

QUICK REFERENCE GUIDE FOR POST OAK WOODLAND RESTORATION FOR NATURE PRESERVES IN THE SOUTHERN CROSS TIMBERS

The definition of a nature area or preserve is that it must have the ability to reproduce itself with trees and plants that are indigenous to the region. Nature areas typically do not have added irrigation and survive on rain water.

Plant life population in the Southern Cross Timbers Region in the pre-Anglo era was influenced by lightning strike fire. History records that approximately every 2 to 12 years lightning strike fire occurred in this region.

These fires burned native grasses, shrubs and thin barked trees. The trees that were left primarily were the post oak and black jack oak tree. This is because the post oak and black jack oak have noticeably thicker bark providing an insulative barrier from heat of fire.

The post oak primarily and black jack oak tree to a lesser extent, by population, have been responsible for increasing the fertility of the soils in the Southern Cross Timbers.

This is because when the trees became old and branches became non-vital the leaf litter, wood and cork like tree bark would stay in place in the soils, while rotting, far better than other species of trees that will grow in these nature areas surviving only on rain water.

With poor quality soils, heat and dry climate the post oak and black jack oak tree and the continual organic material they provide is a requirement for the soils in the Southern Cross Timbers to remain fertile, otherwise soils in this region will revert back and become similar to soils in West Texas and further West.

The other species of trees that grow in unkept or unmaintained nature areas in the Southern Cross Timbers without the benefit of irrigation water are primarily seed forming, wind germinating trees with high surface root density characteristics.

These trees, by comparison, are fast growing, pull all moisture from the soils creating chronically dry soils, cause water runoff during rain instead of absorption into the soil / organic material matrix, thus reduce local watersheds and are a catalyst for soil desertification.

As the wind germinating trees continue to spread across our region choking out the native post oak and black jack oak trees we can realize that if this process had occurred hundreds of years earlier then, there would be far less post oaks and black jack oaks in our region today.

Yet post oak and black jack oak trees do not succumb to drought. Post oak and black jack oak tree roots rescind when trees from another species are within their root system. This arrangement makes it difficult for the post oak to survive in a nature preserve surviving only on rain water.

Seed forming, wind germinating trees live a fraction of the time compared to trees from acorns and when they become non-vital they rot so thoroughly their organic material washes across the soil and provides much less long term benefit to the poor soils in this region of a hot dry climate.

By comparison to the acorn born tree, seed forming, wind germinating trees encourage erosion not only in upland areas but, especially along creek beds where water pushes solid soil masses with little organic material from creek banks.

Many of the other species of trees we see in this region today are trees that were brought by settlers from other parts of the world. When the farmer tilled the soil or the rancher had cattle graze the pasture the soils were left exposed for wind germinating seeds to plant. These trees came to be known as pioneer species trees.

So vegetation management is necessary moving from an agrarian society to an era of understanding and appreciating what the Eco-system in this region was like in the pre-Anglo era.

Success in restoring a post oak woodland requires that land owners and land managers approach the project in a forthright manner. It must be recognized what the percentage of each species of trees would have been in the pre-settlement era.

This information is available from land managers who restored post oak woodlands utilizing controlled burn fire to clear off

pioneer species vegetation.

When beginning the project the first thing that needs to be taken into consideration is that more than likely the post oaks and black jack oak trees in the area needing vegetation management are under stress from encroaching tree roots of invasive species.

Trucks and heavy equipment should never be within the root zones of post oak and black jack oak tree root systems especially in nature preserves where there is no irrigation water available.

When removing vegetation and invasive species vegetation it is necessary to remove this vegetation from within the potential root growth zone of the native post oak and black jack oak trees. All of the roots of these native oak trees need to be able to spread, grow and reclaim their space in their native land unimpeded.

In an area where post oaks, black jack oaks, wind germinating trees and privet is present, if just privet is removed full sun then shines directly on soils, in absence of organic material, with the small diameter roots of the native oak trees just below the surface of the soils.

With the wind germinating tree, still present, with high surface root characteristics, no organic material and the hot Southern Cross Timbers sun present the native oaks are still stressed in the area where attempting to restore the area to its pre-settlement condition.

After the work of removing only the privet the native post oak and black jack oak trees are still left susceptible to the encroachment of aggressive roots from trees with high surface root density, invasive species trees and the allelopathic compounds and hypoxylon fungus they carry.

All species of shrubs and trees that require cutting and removal will require being cut at ground level to accommodate a lawn mower to periodically address the regrowth of unwanted vegetation until die off occurs.

Repeated mowing over time will always result in die off of unwanted invasive species growth, eliminates soil moisture competition for the native oak and allows for leaf litter accumulation from the post oak tree canopy.

Mowing in post oak savannas and woodlands should be done with the greatest of care using the smallest, lightest equipment to do the job. Mowing should be just before or just after a rain and after the sun at the end of the day.

This style of mowing helps to deter native grasses from drying out and the forest or savanna floor from drying out and becoming more susceptible to die off from the heat of the Texas sun and the fungus in the soils as a result of the over population of elm trees that are susceptible to and carry various types of fungus in their limbs, leaves and root system.

Large, heavy high velocity mowers thoroughly lift the organic material from the forest and savanna floor, cutting finely, redistributing the organic material while spreading the fungus cells attached to the organic material.

This process not only spreads and infects new, recently grown grasses and native tree roots spreading disease it also processes the organic material into a fine powder subject to washing away during a rain.

The organic material is required as an insulative barrier from heat to protect the native oaks.

Periodic safety mowing at the perimeter of municipal park nature areas and adjacent to work areas is also necessary for ease of walking to and from the park project work area. This is a hospitality step to ensure an interested, repeat volunteer group. Young female UTA student volunteers are not willing to walk through one foot high or higher native grasses, weeds and stickers to cut privet.

Once the restoration of the woodland floor begins and the native flora returns post oak and black jack oak tree seedlings will germinate during the springtime after a thorough rain.

These seedlings should be flagged to preserve them during the necessary periodic mowing to deter regrowth of invasive species plants.

When restoring each woodland project work area pruning of the native oaks is sometimes required.

Tree limbs should always be cut from the branch of origin and sealed with plastic roofing cement. Pruning cuts from post oak and black jack oak trees in the Southern Cross Timbers will split and allow insects and microbes to enter the tree before the wound heals over. Both post oak and black jack oak trees seal off their wood on a cellular level reducing the chance of tree wood infection from sealant.

All vegetation cut during the restoration efforts can be chipped and spread on existing trails.

Forestry mowers make quick work of cutting down and chipping invasive species trees and shrubs.

If local municipalities are willing to spend the money on this equipment they would be welcome by homeowners who live at the perimeter of municipal park nature preserves where there is an over population of insects and wild animals.

Woodland safety buffer zones are not new to humanity.

Policy institutes are concerned about tree canopy, tree inventory, tree removal for new highways and public funding.

Altering our regional Eco-system and allowing the local soils to go without the consistent feeding of native oak tree organic material by allowing invasives to grow in their place, depletes our local soils, results in erosion and reduces our local watersheds.

Municipal park nature preserve vegetation management would allow for these areas to be used for public events as they have in the past.

Publicly owned land adjacent to the Trinity River banks would make an ideal place for vegetable truck farms and would address the over breeding of the wild animal population.

Both plans are part of safe parks, strong neighborhoods and have revenue generating potential.