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THE BIG THICKET: TYPICAL OR ATYPICAL?

by Michael H. MacRoberts
and Barbara R. MacRoberts

The Big Thicket has long been considered unique.¹ It has been described as the Big Woods of Native American lore and a biological crossroads where all points of the ecological compass meet to create a diversity of plants and animals found nowhere else in North America, perhaps even in the world.² Thomas Eisner, writing in the prestigious journal *Science*, summarized this position when he stated that the Big Thicket was

a region of extraordinary botanical exuberance . . . ecologically unique not only to Texas, but to the entire North American expanse as well. Located at the crossroads between the forests of the South and East and the vegetation of the West, the Thicket includes . . . elements from all convergent zones. It is the way which diversity of kind is combined with diversity of association that gives the area its special mark.³

Having studied the ecology and botany of the Big Thicket and surrounding areas of East Texas and west Louisiana for many years, we began to doubt this characterization. Consequently, we examined the scientific and historical literature regarding these claims and found that there was no evidence to substantiate them.

Surprisingly, these claims originated in non-scientific and non-historical circles during the 1960s, and even more surprisingly, they stuck. Science is not the source of the diversity or richness claims and history is not the source of the "Big Woods" claims. What we found instead was that what the world has come to regard as unique, is not. Here is why.

The Big Thicket, in recent years, has been equated with the "Big Woods" of Native American tradition. According to some scholars, Native Americans encountered a forest in southeast Texas so dense that they called it the "Big Woods," a name carried forward by the Spanish explorers and priests as "Monte Grande."⁴ Not finding any historical evidence to substantiate this claim, we read the sixteenth-, seventeenth-, and eighteenth-century Spanish accounts of East Texas by priests, clerks, and explorers, as well as the nineteenth-century American accounts.⁵

The Spanish established a mission and presidio system in East Texas to "convert" the Native Americans and block French encroachment from Louisiana. There was much traffic between the missions and Native American settlements. Many travelers kept diaries and wrote extensive letters, some of which contain information on Texas habitat before the American onslaught.

Members of the Alarcon expedition of 1718-1719 first used the term "Monte Grande" (Great or Big Woods). The Alarcon expedition crossed the

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Monte Grande heading west—not east—near the Brazos River. Frey Francisco Celiz, diarist for the expedition, described the Monte Grande: “The name fits it, since it is necessary to bring a guide in order to go through it, because it is so wooded and entangled with cocolmecates [unknown vine].”⁶ Although Pedro de Rivera said little about the Monte Grande during his survey of the frontier presidios of New Spain in 1727, near the Brazos he found that “the going became very tedious, because the oaks, walnuts, and other trees ... grow very densely.”⁷

Other accounts place the Monte Grande in the same location, far from the Big Thicket. Jose de Solis, heading east in 1767, encountered the Big Woods just west of the Brazos:

We crossed the Penitas and Tinajas creeks, went through Las Cruces and soon afterwards entered Monte Grande or Monte del Diablo, a wood thick with shady trees of various kinds. In these woods there are many paths so narrow that we had to travel in single file and at times had to cut our way through the brushwood.... Here we found ash-trees, oaks, elms, walnuts, vines, sassafras, excellent zocosotes, storax, various species of blackberry, pomegranets in large numbers, medlars, hazelnuts, chestnuts, strawberry-plants, laurels, taris, and many other trees and plants.... After the services we continued our journey through those woods, traveled along six very narrow paths, went through places that were very muddy ... [until] we came to the first branch of the Brazos de Dios.⁸

Travelling northward in both 1772 and 1778, Don Athanase de Mezieres stated that on the Brazos “there is seen to the right a wood which the natives with good reason call El Monte Grande. It is very dense ... eighty leagues long, one to two in width.”⁹ He described it as containing a great quantity of oaks, walnuts, and other large trees, and “that it is a place of great difficulty to cross.”¹⁰ In 1788, Santiago Fernandez crossed north central Texas near the Red River and described arriving “at the large wood called Monte Grande. It is probably more than two hundred leagues long, according to those natives.”¹¹

Later reports support those of early explorers. The earliest known cartographic depiction of the Monte Grande appears on a Spanish map dated 1789, possibly from the Vial and Frago expedition. It shows the Monte Grande in north central Texas where the Cross Timbers is located.¹² In 1801, Lieutenant M. Muzquiz, ordered to pursue Philip Nolan, an American adventurer, traveled northwest from Nacogdoches and he caught up with Nolan “between the Monte Grande and the Brazos River.”¹³ With the arrival of Americans, the term “Monte Grande” did not immediately die out after Spanish/Mexican occupation. In 1827, Stephen F. Austin prepared a map of Texas showing a line of trees running north from Waco designated “Monte Grande.” On his 1828 version, he uses both terms “Cross Timbers or Monte Grande.”¹⁴ At about the same time Sterling Clack Robertson, in describing his colony north of the Austin Colony, used “Cross Timbers” and “Monte Grande” interchangeably.¹⁵

It was not until the 1960s that anyone claimed that the Big Thicket was the location of the Big Woods. These claims were made by a number of historians, scientists, and naturalists, notably those involved in the push to

establish a national preserve in the part of East Texas known as the Big Thicket.¹⁶ In none of these writings are any sources quoted to substantiate the claim, and using the terms Big Thicket and Big Woods synonymously continues in contemporary usage.

Except for those authors referred to above, historians agree that the Monte Grade (Big Woods) is the Cross Timbers of north-central Texas and southern Oklahoma.¹⁷ Its location is nowhere near the Big Thicket; its shape is entirely wrong, and many trees are named that are typical of the Cross Timbers while pines and beeches, which are ubiquitous in the Big Thicket, are never mentioned. Numerous nineteenth- and twentieth-century descriptions of the Cross Timbers leave no doubt that it was, indeed, formidable to cross in places—that it was, in fact, a thicket.¹⁸ In none of our historical readings did we find southeast Texas referred to as the “Big Woods” or any other type of “woods,” and we believe the appellation “Big Woods” has been recently misapplied to the Big Thicket.

The Big Thicket has been characterized as a “biological crossroads,” where vegetation typical of the eastern, western, northern, and southern United States meet.¹⁹ The Thicket includes “elements from all convergent zones”:²⁰ swamps occur next to deserts, prairies next to glades; Roadrunners next to Pileated Woodpeckers, rattlesnakes next to cottonmouth moccasins. East meets west in an intermingling of vegetation.

We found no scientific study to support the crossroads idea; consequently, we tested it by determining the distribution of each native plant species in four extensive plant lists for the Big Thicket or parts of the Big Thicket.²¹ We determined the regional association of each species on these lists.²² Only nine species (fewer than one percent) were western. Over ninety-nine percent were either endemic or eastern.

The main source of the idea that the Big Thicket is a crossroads appears to be the presence of xeric sandylands and prairies in southeast Texas. Superficially, xeric sandylands resemble deserts and some of the genera, but not the species, found in this habitat originated under desert conditions; cactus, agave, and yucca are obvious examples. But xeric sandylands are by no means confined to southeast Texas but extend from East Texas northward to Oklahoma and eastward to North Carolina. The same is true for prairies, which are not confined to the central and western states but extend across the southern and eastern United States.²³ There is no evidence that the Big Thicket is a floristic crossroads. Its flora is eastern, notably southeastern.²⁴

The Big Thicket also has been characterized as a biologically “rich” area,²⁵ meaning that per unit area, there are more species present than in an area of similar size elsewhere. Eisner dubbed it “a region of extraordinary botanical exuberance.”²⁶ Between one thousand and twelve hundred native plant species are said to grow in the Big Thicket region. But, as in the case of the crossroads idea, we could locate no scientific study of species richness in the Big Thicket. Consequently, we tested this assertion by comparing the total plant species found in the Big Thicket or subsections of it with areas in other parts of the southeast.

General floras and checklists show that the total number of species for all of East Texas is probably between 2500 and 3000, of which perhaps between 2000 and 2400 are native. This is in line with areas of equal size across the southeast. Florida, which is much larger than East Texas, has 3834 species, of which 2654 are native.²⁷ Louisiana has 3249 species, 2423 of them native.²⁸ Western Louisiana (west of the Mississippi River) has about 2600 species, of which about 2000 are native.

For county-sized areas, the data are scarce for the Big Thicket. There are about 1500 species in the 2400 square miles of San Jacinto, Walker, and Montgomery counties on the western edge of the Big Thicket.²⁹ This number of species is comparable to parish species counts across Louisiana. Caddo Parish in northwestern Louisiana, one of the best collected and reported parishes in Louisiana, has at least 1400 species in 882 square miles.³⁰ Calcasieu Parish, adjacent to the Big Thicket, has 1134 species in 1071 square miles, and this number will undoubtedly rise considerably with additional exploration.³¹

Several studies list plants in areas of a few miles within the Big Thicket. Two of the most thorough are for the Roy E. Larsen Sandyland Sanctuary, Hardin County, and the Hickory Creek Unit, Tyler County.³² The Larsen Sanctuary has approximately 500 native species in 2200 acres; the Hickory Creek Unit has approximately 400 native species in 703 acres. A comparison of these figures with areas of similar size across the southeastern United States shows that the Big Thicket falls nicely along the species/area curve, indicating that it is typical. Surveys of two smaller, six-acre wetland pine savannas in Hardin and Tyler counties found 117 and 106 species, which is typical for similar areas of similar size in similar habitat in western Louisiana.³³ One-meter-square plots (11 square feet) in wetland pine savannas in Tyler and Hardin counties average about twenty species.³⁴ This is the same number found in central and western Louisiana for hillside seepage bogs³⁵ and a little below that found in shortleaf pine savannas in northern Louisiana and in xeric sandylands in the Post Oak Region of east central Texas.³⁶

The data are better for trees. The Big Thicket is slightly less species rich than areas farther east due to the fact that many tree species common in the southeastern United States do not extend onto the east Texas coastal plain.³⁷ This east-west loss of tree species has been widely recognized, and the generalization probably extends to non-woody species as well.³⁸ Many herbaceous species do not cross the Mississippi River; others do not reach Texas or are very uncommon there. The Big Thicket, therefore, does not appear to be particularly species rich at any scale and is certainly no richer than other areas of the southeast.

The Big Thicket has been characterized as extremely diverse, meaning that there are more types of resident plant communities than there are in other areas and that these are closely interdigitated (i.e., there are more community types per square mile than in other regions).³⁹ Again, we found no scientific study documenting the community diversity in the Big Thicket. Consequently, we tested this assertion by comparing the number of Big Thicket plant com-

munities with the number found in other regions and by examining what data we could find on the interdigitation of those communities. We asked three basic questions. Are there communities unique to the Big Thicket? Are the communities in the Big Thicket richer in species than elsewhere? And are the communities in the Big Thicket more interdigitated than elsewhere? We have already dealt with the second question.

To answer the first of these, we examined all plant community (association, alliance) classifications available that include the Big Thicket to see if there are any communities unique to the Big Thicket.⁴⁰ While there is no standard definition of community, and West Gulf Coastal Plain community classifications often disagree, we could find no community in any of these lists unique to the Big Thicket region. However, because the area is understudied, there are possibly some unique plant communities. Peter Marks and Paul Harcombe describe Flatland Hardwood Forest, which may present some unique features, but without additional study, there is no way to tell whether this "community" is unique to the Big Thicket or simply a variant of bottomland hardwood communities occurring farther east.⁴¹ However, a single "unique" community in an area the size of the Big Thicket would not be exceptional, only average.

The third question involves landscape heterogeneity. Marks and Harcombe addressed this problem using woody species in the Big Thicket and found that "compared to the whole of the eastern deciduous forest, probably the most distinctive feature of vegetation of both Big Thicket National Preserve and the coastal plain generally is the large number of community types per unit area (~ a few square km), with extreme composition variation among them."⁴² Thus, while high community richness characterizes the Atlantic and Coastal plains in general, how does the Big Thicket compare to areas farther east? Consensus opinion appears to be that it has more communities per unit area, but we could find no actual evidence for this—certainly no study has addressed it. Information is sparse: the Roy E. Larsen Sandyland Sanctuary has approximately six or seven communities in 2200 acres; the Hickory Creek Unit has four communities in 703 acres.⁴³ But the same is true of areas of equal size in the Angelina and Sabine National Forests in East Texas and in the Kisatchie National Forest in Louisiana.⁴⁴

One of the impressive features of the Big Thicket is that different plant communities occur side by side. Here is the way Geraldine Watson expressed it:

In no other area of comparable size can such biological diversity be found.... When one can literally step from a hydrophytic community with ferns, sphagnum and orchids into a xerophytic community with cactus, yucca, and other desert forms; or stand in one spot and facing in four different directions, view scenes which would make one believe he were in the Appalachians, or in the Florida everglades, in a southwestern desert, or in the pine barrens of the Carolinas, then he knows that if there were such a thing as a biological crossroads, he must be in it.⁴⁵

Nothing in this evocative description is incorrect—except the assumption that it applies solely to the Big Thicket. The same degree of biological diversity characterizes many areas between East Texas and the Carolinas. The close proximity of bogs and xeric sandylands, beech-hardwood slopes and prairies, the juxtaposition of wet and dry, “Appalachian” and “Floridian,” that Watson marveled at can be found in other parts of East Texas and in western Louisiana, and indeed, throughout the Gulf and Atlantic Coastal plains.

If the Big Thicket is not the Monte Grande of legend, is not uniquely species rich or diverse, or a crossroads, where did these beliefs arise? We examined four centuries of documents, including early- twentieth-century ecological research, and found none of these ideas to be present prior to 1960.⁴⁶ But by the mid-1960s the Big Thicket had become the “Big Woods” of Native Americans, “the biological crossroads of North America.” “unique in the world,” “possibly the most biologically diverse area in the world,” an “Ark” or “Eden,” with a “staggering number of flowering plants”: in short, a veritable “jungle.”⁴⁷

One possible explanation for these descriptions is that between 1930 and 1975, several groups of conservationists tried to establish a park or preserve in the Big Thicket region of southeast Texas,⁴⁸ and they believed that in order to achieve their aim, it was necessary to prove that the Big Thicket was unique, that there was something about it that made it worth saving. Geraldine Watson states this very clearly: “It appeared to me that if we were to save the Big Thicket, we would have to come up with some tangible evidence that it was something worth saving to present to those with the power to act.”⁴⁹ Thus, the pressure was on. And the result was the “Big Woods, diverse, rich, crossroads” conception.

Exactly when and who originated each of these ideas is unclear and probably will remain so. Earlier (1930 to 1940) conservation efforts headed by R.E. Jackson left few records.⁵⁰ But the conservation group of the 1960s and 1970s was much more intellectual, better organized, and much more vociferous.⁵¹ Professors, senators, congressmen, scientists, historians, biologists, and naturalists made up this conservation group.⁵²

Our assessment leads us to conclude that the characterization of the Big Thicket as the legendary “Big Woods,” which is a “diverse, rich, crossroads,” is nothing more than the result of a group of conservationists who had to find a selling point to persuade politicians and the wider public to establish a state or national park. They clamped on to some of the essentials of the Big Thicket but failed to look beyond its boundaries. During the 1960s, this characterization became rote and ultimately a shibboleth—an incantation—repeated in each retelling of the Big Thicket story, which continues to present.⁵³

So, what is the Big Thicket? The Big Thicket is near the western edge of the southeastern mixed hardwood-evergreen forest/savanna that begins in Virginia and North Carolina and extends across the entire South.⁵⁴ The same habitat that occurs in southeast Texas extends into Louisiana and eastward,⁵⁵ and all attempts to define it as ecologically distinct have proved futile.⁵⁶ But,

when all is said and done, what is important is that the conservationists saved not something atypical but something typical. The idea that only singularities are worthwhile is passe as far as conservation biology is concerned. The important thing must be the typical, not the atypical. The Big Thicket conservation movement achieved precisely this: by saving a representative sample of the Big Thicket, it saved a typical part of the West Gulf Coastal Plain—for which we must be eternally grateful.

NOTES

For general orientation to the Big Thicket area and its ecology see: H.B. Parks and V.L. Cory, *The Fauna and Flora of the Big Thicket Area* (College Station, 1936); C.A. McLeod, "The Big Thicket Forest of East Texas," *Texas Journal of Science* 23 (1971), pp. 221-223; G.E. Watson, *Big Thicket Plant Ecology: An Introduction* (Saratoga, Texas, 1979); P.A. Marks and P.B. Harcombe, "Forest Vegetation of the Big Thicket, Southeast Texas," *Ecological Monographs* 51 (1981), pp. 287-305; E.L. Bridges and S.L. Orzell, "Longleaf Pine Communities of the West Gulf Coastal Plain," *Natural Areas Journal* 9 (1989), pp. 246-262; P.A. Harcombe, J.S. Glitzenstein, R.G. Knox, S.L. Orzell, and E.L. Bridges, "Vegetation of the Longleaf Pine Region of the West Gulf Coastal Plain," *Proceedings of the Tall Timbers Fire Ecology Conference* 18 (1993), pp. 83-103. For estimates of the size and location of the Big Thicket see Parks and Cory, *The Fauna*; J.J. Cozine, "Assault on a Wilderness: The Big Thicket of East Texas," (PhD dissertation, Texas A. & M. University, College Station, 1976); J.J. Cozine, "Defining the Big Thicket: Prelude to Preservation," *East Texas Historical Journal* 32 (1993), pp. 57-71; G. Ajilvsgi, *Wild Flowers of the Big Thicket*, (College Station, 1979); H.H. Peacock, *Nature Lover's Guide to the Big Thicket*, (College Station, 1994); P.A.Y. Gunter and M. Oelschlaeger, *Texas Land Ethics*, (Austin, 1997).

¹P.A.Y. Gunter, *The Big Thicket, A Challenge for Conservation* (New York, 1971); House of Representatives, "Big Thicket National Reserve, Texas," Report 93-676, 93rd Congress, 1st Session, Washington, D.C., 1973), pp.1-26; United States Statutes at Large, "To Authorize the Establishment of the Big Thicket National Preserve." (Public Law 93-439, Vol. 88, 1974), pp. 1254-1257; L.W. Parker, *The Big Thicket of Texas: A Comprehensive Annotated Bibliography* (Arlington, 1977); Ajilvsgi, *Wild Flowers*; Watson, *Big Thicket Planr*; G.E. Watson, "Influence of Fire on the Longleaf Pine-Bluestem Range in the Big Thicket Region," in D.L. Kulhavy and R.N. Conner, eds., *Wilderness and Natural Areas in the Eastern United States: A Management Challenge* (Nacogdoches, 1986), pp.181-185; A. Sutton and M. Sutton, *Eastern Forests* (New York, 1985); Peacock, *Nature Lover's Guide*; *Big Thicket Official Map and Guide* (Washington, D.C., 1997); Gunter and Oelschlaeger, *Texas Land Ethics*; F.E. Abernethy, "Big Thicket," *The Handbook of Texas* (online, 1999, www.tsha.utexas.edu); "The Big Thicket National Preserve," *Big Thicket Chronicle* 1, (2001), p. 3. Botanically, the entire Big Thicket area is understudied and under-documented: there is no documented plant list for the entire Big Thicket, for 11 of the 12 units of the Big Thicket National Preserve, or for 11 of the 14 counties in which the Big Thicket occurs.

²T. Eisner, "The Big Thicket National Park," *Science* 179 (1973), p. 525. This description of the Big Thicket is currently incorporated into a display at the Houston Museum of Natural Science.

³P.A.Y. Gunter, "The Big Thicket," *Living Wilderness* 31 (No.98, Autumn, 1967), pp.3-9; P.A.Y. Gunter, *R.E. Jackson and Early Big Thicket Conservation: Setting the Stage* (Saratoga, Texas, 1997); W.C. Hancock and M.L. Hancock, "The Big Thicket," *Congressional Record-Senate* (March 12, 1968), pp. 6092-6094; Peacock, *Nature Lover's Guide*.

⁴H.E. Bolton, *Athanase de Mezieres and the Louisiana-Texas Frontier 1768-1780* (Cleveland, 1914); J. A. Morfi, *History of Texas 1673-1779*, Carlos Castaneda, trans. (Albuquerque, 1935); R.V. Francaviglia, *The Cast Iron Forest* (Austin, 2000).

⁵F. Celiz, *Diary of the Alarcon Expedition into Texas, 1718-1719*, F.L. Hoffmann, trans. (Los Angeles, 1935) p. 85.

¹C.W. Hackett, ed., *Pichardo's Treatise on the Limits of Louisiana and Texas* (Freeport, Texas, 1931), I, pp. 335, 492. See also R. Murphy, "The Journey of Pedro de Rivera, 1724-1728," *The Southwestern Historical Quarterly* 41 (1937), pp. 125-141.

²P.P. Forrestal, "The Solis Diary of 1767," *Preliminary Studies of the Texas Catholic Historical Society* 1 (No. 6, 1931), pp.1-42, p.25.

³Hackett, *Pichardo's*, I, p. 376. The Spanish "league" was approximately 2.7 miles.

⁴Bolton, *Athanase*, I, pp. 307-308; II, p. 201; see also Hackett, *Picardo's*.

⁵Hackett, *Picardo's*, IV, pp. 376-377.

⁶E.J. Dyksterhuis, "The Vegetation of the Western Cross Timbers," *Ecological Monographs* 18 (1948), pp. 325-376; Francaviglia, *The Cast Iron Forest*.

⁷D.W.C. Baker, ed., "Lieutenant M. Muzquiz Diary," *A Texas Scrap-Book* (New York, 1875), pp. 231-232.

⁸Francaviglia, *The Cast Iron Forest*.

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¹⁴Eisner, "The Big Thicket."

¹⁵Ajilvsgi, *Wild Flowers*; B.R. MacRoberts, M.H. MacRoberts, and L.E. Brown, "Annotated Checklist of Vascular Flora of the Hickory Creek Unit, Big Thicket National Preserve, Texas," *Sida* (2002), pp. 781-795; J.A. Matos and D.C. Rudolph, "The Vegetation of the Roy E. Larsen Sandylands Sanctuary in the Big Thicket of Texas," *Castanea* 50 (1985), pp. 228-249; G.L. Nesom and L.E. Brown, "Annotated Checklist of the Vascular Plants of Walker, Montgomery, and San Jacinto Counties, East Texas," *Phytologia* 84 (1998), pp. 107-153.

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¹⁹Cozine, *Assault*. The Big Thicket Association is still an active conservation and education organization (www.btatx.org/).

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