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# The Sawmill's Role in East Texas Development

By Darrel L. McDonald, David Kulhavy,
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## INTRODUCTION

Understanding cultural landscape is an important research endeavor for historical research. Land conversion is a dynamic process which includes a stage, the landscape; the people, often heterogeneous, and cultural values which enables the population to alter the landscape. In East Texas, the sawmill culture has been a primary factor affecting change in regional landscapes over the last 170 years.

## OBJECTIVES

The objectives are to: 1) define the historical phases of the sawmill industry that shaped the land and culture in East Texas; 2) describe the ways in which the sawmill industry impacted land conversion; 3) present an argument that present East Texas landscapes exhibit aspects of gentrification; and 4) to discuss ramifications of this process on East Texas culture.

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East Texas lies in a vegetational zone described by Correll and Johnston (1979) as the pineywoods[1]. Although historically-based works have addressed culture or individuals in the area, limited research has examined the extent and intensity of land conversion in this southern thermophylic forest region. The piney woods occupy approximately 21 million acres or an area about the size of Ohio. Historically, longleaf pine was an important species, but today loblolly and slash pine are dominant. Hardwoods occupy clayey flood plains and seasonal wetlands, while cypress and tupelo typify woody vegetation associations in perennially wet areas and bayous.[2] For this study, East Texas was defined by the counties in Figure 1. Most of these counties underwent major lumbering over the last century.

## TEMPORAL DEVELOPMENT AND AFFECTS OF THE SAWMILL CULTURE

Although permanent European settlement in East Texas dates from the Spanish period of the late 18th century, significant landscape change did not occur until the early 1800s. Isolated Spanish missions and trade centers did little to alter forest lands long inhabited by Caddoan Indians. The immigrants moving into the region, as Doughty (1987) suggested, changed the wilderness into a garden[3].

### PHASE I (1810s-1850s)

The earliest recorded East Texas sawmills began operating in 1819; one near the Spanish community of Nacogdoches and the other on Ironosa Creek, just north of San Augustine. Both were owned by Anglo-Americans.[4] The early sawmills utilized human, animal and water power to remove trees from the forest to produce lumber products. Resultant open lands were replaced by agrarian landscapes planted in row crops including corn and cotton, or occasionally tobacco into tracts cleared of forests. The number of mills grew slowly over time; many starting as family operations with some later maturing into lumber companies. Near the end of the first phase, rivers and ports became vital to the transportation of logs to mill sites.

The history of the Harrisburg Steam Mills Company reflected the general sawmill effect on the cultural landscape before 1860. Built on the junction of Buffalo and Bray's Bayous in Harris County in 1831, the mill was operated by steam machinery shipped in by the *Ann Elizabeth.* Although the company prospered because East Texas lumber was favored

by Mexican tariff law, the steam machinery also operated flour and grist mills for local consumption. Even though the mill was destroyed by Santa Ana's army during the Texas Revolution, the mill was rebuilt and operated until 1867.[5]

The memoirs of William Zuber revealed the interaction of industry, agriculture and environment in the life of the people. He recalled the mill "was the first steam mill I ever saw--the first built west of the Sabine River." Because workers were provided with shanties and access to food supplies, the Harris sawmill community became one of the first, if not the first, of the region's mill towns that eventually numbered nearly one thousand. Zuber remembered that the Harris pinery "was a forest of noble pines growing within two hundred yards of Bray's Bayou." A work crew of nearly twenty men, including fellers, haulers, water men and cooks, dropped the timber, sawed it into lengths, and floated the raw product across the bayou to the mill, where it was sawed into lumber.[6] Often the cleared land was incorporated into the plantation's crop rotation[7]

After the Civil War, the railroads and sawmill communities developed a synergistic relationship that lasted for almost eighty years. As early as the 1850s, railroads were envisioned as a logical means to transport the raw materials and products to and from the then small but prosperous lumber industry communities. Later, the railroads and sawmill communities developed a synergistic relationship that lasted for almost eighty years. The charter title of the Texas & New Orleans Railroad, founded in 1856, as the Sabine and Galveston Bay Railroad and Lumber Company, exemplified the relationship between timber and rail. The railroads gave the lumber industry an efficient means of both harvesting and marketing the forests; sawmills provided the railroads with vitally needed crossties and building timbers to expand the rail network. However, the development did not begin in earnest until the latter part of the 1870s.[8]

A compilation of sawmill frequencies by county by decade extracted from the ETSMDB (Figures 2) summarizes the spatial patterns of the emerging sawmill culture between 1819-1850. Collaborating records support that population density in these counties closely mirrored patterns of counties which had the highest sawmill frequencies. While most East Texas counties had no sawmill activity, several had between 6-10 mills operating during these decades. Initial commercial exploitation of the forest began in counties adjacent to the Sabine River and in

Houston County between the Neches and Trinity Rivers, respectively. In this phase, large mature trees were cut down and rafted to mills for processing (See Figure 1 for county locations).

By the 1850s, the sawmill industry had greatly expanded in number and geography across East Texas landscapes. From two animal-and-man-powered mills in 1819, at least 229 sawmill plants were documented in East Texas during the decade before the Civil War. The expansion of mills was enhanced by a significant shift from animal and human muscle to steam or water power. By the Civil War, almost ninety pecent of the mills had been converted to steam (134) or water (66) from direct power by either animal and/or human labor. For example, the J. J. Bowman sawmill was converted to steam shortly after the Civil War to increase capacity.[9]

**PHASE II (1860s-1890s)**

It was during the second phase of lumbering in East Texas a distinctive lumber culture emerged and the sawmill industry began to reduce the magnificent, mature forests in earnest. Sawyers turned fallen trees into tens of millions of board feet of quality southern pine and hardwood lumber. Essentially, this phase of sawmill industry development extended from the Civil War years through Reconstruction into a wild-and-wooly period of sawmill, railroad and tram construction that especially dominated the decades of the 1880s and 1890s. This phase witnessed a gradual increase in sawmill numbers, even during the turbulent Civil Wars years (nearly 300 during the decade of the 1860s), until the post-1877 period of rail construction nearly tripled that number by the end of the century.[10] Advanced steam machinery and harvesting techniques brought about an increased level in the division of labor and increased rate as well as amount of lands deforested. Land conversion intensified in East Texas during this phase.

In these decades, the first large scale mills were constructed along the Texas Gulf Coast and also were built in Northeast Texas. Orange and Beaumont changed from small agricultural and commercial villages into important mill towns with extensive rail, tram and shipping connections in order to move the "green gold" of Texas. In the town of Orange alone, the more important operations included Lutcher & Moore Lumber Company, established by northern capital in 1877, the Alexander Gilmer Lumber Company, the Bancroft Lumber Company, M.T. Jones and the Orange Lumber Company. The Beaumont lumber industry thrived on the companies and mill communities of Long Manufacturing, Beaumont

Lumber Company and Texas Tram & Lumber Company. These commercial interests built mill towns for their workers and their families. They also built tram roads deep into the virgin pineries so that loggers could extract enormous volumes of timber and move it many miles by rail and water to the sawmill factories.[11]

The impacts on the Orange area landscape were incredible. Before the Civil War a half-dozen mills, with a combined cutting capacity of 15,000 to 18,000 feet daily, were operating at or near Orange. Of thirty billion feet of timber on both sides of the Sabine, more than a billion of it was within five miles of the city. With the introduction of full-scale, intensive milling fueled by large amounts of capital in 1877 by William Moore and G. Bedell Moore, by 1890, the Orange lumber companies were reaching beyond the five mile radii they had harvested.[12]

Not just southeast Texas was being stripped of its timber crop. More than 200 of the 701 East Texas sawmills documented in the era of the 1880s operated in the three most northeastern Texas counties (ETSMDB). The development of Texarkana, the growth of Cass County, and the revitalization of Jefferson and Marion County were inextricably linked to the expanding lumber industry in the northeastern portion of Texas (See Figure 1). Large mills were built along the major trunklines. In addition, company-owned tram lines built by Central Coal & Coke Company, DeKalb Lumber Company, Redwater Lumber Company, Sulphur River Lumber Company, were vitally important in the economic development of the area. Although not used as extensively as in eastcentral and southeast Texas, more than fifty company-owned trams were built and constructed in the northeastern counties, some lasting into the 1930s. Prosperity was fleeting as many of the mill towns flourished then withered away after timber resources were exhausted. The clearing of the forests along the railroad and tram routes and along the banks of the bayous and rivers not only converted the landscape of northeast Texas but directed economic diversification into livestock, agriculture and new areas of industrialization.[13]

Railroads and tram roads of East Texas contributed significantly to the history of Texas. Not only did they influence the rapid development of the lumber industry after 1880 and consequently brought much needed capital to the state, but many became common carriers as well while others were absorbed into the vast systems of the trunk lines. As a result, many East Texans were given a way to make a living maintaining and operating the rails.

Many of the most labor intensive tasks of getting logs out of the forest to the mills were carried out by African-Americans and oxen teams. These technologies were merged with other horse-drawn skidder technologies and linked to the use of the tram-borne skidding machinery, all of which dramatically increased the rate of logging and intensified the rate of land conversion.[14]

Rivers funneled the majority of logs to the mills. Shifting logging camps housed hundreds of laborers who worked in the stifling heat/humidity and the bitter chill of grueling East Texas summers and winters while performing dangerous jobs. Regional railway lines were built along the periphery but not through the great East Texas forest until the last fifteen years of the 19th century. In East Texas alone, the number of company-owned tram lines increased from seven in use before 1879 to more than seventy-five active lines in the latter part of the 1880s, with more than 300 engines traveling over several thousand miles of track.[15]

The patterns of sawmill frequencies by decade for the phase indicated that the number of sawmills significantly increased in East Texas (Figure 3). By the1880s, 87% of East Texas counties were involved with the lumber industry with 20% having 21 or more mills that operated during the decade.

During this phase tram railways were built to provide transportation conduits from mills to deeper reaches of the forest. A large number of the early trams supported mills along the eastern margin of Texas and along the Neches drainage to the Gulf. The expansion of trams influenced the geography of sawmills. Large numbers of the mills were used to produce ties to for trams which penetrated into the vast forest. This decade was a period of massive deforestation and land conversion.

**PHASE III (1890s-1920s)**

The third phase extended from the 1890s-1920s. The period was characterized by an explosion in the number of sawmills; many capable of producing hundreds of thousands of board feet per day. Hundreds of company-owned towns of 5 to 500 families occupied the forest interior (Maxwell 1983). Toward the end of Phase III electricity and other modern physical infrastructure features were added to sawmill communities. Lumber barons, such as T.L.L. Temple, John Henry Kirby, and the Kurth family amassed large land holdings and wealth. Ernest Kurth was president of the Angelina County Lumber Company and organized Southland Paper Millis in Lufkin, the first mill to use southern

yellow pine for newsprint. The Angelina Lumber Company was sold to Owens-Illinois in March 1966.[16]

As railroads continued to penetrate deeply into the forest they began to dissect the region. The result was increased accessibility to an increasingly vulnerable East Texas landscape. The growing importance of the relationship between the American rail and timber industries before and after 1900 cannot be understated. Texas ranked third in national railroad mileage, excluding thousands of miles of tram tracks, with more than 9,700 miles by 1900.[17]

In 1900, the *American Lumberman* estimated that the railroad industry in the United States was spending about $100,000,000 on lumber annually. Timbers were used for pilings, telegraph poles, bridges and trestles, stringers, caps, sway bracing, bridgesills, guard rails, bridge ties, coal chutes, cattle guards, warning posts, semaphore signals, tank and grade crossing materials, and piece stuff for dockage and terminals. Automobile construction, required roofing, ceiling, flooring, sills; common property fencing; finished lumber for station buildings and platforms; and hardwood lumber and veneers for passenger coaches. Before the turn of the century more than twenty billion feet was used alone in the crossties for American railroads, at a cost of $192,000,000. About 1/8th of the ties were replaced annually at a cost of $24,000,000. About 15,000,000 telegraph poles were in use. An estimated 2,250,000,000 feet of bridge materials were in use at this time, with a replacement rate of one in ten. Privately-owned steam logging railroads doubled in number to 148, with more than 5,000 miles of removable track and at least 400 engines in use.[18]

The zenith of the East Texas lumber world was early in the 1900s; particularly from 1900 to 1910. Its impact on community, culture and landscape cannot be overstated. Belo's *Almanac* for 1904 noted that twenty-four percent of Texas was covered with forest; the largest wooded area was located between the Trinity and Sabine rivers. Although almost thirty-seven billion feet of timber had been cut by the end of 1902, John Henry Kirby estimated early the following year that Texas still had more than thirty billion standing feet of Southern yellow pine. Census records noted that from 1880 to 1900 the value of lumber production had grown from $3,673,449 to $16,296,473. In 1900, 637 lumber mills valued at $19,000,000 employed 7,924 workers, who were paid more than $3,000,000 in wages; Orange ranked first in production, followed closely by Beaumont. Jefferson and Texarkana remained significant milling

centers in northeastern Texas. Inter-regional trade was by coastal vessel to the northeastern states and by rail to the rest of the nation. Texas lumbermen used export trade only when home consumption declined.[19] Turpentine and barrel staves were products also produced from the east Texas forests. Turpentine production peaked in the 1910-1920 with the Western Naval Stores in longleaf pine in Jasper County producing 21 percent of the nation's turpentine in 1918.[20]

Almost 1,500 sawmills operated at one time or another between 1900-1910 in a geographic are not quite as large as that of the Solomonic Empire in ancient Palestine. These mills were fed by nearly 150 private steam logging railroads. The sawmills employed more than ten thousand loggers, millmen and railroad workers, who lived with their families in numberless East Texas village and hamlets, including at least 362 company-owned mill towns. The years of 1906 and 1907 were the threshold harvest signatures for East Texas. In 1906, more than 518 sawmills, 16 shingle mills and 127 planing mills, box factories, sash and door factories produced 1.7 billion board feet of lumber. In 1907, only two other states produced more lumber than did Texas.[21]

The great increase in mills is readily seen in Figure 4. Sawmill numbers reached a maximum frequency and concentration in the early 1900's as the interior forest was exploited. Steam power remained the dominant energy source during this decade with fossil fuel and electric mills starting to increase in number (ETSMDB). Further, the sawmill industry landscape exhibited a core periphery landscape which essentially persists to the present. Records indicated that during this decade up to 6 million tons of lumber were hauled annually which accounted for about 24% of tonnage carried in the state.[22] Vast lumber yards were built as the intensity of forest harvest reached a peak. Along with this explosion of mills, settlements relocated near tracks to serve the lumber industry. The landscape devastation was immense. Estimates indicate that up to 95% of the old growth forest was clear cut during the cut out-get out era of land conversion in East Texas (Block 1995; ETSMDB; and Maxwell and Baker 1983).

**PHASE IV (1920s -1960s)**

The fourth phase was characterized by mature company mill towns and a distinct sawmill culture imprint on the landscape. Mills consolidated and began to specialize. The Great Depression period saw the reduction of mills in East Texas. Highways began to become important

corridors to bring logs from the forest to the mills impacting the importance of railroads and river running. These were tough times.

The final major East Texas mill, that of Wier Long Leaf Lumber Company, was formed by R.W. Wier, C.P. Myer, T. P. Wier, B. F. Bonner, Mrs. Henry Lutcher, Miriam Lutcher Stark, William H. Stark, Carrie Lutcher Brown, and Dr. Edgar W. Brown, all of whom had extensive interests in the Lutcher-Moore Lumber Company. Buying the major remaining unused part of the Lutcher-Moore Texas pinery, in 1918, the mill, company town and tram road were located at Little Cow Creek, deep in Newton County. The company town population fluctuated between 1,500 and 4,000. The mill operated continually during the Great Depression as it dominated the industry, community life and politics of the county until it closed 25 December 1942.[23]

During this phase, the *de facto* enclosure of the East Texas woods, enforcing the *de jure* rights of property owners, began in the 1920s, although traditional views of open access to lands persisted for over four decades. Nearly three centuries of an informal custom of running livestock and hunting across the "open range" of the Southern woods was banned. An oral history interview in 1995 of three East Texas women, each over seventy years of age, who had lived the great majority of their lives near Goodman Bridge in southwestern Nacogdoches County, described the social change that came to the area with forest enclosures.

The informants' fathers worked as farmers, seasonal laborers and small stockmen. The families kept milk cows, vegetable gardens and poultry. In an era of no electricity with water drawn from well or creek, women employed other women as midwives, canned many of the homegrown vegetables, banked sweet potatoes and green winter onions in a cool spot during the summer. In addition, they laundered clothing in boiling pots over wood-fed stoves. The men hunted for squirrels and wild hogs (the deer were gone by then) and fished. One woman explained that the "open range" [meaning the woods outside of the communities, although it was the private property of *someone*] was used by all for firewood, pine and sustaining livestock. Meat hogs were kept in a pen; other swine, known as pineywood rooters, and cattle, other than milk cows, roamed in the woods. At times, fierce fencing disputes arose between landowners and those who used the open range, with much cutting of fences, dynamiting of cattle and hog dips, and occasional deaths. Generations of East Texan forest families lived poor but survived this lifestyle for more than a century. As one woman recalled the year her

family could not afford shoes for the children, but remembered she ate extremely well: fruit, eggs, bread, meat and milk. When the enclosures were enforced, the small stockmen went out of business. Many moved families away from an area where they had lived for many years. Some folks recall that some land owners laid claim to free range stock after fencing. Summarily, the closing of the woods brought to an end the era of the backwoodsmen culture in East Texas.[24]

Sawmill communities achieved a maturity during this phase that lasted until the lumber companies either closed mills down or leased them to tenants; business strategies of more cost-effective economics. Robert S. Maxwell and Robert D. Baker, authors of *Sawdust Empire: The Texas Lumber Industry 1830-1940*, reported that the world of the East Texas lumber worker achieved a remarkably uniform community for several decades[25]. Racial and ethnic patterns remained constant during this period. In large mill towns, such as Keltys or Hayward, now suburbs of Lufkin and Nacogdoches respectively, Maxwell and Baker found that ". . . 9 out of 10 were native-born Americans, two-thirds were native Texans and most of the others were southerners. Four out of ten were black."[26]

The politics of race affected social grouping. So, in a particular mill town, it could, and often did, fluctuate radically from the norm. Afro-Americans at some mills had totaled as much as seventy-five percent of the workforce. The Michelli plant during the 1890s just south of the Angelina River on the Houston East and West Texas is one example. Racial tension was present in East Texas communities. Although, by the 1940s, the Texas Rangers and state guard had not been dispatched to suppress race riots in lumber towns for many years (two earlier examples being Ragley Lumber in Panola County in 1904 and the entire city of Orange in 1899), white lumber workers and their families maintained social and personal feelings reflective of their southern culture. For example, G. J. Maxwell, a Jacksonville sawmill owner whose career spanned the eras of both World War I and World War II, was reported by The *Jacksonville Journal* in 1947 to pride himself on maintaining racial solidarity "in being [able] to operate an exclusively [sic] white man plant." Maxwell was not unrepresentative of his class or for his time.[27]

Almost all sawmill plants in East Texas in 1940 provided their own mill towns, each with company-provided housing, commissary, some schooling and medical care. Costs for these services were deducted monthly from the employee's check. The commissary, at times over priced

and under stocked, nonetheless often provided everything from cotton to coffins for the employees and their families. Access was not always easy. Sometimes company workers and families lived miles from the company store. Chronister Lumber Company of Cherokee County had a logging camp west of Douglass in Nacogdoches County. Joe Bob Staton told Grady C. Singletary in an oral interview that company employees living on Buckshot Road at times left commissary orders on a pole for the engineer of the company tram engine. The next train returning from the mill at Wildhurst would blow its horn, deposit the groceries on the ground, and depart. If the families were not quick enough, then the wild hogs might get the food instead of the people.[28]

Sawmill housing and towns obviously had significant effects on both the social demographics and the rural and community landscapes of East Texas. Housing in Angelina and Nacogdoches counties during the 1940s generally rivaled or exceeded that of non-mill neighbors. In several cases sawmill housing was instrumental in the introduction of modern utilities to the countryside. Six of the major fifteen sawmills were located in or near to the two county seats. Four of these companies either had access to or shared city utilities. Two companies had their own utility systems. Almost every house had electricity; many had running water; while a few were connected to natural gas and sewage systems. The sawmill towns of the countryside were not as well developed as those of the city, yet provided a better standard of material living than did that of the average rural farm in either Angelina or Nacogdoches county and received utilities before adjacent non-mill farm families.

By 1940, nearly all milltown houses in the two counties had electricity; all had access to wells either or running water. The case of T. O. Sutton & Sons at Chireno, the last of the larger mills in the two counties to electrify its company housing in 1942, reflected the material-cultural differences between mill home and farm home. Before electrification, mill-town families at Chireno did not have electric stoves: cooking was done with butane, kerosene oil or wood. Water had to be carried from the mill site about two hundred yards from the quarters. Wells were dug on a hill and later in the quarters. Before electricity came to the homes, the typical family would have a gasoline-powered washing machine, a kerosene refrigerator, a Coleman white gas clothes iron and an Aladdin lamp.[29]

Southern Pine Lumber Company at Diboll and the Southland Paper Mill at Hertys, however, rivaled the preceding city sawmill towns in terms

of development of utilities. Southern Pine, because Diboll was created literally to be the company's mill town, had electrified all of its housing by 1910. Southland Paper Mill (SPM) owned generally by the same people that controlled Angelina County Lumber Company and the Angelina Hardwood Company had been constructed in 1939. The small SPM mill town of Hertys reflected the material conditions of an East Texas town. The company housing of Angelina County Lumber Company at Keltys demonstrated the standard of living in the sawmill towns of the Angelina River Basin by 1948. The community consisted of about 480 families; 150 were Afro-American families. All homes were electrified, about half had vegetable gardens, and, unlike Southern Pine Lumber's mill town at Diboll, very few cows, chickens or horses were kept.[30]

Factors of race and class determined housing priorities in mill towns and affected the demographics of community housing patterns in East Texas. At Keltys (on northwest edge of Lufkin, Texas) for example, four types of housing were available and these were upgraded during World War II. White owners and management lived in large homes of nine or ten rooms with garages, all but two of the homes built in oak groves; these houses were serviced with electricity, water, natural gas and sewer. The next group, also for whites, included five or six room houses with porches and fence-enclosed small yards. The homes all had electricity and water while some had sewer and natural gas. The third house type was primarily inhabited by whites while a few of the homes were available in the African-American quarters. It consisted of four to six rooms, large porches, old fences and electricity and water. The final type consisted of unpainted shacks of two to three rooms, no fences, no porches and no garages. All had electricity, some with running water, but most families had to carry water from hydrants located at several points along a block. These quarters were inhabited mainly by African-Americans.[31]

As the mill towns closed, whites generally moved out of the quarters to newer sections of towns while the African-Americans bought their homes. The houses emptied by whites were bought by other black families, and the sections of East Texas communities that once had mill towns became distinctively reinforced as the housing areas for peoples of color. Distinctive Afro-American sections in Nacogdoches can directly trace their origins to the mill plants of Frost Industries and Nacogdoches County Lumber, on the east and west sides of town, respectively.[32]

During the fourth phase lumber barons began to manage the forest as a renewable, sustainable resource rather than an endlessly exploitable

one. To summarize this phase (Figure 5), sawmill frequencies declined during the 1930s and 1940s, but began to increase during the 1950s. It is important to note that during this phase sawmill frequencies could no longer be used as a surrogate for population densities as the East Texas oil boom began to reshape population concentrations. Power sources also shifted toward fossil fuels and electric driven mills although steam power remained important. Electrification came, in part, to the rural countryside through the need of lumber companies to affect more cost-effective sources of power (ETSMDB).

**PHASE V (1960s-1990s)**

The most recent phase of the sawmill culture is best described as a corporate landscape with diversified regional industries stimulating urban expansion and continued development of the material and physical infrastructure reducing the area's isolation from metropolitan centers. Fewer but larger mills dominated the industrial landscape. In looking at the sawmill frequency maps, two points should be noted (Figure 6). First, there was a gradual centralization of sawmills in the central-eastern portion of East Texas. Second, the numbers of mills have been consolidated gradually over time, from a total of 347 during the 1960s to slightly more than 100 as the year 2000 approaches.[33] But mills that have persisted on the landscape have become integrated with various modes of transportation, enabling the sites to obtain, process and put to market large volumes and variety of lumber products daily. For instance, the Pineland mill has connections to external rail and road transport with a complex internal transportation network. This plant is part of the Temple-Inland Corporation which grew out of the Southern Pine Lumber Company started by T.L.L. Temple during the boom years. Today, the corporation is a Fortune 500 conglomerate based in Diboll, Texas. Temple Inland land was acquired by the Campbell Group and the mills acquired by International Paper and Georgia Pacific. [34] Over the years east coast executives settled in the East Texas region due to Temple Inland. In addition, two of the three remaining industrial short lines still operating in East Texas are associated with Temple-Inland Forest Products, Inc. The Texas-Southeastern, built after 1894, still serves the plant at Diboll in Angelina County. The Sabine River & Northern, the last built of the company-owned tram roads (1965), transverses almost thirty miles from the paper plant on the Sabine River to the deep-water port of Orange.[35]

## LEISURE LANDSCAPES

Another aspect of landscape change in East Texas is exemplified by leisure landscapes. These gentrified places fall into two major classes: 1) landscapes of privileges; and 2) landscapes with privileges.

Most private lands of East Texas represent landscapes of privileged. In the last century, individuals, families and later corporations amassed vast tracts of land in East Texas. Ownership of land is a right worth defending in Texas; but clearly a privilege as well because of the physical and aesthetic value local landscapes. Second homes in the country side or even primary residences outside the city are becoming more common in the region. East Texas also is seen as a retirement destination for many folks. Land holding often integrates agricultural practices with rustic tract of country vista, pleasing the senses or allowing the pursuit of cultural amenities. For example, hunting clubs such as Boggy Slough and Pine Mill Meadow are sought after destinations, not only by local residents but by many others familiar with the amenities found on these managed properties. Trophy deer, turkey and quail are raised for organized hunts or leisure weekends are enjoyed at lodges on these grounds.

The Aldridge mill site, now located in the Angelina National Forest, operated in the early 1900s. The Aldridge sawmill represented the highest level of development with multiple saws, residential areas, hotels, schools and a commissary[36]. Now the site is included on a hiking trail. Also, consider the remnants of the 4-C mill at Ratcliff (ANF). As mentioned earlier this mill operated during the depression. It supported a community of over 1,500 people. Interpretative trails have been developed around the old sawmill buildings and the old logging pond has been up-graded into a recreational lake.

## CONCLUSIONS

In closing, evidence supports that landscape gentrification is a dynamic process operating in East Texas. Further, it is suggested that the sawmill culture initiated massive land conversion in East Texas which was facilitated by improved, adaptive technology over the years. The lumber industry significantly influenced extra-regional and international culture contacts as well as directly influenced transportation infrastructure development in the area reducing its isolation from urban influences. Moreover, sawmill culture and lumber industry remains dynamic elements guiding East Texas landscape gentrification. An important lasting impact on East Texas is most readily seen as landscapes with privileges; public

lands with access and private lands that sustain privilege. The recent acquisition of timber land by Real Estate Investment Trusts and Timber Investment Management Organizations (TIMO). TIMOs and REITs developed in the 1970s after congress passed legislation encouraging investors to diversify their portfolios. A TIMO is a management group that aids institutional investors in managing their timberland investments[37].

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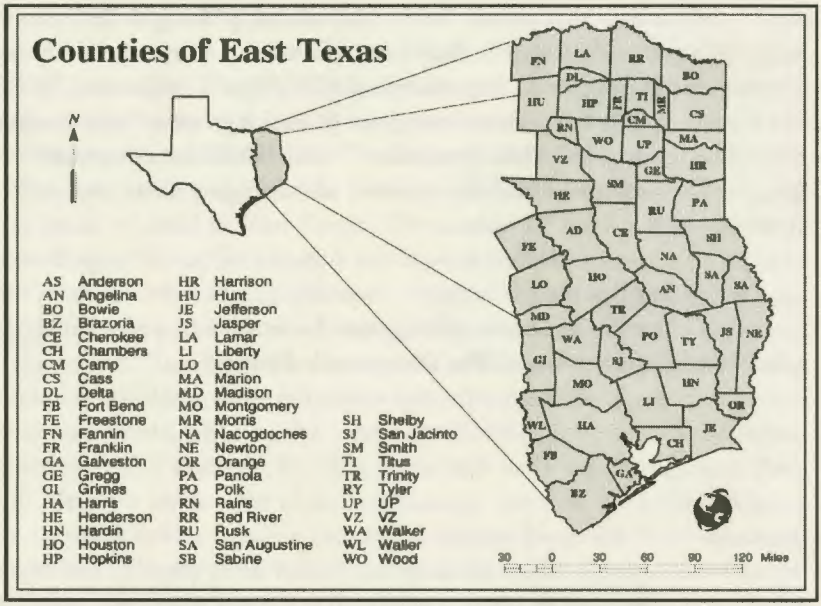


**Figure 1. Counties of east Texas for sawmill database.**

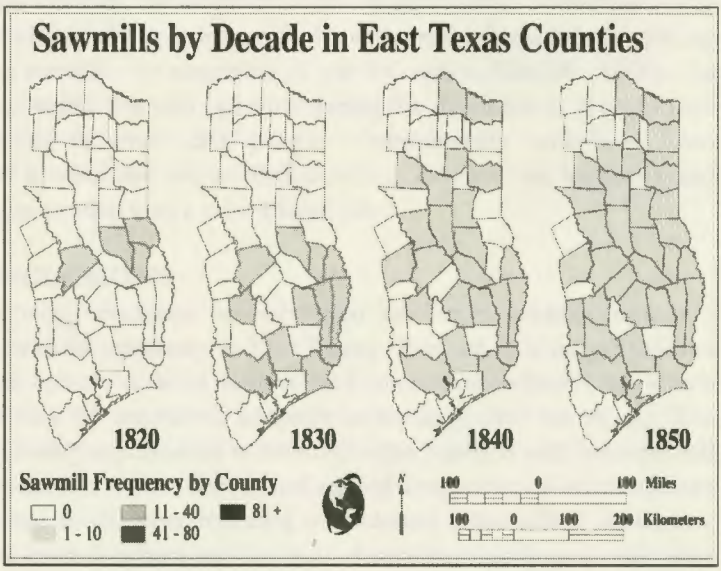


**Figure 2. Sawmill frequency by county, east Texas, Phase I, 1820-1850.**

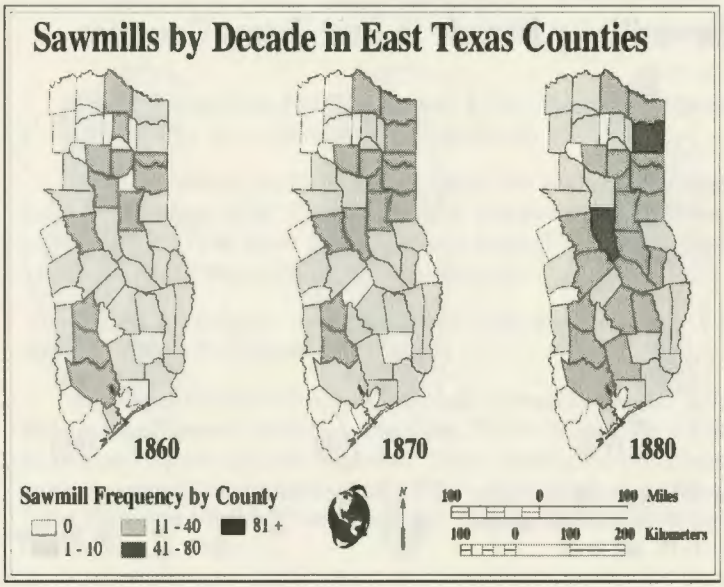


**Figure 3. Sawmill frequency by county, east Texas, Phase II, 1860-1880.**

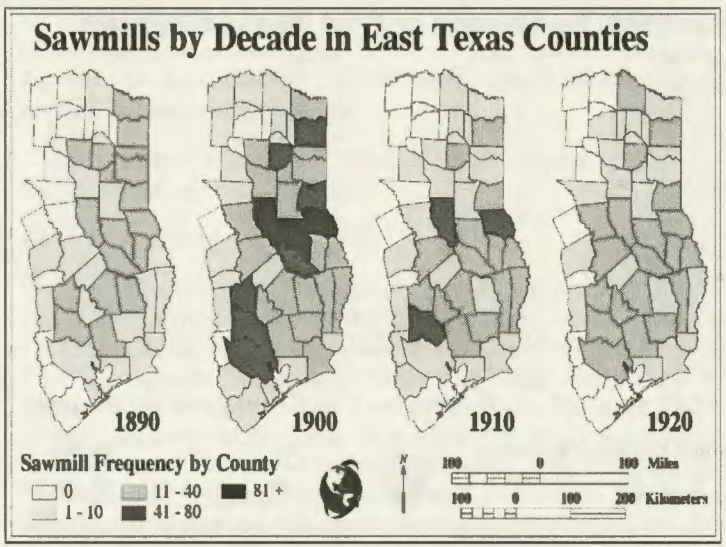


**Figure 4. Sawmill frequency by county, east Texas, Phase II-III, 1890-1920.**

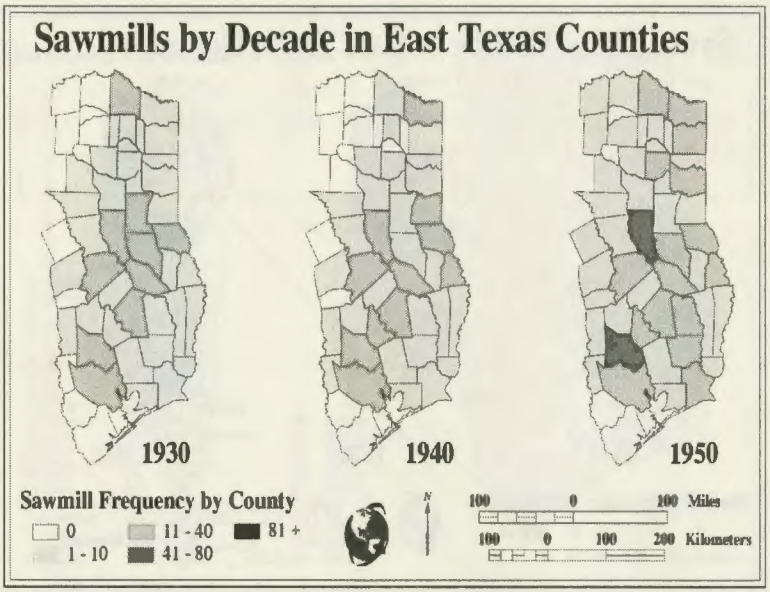


**Figure 5. Sawmill frequency by county, east Texas, Phase III-IV, 1930-1950.**

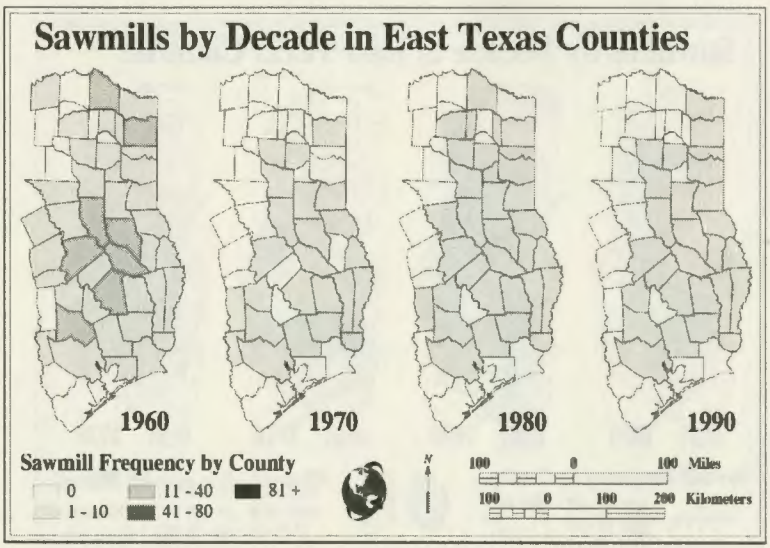


**Figure 6. Sawmill frequency by county, east Texas, Phase IV-V, 1960-1990.**

## ENDNOTES

1 D. S. Correll and M. C. Johnson. 1979. *Manual of the vascular plants of Texas.* (Austin: The University of Texas Press).

2 [2]L. C. Walker and B. P. Oswald. 1999. *The southern forest: Geography, ecology and silviculture.* (CRC Press LLC).; R. S. Maxwell and R. D. Baker 1983. Sawdust empire: The Texas lumber industry, 1830-1940. (College Station: Texas A&M University Press); Correll and Johnston, ibid.

3 R. W. Doughty. *At home in Texas: Early views of the land.* (College Station: Texas A&M University Press).

4 Texas Forestry Museum, Research: Sawmill Database. SA-214, William Ward, owner, 1819, San Augustine, Texas. From a Texas Historical Marker on Highway 21, San Augustine. Texas. http://www.treetexas.com/research/sawmill/?action=view&cid=3582 . Why Stop?: A Guide to Texas Historical Roadside Markers. Betty Dooley-Awbrey, Texas Historical Commission, p. 456

5 David Harris, Handbook of Texas Online, Texas Historical Association, "David became administrator of his brother's estate; as such he operated a sawmill on the J. R. Harris property southeast of Bray's Bayou." http://www.tshaonline.org/handbook/online/articles/fha80

"The Harrisburg Steam Mills Company Company boasted one of the first steam-powered mills in Texas." Texas Forestry Museum, Research: Sawmill Database, HR-74. http://www.treetexas.com/research/sawmill/?action=view&cid=688

6 Zuber, W. P. and J. P. Mayfield. 1971. *My eighty years in Texas.* (Austin: University of Texas Press).

7 Maxwell and Baker *op cit.*

8 Census of 1850 Products of Industry Schedules, Texas; Vera Lea Dugas, "Texas Industry, 1860-1880," Southwestern Historical Quarterly 59 No. 2 (October, 1955): pp. 151-183; (Galveston) Daily News, November 21, 1876; From Beaumont to Nacogdoches: Growth of Towns Along The T & NO Extension, *Southern Industrial and Lumber Review* (June 1904): pp. 24-25; St. Clair G. Reed, A History of the Texas Railroads and of the Transportation Conditions under Spain and Mexico and the Republic and the State (Houston: St. Clair Publishing Co., 1941), pp. 230-234; Charles P. Zlatkovich, *Texas Railroads: A Record of Construction and Abandonment* (Austin: University of Texas, Bureau of Business Research, 1981), pp. 82, 90. See Melvin C. Johnson and Jonathan K. Gerland, "Tapping 'Green Gold': The Steam Rail and Logging Trams of East Texas," *Environmental History* Vol 1, no. 4 (October 1996), pp. 46-65, for the

most recent and most complete analysis of the complex industrial relationship between timber logging and steam rail transportation. *Environmental History* is the combination and successor publication to the esteemed journals, Environmental History Review and the Journal of Forest History. The Galveston Era, Earl Wesley Fornell, 1976. (Austin: University of Texas Press).

9 ETSMTB

10 *Ibid*

11 Census Returns of 1880, Schedule V, Products of Industry, Orange County, Texas; Austin, Texas; Alexander Gilmer Papers, Center of American History, University of Texas, Austin, Texas; Lutcher & Moore Lumber Company archives, East Texas Research Center, Stephen F. Austin State University, Nacogdoches, Texas. The best general narrative of the Orange and Beaumont sawmill industry can be found in the chapters on sawmilling in Orange and Jefferson counties by W. T. Block Thad Sitton and James H. Conrad. *Nameless Towns: Texas Sawmill Communities, 1880-1942,* University of Texas Press, Austin, TX, 1998.

12 W. T. Block, *Cotton Bales, Keelboats and Sternwheelers: A History of the Sabine River and Trinity River Cotton Trades, 1837-1900* (Woodville, Texas: Dogwood Press, 1995): p. 98.

13 See subject name listings in ETSMDB. Consult the ETSMDB's companion project, the East Texas Tram & Railroad Data Base, Texas Forestry Museum, Lufkin, Texas, (hereafter cited as ETT& RRDB) for narrative descriptions on more than 300 privately-owned steam logging railroads that operated in East Texas.

14 In the Letitia Holt Interview of Harry Eaves, typed manuscript prepared from conversations from 1976 to 1985, at Texas Forestry Museum, Lufkin, Texas, p. 7, Harry Eaves stated that the Wiergate mill [in Newton County] initially used 12-cable steam skidders to bring logs to the tram cars. The cables could be snaked out a half-mile to the sawtimber and just jerked to the rails by steam power. Eaves recalled that "it would tear the woods down. So by 1924 or ?25 they had outlawed those." Trees would be felled in the forest, then brought to the tram cars by mules and wagons, where a steam loader picked them up and loaded the car.

15 *American Lumberman*, 13 October 1900: pp. 18, 26. Figures for numbers of East Texas trams, track miles, and engines extracted from ETT&RRDB.

16 ETSMDB; Champion International Corporation, Southland Paper Mills, Inc. produced more than 50,000 tons of newsprint in its first year of production in 1940.

17 Zlatkovich, *Texas Railroads*, p. 3.

18 *American Lumberman*, 13 October 1900: pp. 18, 26.

19 *The Texas Almanac*, 1904, compiled by A. H. Belo & Co, 1904: pp. 143-146.

20 Bob Bowman, *The Turpenrtiners*, All Things Historical, July 15, 2001). Barrel staves were once a well-known industry in east Texas (W. T. Block, Texas sawmills one rolled out the barrel industry, Beaumont Enterprise, April 24, 2004, p. A12 http://www.wtblock.com/wtblockjr/Barrels.htm accessed August 13, 2013)

21 Figures extracted from ETSMDB and ETT&RRDB; *Southern Industrial and Lumber Review*, September 1908, p. 29; and Ed Wagoner, "The Green Gold of Texas," *American Forester* Vol 70, no. 9 (September 1964): p. 27.

22 J. K. Gerland 1996

23 Wier Long Leaf Lumber Company, Wiergate, ETSMDB; Sitton and Conrad, op. cit.

24 Oral History Interviews of Kathryn Oleta Johnson Hunter (73), Inez Boatman Brown (78), Hazel Brown Kesinger (75), in Hunter home, at Goodman Bridge, Nacogdoches County, Texas, on 7 December 1995 by Tonya Whitescarver, Center for East Texas Studies, Stephen F. Austin State University, Nacogdoches, Texas, and Melvin C. Johnson, for Texas Forestry Museum, Lufkin, Texas: tapes at Texas Forestry Museum and East Texas Research Center. See Thad Sitton, *Backwoodsmen: Stockmen and Hunters along a Big Thicket River Valley*, University of Oklahoma Press, Norman, OK, 1995, for an in-depth examination of the effect of fencing on the demise of the rural lifestyle of the East Texas pineywoods

25 Joe Bob Staton Oral Interview With Grady C. Singletary, November 15, Texas Forestry Museum, 1993, p. 19. See Melvin C. Johnson, "Early Electrification in the Sawmill Towns of East Texas" (Paper presented at the September, 1994 East Texas Historical Conference, Nacogdoches, Texas).

26 Maxwell and Baker, *Sawdust Empire*, p. 116.

27 "Michelli," ETSMDB; *Biennial Report of the Adjutant General of Texas for the years 1903 and 1904* (Austin: Gammel-Statesman Publishing Company, 1905), p. 16; *Biennial Report of the Adjutant General of the State of Texas for 1899-1900*, pp. 20-21; *The Jacksonville Journal*, November 14, 1947.

28 Joe Bob Staton Oral Interview with Grady C. Singletary, November 15, Texas Forestry Museum, 1993, p. 19. See Melvin C. Johnson, "Early Electrification in the Sawmill Towns of East Texas" (Paper presented at the East Texas Historical Society).

29 *Memories of Chireno*, Compiled by Chireno Historical Society (Chireno, Texas: 1994). "T. O. Sutton & Sons, " ETSMDB http://www.treetexas.com/research/sawmill/?action=view&cid=2510 (Accessed August 16, 2013).

30 See subject company entries, ETSMDB; Lita M. Mayberry, "Keltys - An East Texas Sawmill Town," M. A. Thesis, 1948, Stephen F. Austin State University, Nacogdoches, Texas, pp. 4-8. See Melvin C. Johnson, "Early Electrification in the Sawmill Towns of East Texas" (Paper presented at the September, 1994 East Texas Historical Conference, Nacogdoches, Texas).

31 "Temple Inland Forest Products, Inc.," at Diboll and "Angelina County Lumber Company" at Keltys, East Texas Sawmill Data Base. Howard Daniel Interview with Melvin C. Johnson, 1994.

32 See Melvin C. Johnson, "The Lumber Industry of the Angelina River Basin during World War II," paper presented for World War II Symposium, Stephen F. Austin State University, Nacogdoches, Texas, April 8, 1995, paper on file with Department of History, SFASU

33 Figures extracted from ETSMDB.

34 The Campbell Group LLC. https://www.campbellgroup.com/about/press-releases.aspx?mediaID=M100 (Accessed August 17, 2013). Temple Inland, A business of International Paper, https://www.templeinland.com/ (accessed August 17, 2013). Woodworking network. http://www.woodworkingnetwork.com/wood-market-trends/woodworking-industry-trends-press-releases/Georgia-Pacific-to-Purchase-Temple-Inland-from-IP-183395021.html?source=related#sthash.ree9CHHw.dpbs Accessed August 17, 2013.

35 See "Texas-Southeastern Railroad Company" and "Sabine River & Northern Railroad Company," in ETT&RRDB, Texas Forestry Museum, for comprehensive narrative, interpretative, and bibliographic sections on each.

36 Texas Beyond History, Aldridge Sawmill http://www.texasbeyondhistory.net/aldridge/logging.html Accessed August 13, 2013.

37 Investopedia http://www.investopedia.com/terms/t/timo.asp (accessed August 18 2013).