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# 41SM195A, The Browning Site

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## INTRODUCTION

A surface collection of early 19th century historic sherds led to archaeological investigations in 2002 and 2003 at the Browning site (41SM195A) in eastern Smith County, Texas. My interest was whetted by mention in the original land abstract that the property had once been deeded to the Cherokee Indians (Walters 2003). In all, a total of 6.5 cubic meters of archaeological deposits was excavated at the site, including 22 shovel tests and 10 1 x 1 m test units, and fine-screen and flotation samples were taken from a prehistoric midden deposit identified during the work. As a result, 1075 prehistoric and historic artifacts were recovered, along with new information about Woodland period archaeology in this part of East Texas.

The initial shovel tests found, in addition to the historic component, a buried midden with evidence of Woodland period occupation. Based on the excavations, the midden covered approximately 500 square meters. The 19th century historic artifacts were found in the upper sediment zone (Zone 1, a brown sandy loam that was mostly gravel- free) covering the midden (Figure 1). The buried midden (Zone 2) was a dark yellowish-brown gravelly loam that contained prehistoric pottery, animal bone, charred wood and nutshells, lithic materials, including lithic debris, flake tools, arrow and dart points, and ground stone tools. A calibrated radiocarbon date of A.D. 625 to 880 (2 sigma), with a calibrated intercept of A.D. 685 (Appendix 1), was obtained on charred nutshell from 40-50 cm bs in the midden zone. A series of Oxidizable Carbon Ratio (OCR) dates from the midden (Appendix 2) indicate that the midden began to from about A.D. 147, with dates of A.D. 357-815 from the main part of the midden, indicating when the Browning site was most intensively occupied in prehistoric times.

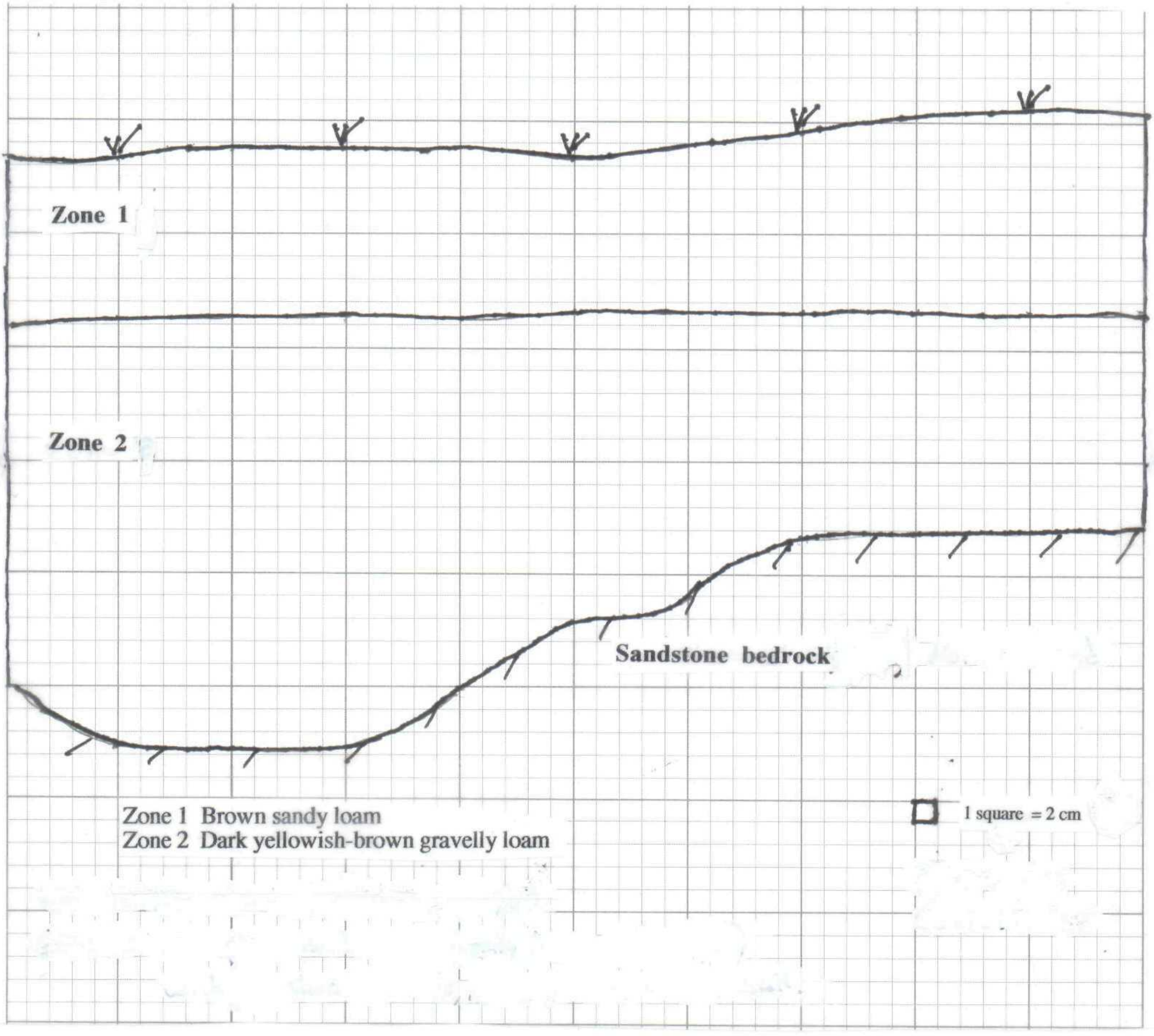


Figure 1. Unit 3 profile, 41SM195A.

## SETTING

The prehistoric (and historic) components at the Browning site are confined to a small corner of a 3800 square meter terrace that overlooks the Auburn Creek floodplain (Figure 2); an undulating sandstone bedrock is the parent material (see Figure 1) and is exposed on the margins of the landform. Depth to the sandstone varies from 30 cm bs to more than 70 cm bs across the 12 meter length of the test units. This terrace was probably truncated at some earlier time and the present soils, excluding the recent relatively sterile overburden, developed from this sandstone parent material. Where present, the midden extends to this sandstone layer.

The soil at this location can be classified as Entisols; that is, they are deposits having little soil development as opposed to the soils further up the hill at the Wolf site (41SM195, see Walters 2003). There, that site had well-developed soils with a Bt horizon. This 20 cm thick layer of overburden (Zone 1 on Figure 1), as indicated by particle size analysis, soil color, and lack of prehistoric artifacts, could be colluvial or eolian in nature but could also be the result of earthworm activity depositing finer particles on the surface, gradually covering the prehistoric midden zone.

## EXCAVATIONS

A total of 22 shovel tests were placed across the landform to determine the extent and concentrations of archaeological materials (see Figure 2). These shovel tests were 35 x 35 cm in diameter and were excavated to either the sterile clay horizon or the sandstone bedrock. They were excavated in 20 cm levels and all of the soil was dry screened through 1/4-inch mesh. Artifacts were tabulated by level, and soil colors and soil characteristics (such as gravel content) were recorded for each shovel test.

Based on artifact counts, soil colors, and the presence of preserved plant and animal remains, a total of 10 1 x 1 m test units were staggered in a east/west direction across the main portion of the Browning site (see Figure 2). These test units were then excavated in 10 cm levels using a flat shovel to skim thin layers of soil. The soil was dry-screened through 1/4-inch mesh to recover artifacts in controlled subsurface contexts. Each level was also troweled for evidence of features exposed in plan view and a profile was recorded on the best wall of each unit. Color and digital photographs were also taken of these profiles and the completed unit floors.

A 40 x 40 cm fine screen sample was collected from Unit 1 and the soils then water-screened through window screen (1/32-inch mesh). A total of 18.9 grams of charred nutshell was collected in the fine-screen sample, of which 6.9 grams from 40-50 cm bs ( the level of its heaviest concentration) were submitted to Beta Analytic, Inc. for a

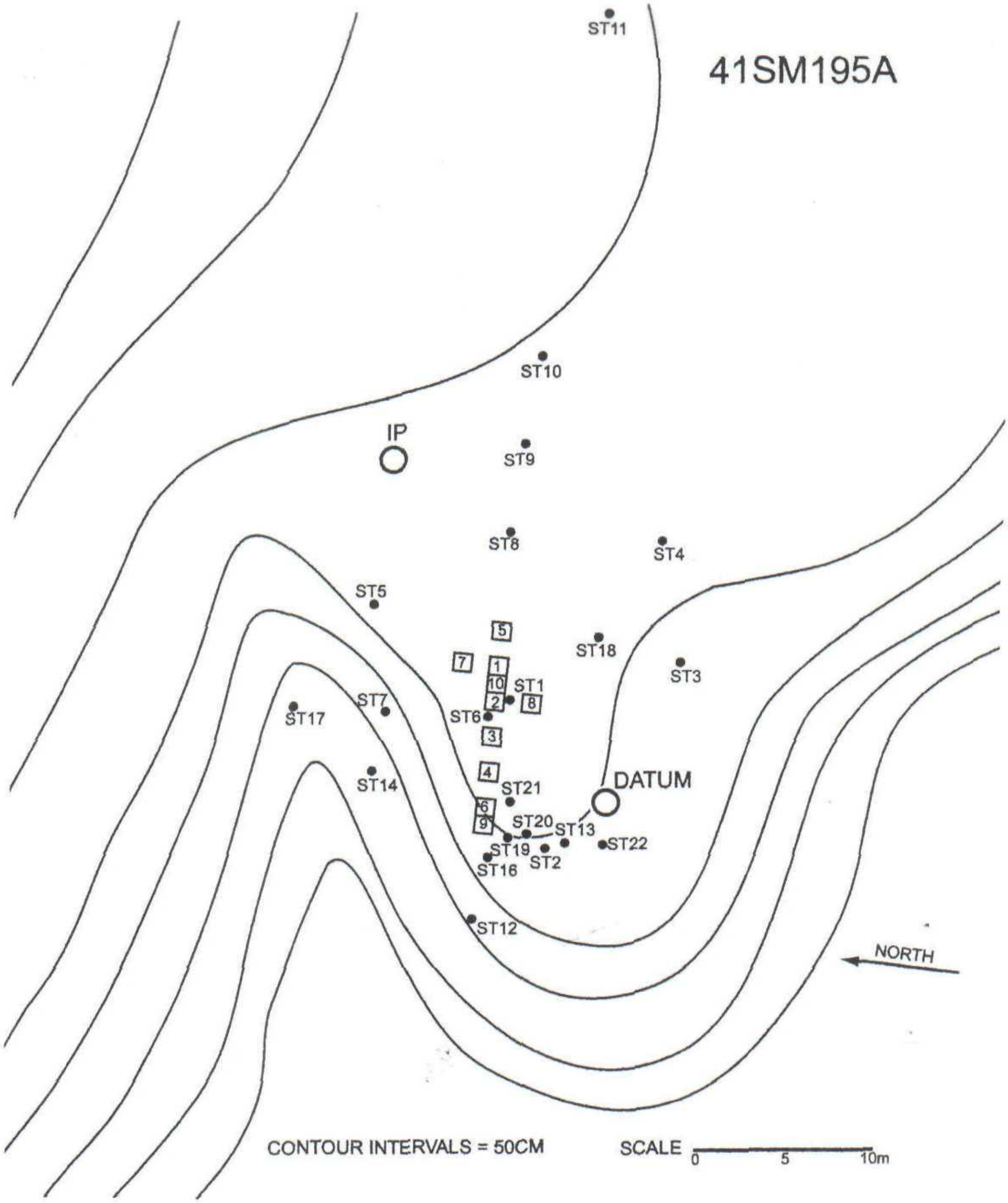


Figure 2. Map of the excavations at the Browning site (41SM195A).

radiocarbon date (Appendix 1). Also from the fine screen sample came 1.3 grams of wood charcoal; a plain sherd (from 50-60 cm); 177 pieces of lithic debris; one arrow point; and one animal bone fragment. Also a 19 liter soil sample was collected from 30-60 cm bs in the dark midden zone for flotation. Collected from the heavy flotation fraction were 15 pieces of lithic debris, two animal bones, and 1.5 grams of nutshell, while the light fraction had a small amount of charred plant remains (see below).

A total (from test units, shovel tests, and fine screen) of 6.546 cubic meters of soil were excavated and screened at the Browning site in 2002 and 2003, with a total of 164.2 artifacts per cubic meter.

## ARTIFACTS FROM THE BROWNING SITE

A total of 1075 artifacts were recovered from the Browning site in the archaeological investigations. As previously mentioned, these came from 10 1 x 1 m test units, 22 shovel tests, a 40 x 40 cm fine screen sample, and a 19 liter flotation sample from the midden (Table 1).

**Table 1. Artifact inventory from the Browning site (41SM195A).**

| Artifact Category | No. | Percent |
|---|---|---|
| *Historic Artifacts* | | |
| Ceramics | 71 | 6.6 |
| Aqua glass | 3 | 0.3 |
| Metal | 3 | 0.3 |
| Burned clay | 46 | 4.3 |
| *Prehistoric Artifacts* | | |
| Chipped stone lithic debris | 820 | 76.2 |
| Animal Bone | 88 | 8.2 |
| Arrow points | 16 | 1.5 |
| Fire-cracked rock | 9 (640 g) | 0.8 |
| Plain pottery sherds | 8 | 0.7 |
| Dart points | 5 | 0.5 |
| Ground stone | 4 | 0.4 |
| Flake tools | 2 | 0.2 |
| Total artifacts | 1075 | 100.0 |

*Not including 43.1 g of charred nutshell and 31.1 g of charred wood

## Chipped Stone Lithic Debris

Representing over 86% of the prehistoric artifacts at the Browning site are many pieces of lithic debris (see Table 1). Breaking the material down into size classes, 52% were 0.64 cm or smaller; 44% were 1.27 cm or smaller; and the remaining 4 % were 2.54 cm or smaller. This number includes the 192 pieces that were recovered from the fine screen and flotation samples in the midden. One-hundred eighty one of those 192 pieces (or 94%), compared to roughly 50% of the lithic debris from the rest of the excavations (which were processed through 1/4-inch mesh), were 0.64 cm or smaller.

Raw materials represented in descending order of frequency are: red quartzite (40%); petrified wood (30%); gray quartzite (18%); tan chert (5%); gray chert (3%); red chert (1%); and white novaculite (1%). Overall, 14% of the lithic debris had cortex.

In summary, most of the chipped stone lithic debris from the Browning site came from small pebbles/cobbles that were bashed in an effort to obtain a suitable flake to make tools. No hammerstones or cores were recovered. It is a generally accepted notion that most of the quartzites found at sites in this part of Smith County, Texas, are local in nature, but other than scattered chunks of petrified wood, no suitable lithic raw material is available in the immediate area. Some of the tools recovered had been heavily reworked, and the large number of small retouch flakes indicates that tool maintenance was the main lithic knapping activity at the Browning site.

## Arrow Points

There were 16 arrow points/fragments (Figure 3) from the Browning site (Table 2), and 10 of the 16 arrow points came from 30-50 cm bs. One of the technological developments that is associated with the Woodland period is the introduction of the bow and arrow late in the period.

**Table 2. Arrowpoints from 41SM195A.**

| Provenience | Dimensions (mm) | Description | Raw Material |
|---|---|---|---|
| Unit 1, 20-30 cm | 22.6 x 15.3 x 5.7 | Friley preform | red quartzite |
| Unit 1, 20-30 cm (FS) | 13.9 x 14.9 x 3.8 | mid-section | red quartzite |
| Unit 2, 10-20 cm | 9.2 x 12.6 x 3.2 | mid-section | gray quartzite |
| Unit 2, 40-50 cm | 16.3 x 11.8 x 2.5 | Friley point | red quartzite |
| Unit 3, 30-40 cm | 11.1 x 10.0 x 2.9 | mid-section | red quartzite |
| Unit 3, 30-40 cm | 19.5 x 10.3 x 3,0 | tip | red quartzite |
| Unit 4, 10-20 cm | 22.4 x 12.5 x 3.3 | base, barbs missing | red chert |

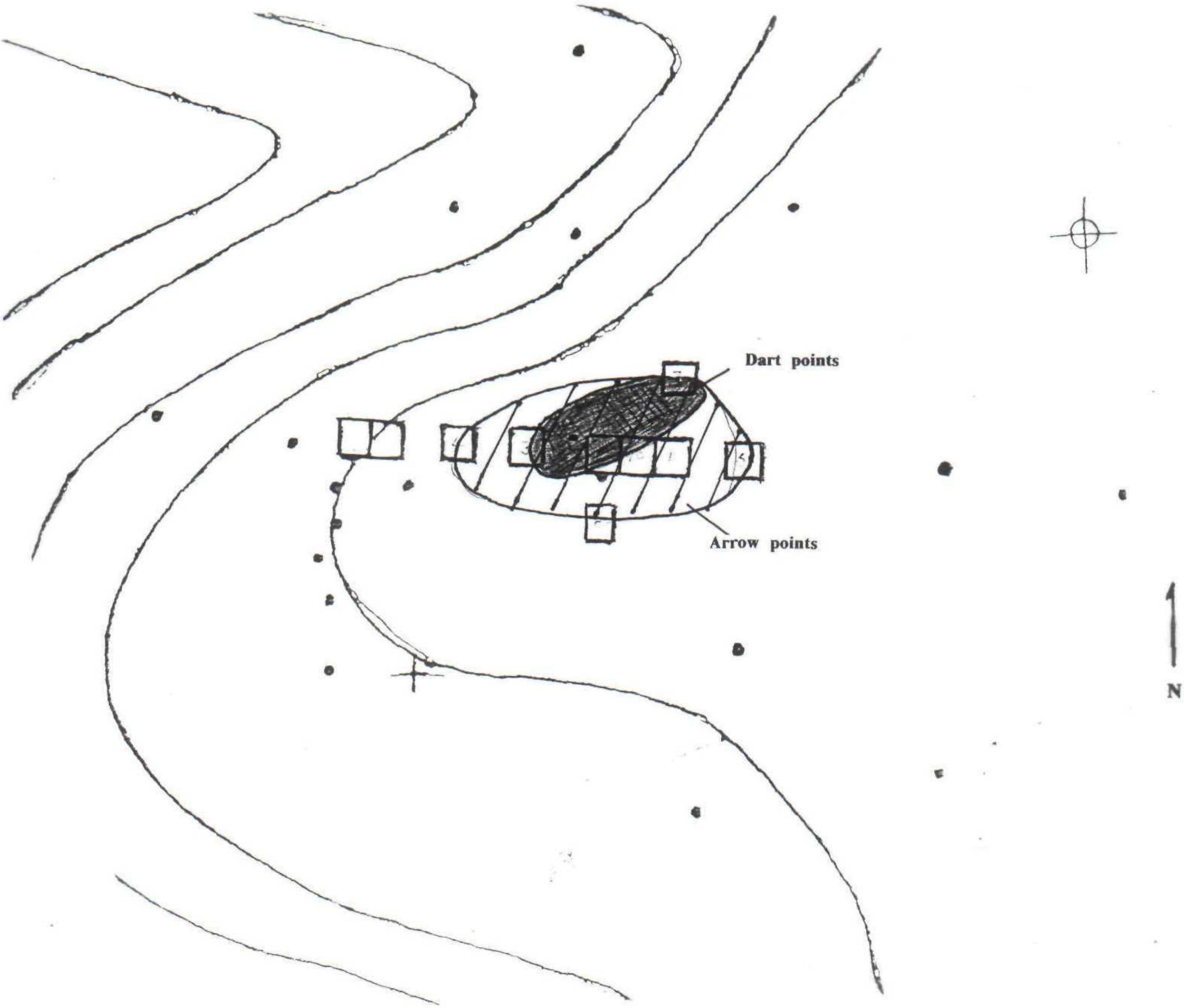


Figure 3. Distribution of arrow points and dart points.

**Table 2. Arrowpoints from 41SM195A, cont.**

| Provenience | Dimensions (mm) | Description | Raw Material |
|---|---|---|---|
| Unit 4, 10-20 cm | 13.0 x 13.8 x 3.2 | mid-section | petrified wood |
| Unit 5, 40-50 cm | 16.9 x 18.2 x 4.2 | fragment | gray quartzite |
| Unit 5, 40-50 cm | 28.3 x 9.5 x 5.2 | tip | gray quartzite |
| Unit 7, 40-50 cm | 11.6 x 14.0 x 3.0 | mid-section | red quartzite |
| Unit 7, 40-50 cm | 20.0 x 12.8 x 4.2 | mid-section | red quartzite |
| Unit 10, 30-40 cm | 18.6 x 14.1 x 3.7 | square base, upturned barbs | red quartzite |
| Unit 10, 30-40 cm | 9.0 x 14.0 x 3.0 | mid-section | red quartzite |
| Unit 10, 40-50 cm | 17.2 x 9.9 x 2.2 | tip | red quartzite |
| Unit 10, 50-60 cm | 21.5 x 13.2 x 2.6 | Friley point | red quartzite |

The exact timing, and from where this development took place, is not well known. Most of the recognizable arrow points from the Browning site are of the Friley type (Figure 4).

Figure 4. Friley arrow points from the Browning site.

Clarence Webb describes the Friley type as "the most unusual arrow type in this area (NW Louisiana) –possibly in the entire U.S." (Webb 1981:15). He places the main center of their spatial distribution in Natchitoches Parish, Louisiana, but states that they occur over northwestern Louisiana as well as in Early Caddoan contexts with Catahoula and Alba points. I have observed numerous Friley points in the Buddy Jones collection, a large collection from around Longview, Texas, and the surrounding area, that is currently housed in the Gregg County Museum in Longview, Texas. I believe the consensus now is that the Friley and Catahoula points are Woodland period arrow points, although which comes first is unclear. Jeff Girard, regional archaeologist for the State of Louisiana, thinks that the Catahoula point is the older (2003 personal communication) of the two types. Certainly the Friley points with their distinctive upturned barbs are unusual and a future study to determine their distribution would be noteworthy. Perhaps this study would be able identify a distinct phase in the later part of the long Woodland period in this area that was characterized by the manufacture and use of Friley arrow points.

## Dart Points and Flake Tools

There were five dart points collected in the excavations at the Browning site (Table 3). Two were small reworked Gary points; two were small square stemmed points (possibly Kent points); and there was one mid-section (Figure 5).

**Table 3. Dart points.**

| Provenience | Dimensions (mm) | Description | Raw Material |
|---|---|---|---|
| Unit 2, 30-40 cm | 31.1 x 18.8 x 6.9 | Gary point | petrified wood |
| Unit 3, 10-20 cm | 39.9 x 19.2 x 9.5 | square-stemmed | gray quartzite |
| Unit 3, 20-30 cm | 26.1 x 13.5 x 7.2 | Gary point | red quartzite |
| Unit 7, 60-70 cm | 37.5 x 22.3 x 6.5 | square-stemmed | petrified wood |
| Unit 8, 20-30 cm | 20.1 x 24.8 x 5.9 | mid-section | red quartzite |


Figure 5. Dart points from the Browning site.

Three flake tools are in the chipped stone tool assemblage from the Browning site (Table 4). Two had unilateral retouch on them, while one flake side scraping tool (Figure 6a-b) had obvious polish on both sides. The latter tool resembles a group of tools (Knives, Group VIII) recovered from the Yarbrough site in various contexts that Johnson (1962:186 and Figure 9t-u) compares to "Harvey Blades." According to Johnson (1962:186), these particular tools are "large sheets or slabs of petrified wood which have been worked bifacially along one side to form a cutting edge." A more in-depth discussion of the use-wear on this tool follows by Marilyn Shoberg and Betty Inman.

**Table 4. Flake tools.**

| | | | |
|---|---|---|---|
| TU 1, 30-40 cm | 54.8 x31.4 x 12.6 | Uniface, edge retouch | RC |
| TU 4, 20-30 cm | 58.77 x 30.66 x 10.86 | Bifacially-retouched, side scraper | PW |
| TU 10, 10-20 cm | 22.4 x 15.6 x 6.2 | Uniface | RQ |

Raw Material: PW=petrified wood; RC =red chert; RQ =red quartzite

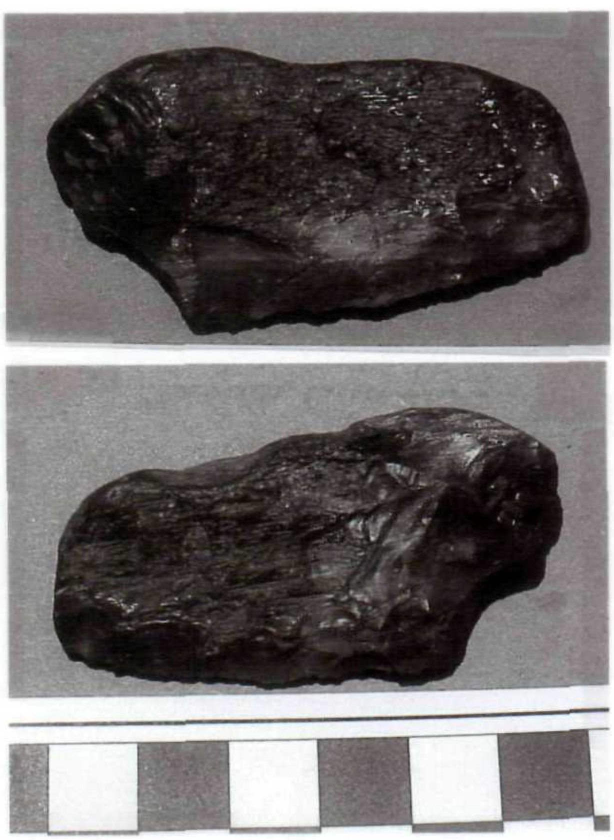

Figure 6. Bifacially retouched tool, front and back sides.

**Use-wear Analysis of a bifacially-retouched tool from 41SM195A (Test Unit 4, 20-30 cm bs),** *by Marilyn B. Shoberg and Betty Inman*

Because of obvious polish at the macro-level, one bifacially-retouched tool from the Browning site was examined for use-wear to determine if the polish could be attributed to plant use or animal processing. The petrified wood artifact was cleaned with alcohol and examined under low magnification (40X), revealing polish over most of the lateral edges of the tool. High magnification microscopy (200X) showed well-developed invasive polish with striations in various directions, some oblique to the edge (Figure 7a).

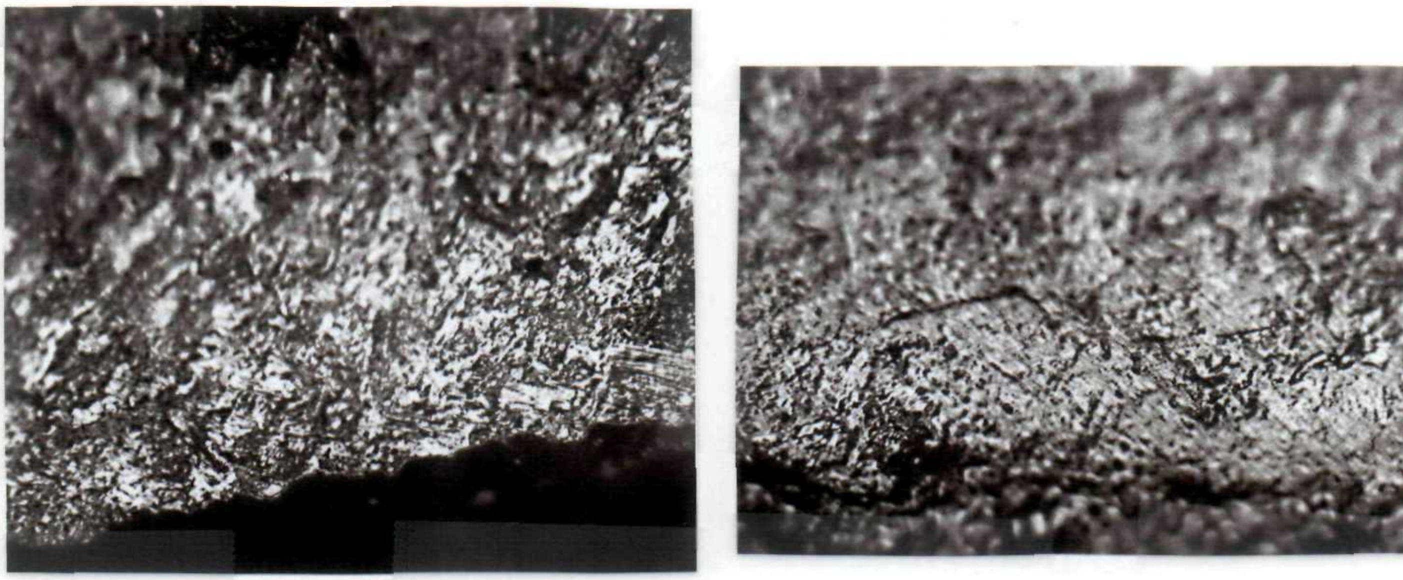

Figure 7. High magnification images of the polish on the bifacially-retouched tool.

An image from the reverse side (Figure 7b) has similar moderately bright invasive polish with cross-cutting striations. Older striate are filled in by subsequent micro-plating: this is a term used by Marvin Kay (1998:745) to describe the evidence of remodeling of a micro-polish. The most recent cutting events are represented by the most sharply defined striate. This "layer cake" sequence of micro-wear traces is consistent with Kay's description of additive or depositional polishes (Kay 1998:756-758).

The use-wear evidence on this artifact is generally associated with cutting tools used for meat processing. Contact with bone could have caused the broader striations. Because of its shallow provenience and its intensive use-history, it is likely this tool was "curated" and used over a long period of time.

## Fire-cracked Rock

Only nine pieces of fire-cracked rock (FCR) (total weight of 640 grams, 71 grams per piece) were collected from the Woodland period midden. These pieces of fire-altered ferruginous sandstone were found at various depths with no concentration in the midden itself.

The few pieces of FCR indicate that indirect or hot-rock cooking was not widely used at the Browning site. This, along with the paucity of pottery, creates a problem when trying to explain how plant materials were processed at the Browning site. The surviving plant remains are mainly nut shells (hickory). When I was a kid, a favorite cake was hickory nut. But it took the whole family with hammers, small nails, and lots of sore fingers, to pry enough meat to sprinkle a few morsels on top of a cake. The concept of crushing the hickory nuts, then boiling them to separate the oil makes lots of sense—if one can explain how the prehistoric people accomplished this feat. Without pottery, people could dig a hole in the ground, pour the crushed nuts and water in, then add heated rocks. But the absence of abundant FCR at the site makes this explanation unlikely.

## Ground stone tools

The first ground stone tool came from ST 5 (20-40 cm) and was 12 x 8 x 4.5 cm in length, width, and thickness and was made from a piece of layered red and yellow sandstone. There was a shallow concave grinding surface on one side. A second tool was from TU 1 (50-60 cm) and measured 7 x 5.5 x 3 cm in length, width, and thickness, and was made of a coarse grained ferruginous sandstone. One side had a smooth 2 cm depression on one side and a rough 3 cm depression on the other.

A third ground stone tool (TU 3, 40-50 cm) was made from red hematite (4.4 x 2.9 x 1.3 cm). This tool was probably used as a pigment rock as one edge was smoothed, showing striations, and one side was smoothed with incised parallel lateral lines. The final ground stone tool (TU 7, 40-50 cm, and 7 x 9 x 3 cm in length, width, and thickness) was made from coarse yellow sandstone. Three edges were ground and thinned, indicating some type of grinding or polishing activity.

The small sample of grinding implements, coupled with the absence of seeds in the floral remains (see below), indicate that processing small seeds was not commonplace at the Browning site. The large amount of charred nut, especially hickory, however, could have been processed without any formal tools, thus leaving little evidence of the process. They may have also been cracked/reduced at the source, reducing transportation costs back to the site.

**Prehistoric Pottery**

Only eight plain body sherds were recovered from the excavations (Figure 7). Six of the sherds were located in the central portion of the site in the area where all of the arrow points were found. Five of the sherds were found in the zone between 20-40 cm bs, with two falling between 10-20 cm and one from 50-60 cm. Two sherds from the Browning site were submitted for instrumental neutron activation analysis to determine the manufacturing locale of the pottery; they were apparently made with local clays (Appendix 3).

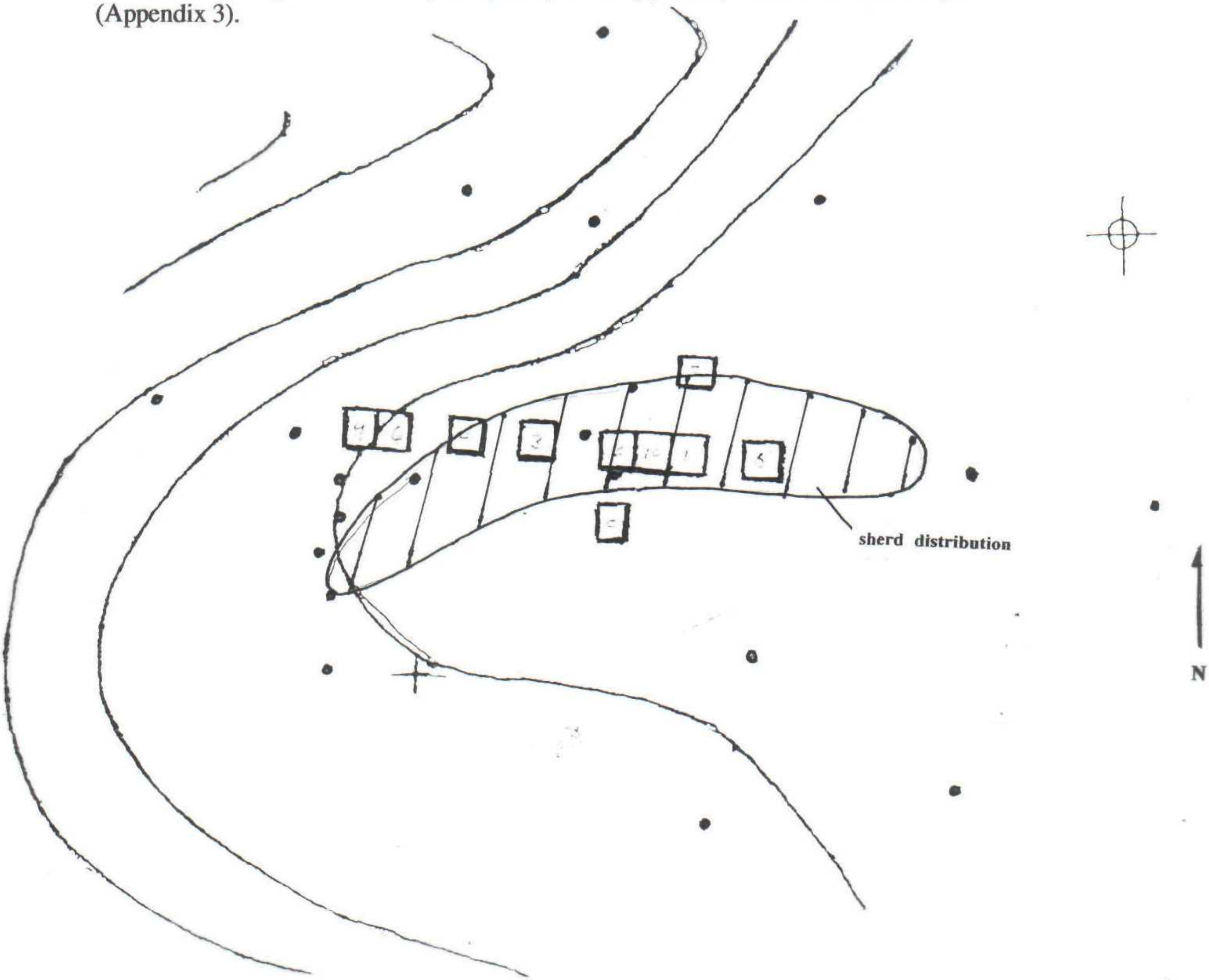


Figure 7. Distribution of pottery sherds at the Browning site.

Sherd thickness was between 4.8 mm and 10.0 mm with the average thickness being 8.8 mm. Temper was as follows: one with bone and grog, and seven with only grog (crushed sherd) inclsuions. Fifty percent of the eight sherds had crushed sandstone inclusions; one sherd had visible carbonized plant remains and also had a contorted paste.

All eight sherds had a sandy clay paste with visible medium-sized sand grains but none had amounts that made them feel gritty. This is understandable since most clay sources in East Texas, especially those formed in situ, have varying amounts of sand. Whether the ceramic-manufacturing technology prevailing at the time favored these sandy clays is not known, but a sandy paste seems to be more prevalent in earlier ceramics in East Texas than in later (after ca. A.D. 900) prehistoric Caddo contexts. The addition of crushed sandstone could have also been a source of some of the sand particles.

Both the exterior and interior surfaces of the sherds had been smoothed and the sherds were all well-fired. Because no bases were found, it is unknown if the vessels had flat or rounded bottoms. Three sherds were from vessels that had been incompletely oxidized during firing and five had been completely oxidized. Almost 63% showed evidence of having been cooled in a high oxygen atmosphere while the remainder had been cooled in a reduced or low oxygen atmosphere.

In summary, these sherds from the Browning site would have been indistinguishable from sherds on a typical Caddo site in the region. But, in fact, they came from deposits that had small Gary dart points, Friley arrow points, and a radiocarbon intercept date of AD 685—plus OCR dates that indicate the main occupation occurred between AD 359-817—well within the Woodland period time frame. These bits of information suggests that pottery-making was introduced sometime during the Woodland period occupation at the Browning site, probably toward the later end of the Woodland period itself. Whether this pottery tradition later evolved into what we call Caddo prehistory is a research question that needs more study. Since this sample of pottery does not correspond to the kinds and frequency of sherds from Fourche Maline Culture sites to the north or sites of the Mossy Grove Culture to the south, perhaps the Browning site falls into what has been identified as the Woodland period Mill Creek Culture (Perttula and Nelson 2003) in the Sabine and Big Cypress stream basins.

## Fired Clay

Forty-six irregular and rounded bits of fired clay were collected from the western end of the site around TU 4, 6, and 9. Most were red in color but several were gray with dark grayish-brown cores. The largest size was 3 x 2 cm in length and width, but most were smaller, and none had cane or grass impressions. This area also contained an ash deposit (that contained historic artifactual materials and burned bone) and probably represented the remains of a historic chimney.

**Charred Plant Remains,** *with contributions from Phil Dering*

Charred plant remains consisted of 43.1 grams of charred nutshell and 30.4 grams of charred wood. The zone of greatest concentration of charred nutshell was from 40-50 cm bs (Figure 8). Most of the charred wood came from the west end of the site around the remains of a historic chimney and was concentrated in the 20-30 cm level (Figure 9).

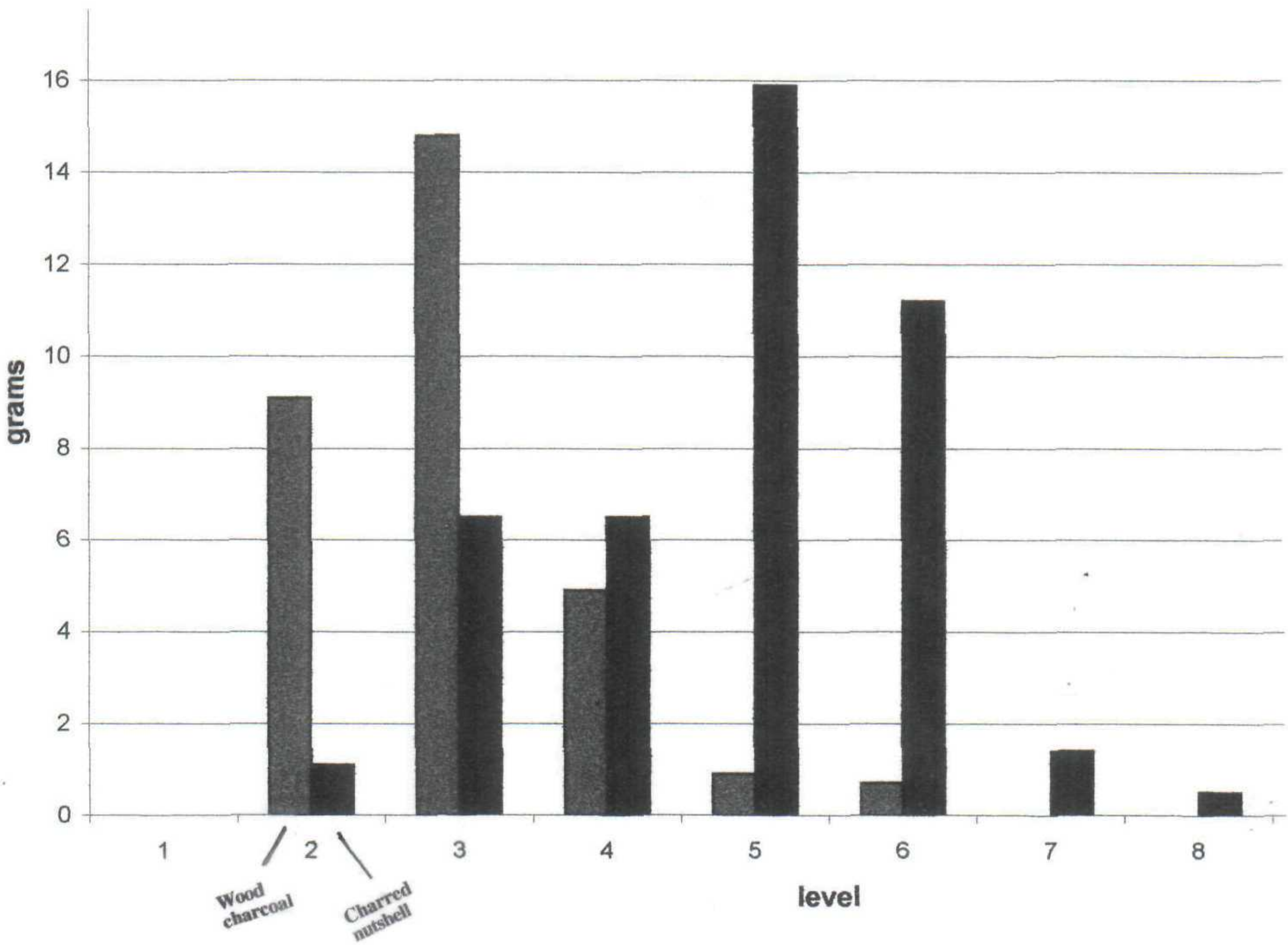


Figure 8. Vertical distribution of wood charcoal and charred nutshell.

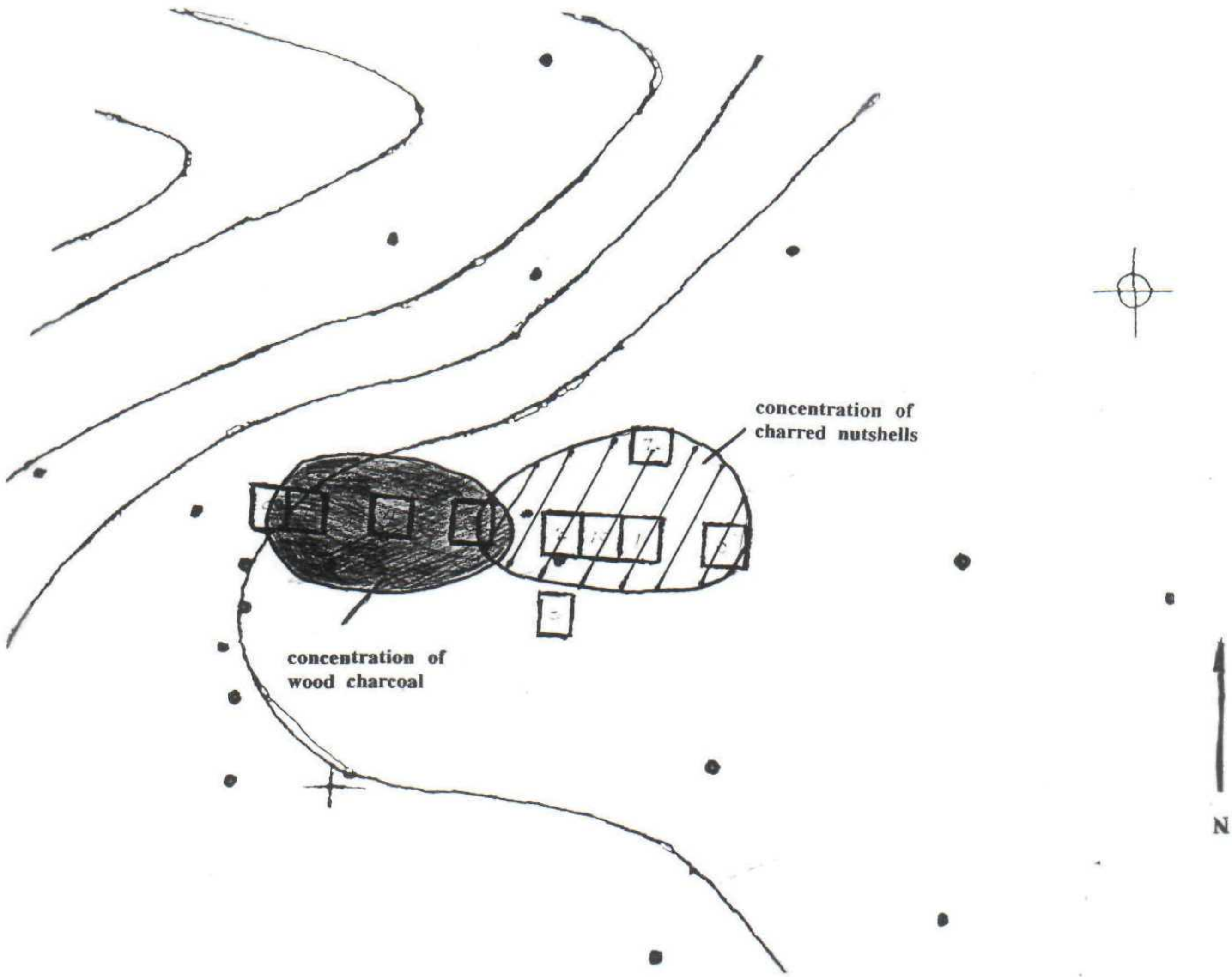


Figure 9. Spatial distribution of wood charcoal and charred nutshell concentrations.

A 19 liter flotation sample was taken from the midden zone in Unit 1. The light fraction was submitted to Phil Dering (Shumla Archeobotanical Services), with the results of the analysis summarized in Table 5.

**Table 5. Plant remains from Unit 1, Flotation Light Fraction.**

| Provenience | Name | Common | Part | Count | Wt(g) |
|---|---|---|---|---|---|
| | | | | | |
| TU 1, Level 30-40 cm | Quercus sp. | Oak | Wood | 18 | 0.1 |
| TU 1, Level 40-50 cm | Carya sp. | Hickory | Nut | 10 | 0.1 |
| TU 1, Level 50-60 cm | Carya sp. | Hickory | Nut | 8 | 0.1 |
| | | | | | |

**Nineteenth Century Artifacts from the Browning site (41SM195A),** *with contributions by Timothy K. Perttula*

A small assemblage of nineteenth century glass and ceramic artifacts, along with a few pieces of metal, have been recovered in archaeological investigations at the Browning site (41SM195A) (Table 6). These include aqua glass sherds, plain whiteware rim and body sherds, plain porcelain body sherds, various decorated whitewares, plain and decorated yellow ware, and one stoneware pipe sherd. The few decorated whiteware and yellowware vessel sherds suggest that the historic occupation at 41SM195-A took place between ca. 1830-1860.

**Table 6. Provenience of Historic Ceramic and Glass Artifacts from the Browning site (41SM195A).**

| Provenience | Glass | Whiteware | | | Stoneware Pipe |
|---|---|---|---|---|---|
| | | Plain Rim | Plain Body | Decorated | |
| Surface | 1 | 2 | 13 | 2 | |
| ST 4, 0-20 | 1 | | | | |
| ST 8, 20-40 | | | 1 | | |
| ST 9, 0-20 | | | 1 | | |
| ST 12, 0-20 | | | 1 | | 1 |
| ST 19, 0-17 | | | | 1* | |
| U. 1, 0-10 | | | 1 | 1 | |
| U. 1, 10-20 | | 1 | 5 | | |
| U. 2, 0-10 | | 1 | 1 | | |
| U. 2, 40-50 | | 1 | | | |
| U. 3, 0-10 | | | 1 | 1 | |
| U. 3, 10-20 | | | 1 | | |
| U. 4, 0-10 | | | 2 | 1 | |
| U. 5, 0-10 | | 1 | | | |

**Table 6. Provenience of Historic Ceramic and Glass Artifacts from the Browning site (41SM195A), cont.**

| Provenience | Glass | Whiteware | | | Stoneware Pipe |
|---|---|---|---|---|---|
| | | Plain Rim | Plain Body | Decorated | |
| U. 5, 10-20 | | | 1 | 1 | |
| U. 6, 0-10 | | | | 1* | |
| U. 6, 10-20 | 1 | | 6** | 1 | |
| U. 6, 20-30 | | | 1 | | |
| U. 7, 0-10 | | | | 3 | |
| U. 7, 10-20 | | 1 | | 1 | |
| U. 8, 0-10 | | 1 | 1 | 1* | |
| U 9, 0-10 | | | 1 | | |
| U 9, 10-20 | | 2 | 1 | 2 | |
| U 9, 20-30 | | | 1 | | |
| U 10, 0-10 | | 1 | 1 | | |
| U 10, 10-20 | | | 2 | | |
| U 10, 20-30 | | 1 | | | |
| Totals | 3 | 12 | 42 | 16 | 1 |

* includes yellow ware ** includes porcelain

Most of the artifacts from the Browning site are refined earthenwares (n=65), namely whiteware (see Table 6). These sherds are probably of English manufacture, and date from ca. 1830-1860 (see Majewski and O'Brien 1987; Hunter and Miller 1994).

There are three blue shell-edged plate rim sherds from the site (Figure 10, lower row), two from the surface and the third from Unit 3 (0-10 cm bs). All three rims are unscalloped with impressed lines. These shell-edged plates were manufactured between ca. 1830-1860 (Hunter and Miller 1994).

Figure 10. Refined earthenwares from the Browning site.

The transfer-printed sherds (n=3) in Units 1, 7, and 9 have blue floral motifs. The hand-painted sherds in Unit 4 (n=1) and Unit 6 (n=1), have blue hand-painted rim bands, while the Unit 9 hand-painted rim has a black rim band and at least one dark green painted leaf (see Figure 10, top row). Annular ware sherds (n=4) were found in Unit 5 and 7; one has blue bands, two have yellow-white-blue bands (see Figure 10, lower row), and the other has black and white bands.

Two pieces of porcelain were found in Unit 6 (10-20 cm bs). These are probably from a tea cup.

Yellow ware sherds, both plain (n=2) and decorated (n=1), are present in Units 6 and 8 as well as ST 19. The example from Unit 8 also has yellow and blue annular lines in a band around the rim. Yellow ware began to be produced in the late 1820s in England, but by the 1840s it was also being manufactured in the United States, particularly the Midwest (Leibowitz 1985:4). The peak production of yellow ware vessels was in the 1860s and 1870s.

The stoneware pipe from ST 12 appears to be from an elbow-shaped pipe with a light glaze on both interior and exterior surfaces. It is probably from a reed stem pipe into which a replaceable wooden stem would have been inserted by the smoker. Similar reed stem pipes have been documented from the ca. 1852-1857 James Franks farmstead on the south Sulphur River in Delta County, Texas (Perttula 1989:98), and the ca. 1837-1846 Milligan Point (41CP276) site on Big Cypress Creek (Nelson and Perttula 2003).

Finally, there are three pieces of aqua-colored glass. They include one thin piece from the surface that may be a piece of window glass and two small and very thin glass sherds—but not pieces of window glass—from ST 4 and Unit 6 (see Table 6).

Figure 11. Metal artifacts from the Browning site

There are also three pieces of metal in the small collection of historic artifacts from the Browning site. One is a machine cut nail (Unit 6, 20-30 cm bs), commonly produced after 1820 and until ca. 1891 (Wells 1998), and another piece from the same unit (Unit 6, 0-10 cm bs) is a metal spoon handle. The last metal artifact (Unit 5, 0-10 cm bs) is a small horse tack buckle (Figure 11).

No definite conclusions could be reached about the function of the historic component at the Browning site, other than to note that the recovered artifacts—principally ceramics—indicate that it was occupied prior to the Civil War. The decorated whiteware ceramics include annular ware and blueshell-edge, and there are also a few yellowware sherds (see Figure 8). Metal objects recovered included a spoon handle, metal buckle, and a cut-nail (see Figure 9). A small concentration of ash and fired clay in one excavation unit may mark a possible chimney location. If this was indeed a house location it was probably of short duration. No other known historic structures dating to this time period, plus the distance from any known road make this setting unusual and the possibility that this could have been a Cherokee residence cannot be ruled out.

## FAUNAL ANALYSIS, *by LeeAnna Schniebs*

Investigations at the Browning site (41SM195A), a Woodland period site in Smith County, Texas, yielded 93 faunal specimens. Total weight of the collection is 31.25 grams. Faunal material was recovered from seven shovel tests and nine test units, including heavy fraction flotation and fine screen samples. Depths range from 0 to 60 centimeters below surface (cm bs). The following sections discuss the methods employed in the faunal analysis, results of taxonomic identification and quantification, and distribution of these remains.

### Methodology

All prehistoric vertebrate remains were inventoried and weighed. Excel for Windows was used to manipulate the generated data. An Ohaus digital scale, Model CT600-S, was used to record bone weight. All fragments recovered were analyzed by the author, using comparative collections on loan from or housed at the Institute of Applied Sciences, Zooarchaeology Lab, University of North Texas, Denton, Texas. Occasional supplements were required, using conventional osteological keys such as Olsen (1964), Gilbert (1980), and Schmid (1972). Identifications were made to the most specific category possible depending on condition of the bone and available comparative material. Only positive identifications resulted in the assignment of elements to genus or species.

Standard zooarchaeological methods have been used. The animal bones were inventoried and bagged, then submitted for identification and quantification. Both unidentifiable and identifiable pieces were analyzed in similar fashion. That is, the same attributes were recorded: taxon, element and portion of that element, anatomical location of the element, condition of the bone and any notes on age, taphonomy, burning or breakage patterns, and presence of modification if applicable. Provenience information was also recorded.

Quantification of the assemblage is summarized as number of identified specimens per taxon (NISP) and as minimum number of individuals (MNI) for identified elements. MNI estimates were calculated according to the most frequently occurring element, based on symmetry and element portion (Munzel 1986). In the mammalian class, teeth were used whenever possible. In some cases, complete long bones and proximal or distal ends were considered. In other cases, the presence of a single element constituted an MNI of one.

The faunal data tables in this section of the article are standard species lists with the number of occurrences for each animal. Those specimens regarded as unidentifiable (those coded to only class) have been consolidated into a few general categories. Elements of nondiagnostic skeletal value (unidentifiable fragments, ribs, vertebrae, and long bone shafts; Olsen 1964), are coded in an indeterminate category by class and size range. For example, specimens counted as "unidentifiable mammal" are from indeterminate-size mammals, "medium mammal" is at least dog-size, and "large mammal" refers to a deer-size mammal. "Indeterminate vertebrate" includes the bones of unidentifiable class. Recording these specimens in a size category enables the most precise level of observation as the specimen allows. In small samples, taking note of weight and the size categories of nondiagnostic elements broadens the function of the bone assemblage. However, percentages referred to in this report are calculated by number of bones (NISP) rather than weight. A complete inventory of the faunal collection from the Browning site (41SM195A) can be found in Table 7.

## Results

The sample is comprised of 13 indeterminate vertebrate bones, 12 unidentifiable mammal bones, five medium mammal bones, 54 unidentifiable large mammal bones, three medium artiodactyl bones, and six deer tooth fragments. The following section describes the vertebrate taxa recovered from the Browning site (41SM195A). Mammalia is the only taxonomic class identified. Number of identified specimens (NISP) and minimum number of individuals (MNI) for each taxon are summarized in Table 8, as are weights for each taxon and percentages of the assemblage. Composition of anatomical elements can be found in Table 9.

**Table 7. Inventory of Browning site faunal sample.**

| Unit | Depth | Qty | Taxon | Elem/Por | Side | Age | Taphonom | Burn | Gnaw | Mod | Wt/g | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ST 2 | 0to20 | 1 | lg mam | l.b.frag | | | exfol | wh | | | 0.8 | spir frac |
| ST 6 | 40to60 | 1 | mammal | unid | | | exfol | wh | | | 0.1 | |
| ST 8 | | 1 | med mam | tooth frg | | | absent | not | | | 0.3 | cf canid |
| ST 13 | 0to20 | 1 | med mam | unid | | | exfol | not | | | 0.4 | |
| ST 14 | 40to60 | 2 | mammal | unid | | | exfol | wh | | | 0.2 | |
| ST 16 | 20to40 | 1 | lg mam | l.b.frag | | | exfol | wh | | | 2.2 | spir frac |
| ST 19 | 0to17 | 1 | mammal | unid | | | absent | blk | | | 0.1 | |
| U 1 | 10to20 | 3 | lg mam | l.b.frag | | | abrade,exf | not | | | 1.9 | |
| U 2 | 0to10 | 3 | lg mam | unid | | | absent | wh | | | 0.3 | |
| U 3 | 10to20 | 1 | lg mam | unid | | | exfol | blk | | | 0.3 | |
| U 3 | 30to40 | 2 | lg mam | unid | | | absent | blk | | | 0.2 | |
| U 3 | 40to50 | 4 | lg mam | rib frg | | | exfol | not | | | 2 | |
| U 3 | 50to60 | 1 | med mam | unid | | | exfol | not | | | 0.1 | |
| U 4 | 0to10 | 1 | lg mam | l.b.frag | | | etch | blk | | | 0.2 | |
| U 4 | 0to10 | 1 | lg mam | l.b.frag | | | absent | char | | | 1.4 | spir frac |
| U 4 | 0to10 | 1 | lg mam | unid | | | absent | not | | | 0.2 | spir frac |
| U 4 | 20to30 | 1 | lg mam | l.b.frag | | | exfol | wh | | | 0.2 | |
| U 5 | 20to30 | 1 | med art | mtpod shft frg | | | absent | wh | | | 0.5 | |
| U 6 | 0to10 | 2 | lg mam | l.b.frag | | | absent | wh | | | 0.4 | spir frac |
| U 6 | 0to10 | 2 | lg mam | rib frg | | | absent | wh | | | 1.1 | |
| U 6 | 10to20 | 1 | lg mam | unid | | | abrade,exf | not | rodent | | 1.5 | |
| U 6 | 10to20 | 2 | lg mam | unid | | | absent | not | | | 0.9 | |
| U 6 | 10to20 | 1 | lg mam | l.b.frag | | | abrade,exf | wh | | | 0.4 | |
| U 6 | 10to20 | 4 | lg mam | unid | | | absent | wh | | | 0.7 | |
| U 6 | 10to20 | 1 | lg mam | alveolar frg | | | exfol | wh | | | 0.5 | |
| U 6 | 10to20 | 1 | med art | phx3 frg | R | | abrade,exf | not | | | 0.8 | |
| U 6 | 20to30 | 3 | lg mam | unid | | | abrade,exf | wh | | | 1.8 | |
| U 6 | 20to30 | 1 | med art | phx3 frg | L | | abrade,exf | char | | | 0.2 | |
| U 7 | 10to20 | 1 | lg mam | l.b.frag | | | exfol | not | | | 2.4 | spir frac |
| U 7 | 20to30 | 1 | lg mam | podial frg | | | exfol | wh | | | 0.3 | |
| U 7 | 30to40 | 2 | deer | tooth frg | | | absent | char | | | 0.1 | |
| U 7 | 50to60 | 1 | deer | tooth frg | | | absent | char | | | 0.2 | |
| U 8 | 10to20 | 2 | lg mam | l.b.frag | | | exfol | not | | | 1.3 | |
| U 8 | 10to20 | 2 | lg mam | unid | | | exfol | not | | | 0.1 | |
| U 8 | 20to30 | 1 | lg mam | unid | | | exfol | wh | | | 1 | |
| U 9 | 0to10 | 1 | lg mam | l.b.frag | | | exfol | wh | | | 0.6 | spir frac |
| U 9 | 10to20 | 1 | lg mam | unid | | | exfol | not | | | 1.1 | |
| U 9 | 10to20 | 1 | lg mam | l.b.frag | | | absent | wh | | | 0.3 | spir frac |
| U 9 | 10to20 | 4 | lg mam | unid | | | absent | wh | | | 0.9 | |
| U 9 | 20to30 | 1 | lg mam | l.b.frag | | | exfol | wh | | | 0.8 | spir frac |
| U 9 | 20to30 | 2 | lg mam | unid | | | exfol | wh | | | 0.5 | |
| U1 FS | 20to30 | 1 | lg mam | unid | | | exfol | blk | | | 0.8 | cf acetab frg |
| U1 FS | 30to40 | 1 | lg mam | l.b.frag | | | exfol | wh | | | 0.6 | |
| U1 FS | 30to40 | 6 | mammal | unid | | | exfol | wh | | | 0.1 | |
| U1 FS | 30to40 | 1 | med mam | unid | | | exfol | wh | | | 0.1 | |
| U1 FS | 40to50 | 2 | deer | tooth frg | | | absent | wh | | | 0.01 | |
| U1 FS | 40to50 | 1 | mammal | unid | | | absent | wh | | | 0.01 | |
| U1 FS | 40to50 | 3 | unid | unid | | | absent | wh | | | 0.05 | prob mammal |
| U1 FS | 50to60 | 1 | deer | tooth frg | | | absent | not | | | 0.05 | |
| U1 FS | 50to60 | 1 | mammal | unid | | | absent | wh | | | 0.1 | |
| U1 FS | 50to60 | 7 | unid | unid | | | absent | wh | | | 0.05 | |
| U1 HF | 30to40 | 3 | unid | unid | | | absent | wh | | | 0.03 | prob mammal |
| U1 HF | 40to50 | 1 | med mam | unid | | | absent | wh | | | 0.05 | |

**Table 8. Taxonomic composition of Browning site faunal sample.**

| Scientific Name | Common Name | NISP | MNI | % of Site Sample | Wt./g |
|---|---|---|---|---|---|
| Vertebrata (indeterminate) | unidentifiable | 13 | | 14 | 0.13 |
| Mammalia | unid. mammal | 12 | | 13 | 0.61 |
| Mammalia (medium) | med. mammal | 5 | 1 | 5 | 0.95 |
| Mammalia (large) | lg. mammal | 54 | | 59 | 27.7 |
| Artiodactyla (medium) | deer-size artiodactyl | 3 | | 3 | 1.5 |
| *Odocoileus sp.* | deer | 6 | 1 | 6 | 0.36 |
| | TOTAL | 93 | | 100 | 31.25 |

**Table 9. Composition of faunal elements from the Browning site.**

| Scientific Name | Common Name | Element | | | | | |
|---|---|---|---|---|---|---|---|
| | | unid | tooth frag | cranial | axial | long bone | pod/phx |
| Vertebrata (indeterminate) | unidentifiable | 13 | | | | | |
| Mammalia | unid. mammal | 12 | | | | | |
| Mammalia (medium) | med. mammal | 4 | 1 | | | | |
| Mammalia (large) | lg. mammal | 28 | | 1 | 6 | 18 | 1 |
| Artiodactyla (medium) | deer-size artiodactyl | | | | | 1 | 2 |
| *Odocoileus sp.* | deer | | 6 | | | | |
| | TOTAL | 57 | 7 | 1 | 6 | 19 | 3 |

NOTE:
"Cranial" inc. one alveolar fragment.
"Axial" inc. rib fragments.
"Long Bone" inc. unid. fragments and one metapodial fragment.
"Pod/phx" inc. extreme lower leg bones (one podial frag and two phalange frags).

Class Mammalia

Order Artiodactyla, Family Cervidae

Deer (*Odocoileus* sp.) is represented by six tooth enamel fragments. Three fragments were recovered from fine screen samples taken in two levels of Unit 1, and three pieces came from two levels of Unit 7. The three medium artiodactyl bones from Units 5 and 6 and the 54 unidentifiable large mammal bone fragments from two shovel test pits and eight excavation units are most likely the remains of deer as well.

Whitetail deer (*Odocoileus virginianus*) is the only species in Family Cervidae that occupies the project area, being found in forests, swamps, and open brushy areas nearby (Burt and Grossenheider 1980). They are smaller in size as compared to the larger mule deer of the western United States. Deer is the most common large game animal recovered from Woodland and Caddo archaeological contexts in the region (see Perttula and Nelson 2004: Tables 54 and 55) and also one of the main subsistence animals. Caddos were adept imitators of deer, and a hunter disguised with the antlers and hide of a deer was able to approach his quarry closely, and even to attract it to himself (Newcomb 1993).

The collection also includes five bone fragments from an animal at least the size of an unidentifiable medium mammal. Because of fragmentation, specific identification was not recorded. However, it is noted in the comments (see Table 7) that the one tooth fragment from Shovel Test 8 compares favorably to canid. The project area is included in the range of the coyote (*Canis latrans*), preferring prairies, open woodlands, brushy, or boulder-strewn areas (Burt and Grossenheider 1980). This animal is hunted for its pelt as well as because it is a nuisance. The domestic dog (*Canis familiaris*) had arrived by Archaic times (Newcomb 1993), and is often found in prehistoric contexts.

## Sample Condition

In general, the faunal sample from the Browning site (41SM195A) is very fragmented. This probably explains the low rate of specimen identification. Taphonomic patterns are absent on 47 specimens (Table 10). Surface observations on the remaining fragments include exfoliation (n=35), abrasion and exfoliation (n=10), and root etching (n=1). Seventy-one fragments are burned (Table 11), 76% of the site collection. This is probably the result of processing and subsequent trash disposal. Distribution of these burned remains can be found in Table 12. Scavenging activities are practically nonexistent: only one unidentifiable large mammal bone from Unit 6 (10-20 cm bs) is rodent gnawed.

**Table 10. Summary of taphonomic patterns on Browning site faunal assemblage.**

| Scientific Name | Common Name | Type of Taphonomy | | | |
|---|---|---|---|---|---|
| | | absent | root etch | exfoliated | abrade + exfol |
| Vertebrata (indeterminate) | unidentifiable | 13 | | | |
| Mammalia | unid. mammal | 3 | | 9 | |
| Mammalia (medium) | med. mammal | 2 | | 3 | |
| Mammalia (large) | lg. mammal | 22 | 1 | 23 | 8 |
| Artiodactyla (medium) | deer-size artiodactyl | 1 | | | 2 |
| *Odocoileus sp.* | deer | 6 | | | |
| | TOTAL | 47 | 1 | 35 | 10 |

**Table 11. Summary of burning patterns on Browning site faunal specimens.**

| Scientific Name | Common Name | Degree of Burning | | | |
|---|---|---|---|---|---|
| | | not burn | charred | black | white |
| Vertebrata (indeterminate) | unidentifiable | | | | 13 |
| Mammalia | unid. mammal | | | 1 | 11 |
| Mammalia (medium) | med. mammal | 3 | | | 2 |
| Mammalia (large) | lg. mammal | 17 | 1 | 5 | 31 |
| Artiodactyla (medium) | deer-size artiodactyl | 1 | 1 | | 1 |
| *Odocoileus sp.* | deer | 1 | 3 | | 2 |
| | TOTAL | 22 | 5 | 6 | 60 |

**Table 12. Distribution of Browning site burned faunal specimens by unit and level.**

| Unit | Scientific Name | Common Name | Provenience and Depth (cm bs) | | | | | |
|---|---|---|---|---|---|---|---|---|
| Shovel Tests (B=6) | | | ST 2 | ST 6 | ST 14 | ST 16 | ST 19 | |
| | | | 0to20 | 40to60 | 40to60 | 20to40 | 0to17 | |
| | Mammalia | unid. mammal | | 1 | 2 | | 1 | |
| | Mammalia (large) | lg. mammal | 1 | | | 1 | | |
| | | | | | | | | |
| Unit 1 (B=27) | | | 20to30 FS | 30to40 FS | 40to50 FS | 50to60 FS | 30to40 HF | 40to50 HF |
| | Vertebrata (indeterminate) | unidentifiable | | | 3 | 7 | 3 | |
| | Mammalia | unid. mammal | | 6 | 1 | 1 | | |
| | Mammalia (medium) | med. mammal | | 1 | | | | 1 |
| | Mammalia (large) | lg. mammal | 1 | 1 | | | | |
| | *Odocoileus sp.* | deer | | | 2 | | | |
| NOTE: "FS"= fine screen; "HF"= heavy fraction. | | | | | | | | |
| | | | | | | | | |
| Unit 2 (B=3) | | | 0to10 | | | | | |
| | Mammalia (large) | lg. mammal | 3 | | | | | |
| | | | | | | | | |
| Unit 3 (B=3) | | | 10to20 | 30to40 | | | | |
| | Mammalia (large) | lg. mammal | 1 | 2 | | | | |
| | | | | | | | | |
| Unit 4 (B=3) | | | 0to10 | 20to30 | | | | |
| | Mammalia (large) | lg. mammal | 2 | 1 | | | | |
| | | | | | | | | |
| Unit 5 (B=1) | | | 20to30 | | | | | |
| | Artiodactyla (medium) | deer-size artiodactyl | 1 | | | | | |
| | | | | | | | | |
| Unit 6 (B=14) | | | 0to10 | 10to20 | 20to30 | | | |
| | Mammalia (large) | lg. mammal | 4 | 6 | 3 | | | |
| | Artiodactyla (medium) | deer-size artiodactyl | | | 1 | | | |
| | | | | | | | | |
| Unit 7 (B=4) | | | 20to30 | 30to40 | 50to60 | | | |
| | Mammalia (large) | lg. mammal | 1 | | | | | |
| | *Odocoileus sp.* | deer | | 2 | 1 | | | |
| | | | | | | | | |
| Unit 8 (B=1) | | | 20to30 | | | | | |
| | Mammalia (large) | lg. mammal | 1 | | | | | |
| | | | | | | | | |
| Unit 9 (B=9) | | | 0to10 | 10to20 | 20to30 | | | |
| | Mammalia (large) | lg. mammal | 1 | 5 | 3 | | | |

In addition to weathering, burning, and gnawing, spiral fracturing was recorded during the analysis. Spiral fractures are the result of impact, such as striking with a hammerstone or breaking on an anvil. It is a common, expedient technique used in tool manufacturing, bone processing, and refuse disposal. Usually associated with large mammal long bones, spiral fracturing can also occur during trampling, carnivore gnawing, or any other severe impacts not necessarily associated with human activity. Ten specimens from two shovel tests and four test units are recorded as spirally fractured.

## Distribution

This section organizes the Browning site (41SM195A) faunal collection according to its recovery by unit type and number. Distribution of faunal remains by provenience is summarized in Tables 13 and 14.

**Table 13. General distribution of Browning site faunal collection.**

| Unit | Scientific Name | Common Name | Provenience | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Shovel Tests | | | ST 2 | ST 6 | ST 8 | ST 13 | ST 14 | ST 16 | ST 19 | | |
| | Mammalia | unid. mammal | | 1 | | | 2 | | 1 | | |
| | Mammalia (medium) | med. mammal | | | 1 | 1 | | | | | |
| | Mammalia (large) | lg. mammal | 1 | | | | | 1 | | | |
| | | | | | | | | | | | |
| Test Units | | | U 1 | U 2 | U 3 | U 4 | U 5 | U 6 | U 7 | U 8 | U 9 |
| | Mammalia (medium) | med. mammal | | | 1 | | | | | | |
| | Mammalia (large) | lg. mammal | 3 | 3 | 7 | 4 | | 16 | 2 | 5 | 10 |
| | Artiodactyla (medium) | deer-size artiodactyl | | | | | 1 | 2 | | | |
| | *Odocoileus sp.* | deer | | | | | | | 3 | | |
| | | | | | | | | | | | |
| Fine Screen and and Heavy Fraction Flotation | | | U1 FS | U1 HF | | | | | | | |
| | Vertebrata (indeterminate) | unidentifiable | 10 | 3 | | | | | | | |
| | Mammalia | unid. mammal | 8 | | | | | | | | |
| | Mammalia (medium) | med. mammal | 1 | 1 | | | | | | | |
| | Mammalia (large) | lg. mammal | 2 | | | | | | | | |
| | *Odocoileus sp.* | deer | 3 | | | | | | | | |

Shovel Tests

Seven shovel test units (ST 2, 6, 8, 13, 14, 16, and 19) yielded a combined total of eight specimens, including the unidentifiable medium mammal tooth fragment from Shovel Test 8. Depths range from 0-60 cm bs. Taxonomic recovery is comprised of four indeterminate mammal bones, two unidentifiable medium mammal bones, and two

**Table 14. Specific distribution of Browning site faunal specimens by provenience.**

| Unit | Scientific Name | Common Name | Provenience and Depth (cm bs) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Shovel Tests (N=8) | | | ST 2 | ST 6 | ST 8 | ST 13 | ST 14 | ST 16 | ST 19 |
| | | | 0to20 | 40to60 | unknown | 0to20 | 40to60 | 20to40 | 0to17 |
| | Mammalia | unid. mammal | | 1 | | | 2 | | 1 |
| | Mammalia (medium) | med. mammal | | | 1 | 1 | | | |
| | Mammalia (large) | lg. mammal | 1 | | | | | 1 | |
| | | | | | | | | | |
| Unit 1 (N=31) | | | 10to20 | 20to30 FS | 30to40 FS | 40to50 FS | 50to60 FS | 30to40 HF | 40to50 HF |
| | Vertebrata (indeterminate) | unidentifiable | | | | 3 | 7 | 3 | |
| | Mammalia | unid. mammal | | | 6 | 1 | 1 | | |
| | Mammalia (medium) | med. mammal | | | 1 | | | | 1 |
| | Mammalia (large) | lg. mammal | 3 | 1 | 1 | | | | |
| | *Odocoileus sp.* | deer | | | | 2 | 1 | | |
| NOTE: "FS"=fine screen sample; "HF"= flotation heavy fraction | | | | | | | | | |
| | | | | | | | | | |
| Unit 2 (N=3) | | | 0to10 | | | | | | |
| | Mammalia (large) | lg. mammal | 3 | | | | | | |
| | | | | | | | | | |
| Unit 3 (N=8) | | | 10to20 | 30to40 | 40to50 | 50to60 | | | |
| | Mammalia (medium) | med. mammal | | | | 1 | | | |
| | Mammalia (large) | lg. mammal | 1 | 2 | 4 | | | | |
| | | | | | | | | | |
| Unit 4 (N=4) | | | 0to10 | 20to30 | | | | | |
| | Mammalia (large) | lg. mammal | 3 | 1 | | | | | |
| | | | | | | | | | |
| Unit 5 (N=1) | | | 20to30 | | | | | | |
| | Artiodactyla (medium) | deer-size artiodactyl | 1 | | | | | | |
| | | | | | | | | | |
| Unit 6 (N=18) | | | 0to10 | 10to20 | 20to30 | | | | |
| | Mammalia (large) | lg. mammal | 4 | 9 | 3 | | | | |
| | Artiodactyla (medium) | deer-size artiodactyl | | 1 | 1 | | | | |
| | | | | | | | | | |
| Unit 7 (N=5) | | | 10to20 | 20to30 | 30to40 | 50to60 | | | |
| | Mammalia (large) | lg. mammal | 1 | 1 | | | | | |
| | *Odocoileus sp.* | deer | | | 2 | 1 | | | |
| | | | | | | | | | |
| Unit 8 (N=5) | | | 10to20 | 20to30 | | | | | |
| | Mammalia (large) | lg. mammal | 4 | 1 | | | | | |
| | | | | | | | | | |
| Unit 9 (N=10) | | | 0to10 | 10to20 | 20to30 | | | | |
| | Mammalia (large) | lg. mammal | 1 | 6 | 3 | | | | |

unidentifiable large mammal bones. Six fragments are burned, and one is spirally fractured.

Unit 1

Unit 1 yielded a total of 31 faunal specimens. Three large mammal long bone fragments were recovered from 1/4-inch screening between 10-20 cm bs. These specimens are not burned, but are abraded and exfoliated. Twenty-four fragments came from fine screen samples taken in four levels (20-60 cm bs), and four fragments were found in heavy fraction flotation samples taken in two levels (30-50 cm bs). The unit sample is dominated by indeterminate vertebrate (n=13). The remainder of the collection is comprised of indeterminate vertebrate, unidentifiable medium mammal, unidentifiable large mammal, and deer. Twenty-seven specimens from the fine screen and heavy fraction samples are burned.

Unit 2

Three unidentifiable large mammal bones were recovered from 0-10 cm bs in Unit 2. These fragments are burned.

Unit 3

Four levels in Unit 3 had eight faunal specimens. One large mammal bone came from 10-20 cm bs, and two large mammal bones came from 30-40 cm bs. These three fragments are burned. Level 5 (40-50 cm bs) yielded four large mammal rib fragments, and one unidentifiable medium mammal bone was found in level 6 (50-60 cm bs).

Unit 4

Three large mammal bones were recovered from level 1 (0-10 cm bs), and one large mammal long bone fragment came from 20-30 cm bs. Three pieces are burned, and two pieces are spirally fractured.

Unit 5

One medium artiodactyl metapodial shaft fragment was recovered from 20-30 cm bs in this unit. The specimen is burned white.

Unit 6

Three levels in Unit 6 had 18 faunal specimens. Two large mammal long bone fragments and two large mammal rib fragments came from 0-10 cm bs. Nine large mammal bones and one medium artiodactyl phalanx fragment was found in level 2 (10-20 cm bs). Three unidentifiable large mammal bones and another medium artiodactyl phalanx fragment was recovered from the third level (20-30 cm bs). Fourteen specimens from this unit are burned, one fragment is rodent gnawed, and two pieces are spirally fractured.

Unit 7

Four levels in Unit 7 contained five faunal specimens. The sample is comprised of two large mammal bones (10-20 and 20-30 cm bs), and three deer tooth fragments (30-40 and 50-60 cm bs). Four specimens are burned, including the deer tooth fragments. The large mammal long bone fragment from level 2 is spirally fractured.

Unit 8

Four large mammal bone fragments were recovered from level 2 (10-20 cm bs), and one large mammal bone came from level 3 (20-30 cm bs) in this unit. The specimen from the third level is burned.

Unit 9

Three levels in Unit 9 had 10 large mammal bones. One fragment came from the first level (0-10 cm bs), six pieces came from the second level (10-20 cm bs), and three were found in the third level (20-30 cm bs). Nine specimens are burned, and three are spirally fractured.

## Summary of the Faunal Analysis

The faunal sample from the Browning site (41SM195A) can be considered subsistence debris from the processing of game animals. It reflects a foraging diet supplemented by large game such as deer. The rich natural resources of East Texas were undoubtedly utilized by the occupants of the site, and further investigations could provide more information on the hunting practices of prehistoric peoples during the Woodland period.

## RADIOCARBON AND OCR DATING

A sample of charred nutshell (6.9 grams) collected from TU 1, 40-50 cm bs, was submitted for radiocarbon dating by Beta Analytic, Inc. The conventional age of the sample (Beta-170727) is 1310 ± 70 B.P. The calibrated intercept is A.D. 685, and at two sigma, there is a 95% probability that the calibrated age of the charred nutshell falls between AD 625 to 880 (Stuiver et al. 1998; Talma and Vogel 1993).

Oxidizable Carbon Ratio (OCR) samples were collected from TU 1. The OCR samples were collected in a column starting at 11 cm and continuing at 10-15 cm levels to 56 cm bs, the lowest sediment zone before reaching bedrock. A series of OCR dates from the midden zone (26-46 cm) indicate the midden begin to form after about AD 145, with the dates of ca. AD 357-815 indicating when the Browning site was most intensively occupied in prehistoric times. The sediment data in Table 15 suggests two weakly developed signals of pedogenic influence, sandwiched between two discontinuities (breaks resulting from erosion and/or deposition). The first break between 11 cm and 26 cm would explain the relatively sterile overburden and the second break between 46 cm and 56 cm would explain the geologic events that preceded the present soils.

**Table 15. OCR Dates from Unit 1.**

| Sample Depth (cm) | OCR Date (B.P.) | Conventional Age |
|---|---|---|
| 11 | 457 | A.D. 1493 |
| 26 | 907 | A.D. 1043 |
| 36 | 1135 | A.D. 815 |
| 46 | 1593 | A.D. 357 |
| 56 | 1805 | A.D. 145 |

While the radiocarbon and OCR dates overlap each other, the two procedures are looking at different things in different ways. Radiocarbon analysis was conducted on one item, that being nutshell (see Appendix 1). The OCR analysis was conducted on a collection of organic carbon molecules. Correspondence between the two items has been established to within a 10 cm level—statistically speaking, this leaves open a wide range of possible errors. While the range in possible ages for the nutshell (constituting a closed and finite system) is relatively limited (± 70 years), the correlation to the OCR sample is spread across the 10 cm range. The OCR is measuring a mean of all the organic carbon molecules (constituting an open and potentially infinite system) within the sampled depth

(2 cm thickness for each sample, i.e., 10-12 cm bs for the 11 cm sample listed in Table 15). This sample will likely contain older and younger organic carbon, but statistically the mean age of the organic carbon (presumed to be anthrogenically related), will approximate that discerned by the OCR procedure. Because this level evidences pedogenic characteristics consistent with a surface-related event (in this case presumed to be anthrogenically-related), we may assume that the organic carbon within the sample depth will contain organic carbon that precedes the anthrogenic event as well. Thus, the relationship between the results from the radiocarbon date on a closed system item, and the results from the OCR date on an open system composite, are appropriate for supporting both (Douglas Frink, 200? personal correspondence)

## SUMMARY OF FINDINGS

Briefly, the Browning site (41SM195A) represents a pre-Civil war homestead that was probably only occupied for a brief period of time. This occupation is confined to a small area on the western edge of the landform and is confined to a recent soil zone that covers a buried Woodland prehistoric component.

The Woodland period has been described as a transition period between the Archaic period and later sedentary groups, in this case the Caddo (Story 1990). This period involved technological innovations such as the introduction of the bow and arrow, pottery making, the introduction of agriculture, and a more sedentary way of life with more permanent houses and associated features. So far the Woodland period is poorly known in East Texas and it is not well known in what sequence these innovations were introduced and/or adopted by the Woodland peoples.

There are probably far more of these kinds of Woodland period sites in East Texas than is now realized; some with only small Gary points, others with Gary points and pottery, and others, such as the Browning site, with Gary points, pottery, and arrow points. There are three recorded sites falling into this category within a _ mile radius of the Browning site. The problem in identifying these sites are they are very small, indicating none were used for extended periods of time or by large bands of people. The

Browning site is the only one that has revealed what could be termed a midden, probably indicating a more extended occupation or more repeated usage, although it would be difficult to explain how or why they chose the small midden area on a larger landform to return to each time. Most Woodland sites in this area seem to be located closer to floodplain areas than later occupations, perhaps indicating more reliance on floodplain resources.

Although there is evidence that the Browning site was used for a considerable amount of time, no structures or pit features were identified in the archaeological work conducted to date here. Other Woodland period sites in the area are the Herman Bellew site (41RK222) on Mill Creek (Rogers et al. 2001), which was dated by numerous radiocarbon dates to between 200 B.C. and A.D. 800. Although lacking a distinct midden, the Herman Bellew site yielded ceramics, small Gary dart points, and Friley arrow points, as well as a number of pit features, including several with concentrations of fire-cracked rock. Perttula and Nelson (2004) identified a buried Woodland component at the Broadway site (41SM273), which is located 15 miles to the west of the Browning site, on West Mud Creek, just south of Tyler, Texas. Though no midden was associated with the Woodland period component at the Broadway site, which was radiocarbon-dated to A.D. 300-800, a few sandy and clay paste sherds, Gary and Kent dart points, and Friley/Steiner arrow points were recovered. By comparison, the Browning site had a calibrated intercept date of A.D. 685 and OCR dates indicate the site was first used after around A.D. 145, with the most intensive usage between A.D. 357-815.

The Browning site lies within Frank Schambach's "Trans-Mississippi South," the key to developing his Fourche Maline Culture. (Schambach 2002) This particular biogeographical area with its unique environment supposedly shaped the particular culture he defined as Fourche Maline. While the Browning site falls within this unique (though very broad and varied) area and is contemporaneous with the Fourche Maline culture, especially the later stages of that Woodland period culture, there are important differences.

It is now up to researchers in this area to more carefully look for and try to identify these Woodland period sites in East Texas. We also need to obtain reliable dates from these Woodland period sites, and note traits that can be used to develop distinct cultural phases that can then be used to better define and describe this exciting period of East Texas prehistory.

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**Appendix 1,**
**Radiocarbon Data Form**

# CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-25.3:lab. mult=1)

**Laboratory number:** **Beta-170727**

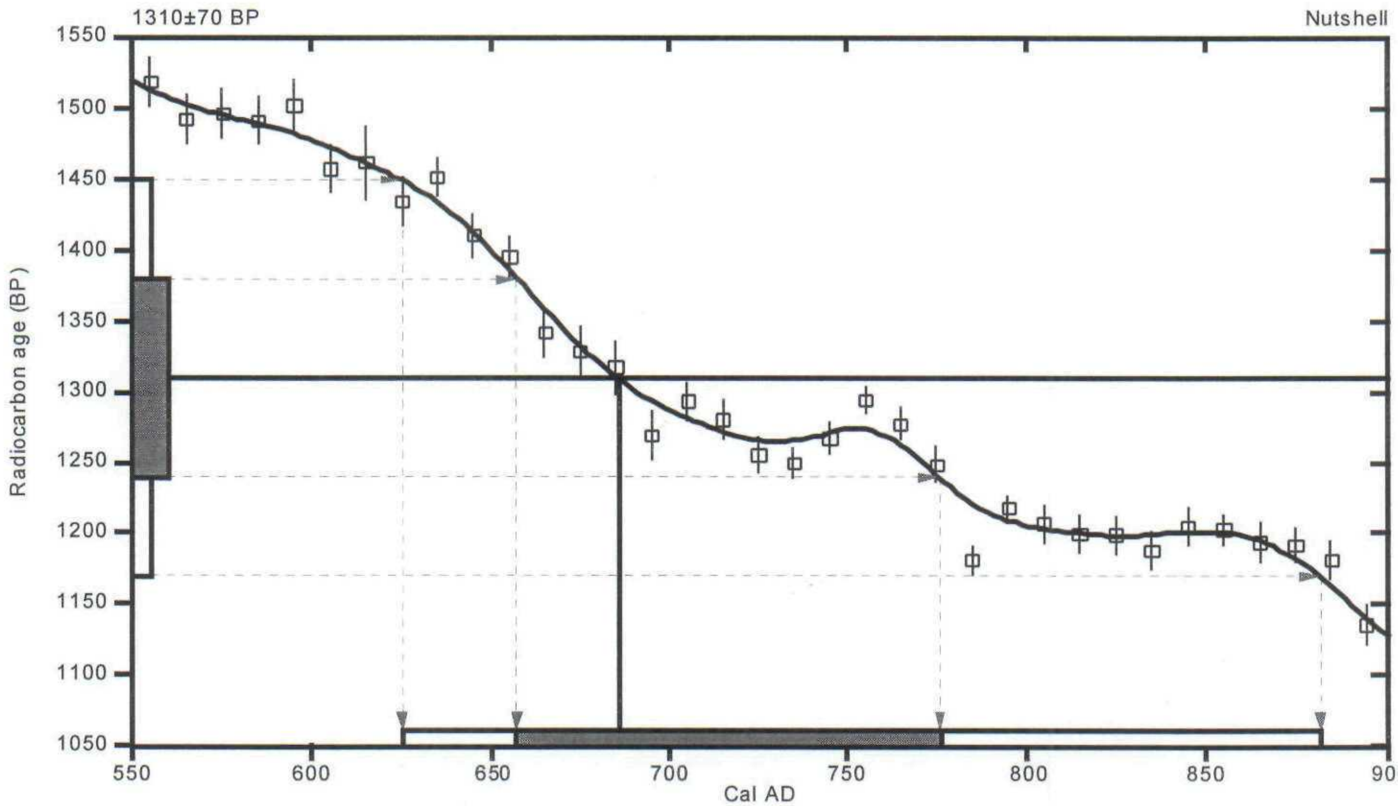
**Conventional radiocarbon age:** **1310±70 BP**

**2 Sigma calibrated result: (95% probability)** **Cal AD 625 to 880 (Cal BP 1325 to 1070)**

Intercept data

Intercept of radiocarbon age with calibration curve: Cal AD 685 (Cal BP 1265)

1 Sigma calibrated result: (68% probability) Cal AD 655 to 775 (Cal BP 1295 to 1175)

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***Editorial Comment***
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***Mathematics***
***A Simplified Approach to Calibrating C14 Dates***
*Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2), p317-322*

**Beta Analytic Inc.**

*4985 SW 74 Court, Miami, Florida 33155 USA • Tel: (305) 667 5167 • Fax: (305) 663 0964 • E-Mail: beta@radiocarbon.com*

## Appendix 2, OCR Data Form

## 41SM195.A

| Soil Depth | pH | % Organic Carbon (LOI) | Ocr Date | Very Coarse | Coarse | Medium | Fine | Very Fine | Coarse Silt | Fine Silt | Sample Id | % Oxidizable Carbon (WB) | OCR Ratio | Mn |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | 5.0 | 0.412 | 457 | .336 | .099 | .183 | 6.882 | 53.858 | 28.614 | 10.028 | 6194 | 0.21 | 1.96 | 11.05 |
| 26 | 4.3 | 0.703 | 907 | 2.956 | .287 | .255 | 20.808 | 53.059 | 13.062 | 9.574 | 6195 | 0.27 | 2.60 | 10.75 |
| 36 | 4.1 | 0.628 | 1135 | 1.158 | .206 | .318 | 19.036 | 58.460 | 12.668 | 8.153 | 6196 | 0.19 | 3.31 | 5.30 |
| 46 | 4.0 | 0.586 | 1593 | 3.557 | .142 | .265 | 18.763 | 55.576 | 13.119 | 8.579 | 6197 | 0.10 | 5.86 | 4.16 |
| 56 | 4.0 | 0.479 | 1805 | 4.689 | .188 | .298 | 19.892 | 56.168 | 11.692 | 7.073 | 6198 | 0.17 | 2.82 | 6.85 |

# Appendix 3,
# Instrumental Neutron Activation Analysis of Pottery Sherds from the Browning Site (41SM195A)

**Timothy K. Perttula**

Two plain grog-tempered body sherds from the Browning site (41SM195A) were submitted to the Missouri University Research Reactor (MURR) for instrumental neutron activation analysis (INAA). This was done as part of a broader study of the chemical composition of clays found on Woodland and prehistoric Caddo sites in the Caddoan area (Perttula 2002). The goal being of the work has been to establish manufacturing locales of aboriginal ceramics from different and chemically-distinct clays in the region, and investigate trends in the use of different clays as well as the extent of trade/exchange of ceramic vessels by Woodland and Caddo groups.

Both sherds from the Browning site are assigned to the Titus chemical group (Descantes 2003: Table 5; Perttula 2002:92-94). This is one of the 12 different chemical compositional groups of clays currently recognized in northeastern Texas ceramic assemblages from the INAA study of more than 700 sherds. This group is principally defined on the basis of prehistoric Woodland and Caddo ceramic sherds made from clays in the Sabine River and Big Cypress stream basins (see Perttula 2002: Figure 5.2). The two Titus chemical group sherds from the Browning site are considered likely to represent sherds from vessels made with local clay sources.

INAA has also been done on several other prehistoric Smith County Caddo sites in the Sabine River basin, including Jamestown (41SM54), Bryan Hardy (41SM55), Redwine (41SM193), and Langford (41SM197) sites. About 85% of the sherds (n=11/13) in these sites also belong to the Titus chemical group, with the others belonging to Rusk and Smith chemical groups. Both of these chemical groups in the larger INAA sample (Descantes 2003: Table 5) are dominated by sherds from sites in the Angelina, Attoyac, and Neches river basins in northeastern Texas. This suggests that some vessels made from non-local clay sources, presumably made by Caddo groups living to the south and west, were traded/exchanged with neighboring Caddo groups living in the northern parts of Smith County, Texas.

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