

Tyler County Forest Landowner Association
Forest Ecology and Tree Identification – September 19, 2015

On Saturday, September 19, 2015, twenty-six attended the Tyler County Forest Landowner Association (TCFLOA) meeting in Woodville, Texas. The program focused on Forest Ecology – especially that in East Texas – and tree identification.

Forest Vegetation Response to Disturbance Factors

Mike Oliver, State Forester, USDA, presented Forest Vegetation Response to Disturbance Factors. He showed slides that recorded the effects of natural occurrences such as fires, windstorms, flooding and ice storms. Other parts of the county may also experience earthquakes or volcanic eruptions and lava flows. Possible post-disturbance impacts include

- One species is favored over another.
- Dead plant material is consumed.
- New substrates (the surface on which an organism grows) are created.
- Nutrients are returned to the soil.
- Forest gaps and patches become very dynamic.

Biological diversity is dependent on disturbances. Many species depend on disturbances. For example, bald cypress and black willow seeds are transported to new locations by floating on water rather. The Carolina parakeet which is the only bird known to transport these seeds is now extinct. The longleaf pine likes fires. Understanding disturbances allows us to mimic them so that we can restore and manage ecosystems. Ecosystems recover from disturbances, but may be quite different – sometimes in ways that are desired.

Basic Tree Identification Techniques

Jacob Spivey, Texas A&M Agrilife, Tyler County Extension Agent, presented Basic Tree Identification Techniques. To identify a tree, one should observe the tree's form, habitat, bark and leaves.

The leaves are the most common ID tool. First determine if the leaf is simple or compound. A compound leaf, like the pecan, comes from a single lateral bud. Other characteristics are the leaf type and arrangement, its shape and form, the shape of its apex (outer tip), the details of its margins (edges), the shape of its base (where it attached to the tree), and finally, its arrangement (alternate, opposite or whorled).

Next observe the fruit or nut type. Pine trees have pine cones that vary significantly by species. The characteristics of the different pine trees typically found in East Texas are as follows:

Longleaf pines have needles that are clustered in 2s or 3s at the apex; the needles are 10"-18" long; and the cones are 6"-12" high.

Loblolly pines have needles that are clustered in 3s at the apex; the needles are 5"-10" long and the cones are 3"-5" high.

Slash pines have needles that are clustered in 2s at the apex; the needles are 5"-10" long; and the cones are 4"-6" high. The needles of a slash pine tend to be waxier and heavier than those of a loblolly pine.

Shortleaf pines have needles that are clustered in 2s at the apex; the needles are 3"-5" long; and the cones are 1.5"-2.5" high.

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The longleaf and shortleaf pines are more draught resistant than the loblolly and slash pines.

Texas A&M's Trees of Texas website <http://texastreeid.tamu.edu/> provides a wealth of information to facilitate tree identification.

Ecological Reconstruction of the East Texas Forests.

Ike McWhorter, Fire Ecologist, U.S. Forest Service, presented the Ecological Reconstruction of the East Texas Forests. In 1904, William Bray documented the forests of East Texas in Forest Resources of Texas. His documentation shows that much of Tyler County was covered in longleaf pines with a magnolia forest running east-west across the middle of the county. In 1935, a forest survey published in Forest Resources of Southeastern Texas by J. W. Cruikshank and I. F. Eldredge documented vast expanses of longleaf pine in both northern and southern thirds of Tyler County. (The ebook version is available free from Google Books.)



Tyler County - 1935



Another historian of Tyler County's forests was Herman H. Chapman who published Forest Mensuration in 1921. Chapman noted that East Texas was composed of even-aged forests that formed a mosaic of different-aged forests. Currently under construction are maps of Tyler County from the Houston Oil Company's 1910 Survey.

Longleaf forests grow as open forests (limited undergrowth) that include areas with no trees. Shortleaf pine forests had heavier undergrowth as they tended to grow in clay soils with higher nutrients. Hardwood tends to grow in bottomlands.

Longleaf pines produce seeds in intervals of about seven years. Hence, even though the loggers in the late 1800s and early 1900s tended to harvest only trees with a diameter of 12" or more, there were seldom seeds left for reforestation.

The role of fire is a driving force in reconstructing forests because it promotes grasses and understory. Control burns of longleaf forests are more effective in May – June. If longleaf trees are exposed to fire during the April timeframe when they are candling, the

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tree may be permanently damaged. It is important to protect the bud on the candle.

Longleaf pines may remain in the grass stage for as long as 20 years.

Loblolly forests are not as open as longleaf forests. Loblolly may produce more financial benefits, but the long leaf produces superior products, especially for poles.

The Boykin Springs Longleaf forest, just across the Neches River from Tyler County, was not cut in in the 1900s because the trees had experienced severe storm damage and the loggers decided it was not cost-effective to build the railroad trams necessary to harvest the trees that were left. Today, it is a beautiful forest.

When you observe a forest of crooked trees, they are probably growing in clay soil.

Originally, Pinehill bluestem grass grew under Tyler County's longleaf pines. Pinehill bluestem likes sandy, non-fertile soil. It is also known as little bluestem, but the pinehill bluestem is different from the little bluestem that grows in prairies. While prairie little bluestem seeds are available, the seed bank for the pine-hill bluestem has almost disappeared. The East Texas Plant Material Center (ETPMC) is working to create a supply of these seeds. ETPMC is part of the Natural Resources Conservation Service (NRCS), United States Department of Agriculture. The ETPMC is a joint venture between Soil and Water Conservation Districts in east Texas and northwestern Louisiana, NRCS, Stephen F. Austin State University, and US Forest Service. The ETPMC is located at the Stephen F. Austin Experimental Forest.