

**Timber Fawn (41HR1165):
A Clovis Site in Harris County, Texas**

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Texas**

Wilson W. Crook, III, Editor

Houston Archeological Society

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Front Cover (Left to Right): Lenore Psencik (upper Left); location of Timber Fawn site (lower left); discovery artifact – Clovis blade (center); base of Clovis point #1 (upper right); base of Clovis point #2 (lower right); Timber Fawn surface survey, February 4, 2015 (Dub Crook, Linda Gorski, Tom Nuckols and Nesta Anderson (Pape Dawson Engineers)).

Forward

The *Houston Archeological Society Report No. 26* is a publication of the Society. Our Mission is to foster enthusiastic interest and active participation in the discovery, documentation, and preservation of cultural resources (prehistoric and historic properties) of the city of Houston, the Houston metropolitan area, and the Upper Texas Gulf Coast Region.

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DISCOVERY OF THE TIMBER FAWN CLOVIS SITE

Lenore A. Psencik

My interest in archeology began in the 1980's when I first visited a friend in Northern Scotland and then again in New Mexico. Driving through the countrysides of both of these areas I was struck by the structural ruins still visible from the roadside. This fueled an interest in me to learn more about how early humans lived, where they traveled, how they (and we) got here, etc. In my search for archeological knowledge, I have traveled to Scotland and have spent many years traveling around the Four Corners Region of the U.S. as well as visiting Anasazi sites throughout the rest of New Mexico.

What I discovered in my travels is that evidence of early human occupations is all around us; you just have to look and pay attention and you will be rewarded by bits of clues and evidence. Archaeology

is thus the science that tries to connect the pieces of evidence and then attempts to tell the story.

In late November of 2014, I left my house in a subdivision of Kingwood, Texas, a few blocks from the San Jacinto River, to embark on a nice sunny day bicycle ride. My route took me through a new sub-division that had just been cleared for housing; the streets were in and the ground graded to level for the new houses. I paused at the end of one of these new streets to take a rest, and much to my surprise, discovered what appeared to be a lithic artifact in the soil just off the street. When I picked it up for the first time, I immediately knew that it could be a Clovis style blade (Figure 1). Imagine a Clovis blade not 400 yards from my front door! I brought the blade to the next Houston Archeological Society meeting to show

Figure 1. Large Blade #1 from the Timber Fawn site, Harris County, Texas.



Dub Crook, our resident HAS member who has a lot of Clovis site experience. Dub took one look at the blade and immediately agreed that it was not only Clovis technology but that we (the HAS) needed to take a detailed look at the area.

The land owner-developer was contacted, and after many discussions with various managers, Dub was able to get permission for a limited surface survey for more evidence. A small group of HAS members conducted a surface survey in early March of 2015 and found more lithic artifacts, all consistent with a Clovis occupation. Further analysis by Clovis experts such as Dr. Michael Collins and Dr. Tom Williams at Texas State University, verified that all the artifacts were indeed of the Clovis time period. X-Ray Fluorescence analysis of the chert artifacts from the site showed that many of them had a trace element geochemical signature characteristic of the Edwards Plateau area. My discovery blade was shown to have originated in the Callahan Divide area of the northern part of the Edwards Plateau.

And so, the Timber Fawn site was created and named for the street where the artifacts were discovered. This is just the beginning of the story of how these artifacts came to be here in Harris County and where they came from. With further analysis, we may be able to determine more chapters around where they came from, and where the Timber Fawn aboriginal inhabitants were going. So the point of this story is as you go about your daily activities, remember, the clues of earlier cultures are all around us; you just have to pay attention.



Figure 2. Lenore Psencik – Discoverer of the Timber Fawn Clovis Site.

THE TIMBER FAWN CLOVIS SITE (41HR1165): AN EARLY PALEOAMERICAN OCCUPATION IN KINGWOOD, HARRIS COUNTY, TEXAS

Wilson W. Crook, III, Lenore A. Psencik, Linda C. Gorski and Thomas L. Nuckols

Introduction

The Gulf Coast has the highest density of reported Clovis points of any region in Texas (Beaver and Meltzer 2007); however the total number of points recorded from the region ($n=119$) is somewhat skewed due to large quantity from one locality, McFaddin Beach in Jefferson County ($n = 97$). McFaddin Beach (41JF50) is not so much a single site as a 35 km stretch of beach that has produced artifacts from many archeological time periods over a number of decades (Long 1977). Within Harris County, documented occurrences of Clovis points include a single point from the Addicks Reservoir survey (Wheat 1953), a Clovis point from the Galena site (Hester 1980), and seven additional points known from local collections (Patterson et al. 1992a, 1992b). A single Clovis point is also known from 41GV101 in adjacent Galveston County (Huebner 1988). In addition, several other Clovis points from Harris County can be found on local collector websites (Crain 2007). All of these occurrences consist of single isolated finds; none of which were in a site

context and were without any associated Clovis age tools such as blades, end-scrapers, graters, etc. These occurrences have now been augmented by the discovery of a new Clovis site in the Kingwood area of northeast Harris County.

In late 2014, KB Home began developing a new sub-division in the Kingwood area of Harris County known as “Rivergrove.” This development entailed putting in a new east-west entrance way (“Pine Trail Lane”) off of West Lake Houston Parkway to provide access to the sub-division (Figure 1). Soil excavated in order to lay the new street was moved approximately 30 meters to the north and piled at the end of the sub-division’s first residential street, “Timber Fawn Trail.”

In late November, Houston Archeological Society (HAS) member Lenore Psencik was bicycling through the new sub-division and looked at the piles of soil at the end of Timber Fawn Trail. Sticking out of one pile adjacent to the street was a large, complete highly curved blade. Recognizing the artifact to be of probable Clovis affinity, Psencik contacted the first author (WWC) who also lives in the Kingwood area. Repeat-

Figure 1. Pine Trail Lane entrance to new Rivergrove sub-division, Kingwood, Harris County, Texas. Original location of the Timber Fawn Clovis site is believed to be near the center of the photograph.



ed visits to the site in December of 2014 discovered fragments of several additional blades, a large biface and the base of a fluted projectile point on the surface in the same area as the initial blade discover. Recognizing the significance of the finds, the first author initiated contact with the management of KB Home in order to secure permission to conduct a surface survey of the entire area to recover any additional artifacts. This request KB Home graciously granted and members of the HAS conducted an extensive surface survey of the entire area on February 4, 2015 with a number of additional artifacts recovered both at the Timber Fawn cul-de-sac and on either side of the sub-division entrance way at Pine Trail Lane. All the artifacts are consistent with a single Clovis age occupation; no other artifacts from any additional prehistoric occupational period were found. In addition, KB Home's supervisor for the new development, Mr. Robert Hulbert, confirmed to us the precise location where the artifact-bearing soil had originally come from.

While the original provenience of the artifacts was lost due to the construction of Pine Trail Lane and the subsequent movement of soil 30 meters to the north, the artifact collection still provides an extensive amount of new information. This paper thus serves to describe the site, its artifact assemblage, and put on record another Clovis age occupation in Southeast Texas.

Site Description

The Timber Fawn site (41HR1165) is located on a high terrace 0.6 km (0.4 miles) south of the East Fork of the San Jacinto River in northeast Harris

County, Texas (Figure 2). The original site location covers an area of approximately 625 square meters immediately west of the intersection of Pine Trail Lane and West Lake Houston Parkway (see Figure 1). As mentioned above, this is the entrance way into the new Rivergrove sub-division of Kingwood. Artifacts have been recovered both at the entrance way into the sub-division and 30 meters to the north of this location at the east end and on the north side of Timber Fawn Trail. At the time of this writing all of the site has now been covered by either new housing or landscaping and is no longer available for archeological investigation. The primary datum of the site is at an elevation of approximately 23 meters (76 feet) above sea level. Site location, name and description are on file at the Texas Archeological Research Laboratory (TARL) in Austin (it should be noted that due to a conflict in street names, the original name of "Timber Fawn Trail" has now been replaced by "Fawn Timber Trail" but the archeological site described herein has retained the original street name).

The Timber Fawn Clovis site lies on the northern margin of the Gulf Coast Prairies and Marshes physiographic province, a narrow northeast-to-southwest zone that includes most of the Texas Gulf Coast. The northern margin of the Gulf Coast Prairies and Marshes are encompassed by the forest dominated Austroriparian province that covers most of East Texas (Blair, 1950). Soils of the area in and around the Timber Fawn site are for the most part alfisols of the Pleistocene Aldine soil series that develop under forest vegetation (Wheeler 1976). These upland soils are characterized by a low permeability which results

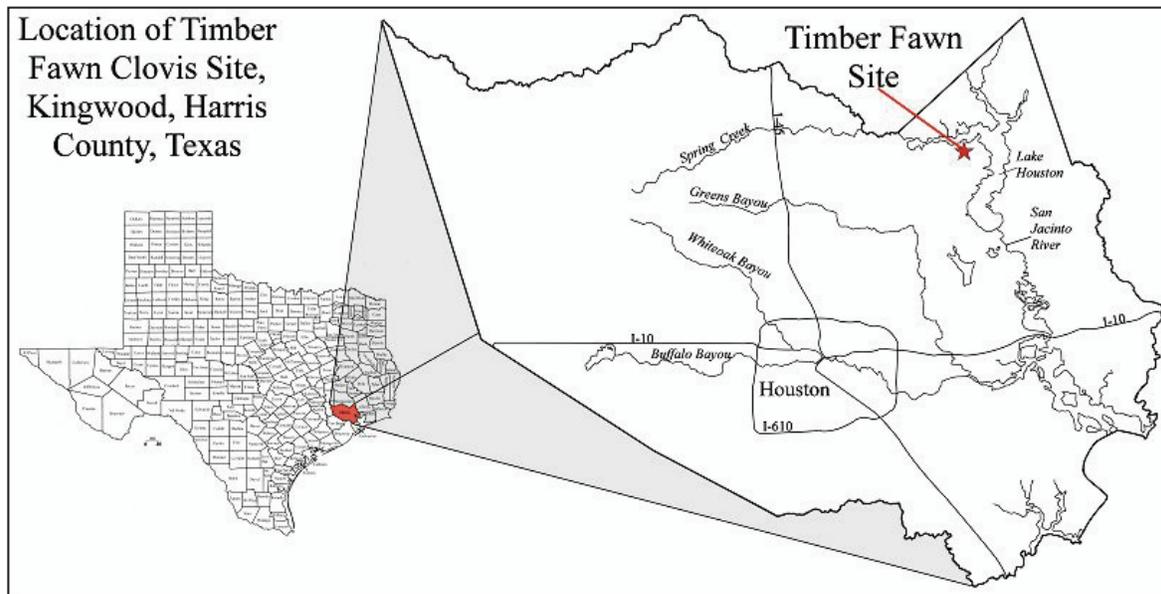


Figure 2. Location Map of the Timber Fawn Clovis site, Kingwood, Harris County, Texas. (Illustration by Lance K. Trask).

in slow runoff and poor drainage. The native vegetation is chiefly piney woods (loblolly and shortleaf pines) with scattered hardwoods, mainly southern red oak, water oak and sweetgum. Underbrush consists of hawthorn, American beautyberry, yaupon and greenbrier. Grasses that develop in and around the stands of pines and hardwoods include little bluestem, beaked panicum, longleaf uniola, purpletop, brownseed paspalum and yellow indiagrass (Wheeler 1976; Peterson 1972).

Very little is known for certain about the climate of the Gulf Coastal zone during the end of the Pleistocene. Ricklis and Weinstein (2005) believe that a tall-grass prairie vegetation was present, with moisture exceeding that of today. It is well-established that there were significant changes in sea level during the Pleistocene with the shoreline at a considerable lower elevation than that today; the present coastline not achieved until 3,000-4,000 years BP (Ricklis and Weinstein 2005). As such, the Timber Fawn site would have been even further inland than it is today and the vegetation in the area most likely included more prairie grassland. Coupled with the close proximity of the confluence of two major river drainages (East and West Forks of the San Jacinto River), the location would have been an ideal area for wild game.

A substantial amount of food resources would have been available to the aboriginal inhabitants of the Timber Fawn site area. Acorns and pine nuts are common in the area today. Other nut-bearing trees such as pecan, walnut and hickory, can be found a short distance away elsewhere in northern Harris County. The leaves of several of the common shrubs, notably American beautyberry and yaupon, are known to have been used by the aboriginal inhabitants of the area to brew a medicinal tea (Medsger 1966; Zimmermann 1997). Both mustang grapes, persimmons and various berry vines can also be found in the near vicinity. In addition, even with recent urbanization, the area continues to support a varied fauna including whitetail deer, Eastern cottontail rabbit, striped skunk, opossum, raccoon, bobcat, squirrel, turkey and a large number of species of snakes, rats, mice and shrews. As mentioned above, the site overlooks the confluence of the East and West Forks of the San Jacinto River. The San Jacinto River, in addition to being a year-round source of fresh water, also produces 89 species of fish, and a large number of turtles, frogs, fresh water mussels and snails (John Botros, Texas Parks and Wildlife, personal communication, 2009). Several fragments of mammoth teeth and a small piece of highly weathered turtle shell were recovered along with Clovis period artifacts.

Geology

The Timber Fawn site is situated within the drainage of the San Jacinto River, being 0.6 km south of the East Fork of the river and about 3 km from the conjunction of the East and West Forks. A terrace system is developed along the river but is much better defined on the southern bank where the Timber Fawn site is located. The floodplain (T-0) is largely submerged today during most of the year as damming of the San Jacinto River downstream to form Lake Houston has resulted in both the East and West Forks to be significantly wider and deeper than their original expression. Where exposed upstream of the site, the floodplain lies at an elevation of approximately 12 meters (40 feet) above sea level. A well-developed first terrace (T-1) is present above the river, easily denoted because all the riverside houses are built upon it. Elevation of the first terrace is approximately 15 meters (50 feet) above sea level. A second, much higher terrace (T-2) forms a prominent bluff above the river. Elevation of the T-2 terrace is 21-23 meters (70-75 feet). The Timber Fawn site lies above the river on this T-2 terrace.

Harris County lies in the Western Gulf section of the Coastal Plain. The uppermost formations, from which the parent materials of the soils in the county weathered, are of Pliocene and Pleistocene age. These formations consist of a mixture of fluvial, deltaic, coastal marsh, lagoonal and shallow sea deposits. Across the county these deposits are locally broken by geologic and geomorphic features including normal faults, salt domes, pimple mounds and scarps (Wheeler 1976).

In the area of the Timber Fawn site, the underlying geologic formation is the Pleistocene Beaumont Formation. The formation consists mainly of fluvial and deltaic sands and clays. Radiocarbon dating of the Beaumont Formation from eastern Harris County shows it to be in excess of 40,000 years BP (Wheeler 1976). A younger terminal Pleistocene unit, the Deweyville Formation, is also present along the San Jacinto River south of the Lake Houston dam. Consisting mainly of very sandy point bar deposits, it is uncertain if the Deweyville is present on top of the Beaumont Formation in the area of the Timber Fawn site. The Deweyville is also known to contain siliceous cobbles which could also have provided a source of lithic material to the aboriginal inhabitants of the area (Wheeler 1976).

Based on observation of an excavation by KB Home to create a scenic pond in the Rivergrove sub-division, two soil horizons are present at the site. Both belong to the Aldine series of sandy loams and clays that develop on uplands in northeastern Harris County under forest vegetation. From the surface to

a depth of about 12 cm is a thin “A” horizon. This unit consists of dark grayish-brown (10YR 4/2) to light grayish-brown (10YR 6/2) fine-grained sandy loam. Below this is a “B” soil horizon that consists of a thicker section of yellowish-brown (10YR 5/4-5/6) clay-rich loam. This unit is fairly impermeable and poorly-drained. Thickness of the “B” horizon at Timber Fawn is in excess of 90 cm. While site provenience has generally been lost due to the construction of the Pine Trail Lane entrance way, soil on the artifacts found near the front of the Rivergrove sub-division suggest they came from below the base of the “A” soil horizon and somewhere within the “B” horizon sandy clays.

Artifact Assemblage

A total of 24 artifacts have been recovered from the Timber Fawn site, all but two of which are chipped stone material. Two artifacts of ground stone, a broken part of an oval-shaped quartzite gorget and a quartzite hammerstone, complete the lithic assemblage (Table 1). In addition, a cobble of smokey quartz, several fragments of apparent mammoth teeth (*Mammuthus sp.*), and a single highly weathered fragment of turtle shell were recovered.

Two basal fragments of fluted points have been recovered from the site. Comparative measurements

versus the State mean as reported in the most recent Texas Clovis Fluted Point Survey of 408 specimens (Beaver and Meltzer 2007) are shown in Table 2. In general, the points are slightly wider at the base than the State average, but other measurements including width of fluting, thickness of the point at the flute, etc. are in general agreement with other Clovis points from the State. Examination of both bases by Michael Collins and fellow staff members at the Gault School of Archeological research at Texas State University confirmed that both points were of Clovis manufacture.

The first point (Figure 3) is a light reddish-brown to pinkish chert (2.5YR 7/3-6/3). Prominent flutes are present on both the obverse and reverse faces and the lateral edges and base are heavily ground from the base of the point to the point of breakage. The break appears to be ancient and is not the result of excavation and grading of the soil taken from the entrance way of Pine Trail Lane. No other parts of the point were found. The point fluoresces a weak lemon-yellow color under UV radiation.

The second Clovis point is wider and constructed of a reddish-gray to dark reddish-gray chert (5YR 5/2 – 5YR 4/2) (Figure 4). Prominent flute scars are present on both faces and the lateral edges are heavily ground to the point of breakage. The base of the point is only weakly ground. The break does not appear to

Table 1. Total Artifact Assemblage by Lithic Type, Timber Fawn Clovis site.

Artifact Type	Chert	Quartzite	Total
Projectile Point			
▶ Clovis	2	0	2
Clovis Blades			
▶ Large	5	0	5
▶ Small / Bladelets	3	0	3
Biface	1	1	2
Scrapers			
▶ End Scraper	3	0	3
▶ Worked Flake	1	2	3
Flake Graver	2	0	2
Notch	1	0	1
Adze	1	0	1
Hammerstone	0	1	1
Gorget	0	1	1
TOTAL	19 (79%)	5 (21%)	24

Table 2. Comparative Measurements of Timber Fawn Clovis Points to State Average (Texas Fluted Point Survey, Beaver and Meltzer 2007).

Characteristic	Clovis Point 1	Clovis Point 2	State Mean ²
Maximum Length (mm)	15.5 ¹	27.1 ¹	65
Maximum Width (mm)	30.5	36.1	28
Width at Base (mm)	26.9	32.5	23.9
Maximum Thickness (mm)	5.9	6.8	7.4
Length of Flute (mm)	N/A	N/A	25.2
Ave. Width of Flute (mm)	13.4	13.2	13.5
Max. Thickness of Flute (mm)	5.5	5.6	5.7
Basal Depth (mm)	3.3	3.1	3.1
Length Basal Grinding (L)	15.5 ¹	24.5 ¹	26.2
Length Basal Grinding (R)	14.3 ¹	19.1 ¹	26.2

¹ Point is broken near the base.

² Based on 408 Clovis points recorded in Texas Clovis Fluted Point Survey (2007).

be fresh but this may be due to the darker coloration of the chert. The point fluoresces a dull dark orange color under long-wave UV radiation.

Two additional bifaces were recovered from the site. The first biface is the basal fragment of a dark

olive-gray quartzite (5Y 5/4-4/4). Remaining dimensions are 36.5 mm by 36.0 mm; maximum thickness is 8.9 mm. The biface has shallow basal thinning flakes on both faces and the lateral edges have been extensively ground. The base has only a slight inden-



Figure 3. Clovis Point #1, Timber Fawn Clovis site, Harris County, Texas.



Figure 4. Clovis Point #2, Timber Fawn Clovis site, Harris County, Texas.

tation (1 mm) but otherwise appears to be a fluted projectile point. The quartzite is of a different color and texture from that found in local river cobbles and has a dull, waxy appearance from probable heat treating (see Figure 5).

The second biface is a large oval-shaped artifact constructed from gray to grayish-brown chert (10YR 6/1 – 5/2). Dimensions are 103.9 x 70.2 mm; maximum thickness is 12.0 mm (Figure 6). The biface shows no evidence of shaping or retouch and appears to be a large preform which could be turned into a number of different tools depending need. Under UV radiation, the biface fluoresces a strong yellow-orange color, characteristic of Edwards chert.

A number of characteristic Clovis blades have been recovered from the site. These include five “large blades” and three blade fragments (<40 mm in length) which appear to have been created by intentional snapping of a larger blade. The large blades have been measured using the comparative system

developed by Collins (1999) and Collins and Lohse (2004) (Table 3). The large blades (Figure 7) are exclusively constructed of chert, and typically show unifacial lateral or distal end retouch. When plotted on a triangular configuration diagram they show a close affinity in terms of length, width and thickness ratios to similar large Clovis blades from the Gault (41BL323) and Keven Davis (41NV659) sites (Table 4 and Figure 8).

Large blade #1 (Figure 9) is constructed from dark brown (10YR 3/3 to pale brown (10YR6/3) to very pale brown (10YR 8/3) to white concentrically-zoned chert. A very small amount of cortex is present on the outer surface but flake scars on both the left and right lateral surfaces plus on the cortex itself shows this blade was not a first-phase exterior blade. A marked twist to the interior surface of the blade shows that the blade was struck from the corner of a blade core, probably the left corner of a wedge-shaped core (Thomas Williams, personal communication 2015).



Figure 5. *Quartzite Biface from the Timber Fawn Clovis site, Harris County, Texas. Note the prominent basal thinning flake scar.*

The blade was further modified into a composite scraping/engraving tool, with a prominent graver point on the left lateral edge of the blade's distal end. This graver point was subsequently snapped during use. Steep retouch is present on the distal end of the blade and shallower retouch on the left lateral edge.

Thus the tool could have served as both a cutting edge, an end-scraper, and as an engraver. Lastly, steep retouch was put on the proximal end of the blade, probably as the distal scraping end began to wear out.

Blades 2 through 5 appear to have been constructed of a very similar material a light gray (2.5YR 7/1)

Figure 6. *Large Chert Biface from the Timber Fawn Clovis site, Harris County, Texas.*



Table 3. Large Blade Data, Timber Fawn site, Harris County, Texas.

Blade Number	1	2	3	4	5	Large Blade Mean ¹
Maximum Length (mm)	91.8	78.1	80.9	52.7*	40.1*	83.6
Maximum Width (mm)	22.9	21.9	23	34.8	22	22.6
Max. Thickness (mm)	10.7	8.2	8.9	15	5.1	9.3
Platform Angle (°)	111°	113°	112°	108°	111°	112°
Platform Width (mm)	6.8	5.5	7.1	10	6.1	6.5
Platform Depth (mm)	2.8	3	3.5	4	2.9	3.1
Index of Curvature	12.1	12.8	11.1	6.25	7.45	12
Ratio Length:Width	3.18	3.57	3.52	1.51	1.82	3.42
L + W + T (mm)	131	108	113	102	67	117
Ratio L/L + W + T	0.7	0.72	0.72	0.52	0.6	0.71
Ratio W/L + W + T	0.22	0.2	0.2	0.34	0.33	0.21
Ratio T/L + W + T	0.12	0.08	0.08	0.14	0.08	0.09
Approximate % Cortex	20%	None	20%	30%	None	N/A
Blade Material	Brown Chert	Gray Chert	Gray Chert	Gray Chert	Gray Chert	
Comments	Complete	95% Complete	Complete	*Blade Snapped	*Blade Snapped	

¹ Large blade mean based only on three complete blades (Blades 1, 2 and 3).

to white (2.5YR8/1) colored chert. Blade #2 is a classic interior Clovis blade with a high degree of curvature and no cortex. Prominent notches have been constructed near the mid-point of the blade (see Figure 7); it is uncertain if the purpose of the notches were for hafting and/or to facilitate snapping of the blade into smaller fragments. No lateral or distal end retouch is present although the distal end has been broken in the ancient past.

Blade #3 is an early stage corner blade from the outer part of a blade core. The distal end has been shaped to a point through bifacial retouch. Blade #4 had a major hinge fracture during construction which was subsequently removed with a series flake removals, the second of which snapped the blade. The remaining proximal end of the blade was retained and minor unifacial lateral retouch added to the left margin for use as a side-scraper (see Figure 7). Lastly,

Blade #5 is an interior blade from near the center of the core which subsequently broke either during blade removal or sometime later during use. The blade shows the lowest degree of curvature of any of the large blades from Timber Fawn which is characteristic of interior blades. Minor lateral retouch is present on both edges.

In addition to the large blades, three blade fragments were found. In general, these are shorter (20-40 mm in total length), thinner, and have significantly less curvature than the larger blades described above (Table 5). All three are constructed of gray (5YR6/1) to white (5YR 8/1) chert. All show strong yellow-orange fluorescence under both short and long-wave UV radiation. Small blades are traditionally associated in Texas with Late Prehistoric age sites (Collins, 1999). However, recent work at the Gault site and at the Brushy Creek site has shown that the Clovis



Figure 7. Large Blades from the Timber Fawn site, Harris County, Texas. Blades are numbered 1 through 5 from left to right.

toolkit also included smaller blades as well (Collins and Lohse, 2004; Crook and Hughston 2008; Crook et al. 2009a). As can be seen in Figure 10, the blade fragments all appear to have been snapped; whether this was done intentionally or as a result of the recent construction is unknown. Similar small, snapped blades are known from the Gault site (Michael B. Collins, personal communication, 2009). The role of these small blades within the Clovis toolkit is still largely unknown.

The broken bit end of an apparent adze (Figure 11) was recovered. The adze is constructed of light gray to very pale brown colored chert (10YR 7/2-8/2) and has been extensively thinned by extensive basal thinning on the dorsal surface. One of these basal thinning flakes has created a pronounced scooped face near the bit edge. The adze fragment is 32.8 mm in length and has a maximum width of 41.8 mm. Thickness varies from 13.5 mm at the base to 10.0 mm across the basal thinning flake. The edges along the lateral edges of the tool away from the bit edge have extensive polish, probably from hafting. The tool is broken near the distal end, also probably from use which then resulted in it being discarded. Under either

short or long-wave UV radiation, the artifact shows no fluorescence.

Adzes from Clovis contexts are a relatively rare trait item with examples known from the Gault site in Central Texas (Collins and Hemmings 1995; Collins 1999), the Brushy Creek site in North Central Texas (Crook and Hughston 2012) and a few others (Bradley et al. 2010). As the artifact assemblage at Timber Fawn appears to come from a single occupation, the discovery of an adze-like tool adds another Clovis site to the artifact's distribution.

A total of three end-scrapers and six worked flakes have been recovered. Two of the end-scrapers are constructed from chert flakes with the third made from what appears to have been a chert blade. Size ranges from 20-30 mm, probably at the very end of their useful tool life. All three are unifacial and show steep flaking on the bit edge (Figure 12). Of the six worked flakes, four are made from chert with the other two constructed from a coarse-grained gray quartzite which appears to be local in origin. In addition to retouched edges, several of the flakes have well-made graver points (Figure 13). Microscopic examination shows extensive polish on the remnant spurs probably from use-wear.

Table 4. Comparison of Timber Fawn Blade Measurements to Other Texas and Oklahoma Clovis Contexts

Site	TEXAS					OKLAHOMA		
	Timber Fawn	Gault	Pavo Real	Keven Davis	Brushy Creek	Anadarko	Cedar Creek	Domebo
Number Blades	3	78	33	15	6	21	7	1
Max. Length	84	97	104	101	100	111	98	86
Max. Width	23	28	30	25	31	37	34	32
Max. Thickness	9	12	13	10	12	10	13	10
Platform Angle	112°	110°	108°	114°	115°	112°	117°	N/A
Platform Width	6.5	7	14	6.5	10.2	N/A	N/A	N/A
Platform Depth	3.1	3.2	5.6	2.6	7.4	N/A	N/A	N/A
Index Curvature	12	8.7	5.8	13.6	7.6	9.1	9	N/A
Length:Width	3.42	3.57	3.44	4.04	3.62	3	2.88	2.69
L + W + T	117	137	148	137	144	158	145	128
L/L + W + T	0.71	0.7	0.71	0.74	0.68	0.7	0.67	0.67
W/L + W + T	0.21	0.21	0.2	0.18	0.22	0.23	0.25	0.25
T/L + W + T	0.09	0.09	0.09	0.07	0.09	0.06	0.08	0.08

In addition to the above chipped stone artifacts, a single quartzite hammerstone was recovered. The hammerstone displays extensive wear on all its work surfaces and was likely discarded as no longer usable. The artifact is rather small (~50 mm), a trait which is common to many Clovis lithic assemblages (Mike Collins, personal Communication, 2008; Crook et al. 2009a).

A single piece of ground stone was recovered which appears to be a portion of a circular to oval-shaped gorget made from light yellow-brown colored quartzite (10YR 6/4). The edges have been extensively thinned to give the artifact a disk shape. Two intentionally made drilled perforations are present along the centerline where the artifact broke. Given the quartzite material, both the edge shaping and the perforations required a great deal of time and effort to construct. The perforations appear to have been drilled biconically. The gorget has a vertical diameter through the perforations of 54.0 mm with a lateral width of 37.0, thus implying an original artifact size of about 54 by 74 mm. Maximum thickness is only 5.5 mm with the edges being less than half of that.

While the gorget has been heavily scratched over time, on the obverse face of the gorget a number of cross-hatched "X's" are engraved into the stone ranging in size from 7 to 12 mm. There is no specific pattern to the engraving and each of the figures appears to be randomly placed across the artifact. The

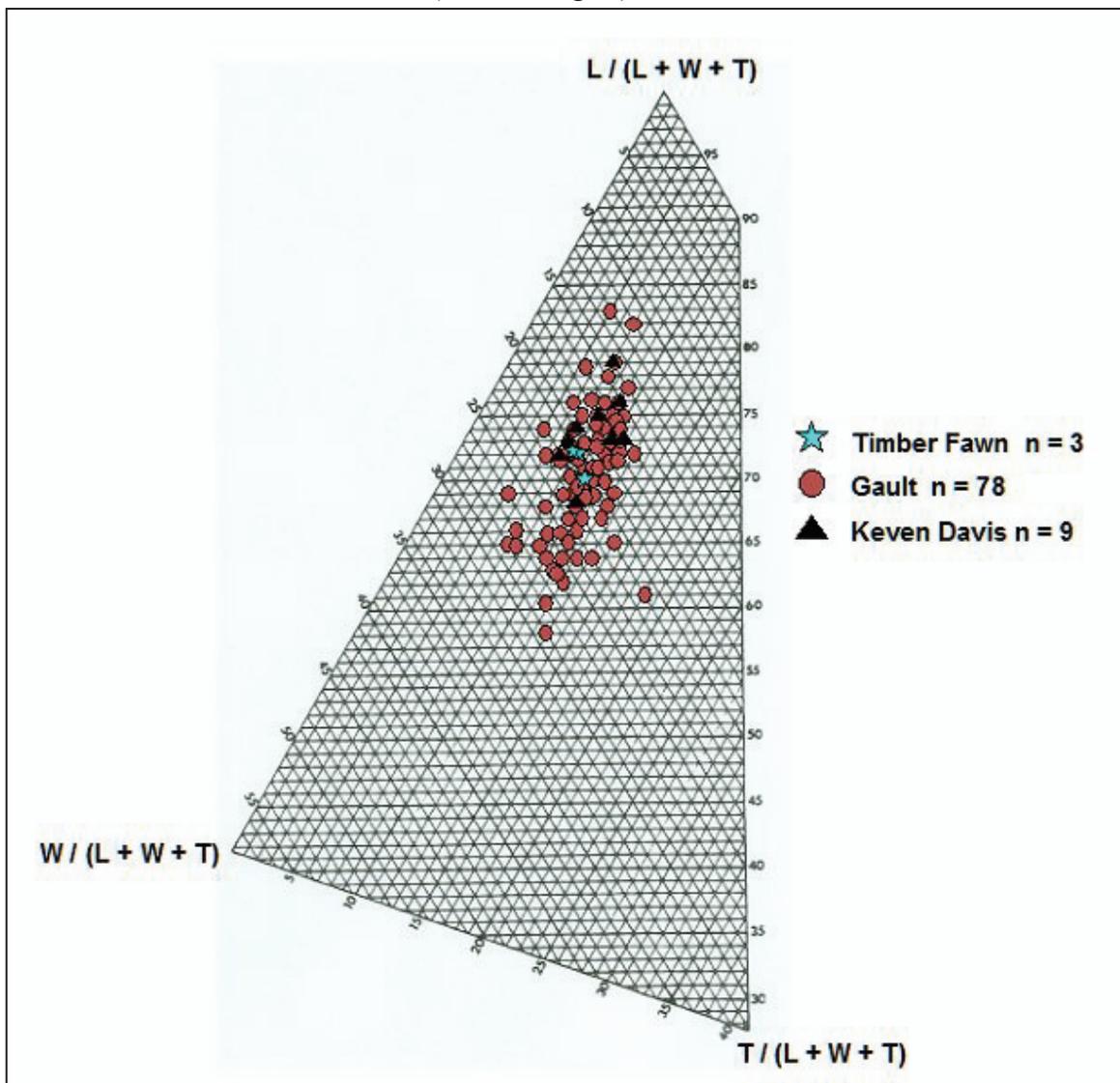
engraved lines are narrow (0.4-0.8 mm) but well incised (0.1-0.3 mm) and appear to have been scratched using either a fine pointed tool like a graver or from a thin-edged blade. The gorget is depicted in Figure 14 with an illustration that more clearly delineates the "X" figures shown in Figure 15.

Despite an extensive search, no unworked pieces of debitage have been recovered from the site. However, a single nodule of smokey quartz was recovered (Figure 16). Smokey quartz does not occur locally in the Harris County region although can occasionally be found in the major river drainages such as the Brazos and Colorado Rivers (Sellards and Baker 1934). Smokey quartz can also be found in the Llano Uplift area in Llano and Burnet counties where it occurs in and around large rare-earth bearing pegmatite structures (Crook 1977a, 1977b). Its presence at the Timber Fawn site indicates it is not native to the area and was transported into the site probably by its aboriginal inhabitants.

Faunal Remains

In addition to the lithic artifacts, three fragments of enamel from a proboscidean and one small fragment of heavily weathered turtle shell were found with the Clovis lithic artifacts. The proboscidean fragments are believed to come from a mammoth (*Mammuthus sp.*). Because of the lack of provenience

Figure 8.
Triangular Coordinate Graphic Comparison of Timber Fawn Large Blades (turquoise colored stars) to those from the Gault (red ovals) and Keven Davis (black triangles) Sites.



at the site due to housing construction, there is no evidence for direct association of the faunal remains with the artifacts; however their close proximity with artifacts of known Clovis affinity is certainly suggestive of their probable association.

X-Ray Fluorescence Analysis

The majority of the lithic artifacts (n = 19; 79 percent) from the site are made from chert, all of which appears to be of non-local origin (see Table 1). Twelve of the artifacts display a strong yellow-orange fluorescence under both short and long-wave Ultra-

Violet (UV) radiation which is characteristic of Edwards Plateau chert. Of the remaining seven chert artifacts, two show a weak lemon-yellow UV fluorescence and five display no reaction to UV radiation, either under short or long-wave. Based on these results, it was assumed that several chert sources are likely present at the Timber Fawn site. It was therefore decided to analyze each chert artifact for its trace element geochemistry using X-Ray Fluorescence (XRF) technology in order to see if the provenance of the chert could be ascertained.

Historically, archeologists have been challenged in sourcing chert due to the combination of the

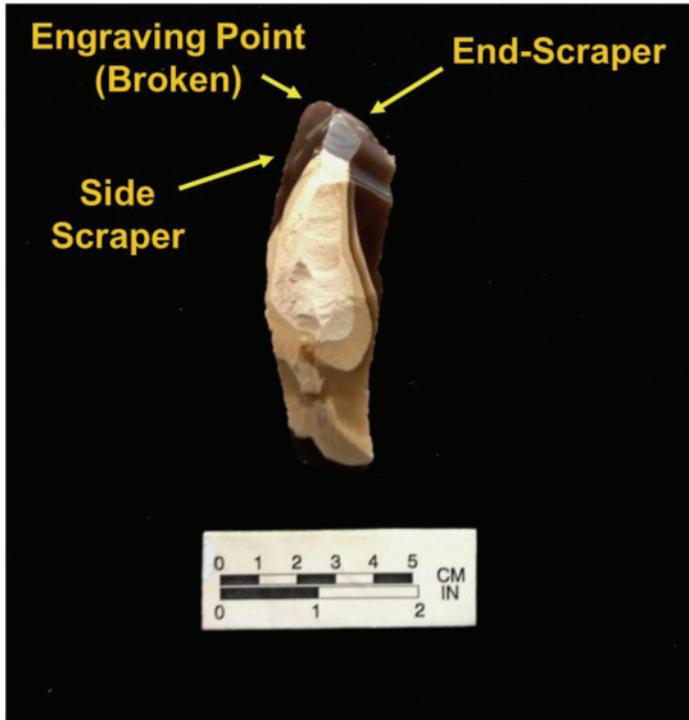


Figure 9. Large Blade #1 from the Timber Fawn site, Harris County, Texas. Note probable intentional retention of chert color zonation on dorsal surface. The original engraving point (now snapped) would have been on the upper left former of the distal end.

mineral's largely monomineralic character, the destructive nature of many geochemical analytical techniques (wet chemistry, X-Ray powder diffraction, Neutron Activation analysis, etc.), and the complex trace element chemistry of cherts (Gauthier et al. 2012). Cherts are cryptocrystalline rocks that frequently contain sub-microscopic minerals that are difficult to determine in polarized light microscopy, even for experienced sedimentary petrographers. UV fluorescence, both short-wave and long-wave, has historically been used to make some preliminary source determinations. This is especially true for

Edwards chert, which has traditionally been identified by its strong yellow to yellow-orange fluorescence under short-wave and particularly long-wave UV radiation (Hoffman et al. 1991; Hillsman 1992). However, other non-Edwards Plateau cherts also fluoresce under UV radiation and thus UV light alone cannot be considered a reliable tool for absolute chert source identification. Moreover, within the Edwards Plateau, UV light alone cannot distinguish amongst the many individual sources of chert. These facts argue strongly that a geochemical analysis remains



Figure 10. Small Blades from the Timber Fawn site, Harris County, Texas. Blades are numbered 6 through 8 from left to right.

Table 5
Timber Fawn Site, Harris County, Texas
Small Blade Data

Blade Number	6	7	8	Small Blade Mean
Maximum Length (mm)	33	31.6	21.5	28.7
Maximum Width (mm)	22.2	21.1	18.8	20.7
Max. Thickness (mm)	5	4.8	4.1	4.6
Platform Angle (°)	N/A	N/A	N/A	N/A
Platform Width (mm)	N/A	N/A	N/A	N/A
Platform Depth (mm)	N/A	N/A	N/A	N/A
Index of Curvature	2.75	2.82	2.45	2.67
Ratio Length:Width	1.49	1.5	1.14	1.38
L + W + T (mm)	60	58	44	54
Ratio L/L + W + T	0.55	0.54	0.49	0.53
Ratio W/L + W + T	0.37	0.36	0.43	0.46
Ratio T/L + W + T	0.08	0.08	0.09	0.08
Approximate % Cortex	None	None	None	N/A
Blade Material	Gray Chert	Gray Chert	Gray Chert	
Comments	*Blade Snapped	*Blade Snapped	*Blade Snapped	

the best technique available to archeologists for sourcing cherts.

Within the spectrum of geochemical analytical techniques currently available, the best non-destructive methods are X-Ray Fluorescence (XRF) and Laser Ablation analysis (Laser Ablation Inductively Coupled Plasma Mass Spectroscopy or LA-ICP-MS). Of these two techniques, the latter requires access to highly specialized equipment typically not available to most archeologists. Thus XRF would appear to be the ideal choice for non-destructive sourcing. In this regard, archeologists have had considerable success in sourcing obsidians using a basic 7-9 trace element profile (Glasscock et al. 1998; Jenkins et al. 1995; Shackley 2011). However, when the same technique has been applied to the more complex geochemistry present in cherts, XRF analyses have had mixed success (Gautier et al. 2012; Kendall 2010; Luedtke 1978, 1979; Tykot 2004). As a result, Williams and Crook (2013; Crook and Williams 2013) adopted a much larger, multi-element approach based on the techniques developed for Laser Ablation analysis as developed by Speer (2014).

The Timber Fawn chert artifacts were subjected to a trace element geochemical analysis using a portable X-Ray Fluorescence spectrometer (pXRF) in order to attempt to determine their provenance. The analyses were conducted using a Bruker Tracer III-SD handheld energy-dispersive X-Ray Fluorescence spectrometer equipped with a rhodium target X-Ray tube and a silicon drift detector with a resolution of ca. 145 eV FWHM (Full Width at Half Maximum) at 100,000 cps over an area of 10 mm². Data was collected using a suite of Bruker pXRF software and processed running Bruker's empirical calibration software add-on. Sample area on each artifact analyzed was carefully selected to specifically avoid any inclusions within the chert and, where possible, only on flat surfaces such as a flake scar to reduce the scattering effects due to surface topography. Analyses were conducted in March, 2015 at the laboratory of the Gault School of Archeological Research located at Texas State University in San Marcos.

All artifacts were initially measured using operating parameters of 15 keV, 55µA in order to detect



Figure 11. Bit End of an Adze, Timber Fawn site, Harris County, Texas.

major trace elements (calcium, iron, etc.). The unit was operated for 15 seconds live-count time and a total of 10 readings per sample which were then averaged. Intensities were recorded for a suite of 18 light elements. A second analysis was conducted on all samples using a higher energy, 40keV, 36.2 μ A, using a 0.12 mm aluminum / 0.01 mm titanium filter in the X-Ray path, and a 300 second live-count time. Multiple measurements were taken on both the obverse and reverse faces of each artifact. Peak intensities for $K\alpha$ and $L\alpha$ peaks were measured for an additional suite of 12 heavier elements. From these

two analyses, 22 trace elements were used for the statistical analysis of the chert artifacts, from which their peak intensities were calculated as ratios to the Compton peak of rhodium and converted to parts-per-million (ppm). The suite of elements used in this analysis consisted of calcium, titanium, chromium, manganese, iron, cobalt, nickel, copper, zinc, arsenic, rubidium, strontium, yttrium, zirconium, niobium, molybdenum, tin, antimony, barium, lead, thorium and uranium. All the raw data was processed using a multivariate discriminant analysis ("Fishers Discriminant Analysis") (Fisher 1936; Krzanowski 1977;



Figure 12. End-Scrapers from the Timber Fawn site, Harris County, Texas.

Figure 13. Worked Chert and Quartzite Flakes from the Timber Fawn site, Harris County, Texas. Note the worn graver spurs on several of the artifacts.



Friedman 1989; Rencher 1992). This statistical method was utilized as, unlike principle component analysis, it allows data to be analyzed by individual region. By using this type of statistics, a discrete variance in geochemical signatures can be analyzed

and compared. A complete table of all raw data collected (in parts-per-million) is presented in Appendix I at the end of this paper.

Provenance analysis of the trace element data collected from the artifacts was conducted using a 464

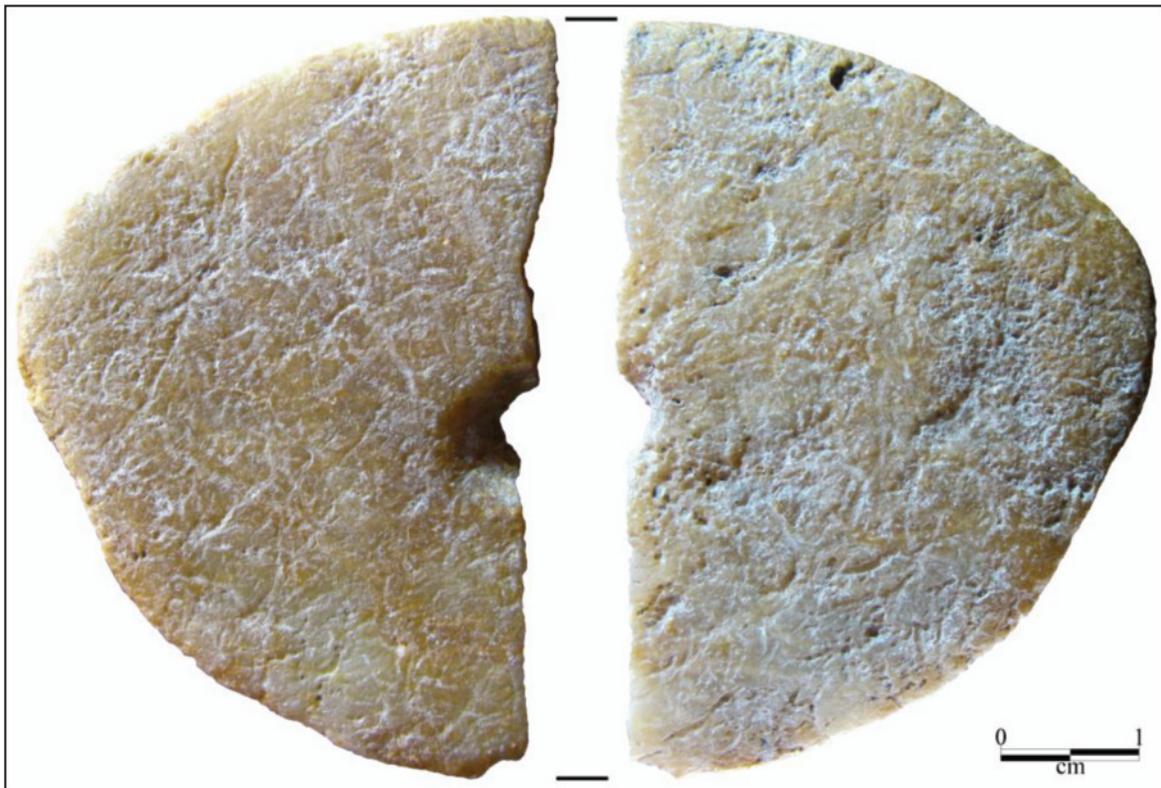


Figure 14. Composite Photograph of the Obverse (left) and Reverse (right) Faces of the Engraved Quartzite Gorget from the Timber Fawn site, Harris County, Texas. The artifact broke through the perforations along the centerline. The engraved "X's" are across the obverse face to the left and above the central perforation. (Photo by Lance K. Trask)

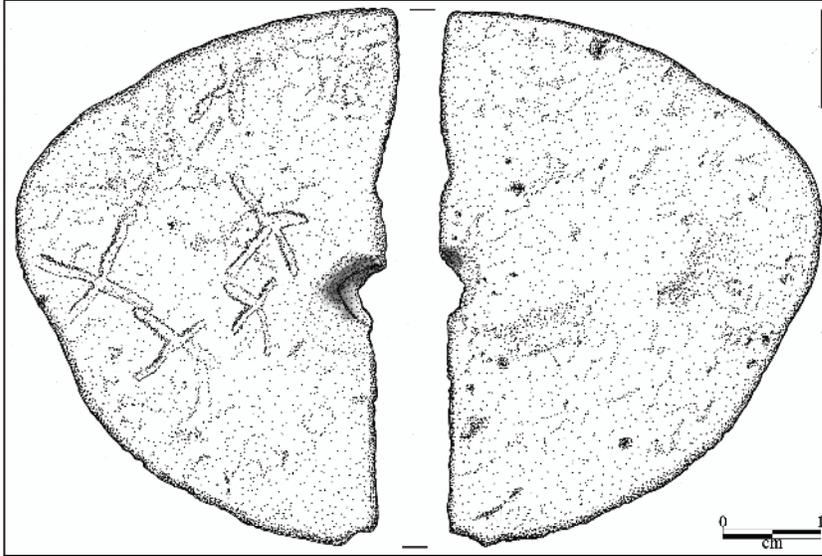


Figure 15. Composite Illustration of the Engraved Quartzite Gorget from the Timber Fawn site, Harris County, Texas. The engraved "X's" on the obverse face to the left are highlighted. (Illustration by Lance K. Trask)

sample Edwards Plateau chert data base constructed by Williams and Crook (2013). Only artifacts that fit within a greater than 50 percent probability were recorded as being statistically connected to a particular Edwards Plateau region (ie. Gault area, Fort Hood Military Reservation, Callahan Divide, Leon Creek, etc.). If artifacts had a probability between two geologic areas of the Edwards Plateau and plotted on a canonical plot in between two geochemical signatures (ie. within an area of regional overlap), they were assigned statistically as general "Edwards Chert". As the Gault School of Archeological Research's geologic database currently does not extend outside the Edwards Plateau, samples whose geochemical signatures did not match any known Edwards region samples in the geologic database would be assigned as "Non-Edwards Chert".

X-Ray Fluorescence Analytical Results

Based on the results from the XRF analysis using the analytical methodology described above, 15 of the 19 chert artifacts from the Timber Fawn site can be sourced to cherts within the Edwards Plateau (Table 6). Five of these artifacts, including Clovis point #1 (see Figure 3), the large biface (see Figure 6), blades #1 and #3 (see Figure 7) and worked flake #1 (see Figure 13) were matched to the Callahan Divide region of the northern part of the Edwards Plateau. The other 10 Edwards chert artifacts including Clovis point #2 (see Figure 4), blades #2, #4 and #5 (see Figure 7), all three of the blade fragments (Figure 10), end scraper #1 (see Figure 12) and worked flakes #3 and #4 (see Figure 13) closely match cherts in and around the Gault site in Bell and Williamson counties. That does not mean they neces-



Figure 16. Broken Cobble of Smokey Quartz from the Timber Fawn site, Harris County, Texas.



Figure 17. Fragments (3) of Mammoth Molar Enamel and Weathered Turtle Shell (far right) from the Timber Fawn site, Harris County, Texas.

sarily came from the immediate area of the Gault site (41BL323) per se, but could have based on their close geochemical match to chert outcrops adjacent to the site.

The remaining four chert artifacts, which include end-scrapers #2 and #3, worked flake #2, and the adze, do not match the geochemistry of any known sample from the Edwards Plateau and are thus assumed to have a source from outside that region. As mentioned above, the XRF geologic database collection at Texas State University does not include many samples from outside the Edwards Plateau. As such, the precise location of these four artifacts cannot be determined. However, the adze did contain anomalous amounts of titanium (1,008 ppm) and zirconium (730 ppm), levels several orders of magnitude greater than in any of the other chert artifacts (see Appendix I). A similar Clovis adze from the Brushy Creek site (412HU74) in Hunt County, Texas also contained very high amounts of titanium and zirconium (Crook and Williams, 2013). The only area in the vicinity known to have high amounts of both elements is the Magnet Cove region in the southern Ouzchita Mountains in Arkansas. Magnet Cove is also known for its

cherts and novaculites and thus potentially could be a source for this artifact.

Cultural Affiliation

While none of the artifacts recovered from the Timber Fawn site were found unequivocally *in situ*, and we have yet to find any datable charcoal or bone material, we believe the presence of (1) the two Clovis projectile point bases, (2) the fluted quartzite biface, (3) the long curved blades and snapped blade fragments, which have measured physical affinities to similar tools from known Clovis sites, (4) the presence of finely-made end-scrapers, graters and the small hammerstone - all of which are known constituents of the Clovis toolkit, and (5) the occurrence of extinct large mammal (mammoth) teeth fragments all support the conclusion that the Timber Fawn site represents a single occupation of Clovis age. The location of the site on a high terrace above the confluence of the two branches of the San Jacinto River drainage would have made the area attractive for both large and small game animals, as well as

Table 6
Summary X-Ray Fluorescence Results on Cherts from the
Timber Fawn Clovis Site, Harris County, Texas

Artifact	Source	Possible Region
Clovis Point #1	Edwards Chert	Callahan Divide
Clovis Point #2	Edwards Chert	Gault Area
Blade #1	Edwards Chert	Callahan Divide
Blade #2	Edwards Chert	Gault Area
Blade #3	Edwards Chert	Callahan Divide
Blade #4	Edwards Chert	Gault Area
Blade #5	Edwards Chert	Gault Area
Blade Fragment #1	Edwards Chert	Gault Area
Blade Fragment #2	Edwards Chert	Gault Area
Blade Fragment #3	Edwards Chert	Gault Area
Large Biface	Edwards Chert	Callahan Divide
Adze	Non-Edwards	Hot Springs, AR (?)
End Scraper #1	Edwards Chert	Gault Area
End Scraper #2	Non-Edwards	Unknown
End Scraper #3	Non-Edwards	Unknown
Worked Flake #1	Edwards Chert	Callahan Divide
Worked Flake #2	Non-Edwards	Unknown
Worked Flake #3	Edwards Chert	Gault Area
Worked Flake #4	Edwards Chert	Gault Area

provide a year-round source for fresh water and riverine fauna.

The relatively large number of artifacts recovered (24) supports the conclusion that the site was probably periodically occupied over a period of time, perhaps seasonally as part of a hunting expedition along the Coastal Prairie – East Texas Riparian Belt margin. The complete lack of debitage from the site indicates the site was not a primary, long-term campsite but rather one which had intermittent, short-term occupa-

tions. The absence of unworked debitage coupled with the fact that most of the tools left at the site were either broken or near the end of their useful life is consistent with a hunting camp where tools were resharpened and/or discarded but not manufactured. No cores or primary cortex-bearing flakes were recovered.

The occurrence of two Clovis point bases plus an additional fluted biface increase the total number of reported fluted points from the Harris County area from nine to twelve. Moreover, the relatively large

number of blades recovered from the site is also unique within Southeast Texas. Lastly, the definite bit-end of an adze is an additional Clovis artifact recognized at only a few sites to date (Gault, Brushy Creek in particular). The other absolutely unique artifact is the engraved quartzite gorget.

Engraved stones of Paleoamerican association have been found at the Gault site (41BL323) and Kincaid Rock Shelter (41UV2) in Central Texas, from the Brushy Creek site (41HU74) in North Central Texas, and from Blackwater Draw in New Mexico (Collins, et al., 1992; Crook et al. 2009a, 2009b). In addition, one engraved stone has been recovered from the Midland level at the Wilson-Leonard site (41WM235) (Collins, et al., 1991). The stones are predominantly made from thin pieces of smooth, weathered Cretaceous limestone, although engraved specimens of cortex on chert nodules and ochre are also known. One specimen found at the Kincaid Rock Shelter was engraved on a fragment of *Inoceramus* shell (M. B. Collins, personal communication, 2009). The single engraved stone from the Brushy Creek site in Hunt County was also constructed from a fragment of *Inoceramus* shell (Crook et al. 2009a, 2009b). The confirmed presence of an engraved gorget at Timber Fawn marks the first time such a stone has been found in Southeast Texas and supports a potential relationship between the inhabitants and those of Gault and other Clovis sites in Central Texas.

The cross-hatched pattern on the Timber Fawn gorget is very similar to patterns found on stones at Gault, Kincaid Rock Shelter and Brushy Creek. Ethnologists have found that human beings, chimpanzees (*Pan troglodytes*) and bonobos (*Pan paniscus*) are all capable of reproducing this pattern from about age 2 on (D. Clark Wernecke, personal communication, 2009). Thus the design on the Timber Fawn gorget represents a common human design however, the pattern's meaning, especially in relation to the Clovis culture of the region, remains problematical.

It is uncertain whether any or all of the animal bones recovered in the area of the site are due to the presence of man. However, those bones which are present represent species which are consistent with known Clovis subsistence activity (mammoth and turtle).

Acknowledgements

The authors are indebted to the entire management of KB Home, notably Mr. Robert Hulbert, Land Development Manager, for their superb cooperation in allowing the Houston Archeological Society access to the site and collection of the artifact assemblage recorded in this paper. Their cooperation should be seen as a model of how archeology and economic

development can co-exist in order to preserve valuable scientific information. We would also like to thank the Gault School of Archeological Research, especially Dr. Tom Williams, for his assistance in conducting the X-Ray Fluorescence analysis of the chert artifacts discussed herein.

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APPENDIX I
XRF RESULTS – TRACE ELEMENT GEOCHEMISTRY OF CHERT
ARTIFACTS FROM THE TIMBER FAWN CLOVIS SITE,
HARRIS COUNTY, TEXAS (ppm)

Element	Clovis Point #1	Clovis Point #2	Large Chert Biface	Blade #1	Blade #2	Blade #3	Blade #4	Blade #5
Calcium	454	458	457	433	438	477	459	1369
Titanium	24	17	25	19	18	23	18	19
Chromium	0	0	0	0	1	0	2	0
Manganese	8	8	8	8	8	8	8	8
Iron	252	254	273	247	264	350	248	248
Cobalt	0	0	0	0	0	0	0	0
Nickel	1	1	1	1	2	1	2	1
Copper	5	3	5	4	3	5	4	4
Zinc	0	0	0	0	0	0	0	0
Arsenic	0	0	0	0	0	0	0	0
Rubidium	1	1	1	1	1	1	1	1
Strontium	3	2	2	2	1	1	2	1
Yttrium	2	2	2	2	2	2	2	2
Zirconium	3	3	3	3	3	3	3	3
Niobium	1	1	1	1	1	1	1	1
Molybdenum	4	5	5	5	5	5	5	5
Tin	0	0	0	0	0	0	0	0
Antimony	0	0	0	0	0	0	0	0
Barium	55	75	70	69	65	72	81	79
Lead	1	1	1	1	1	1	1	1
Thorium	1	1	1	1	1	1	1	1
Uranium	0	0	0	0	1	1	1	1

APPENDIX I
XRF RESULTS – TRACE ELEMENT GEOCHEMISTRY OF CHERT
ARTIFACTS FROM THE TIMBER FAWN CLOVIS SITE,
HARRIS COUNTY, TEXAS (ppm)

Element	Blade Fragment #1	Blade Fragment #2	Blade Fragment #3	End Scraper #1	End Scraper #2
Calcium	956	726	1342	468	451
Titanium	18	19	20	16	32
Chromium	2	0	0	0	0
Manganese	8	7	8	9	9
Iron	246	240	247	260	300
Cobalt	0	0	0	0	0
Nickel	2	1	1	1	1
Copper	3	3	3	4	4
Zinc	0	0	0	0	0
Arsenic	0	0	0	0	0
Rubidium	1	1	1	1	2
Strontium	2	1	1	2	2
Yttrium	2	2	2	2	2
Zirconium	3	3	3	3	4
Niobium	1	1	1	0	1
Molybdenum	5	5	5	5	4
Tin	0	0	0	0	0
Antimony	0	0	0	0	0
Barium	54	70	66	116	73
Lead	1	1	1	1	1
Thorium	1	1	1	1	1
Uranium	1	1	1	0	2

APPENDIX I
XRF RESULTS – TRACE ELEMENT GEOCHEMISTRY OF CHERT
ARTIFACTS FROM THE TIMBER FAWN CLOVIS SITE,
HARRIS COUNTY, TEXAS (ppm)

Element	End Scraper #3	Adze	Worked Flake #1	Worked Flake #2	Worked Flake #3	Worked Flake #4
Calcium	455	567	455	440	428	441
Titanium	24	1008	21	25	16	20
Chromium	0	0	0	0	0	0
Manganese	10	7	9	11	8	8
Iron	261	257	377	602	236	235
Cobalt	0	0	0	0	0	0
Nickel	1	1	1	1	1	1
Copper	5	6	4	4	3	4
Zinc	0	0	0	0	0	0
Arsenic	0	0	0	0	0	0
Rubidium	1	1	1	1	1	1
Strontium	2	3	4	3	2	2
Yttrium	5	4	2	2	2	2
Zirconium	3	730	3	3	3	3
Niobium	1	1	1	1	1	1
Molybdenum	5	0	5	5	5	5
Tin	0	0	0	0	0	0
Antimony	0	0	0	0	0	0
Barium	108	67	55	104	59	53
Lead	1	1	1	1	1	1
Thorium	1	1	1	1	1	1
Uranium	1	0	0	0	0	0