who left behind journals and scientific articles that contain a wealth of knowledge about the plants and animals encountered in 19<sup>th</sup> century Texas. Thankfully, many of them also took time to describe the soils they encountered. These soil descriptions provide important clues to how the soil has changed over the centuries, and they also demonstrate how people's attitudes towards soil as a natural resource also changed.

The first documented account of soil utilization in Texas by a European occurred in 1534. Cabeza de Vaca first landed on Galveston Island in 1528, and around 1534 he was surviving on prickly pear fruit somewhere south of San Antonio. A book with the modern translation of his memoirs reads, "*The thirst we had all the while we ate the pears, we quenched with their juice. We caught it in a hole we hollowed out in the ground [surely a rock]. When the hole was full, we drank until slaked.*" The bracketed text - surely a rock - was added by the translator/editor, and I say o' ye editor of little faith! Anyone that has driven south along Highway 16, south of San Antonio can still see prickly pear flats that occupy the clayey geologies dissected by the Nueces River. Anyone that has walked across those flats after a rain can testify that those sticky soils have more than enough clay to pond prickly pear juice.

Other early explorers that described soils in Texas include William Kennedy, Randolph Marcy, Frederick Olmstead, and Ferdinand Roemer. In 1845, Ferdinand Roemer, known as the Father of Texas Geology, traveled in Texas describing the plants, animals, geology, and soils he encountered. In 1850, he published a book called *Roemer's Texas*, in which he writes some fairly detailed soil descriptions. Roemer writes:

"We crossed the Llano [River], and the character of the soil changed immediately upon reaching the other side. Instead of gravelly limestone of the cretaceous formation which forms the predominant rock from Fredericksburg to this point there comes in a brown, ferruginous, evidently metamorphosed sandstone, whose weathering produces a light, loose soil. A few miles farther, the character of the region changed again, and the sandstone was replaced by red granite, which arose in a number of places in various shaped erect formations, but reaching nowhere any great height. The land in general, however, appears by no means to be sterile, for between these granite elevations are sizeable plains, overgrown with oaks and mesquite trees, and the loose soil, composed of decomposed granite is without doubt suited to agriculture."

In this description he does two notable things. He relates soil characteristics to the geologic parent material (decades before soil formation was completely understood), and secondly he describes the relationship between plant communities and soil types. This sounds like an early attempt at an Ecological Site.

Some 60 years later, in 1899, soil scientists began the formal process of mapping the soils of Texas. In 2010, NRCS soil scientists gathered in Temple, Texas, to celebrate the completion of the initial Soil Survey and the 110 years it took to complete. However, a soil scientist's work is never done. That same year, an NRCS Soil Survey Office was established in Stephenville, Texas, to update the soil map in the North-Central Texas region. I am the Major Land Resource Area (MLRA) Project Leader in that office. One of the goals for the *Update Soil Survey* is to better document the relationship between soils and plants. A large portion of our work is making the soil maps more consistent between the counties.

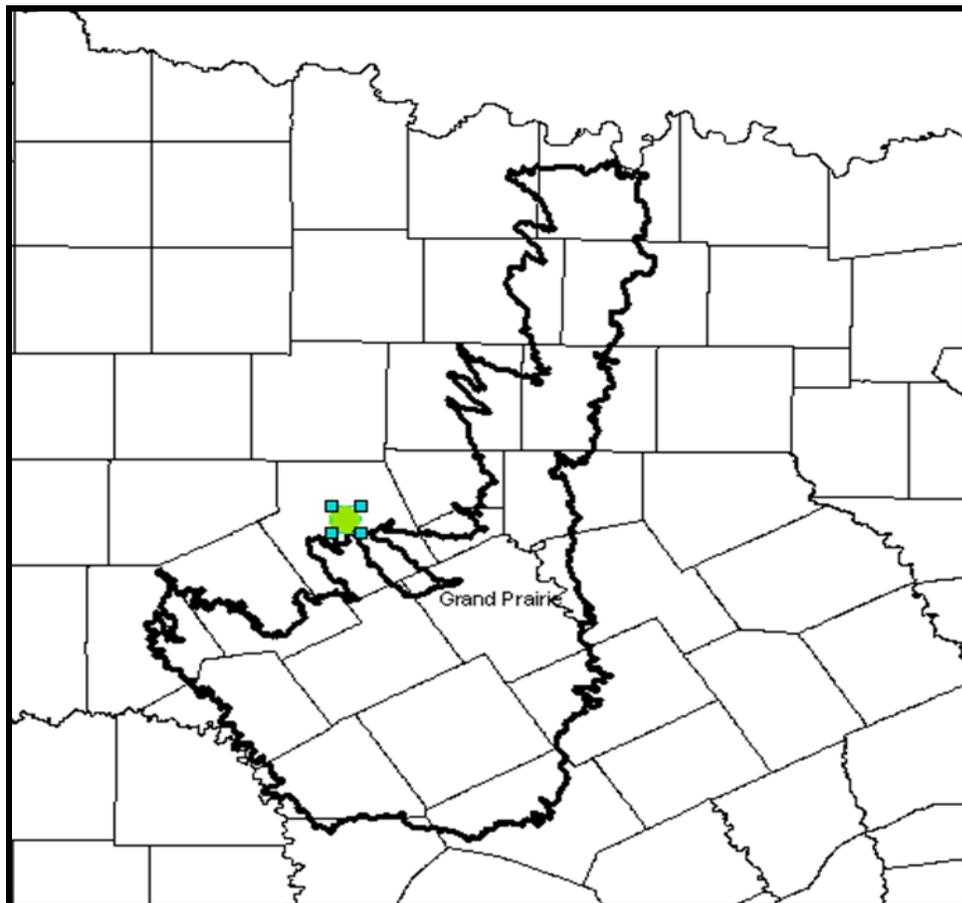
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Part of the data we consider while doing this is the Ecological Site. NRCS soil scientists often emphasize the soils part of the Ecological Site Description (ESD), but this is beginning to change. Soil scientists are spending more time documenting plant species found on each sample site, and understanding how soil characteristics influence plant communities.

Being a soil scientist in Texas has an extra dimension that soil scientists in other states may not experience. This is because Texas is as rich in folklore as it is in natural resources. In 1936, the granddaddy of Texas Folklore, J. Frank Dobie, wrote - *Great literature transcends its native land, but none that I know of ignores its soil.* In his book, *I'll Tell You a Tale*, he relates a story called "In a Drought Crack." This tale of lost treasure takes place on Onion Creek, which is about 8 miles south of Austin. It's fitting that the weather that year is similar to the droughty weather we have be experiencing this year.

The first line of the story reads, "Only two or three times in a century does a drought scorch the life out of the central part of Texas as did that of 1886." As oaks died and leaves fell from the cedar elms, cracks in the black land were so wide that a jackrabbit could not jump across them. It was in one of those cracks that an iron chest was spotted by a farmhand's wife named María. María knew well the tales of cached Spanish gold on the Spanish Trail that ran through the area. Even though fate was not on María's side, and like all good tales of buried treasure, circumstances prevented the loot from being recovered. In this story, it was the badly needed rain that prevented María and her husband from hoisting the chest out of the giant crack. It rained "barrels, hogsheads, tanks of water," and the desiccation cracks all closed. The moral of the story is if you see a soil scientist with a brand new Mega-cab diesel truck, you might just ask him if he found the funds in a soil pit!



*According to John Sackett III, the current update project for the Stephenville Soil Survey Office includes the Grand Prairie, which is outlined in black, left, and the green dot represents the Stephenville Soil Survey Team location. (Graphic courtesy of USDA-NRCS)*

# Conservation Partners Come Together for Landowners

*Story by Randy Henry, USDA-NRCS  
Weatherford, Texas*

Landowners and producers seeking information about land management techniques and issues during this year's record-setting drought got a handful of information at the Hood and Somervell County's Land Management Workshop held at the First Christian Church in Granbury, Texas.

Several conservation professionals gave presentations during the indoor portion of the workshop, including tree care during a drought, role of native plants, Web Soil Survey (WSS) as a tool, brush management, and rainwater harvesting. The agencies that came together to co-sponsor the workshop in Granbury were USDA-Natural Resources Conservation Service (NRCS), Texas Forest Service (TFS), Texas AgriLife Extension Service, Texas Parks and Wildlife Department, and U.S. Fish and Wild Service.

"The teaming up of state and federal agencies during this initiative for Hood and Somervell Counties is called the Central Conservation Partnership, and our goal is to deliver an overview of what we do as teams for landowners and producers," said Nick Harrison, TFS staff forester in Granbury.

One of the presentations focused on the WSS, and what an excellent source of information it can be for landowners or producers. Cole Jacoby, NRCS rangeland management specialist in Granbury, addressed the audience about the WSS as an online tool and the conservation planning process.

"The WSS allows landowners to map their land and define an area of interest, and gives landowners many selections to create a printable file to analyze data and generate custom reports about their property," said Jacoby. "As a ranch manager, the WSS can help you with conservation planning, and as a farmer help with soil erosion and productivity on your land."

After lunch, the attendees moved to an outdoor environment at Squaw Creek Park, a recreational area with a 3,200-acre lake near Comanche Peak in Granbury, and had the opportunity to ask questions during four different field sessions. The field sessions included What is Oak Wilt, Reading the Land, Brush Management, and Restoring Native Grasses.

As many of the speakers talked about drought, a few focused on water and the value it has on the land.

"Water and rainfall as tools are a precious commodity and a much needed value for life," said Marty Vahlenkamp, Texas AgriLife Extension Service agent in Hood County. "As land managers and stewards, we need to think where water is leaving our property and slow it down, for that way we can use it longer and keep it on our land."



**Cole Jacoby, left, NRCS rangeland management specialist, speaks to residents in Hood and Somervell counties about the Web Soil Survey, while Ricky Linex, below, discusses *Reading the Land* with attendees at a workshop held in Granbury, Texas. (Photo Credit: Randy Henry, USDA-NRCS)**



# Indian Marker Trees

*Story by Steve Houser*

*Texas Master Naturalist and Master Gardener*

*Dallas, Texas*

**H**istorically, living in complete harmony with nature has been a way of life for the American Indian. They relied on Nature for all their needs. Many years ago, traveling from place to place required good navigational skills, directions along the way, and a method to mark common trails. American Indians used trees to not only mark a trail, but also to signal the presence of important features, some of which were critical for survival.

Today, some call these old road signs *Indian marker trees*. They are known by others as *trail trees*, *thong trees*, or *culturally modified trees*. Years ago, Linda Pelon, one of the first anthropologists researching the subject, taught me the term of Indian marker tree. An Indian marker tree is a tree that was purposely bent over as a sapling and held in a bent position throughout most of its young life. The trees were tied down using a thong of animal hide, which is where the name “thong tree” originated. They were used to guide the American Indians to a source of water, a good place to cross a river, a campsite or other important natural features. To those who could interpret their meaning, they were similar to a life-saving road sign. However, I doubt they had one for rest stop.

Why are most folks not aware that Indian marker trees exist? Many years ago, the American Indians were not fond of explaining all the details regarding their way of life to outsiders. They always saw the need to live within the balance of nature and had a great reverence for all the glorious things that nature provided. They were the ultimate stewards of our natural world, whereas the “white man” only saw endless opportunity. “White man look—but not see.”

Indian marker trees are the living witnesses to the history of a past civilization and their incredible way of life. Indian marker trees are a significant part of this nation’s cultural heritage and a gift to our current society. They provide lessons about our past and lessons yet to be learned; but their life expectancy is limited. This underscores an urgency to study and document as much information as we can about those trees that do exist. A number of suspected Indian marker trees in the DFW area are currently being researched and more details are expected in the future.



*This Cherokee Marker Tree exhibits the typical slight bend low on the trunk with a second sharp bend upward. (Photo Credit: The Mountain Stewards)*

A very inspired group of volunteers known as the “Mountain Stewards” have documented literally thousands of Cherokee Indian marker trees in the Southern Appalachian Mountains. They created trail maps, presentations, and completed a soon to be released book on their research. The organization’s president, Donald Wells, is an outstanding source of information and support for our regional research.

Although the exact shape and tree species may vary, the Cherokees had a different way of shaping a marker tree than the typical Comanche marker tree found in the DFW area. Most all trees found by the Mountain Stewards are the Cherokee style, which has a slight bend low on the trunk (near the ground) and a second sharp bend upward.

The typical Comanche style Indian marker tree in North Texas has a trunk that is often described as a “half-moon”, which may touch the ground before growing upward. Since there are different shapes for some tribes, the trees could have been used to mark tribal boundaries, signaling other tribes to stay away—much like “no trespassing” signs. You trespass ... you get a Kickapoo. Although there is enough documentation on Indian marker trees to more than verify and confirm their existence, skeptics remain.

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The purpose of discussing Indian marker trees in a public forum is to increase awareness of their existence, and to recognize them as living witnesses to our history as well as priceless cultural treasures. Indian marker trees should be celebrated, preserved, and properly maintained to ensure future generations have an opportunity to enjoy them. All trees are lost over time. Therefore, recognizing them beforehand seems to be a moral obligation. In addition, the elders who have knowledge of Indian marker trees within the various tribes around the nation will not be around forever and any remaining knowledge of these trees must be recorded. We cannot preserve significant trees or cultures that we have not taken the time to recognize or fully understand.

According to tribal elders of various Indian nations, individual tribes had different styles of selecting and bending marker trees. For example, Indian marker trees found in Florida may be from the Seminole tribe, while trees found in Alabama may be Choctaw or Chickasaw. The form and function of each tree can vary considerably, but all of them served an important purpose that may not be clear without researching the surrounding area for clues and checking with various experts. As an example, the California Crossing Marker Tree, in Dallas, signified a good area to cross the Trinity River in shallow water, an important fact to know many years ago unless you needed a bath.

The California Crossing Marker Tree has been blessed by tribal elders, and the Gateway Park Marker Tree was officially recognized with a proclamation from the Comanche nation on April 26, 1997. The proclamation notes that the site was a favored campground due to the abundant resources in the area.

Ironically, the entire top of the tree was broken off just above the long bend during a subsequent Memorial Day storm. A section of the tree was preserved and used to date the age of the tree, which was over 500 years old. In addition, an unsuccessful effort was made to revive the tree by planting saplings near the base and grafting the top growth into the trunk of the tree.

Guidelines to help distinguish between what may or may not be an Indian marker tree are currently being developed for the North Texas area. A few important points include the following:



***This Gateway Park Marker Tree was officially recognized via proclamation by the Comanche Nation on April 26, 1997. The site was a favored campground due to the abundant resources in the area. (Photo Credit: Doug Taylor)***



***This Comanche style Indian Marker Tree in North Texas has what is described as a half-moon that may touch the ground before growing upward. (Photo Credit: Kirbie Houser)***

- They must be at least 150-200 years old. Unlike humans, trees can't hide their age.
- They are always a native tree species, which is known to be long-lived for a given part of the country. Without a doubt, the American Indians were quite knowledgeable about the life expectancy and cultural habits of tree species.
- They often include sharp bends in the trunk, which would have required an acute knowledge regarding the biological function of a tree's vascular system. To create the bend, often called a hip, may have required the removal of bark and underlying tissues. If any of the bends in the trunk are higher above the ground level than a person could have created from standing on the ground, the tree may not be an Indian Marker Tree.

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(Continued from page 8—Indian Marker Trees)

- They are often associated with significant natural features such as a tree recently submitted in Bowie, which marks a natural spring.
- They are often associated with witness reports and with records that indicate arrowheads or other artifacts were once found in the area.
- They may show injury scars along the trunk, resulting from the thongs that tied them down, or possibly wounds created to maintain their bend.

In contrast, trees that are not Indian marker trees, though they may have a similar bend, are typically trees that are blown over, or forced over by ice and snow accumulations.

These trees will often show exposed roots on one side of the trunk and a mound of soil created when the roots are forced upward and the trunk goes over. To the skeptics that say nature, not Indians, created these trees, I would pose a simple question: How could nature create two trees near each other (termed “doublets”) or even three trees close together?

The Indian Nations understood, celebrated, and lived in complete harmony with all aspects of our natural world. They were the ultimate stewards of our lands and they understood the importance of maintaining a healthy balance in any ecosystem--something we should carefully consider in determining how we live in the future.



*These trunk scars were probably made from the thongs that tied them down, or wounds to maintain their bend. (Photo Credit: Steve Houser)*



*Trunk scars like these are similar, yet show signs of being tied down by thongs, as well as possibly wounds created to maintain their bend. (Photo Credit: Steve Houser)*

**Steve Houser** is a consulting arborist as well as a tree climber with more than 30 years of experience, and the owner of a tree care company. Houser is also an instructor for the Texas Master Naturalist program (North Texas and Indian Trails Chapters), along with the Texas Master Gardener program in Dallas, Ellis and Collin counties. He works closely with the Dallas Historic Tree Coalition.

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