

In 1759 Spanish forces attacked a Wichita village on the Red River in south-central Oklahoma. This expedition provided the first description of a Wichita fortification, a roughly circular rampart and stockade surrounded by a ditch. Wichita groups, however, erected similar structures as early as AD 1500. Magnetic surveys and excavations at an early eighteenth-century Wichita village, Bryson-Paddock, revealed at least four concentric ditches representing portions of fortifications. The efforts expended to excavate ditches and build extensive fortifications at large villages reflect intensification of intertribal conflict in the southern Plains by 1700, probably arising from increased mobility with the arrival of horses and competition over access to the European market economy. This is a period of increasing social complexity, regional trade and economic development, and coalescence marked by increasing village size, territorialism, and construction of extensive defensive features.

Relative to the numerous investigations of fortified indigenous village sites on the northern Great Plains (Bamforth 1994; Caldwell 1964; Jones 2004), we know much less about southern Plains fortifications (Bell 1984; Drass 1998). Increasingly, however, archaeologists use geophysical analyses and excavations to investigate suspected fortifications in southern Kansas, Oklahoma, and Texas, some dating to as early as AD 1500 (Drass and Baugh 1997). In this chapter, we present new archaeological evidence emanating from a decade-long

Digging Ditches

*Archaeological Investigations
of Historically Reported
Fortifications at Bryson-
Paddock (34KA5) and Other
Southern Plains Village Sites*

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investigation of the Bryson-Paddock site (34KA5), located in north-central Oklahoma along the banks of the Arkansas River. As described below, between approximately 1680 and 1755, one subdivision of the Wichita occupied Bryson-Paddock while another subdivision occupied its nearby sister site Deer Creek (34KA3). Both sites contain abundant French trade goods and large numbers of indigenous hide-scrapers produced from local chert (Vehik et. al. 2010). Artifacts and faunal remains demonstrate the intensification of hide tanning by Wichita women. Households exchanged these bison robes with French traders for European commodities (Wedel 1981).

Archaeologists have long hypothesized that both Bryson-Paddock and Deer Creek included fortifications, but until 2004 neither site had been systematically excavated to examine this hypothesis. In fact, with the exception of several trenches dug to cross-section suspected ditches, no indigenous fortification on the southern Plains had ever been extensively excavated prior to our work.

The purpose of this chapter is to discuss our findings, specifically, the structure and function of numerous linear ditches that have been discovered. To better interpret these ditches, we begin by first reviewing the observations of contemporary eyewitnesses concerning Wichita fortifications and their construction. We then compare historical descriptions with archaeological data from Bryson-Paddock and other fortified sites in Oklahoma and Kansas. We argue that different types of entrenchments existed simultaneously, constituting a fortification complex that included dry moats, palisade ramparts, and interior semi-subterranean shelters. Combining historical and archaeological data provides a rare opportunity on the southern Plains to critically evaluate historical descriptions with the archaeological record. While written accounts provide valuable momentary descriptions of structures, archaeological investigations permit us to examine the temporal development of fortifications across the entire region and within particular sites.

HISTORICALLY REPORTED FORTIFICATIONS ON THE SOUTHERN PLAINS

Spanish, French, American, and Native American observers noted native fortifications at different times and places on the southern Plains. Significantly, every known account comes from villages attributed to a subdivision of the Wichita. Five or more affiliated groups historically composed the Wichita-speaking Caddoan people, including Taovaya, Tawakoni, Waco, Iscani, and Wichita (proper). In the words of the perceptive French chronicler, Jean

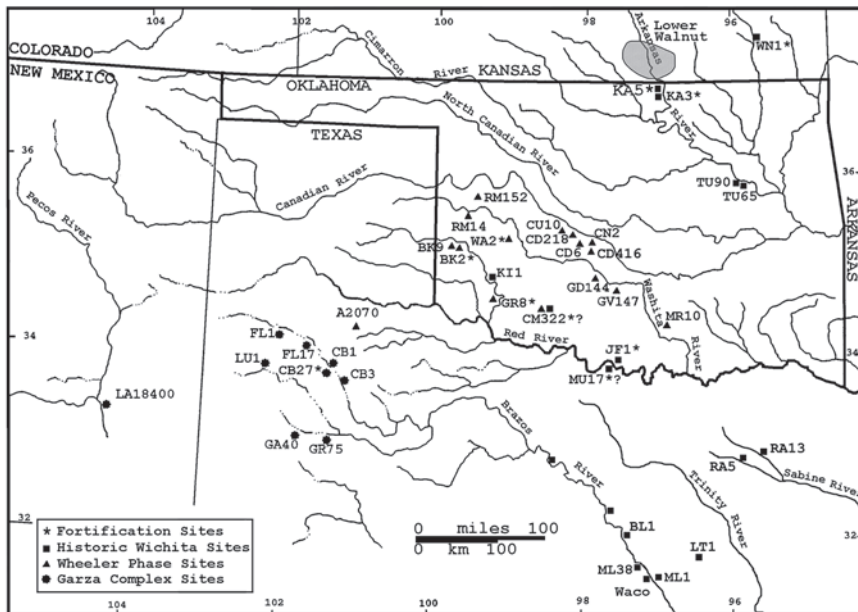


FIGURE 8.1. *Protohistoric and historic Wichita sites and fortifications on the southern Plains.*

Louis Berlandier, in 1830: “Fortifications are rare among the Texas Indians. They are found in only three tribes of the same nation, in the villages of the Huecos [Wacos], Tahuacanos [Tawakonis], and Tahuaiasses [Taovayas]” (Berlandier 1969:55n47).

Some of the earliest, and certainly the most detailed, descriptions of a fortification come from the Red River village inhabited by the Taovaya from roughly 1757 to 1811. Known today as the Longest site (34JF1), it is located in Jefferson County, Oklahoma (figure 8.1) (Bell and Bastian 1967; Duffield 1965; John 1975; Newcomb and Fields 1967). On October 7, 1759, a large Spanish expedition attacked this village in retaliation for the sacking of the San Sabá mission in central Texas the previous year by Taovaya and Comanche raiders (John 1992; Weddle 2007). Arriving at the Red River, the expedition’s Spanish officers briefly glimpsed the Taovaya’s defenses before being driven off by mounted Comanche and Wichita warriors. Captain Juan Ángel de Oyarzún later wrote how he saw “at the short distance of a gunshot, a village consisting of oval-shaped huts enclosed by a stockade and moat, and that its entrance road is enclosed in the same manner” (Weddle 2007:124). Within the enclosure, Taovaya warriors with French muskets fired across the river at the Spanish.

Six years later, another Spanish soldier—this one captured and held for six months by the Taovaya—had a much better opportunity to inspect the same fortress inside and out. The soldier, Antonio Treviño, described the fortress as “made of split logs, which the Indians have placed separate one from the other in order to make use of muskets, the weapons they use, through them.” Elaborating further, he said that it was

completely surrounded on the outside by an earthen rampart, close to more than a vara and a third [approximately 1.13 m] in height, which serves them as an entrenchment, and, about four paces to the east and west, a very deep trench made so that no one can come close to the fortress, on horseback. Inside there are four subterranean apartments occupying all of its circumference, into which all of the people who cannot help with the defense of the said settlement retreat in time of invasion.¹

As Treviño’s account makes clear, three different structural features comprised the Taovaya fortification: (1) a rampart and palisade; (2) a trench or “dry moat” outside the fortification to impede approach; and (3) four subterranean structures entrenched along the interior circumference of the fortification. Treviño believed the Taovaya built the entire structure to resist the Spanish attack in 1759. It remained in use at the time of his captivity in 1765.

Although archaeologists conducted limited test excavations on the fortification ditch at Longest in 1967, until 2013 no work had been done to identify the “subterranean apartments” mentioned by Treviño. An oval-shaped feature (labeled structure 8 on the 1967 excavation map) just inside the fortification may represent part of one of these subterranean structures (see Bell and Bastian 1967:figure 30).

Elsewhere, other accounts from Texas provide similar information regarding Wichita fortifications and subterranean structures likely built between the late eighteenth and early nineteenth centuries. In 1836 John Ridge recorded John Smith’s recollection of a Cherokee expedition against a Tawakoni village near Waco, Texas, in 1830 (Foreman 1931; also see Jackson 2005 and Watt 1969). Smith describes how Tawakoni warriors hid in a long lodge partially underground:

In the middle of the village we found Gah wah na nah [a Cherokee Chief and accomplished warrior] standing, watching the mouth of a large & long lodge which stood over a hole in the ground . . . He said a great many have gone in that hole & most of them are warriors . . . The Big lodge where Gah wah na nah stood proved to be the arsenal of the tribe & a place of refuge. It was about

forty five feet long & twelve feet wide. Posts were stuck in the ground in the centre of the hole which was dug about waist deep. A ridge pole extended horizontally across the posts, & ribs of poles extending from it down to the ground on each side which was covered with corn stalks covered over with dirt. Close to the mouth of this singular place of refuge & defence, stood a lodge which was unoccupied, which we used as a screen from the enemies shot. (Foreman 1931:256)

Smith's description of the assault on the Wichita village in 1830 focuses entirely on the semi-subterranean shelter without mention of a parapet, stockade, or ditches.

In the same year, Berlandier (1969:54–55, 144–145) describes Wichita fortifications as consisting of “square or rounded ditches, surrounded by breastworks,” (Berlandier 1969:54) and these “circular embankments and trenches [are built] within their villages” (Berlandier 1969:145). One village occupied by the Tahuaco [Tawakoni] reportedly had a “double ring of fortifications around their town” in 1829 (Berlandier 1969:144). He goes on to describe Wichita semi-subterranean shelters as ditches “covered with a roof of wood strong enough to resist gunfire” (Berlandier 1969:54), adding that these are “subterranean forts with only one door, big enough and deep enough to hold families and warriors” (Berlandier 1969:55). Unfortunately, no evidence exists that Berlandier actually visited Wichita villages; his descriptions were probably obtained from local settlers (Berlandier 1969:126n174).

In 1858, Chickasaw Indians led by Indian agent Douglas Cooper conducted an expedition in southwestern Oklahoma (Foreman 1927). In his journal, Cooper describes several abandoned Wichita villages including one in the area of Fort Sill, Oklahoma. He notes how they arrived “at the old Kechi or Wichita Village on Cache creek [Fort Sill area] and encamped to recruit the men and horses . . . This place was last occupied by the Wichitas and the remaining of their fortifications are easily traced” (Foreman 1927:386). Later on the same trip he describes another old camp: “Visited the old Waco village about 5 miles from camp also the ancient Wichita village say 10 miles higher up Cache creek. Here we found traces of the same kind of fortifications as found at the village lower down” (Foreman 1927:386–387). However, Cooper provides no information on these “fortifications.” He later passes an occupied Wichita village on Rush Creek and estimates 150 lodges are present but he says nothing about fortifications. A Comanche camp next to the Rush Creek village was later attacked by US Cavalry, but the troopers also make no comment on fortifications. In 1834 the US Dragoons (accompanied by the artist George Catlin) visited a village at Devil's Canyon, again without mention of

fortifications or subterranean structures. So it seems that with the Wichita's movement north from Texas to Oklahoma, they initially built fortifications but soon after abandoned the practice. As their population continued to decline in the 1830s and beyond, the loss of a labor force may have prevented construction. By the 1850s they were relying on the US government for protection on their reservation near Anadarko, Oklahoma.

Historical accounts provide ample information about the presence of fortifications in particular Wichita villages. The palisades did not encircle villages, but served as a redoubt and refuge within villages during attacks, as illustrated in the Spanish attack in 1759 and the Cherokee assault in 1830. Moreover, a variety of observers over time report semicircular and semi-subterranean "lodges" or "apartments" as a standard type of refuge, either within stockades or in the absence of stockades. Until the recent excavations at Bryson-Paddock, however, such structures had never been definitively identified or excavated in the southern Plains.

FORTIFICATION FEATURES AT BRYSON-PADDOCK (34KA5) AND RELATED SITES

Archaeologists, ethnohistorians, and artifact collectors long suspected the presence of fortifications at the eighteenth-century sites, Bryson-Paddock (34KA5) and Deer Creek (34KA3), located on the west side of the Arkansas River approximately 2 km apart from one another in far northern Kay County, Oklahoma (figure 8.1). Based on maps and French accounts, members of the Taovaya subdivision apparently occupied Deer Creek, in contrast to Bryson-Paddock's Wichita subdivision inhabitants (Vehik 1992:327). Bryson-Paddock is north of Deer Creek on a high bluff overlooking the west side of the river. In one historical account, French traders passed through the villages on their way from Louisiana to Santa Fe. Arrested and interrogated by suspicious Spanish officials in Santa Fe, the traders described the villages, mentioning fortifications, but provided no details (Wedel 1981).

A third eighteenth-century site, Neodesha Fort (14WN1), is located on the Verdigris River in southeastern Kansas. Like Bryson-Paddock and Deer Creek, Neodesha Fort was one of a pair of Wichita villages occupied simultaneously. One of the Neodesha sites may have been visited by Claude Charles Dutisné in 1719. But, he made no mention of a fortification at the time of this visit. Today, the Neodesha Fort site has been mostly destroyed by modern activities and the location of the second village is not known. Visitors to the Neodesha site beginning in the 1870s through the 1930s, however, recorded evidence of ditches and



FIGURE 8.2. *Aerial photo (1938) of the possible fortification at the Deer Creek site, 34KA3.*

ramparts. The earliest descriptions indicate embankments 0.6 m high by 3.7 m wide laid out in a U-shape over an area estimated at 117 m by 146 m (Weston and Lees 1994). One or two ditches were present just outside of the embankments and these are estimated at 1.2 m deep and about 3 m wide at the top.

Like Neodesha Fort, no excavations have occurred at Deer Creek. Surface collections, however, suggest an early eighteenth-century occupation (Sudbury 1976). A large portion of Deer Creek has never been plowed and a possible fortification ring is very visible (figure 8.2). Early maps of the fortification indicate a U-shaped ditch about 76.2 m in diameter with adjacent earthen embankments around the head of a draw (Corbyn 1976). The draw may be an entryway allowing protected access to a spring on the edge of the nearby

creek. A second ditch is reported on the west side of this feature. Corbyn (1976) also suggests a possible bastion and various interior features (including a large rectangular area) based on aerial photographs. Magnetic, electrical resistivity and radar surveys in the 1980s confirm many of these features, but, without excavation, the function of the suggested bastion remains untested. Little information can be ascertained about features and activities within the structure. Trash mounds and features are present over a considerable area outside of the possible fortification, indicating that most residences were not protected by the structure.

Initial excavations at Bryson-Paddock took place in 1926, resumed in the 1970s, and have occurred there almost annually since 2003 as a joint project involving the Oklahoma Archeological Survey, the University of Oklahoma, Oklahoma State University, and the Oklahoma Anthropological Society. The site may have been occupied as early as the late 1600s. Artifacts, Spanish and French descriptions, and a thermoluminescence date all indicate a definite occupation in the early eighteenth century and extending until mid-century. Unfortunately, radiocarbon dates from the site are inconclusive, ranging from AD 1490 to 1959 calibrated (Drass et al. 2004). The available historical documentation (Wedel 1981) indicates the occupants of Bryson-Paddock and Deer Creek migrated south in the mid-1750s to locations along the Red River, including the Longest site (34JF1), where the Spanish attacked the Taovaya fortress in 1759.

Joseph Thoburn (1930) organized the 1926 excavations at Bryson-Paddock overseen by his foreman, Otto Spring. Excavations focused on mounds that they believed were collapsed earthen houses but are now understood to be trash deposits. The excavators also mentioned a possible ditch segment in an unplowed field (figure 8.3). Limited work on the ditch revealed little information, but Thoburn (1930:77) suspected a larger U-shaped trench was present. Archaeological work almost 50 years later continued to test additional trash mounds and to expose house patterns (Hartley and Miller 1977).

Beginning in 2003, our research has employed magnetic and resistivity survey technology to examine the distribution and extent of features across the site. Magnetometers/gradiometers, especially, have successfully identified small anomalies that, when tested, reveal storage pits and hearths. Large blocks of magnetic data have also led to the identification of long linear anomalies resembling ditches or similar features (figure 8.4). Subsequent ground-truthing through excavation resulted in the classification of these features as either fortification ditches or covered semi-subterranean trenches. We discuss each type of ditch in turn.



FIGURE 8.3. *Visible ditch segment in pasture at Bryson-Paddock site, looking north. Photo taken November 2005.*

FORTIFICATION OR RAMPART DITCHES

The excavation of several large magnetic anomalies at Bryson-Paddock revealed cross-sections of ditch features. Initially two parallel, linear magnetic anomalies about 30 m apart in the plowed field were tested, revealing ditches about 60–80 cm deep and 3–4 m wide (figure 8.5). Subsequent magnetic surveys and excavations revealed the presence of four ditches (numbers 1–4, from inner to outer ditch) that encircle the head of a small dry draw that runs northwest to southeast across the middle of this site (figure 8.6). The now-dry draw may have had a spring in the eighteenth century, or the Wichita may have caught water in a basin at the head of this creek. Maps of the nearby Deer Creek fort tentatively indicate similar protected access to a spring. Later evidence from the Longest site suggests the fortification protected access to water from a spring and the Red River.

Excavations indicate that three of these linear features (#2–4) are ditches representing dry moat trenches. As the Wichita dug these trenches they apparently deposited the excavated soil to the inside of the fortification to

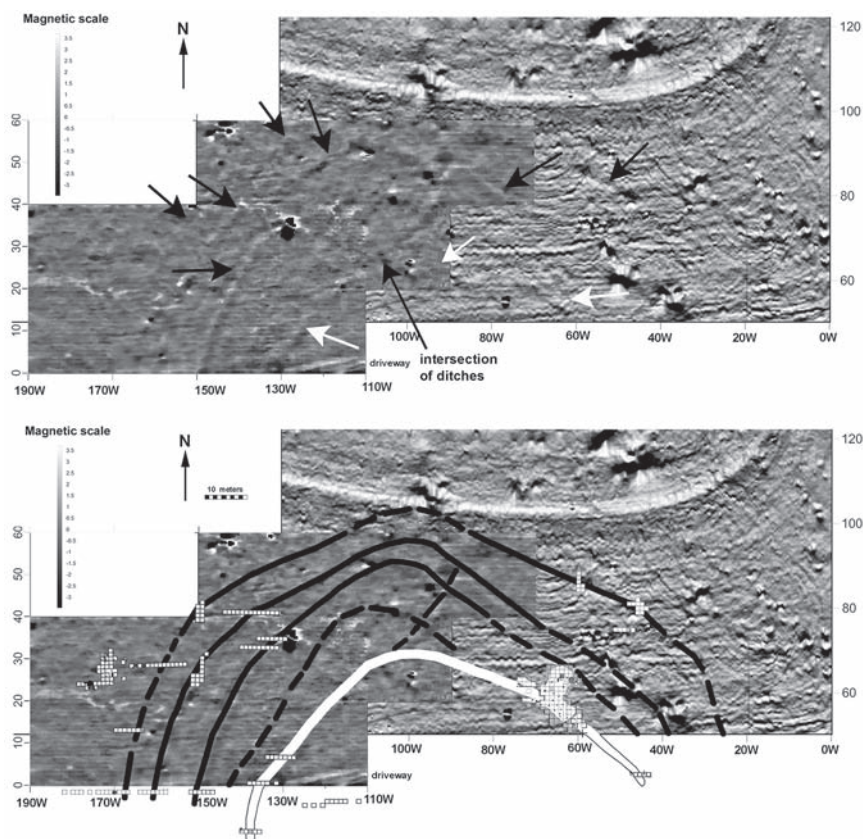


FIGURE 8.4. *Bryson-Paddock Site. (A) Magnetic map exhibiting linear features that are portions of fortification and structure ditches in the north plowed field at Bryson-Paddock. Arrows indicate ditches. Note that lighter areas are higher magnetic values representing ditch fill and these occur outside darker linear anomalies of low magnetic values that are thought to represent remnants of parapets that have been plowed down. (B) Magnetic map with fortification ditches and potential ditches marked in black and the semi-subterranean shelter ditch, the innermost ditch, marked in white. Dashed lines indicate the possible but unconfirmed ditch locations. Two instruments were used: a cesium magnetometer and a gradiometer. The instruments covered some of the same areas.*

form ramparts. At the Longest site, the Spaniard, Antonio Treviño (discussed earlier), described a similar embankment as an “earthen rampart, close to more than a vara and a third [approximately 1.13 m] in height, which serves them



FIGURE 8.5. *Cross-section of the north ditch (#4) in the eastern part of the plowed field at Bryson-Paddock (34KA5). Arrows indicate the edges of the ditch.*

as an entrenchment.” Although no embankments or ramparts remain visible in the plowed field at Bryson-Paddock, slight rises are evident on the interior sides (west sides in this location) of the ditches identified in the unplowed portion of the site. The magnetic surveys provide some evidence for embankments. The highest magnetic readings at Bryson-Paddock occur within filled ditches, and lower readings occur on the original interior surface adjacent to the ditch where soil was piled as inhabitants dug it (figure 8.4). The relatively high magnetic readings are therefore likely caused by deposition of highly organic trash and soils in the ditches (see Kvamme 2006:218–219). The lower magnetic readings reflect how native soils were removed and piled to the interior side as the ditch was dug. These geophysical readings at Bryson-Paddock reinforce the idea that Wichita excavators deposited soil on the inside of the three fortification trenches to form embankments for a palisade. Evidence also suggests that all three fortification trenches had been filled in during occupation of the site. Excavations revealed pits and a hearth that had been dug into the filled fortification ditches. The ditch fill included trash such as broken pottery, burned

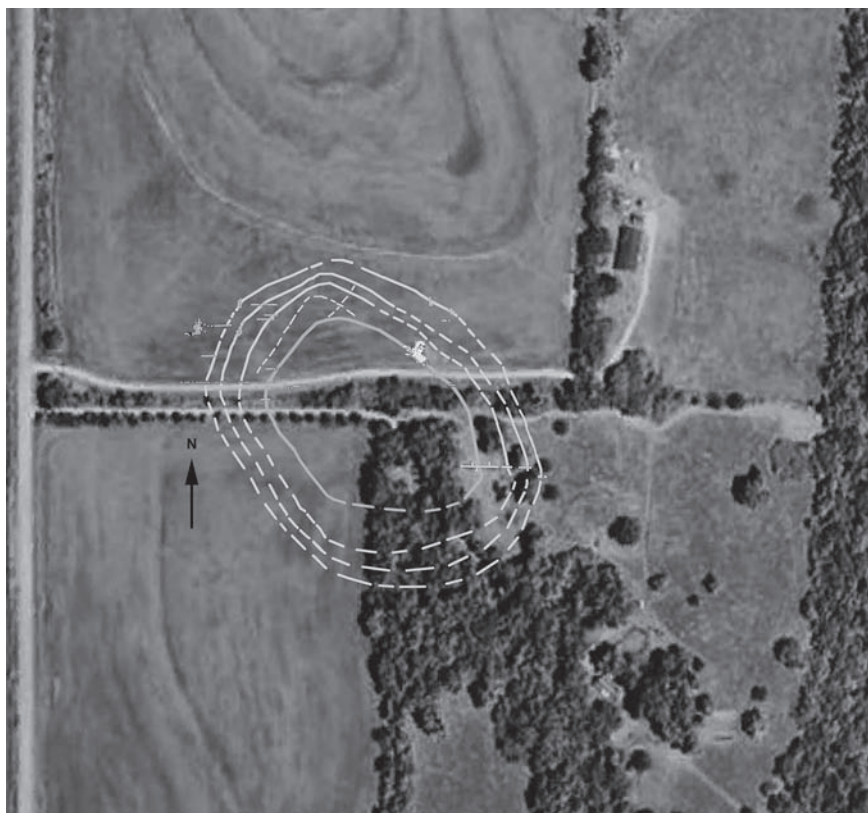


FIGURE 8.6. *Aerial view of the Bryson-Paddock site, indicating probable fortification ditches and subterranean structure. (Map made with Google Earth 2006 image.)*

clay pieces, lithic tools and debris, and charcoal in a brown to dark-brown organic soil. Thus, ditches were filled and the Wichita occupation extended long enough that activity such as pit construction impinged on filled ditches. At least some of the soil from the embankments may have been used to cover trash thrown into the fortification trenches.

The Bryson-Paddock fortification ditches are U-shaped or a rounded V-shape in cross-section; they narrow from over 3 m across at the top to 2 m or less at the bottom (figure 8.7). In the least-eroded areas, the fortification ditches were dug 110–120 cm below the surface at the time of occupation. Although these ditches do not have the sharp V-shape that Keeley et al. (2007) consider characteristic of most historic fortifications, they do contract toward the bottom. The top width and depth dimensions also fit the model

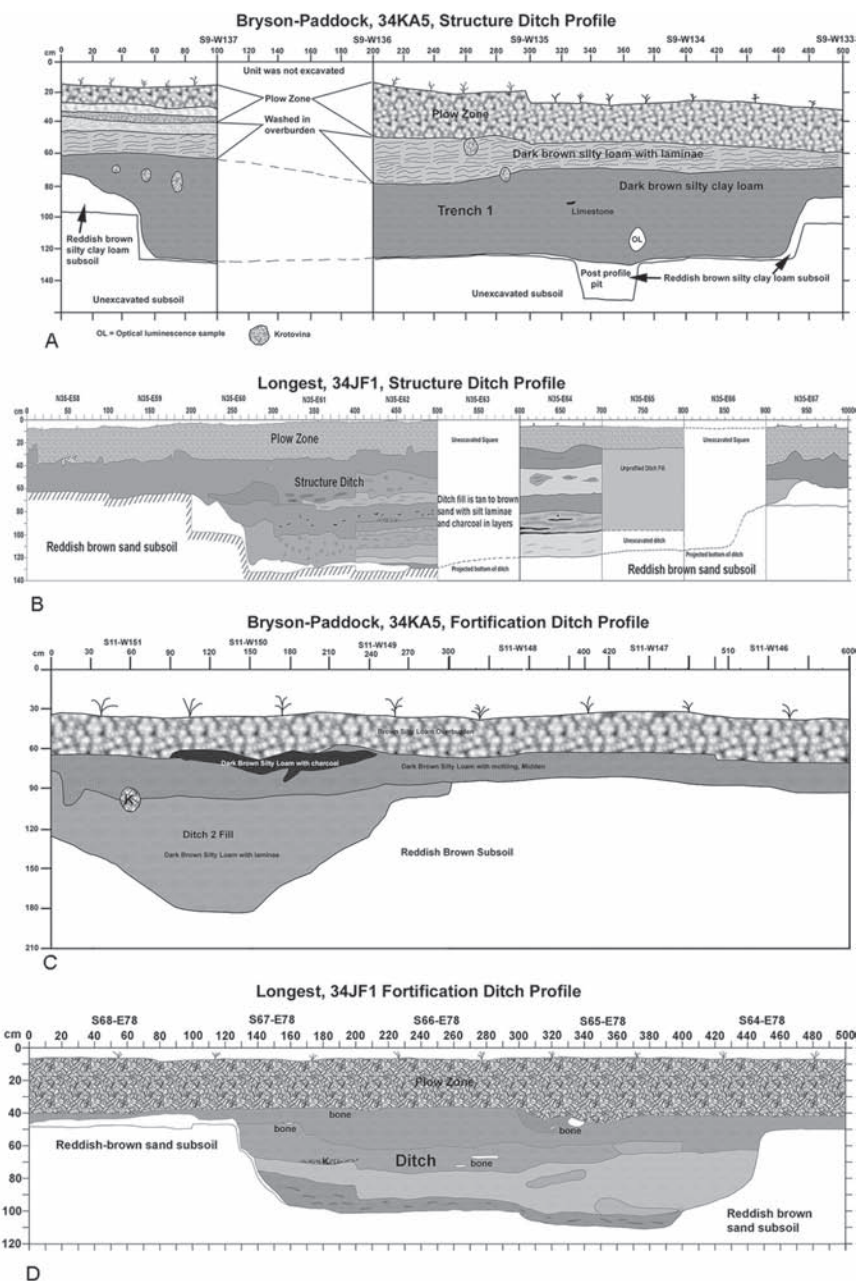


FIGURE 8.7. Profiles of semi-subterranean structures (A–B) and fortification ditches (C–D) at the Bryson-Paddock (A, C) and Longest (B, D) sites.

for defensive ditches (Keeley et al. 2007:58). In addition, the small excavation into the Longest fortification ditch revealed a profile (Bell and Bastian 1967) resembling the fortification ditches at Bryson-Paddock. The Longest ditch is 120 cm deep and about 4 m wide at the top, narrowing to 2.25 m at the bottom. More recent excavations in another portion of the Longest ditch exposed similar width dimensions (3.3 m at top and 2.3 m at bottom), but ditch depth extended only 1 m.

The Bryson-Paddock fortification ditches run along a fairly good slope on the south side of a ridge down to a gently sloping area at the south end. Irregularities appear in the visible magnetic distribution of these features, but the three ditches generally parallel each other and are 6–10 m apart at the closest points. The ditches appear to be continuous but metal and deeper soil deposits at the base of the slope along a road and modern fence line obstruct the magnetic readings for certain sections. In addition, a modern farm terrace on the north end of the fortification complex truncates the outer or fourth ditch, which would otherwise encircle an area about 140–150 m east–west and over 160 m north–south. The inner fortification ditch (second ditch) is 120–125 m east–west and over 140 m north–south.

COVERED SEMI-SUBTERRANEAN STRUCTURE

The most distinctive and extensively excavated linear feature at Bryson-Paddock is visible in the unplowed pasture as an 8–10-m-wide depression running downslope, south, and making an almost right-angle turn to the west (figure 8.3). This is the innermost linear feature (ditch #1) seen on the magnetics in the plowed field and occurs in an area of only slight slope. It also encircles the head of the draw and extends across an area of 100 m east–west and over 95 m north–south. Excavations tested the feature in four different locations. Numerous soil cores confirmed its position in other areas. Excavations included a trench to cross-section the feature in the unplowed area, and a large excavation block in the southeast end of the plowed field, located north of the unplowed portion.

Initially, the feature appeared to represent another fortification ditch. However, excavations revealed significant differences. It was wider than other fortification ditches extending from 4 m to almost 5 m across. In cross-section its walls were vertical near the bottom and expanded only slightly toward the top. The floor of the feature was flat at 70–80 cm beneath the modern plowed surface and unplowed pasture (although the surface in the pasture is in a depression about 40 cm deeper than surrounding areas). It was also

filled with organic soil and trash from occupation, although few artifacts were found in the floor area. Two pits overlapped one edge of the ditch, obviously dug after the ditch had been filled. The trench had evidence of burning on the floor and intensive burning was apparent in some of the excavated units. In addition, excavators encountered burned post or beam sections near the floor, and post molds in the floor in all four excavated sections of the ditch. These postholes extended down to 70 or 80 cm below the floor. In the unplowed pasture section of the ditch, soil appeared to have been thrown to the west or inside portion of the ditch to form a low, now-eroded embankment. Initially, we presumed this embankment to be a remnant of a rampart supporting a stockade for defense. However, no evidence of post molds was found in the small area of embankment that was excavated.

Obviously, it would be highly unusual to have post molds and burned post sections on the floor of a dry moat, especially if it were located at the foot of an embankment and stockade. Indeed, the other three ditches at Bryson-Paddock lack these features. We therefore expanded excavations in one section of the ditch to further evaluate the structure. The feature in this area has a southeast end marked by an abrupt rise to a shallow depth (30–40 cm). This shallow area extends less than a meter to the southeast before a ditch feature resumes and apparently extends south into the pasture, where it would tie into the unplowed portion of the ditch. The main excavations followed the ditch feature northwest in the plowed field in an attempt to identify a northwestern edge. Over 14 m of the ditch were exposed but no end was encountered (figure 8.8). To further complicate matters, another ditch was discovered intersecting the main ditch from the north. This intersecting ditch was excavated and extended 6 m to the north and was 5.5 m wide. In the center of this short ditch feature we encountered an ash-filled basin hearth about a meter in diameter that was dug into the floor (at 70 cm below the current surface). Four post molds surround this hearth, forming center posts for a roof that covered it (figure 8.8).

In light of the historical accounts of Wichita fortifications, our excavations provide strong evidence that the innermost ditch—found in the plowed fields as well as the unplowed pasture—served as a covered semi-subterranean structure with a room built as an extension off the larger structure. The nearly straight walls and over 4-m-wide flat floors of this inner trench are distinct from other fortification ditches at the site. The large, deep, post molds in the floor and evidence of burned wood elements (post or beam pieces) as well as clinkers from burned grass suggest that this ditch and the northern room were covered by a grass-thatch roof. The structure burned, leaving small charred post or beam sections, burned floors, and an abundance of charcoal in the floor

post fragments, a hearth, and a flat floor all fit with our expectations for what we would see archaeologically in a roofed semi-subterranean structure. None of these features has been found in the three other fortification ditches at the site. The depth and width dimensions of the Bryson-Paddock subterranean structure also roughly match those of the underground “lodge” described at the Waco village (Foreman 1931). The presence of a shallow divide in one part of the trench at Bryson-Paddock suggests that we may have excavated into portions of two of these subterranean shelters. The Bryson-Paddock subterranean structure encircles the inside of the fortification much as Treviño described for the Longest site fortification. Based on geophysical data, we suspect that four or more such shelters may be identifiable within the Bryson-Paddock fortification.

Magnetics indicate that some of the northern and western ditch sections may intersect or at least include extensions similar to the one excavated off the innermost trench on the east side (figure 8.4). One of these possible extensions is on the northwest corner of the inner ditch but it appears on the magnetics to intersect with a moat-type ditch to the north. Excavations have not been conducted on this section of the feature, but extensive soil coring has been done in an attempt to confirm the presence of an intersecting ditch. The coring revealed a large, roughly rectangular feature 30–40 cm deep, but continued coring outside this feature indicated that a trench or ditch about 60 cm deep is present and likely crosses beneath the shallower rectangular feature. Based on the magnetics and coring, this linear anomaly is a section of ditch that ties into other ditches on the north end of the fortification. A possible ditch section may be present between ditches 1 and 2 on the northwest side of the fortification, but there have been no excavations to confirm this structure and it does not appear to continue in other areas of the fortification.

The fill of every ditch contained artifacts but they provided no clue to the order of construction or whether the ditches were all in use at the same time. Excavations across the site have noted numerous examples of overlapping features, suggesting a relatively long occupation or, less likely, repeated occupations during the early to mid-1700s time period. The few historic records seem to indicate an occupation of at least 30 years but likely longer. Given that the site was occupied for a considerable time, the fortification ditches may have been dug at different times. The filling of the subterranean structure inside the fort suggests that the fort was not abandoned at the time this structure was burned; it may have been intentionally burned by the occupants. Storage pits dug into the three outer, moat-like ditches show that they also were abandoned and filled during occupation. Filling of the fortification ditches may suggest that another fort was built at the site. Magnetics to the west, outside

the fourth ditch, have not revealed clear evidence of other ditch features nor is another ditch visible in magnetics on the southeast side. There is also no clear evidence that a second covered subterranean structure was built after the inner one burned. In the unplowed field, ditch #3 is about 4 m wide and has relatively straight walls, similar to the roofed ditch (ditch #1). However, the small cross-section excavation of ditch #3 did not encounter post molds. Thus, we are not confident that this wide ditch is a second roofed subterranean structure. More work is needed to determine if the fort was enlarged outside of the fourth ditch, or if there is another fort structure elsewhere on this large site.

SUMMARY OF FORTIFICATION FEATURES

Investigations at Bryson-Paddock have identified a series of ditches that were parts of fortifications resembling forts described at later historic Wichita sites. At least four ditches were built near the center of Bryson-Paddock on a south-sloping ridge (figure 8.9). The ditches extend in a roughly circular pattern around the head of a dry draw or creek that may have been a source of water in the eighteenth century. The pattern of some ditches is irregular based on the magnetics, and there are indications that ditch segments may join or intersect other ditches. The outer three ditches appear to be dry-moat-type features used in conjunction with earthen ramparts and probably a stockade for defense. The innermost ditch constitutes the remains of a specialized semi-subterranean structure. Ramparts or embankments are not clearly visible at Bryson-Paddock but magnetic data suggest that earth from the ditches was piled to the inside. No posts for a stockade have been encountered at the site but plowing, erosion, or use of the earth from embankments to fill ditches may have removed enough soil to destroy any post molds formerly found in the embankments. Even the largest of these ditches and embankments would only encircle part of this large village; many houses, pits, and trash mounds are not enclosed by the fort (figure 8.9). However, the filling of all the identified fortification ditches while the site was still occupied may indicate that another ditch with ramparts and a wooden stockade could have encircled a much larger area of the village.

The inner ditch at Bryson-Paddock served as a semi-subterranean structure that lined the inside of the fortification. The excavations at Bryson-Paddock represent the first archaeological research on one of these specialized structures. The structure is similar to Treviño's description of them at the Longest site on the Red River and to later historical descriptions of shelters at Wichita villages in Texas. Treviño's limited description noted how they were used to store supplies and as safe shelters for noncombatants during attacks, thereby

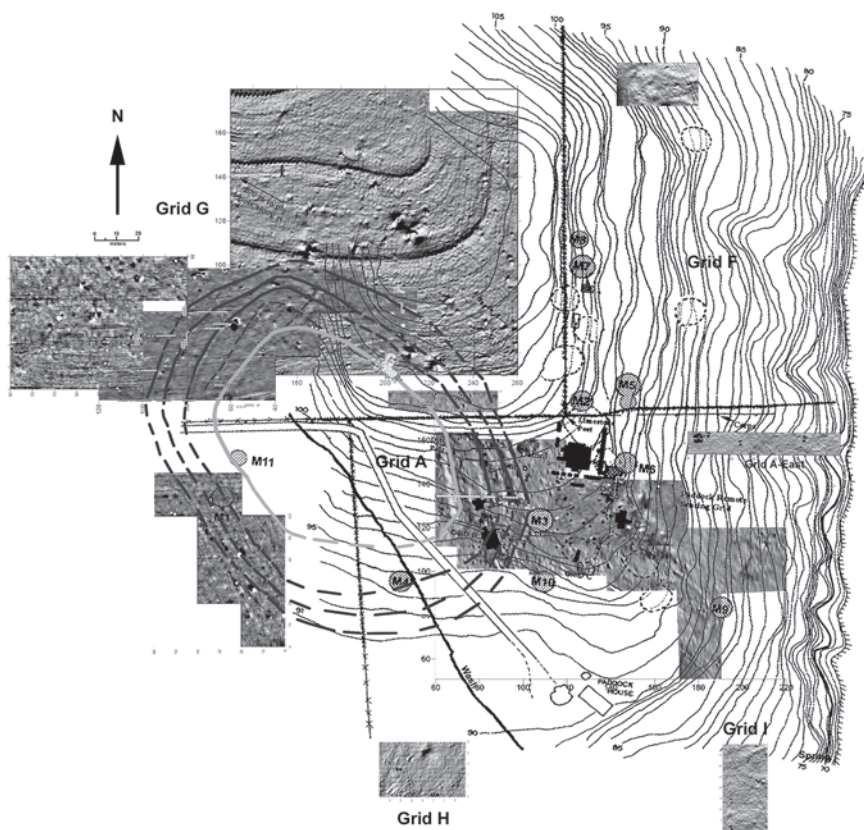


FIGURE 8.9. Map of Bryson-Paddock magnetic surveys with identified and projected fortification ditches (three black outer rings) and semi-subterranean shelter (inner gray ring). Dashed lines indicate unconfirmed ditch locations.

constituting an important part of Wichita defenses. The size and shape of one large excavated segment of the semi-subterranean structure matches these historic descriptions. Evidence from Bryson-Paddock suggests that large posts scattered throughout the ditch supported a roof of wooden beams covered by grass thatch. Soil may have been placed over the thatch but there is very little burned clay in the fill. No entryway is apparent in the excavated portions of the structure; entry may have been through the roof. The short ditch extension with a central hearth and four center posts at Bryson-Paddock, however, has not been described at later Wichita villages. This extension resembles the footprint of a small Wichita house, but this structure is semi-subterranean

and connected to the larger semi-subterranean structure that appears as a ditch in the magnetic surveys. More recently, test excavations at Longest in 2013 uncovered a small section of one of the four subterranean “apartments” witnessed by Treviño. In cross-section (figure 8.7) this feature closely matches the inner ditch at Bryson-Paddock, although the Longest subterranean structure is wider (7.4 m wide at the top and 5.9 m at the bottom) and deeper (1.3 m). Like the excavated ditch at Bryson-Paddock, the Longest ditch had a flat floor, post molds extending down from the floor, and burned roof supports in the fill.

Finally, no indications of bastions, baffled gates, or similar defensive structures have been recovered at Bryson-Paddock. The draw may have been used as a southeast entryway into the fortification. The magnetics do indicate an apparent break in the fourth, outer ditch on the east side of the fort (figure 8.10). Testing of this area revealed no ditch here although there are clear indications of the ditch within a few meters to the north and south. Similar breaks are evident in the second and third ditches in the same area although there have been no excavations of these possible entryways. Other entryways may be present. An eastern entry could have been easier to defend since access from the east is limited by the high, steep bluff to the river that is within 150 m of the fort. The inner semi-subterranean structure does not appear to have a gap in the area of the possible east entryway.

Sites such as Bryson-Paddock, Deer Creek, and Neodesha Fort provide evidence of the intensified defensive efforts undertaken by the Wichita in the early eighteenth century. The organization of large, often paired, villages, spaced within a few kilometers of each other, and the labor needed to construct massive features such as fortifications and underground shelters may be an indication of increasing social complexity at this time. Unfortunately, few burials have been identified from protohistoric sites and evidence of social differentiation is minimal. Further investigations will be needed to document the timing and location of fortifications across the southern Plains, and to identify the factors leading to their construction. To further explore these issues, albeit tentatively, we turn to archaeological evidence of fortifications predating the structures just described.

OTHER ARCHAEOLOGICAL EVIDENCE OF WICHITA FORTIFICATIONS

Just as more research is needed for the eighteenth- and nineteenth-century forts, investigations need to be undertaken to create an accurate chronology of the earliest fortifications on the southern Plains. At this time, we do know

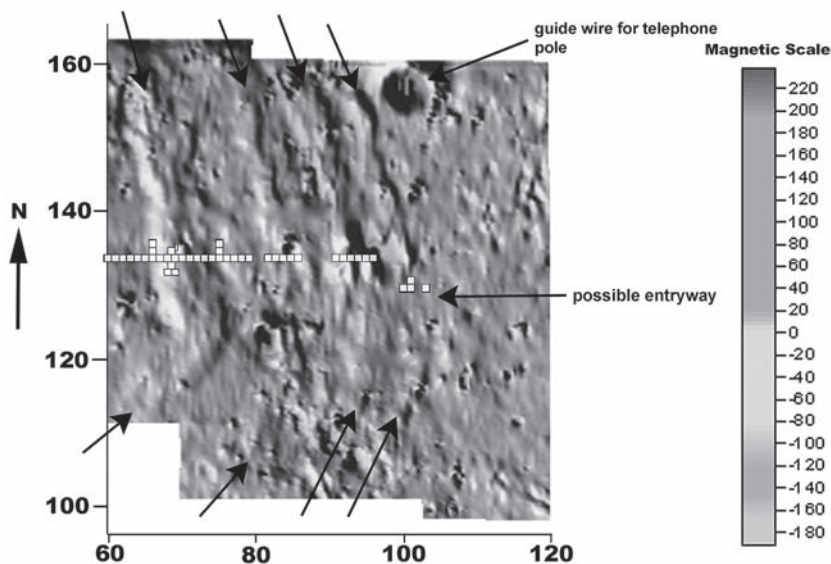


FIGURE 8.10. Magnetics on the southeast side of the Bryson-Paddock fortification. Arrows point to ditches and possible entryway.

that relatively small fortified sites in the sixteenth century preceded the larger and more complex eighteenth-century structures discussed above. The earliest fortifications in the southern Plains appear before European contact, about 200 years prior to the occupation of Bryson-Paddock and Deer Creek. Circular ditches are found at certain sixteenth-century Wheeler and Garza phase sites in western Oklahoma and northwest Texas (figure 8.1) (Drass and Baugh 1997). Interpreted as the remains of fortifications, they have been identified at the Edwards I (34BK2), Duncan (34WA2), and Bridwell (41CB27) sites. Edwards I and Duncan are today located in plowed fields in western Oklahoma. Before plowing leveled the fields, the ditches had embankments on their inner side. Limited excavation indicates the ditches are about 1 m deep, 2–3 m wide at the top, and encircle an area about 50 m across, a relatively small portion of each site. At Bridwell in the Texas Panhandle, an embankment remains to this day, measuring approximately 60 cm high (Drass and Baugh 1997).

Little is yet known of the activities that occurred within these early fortifications—only limited test excavations have been undertaken and magnetic surveys indicate some anomalies but none has been thoroughly excavated. No

semi-subterranean shelters have been identified. The Duncan and Edwards sites contain significant amounts of nonlocal trade materials, particularly items from the Southwest such as pottery, obsidian, turquoise, and *Olivella*-shell beads.

By the mid-sixteenth to seventeenth centuries, the Spanish expeditions of Coronado (1541) and Oñate (1601) reported large populations of people now believed to be Wichita living in villages along drainages in southern Kansas. These sites are today collectively known as the Great Bend aspect, consisting of two foci, the Little River and Lower Walnut (Wedel 1959). Numerous Great Bend sites exist, but no fortifications have been identified. Fortifications in southern Kansas only appear with the later eighteenth-century site, Neodesha Fort (14WN1).

Recently, Baugh (2007) has suggested that previous interpretations of “council circles” (Vehik 2002; Wedel 1967) within seventeenth-century villages in south central Kansas may actually be remnants of fortifications. In fact, Wedel’s 1940 and 1965 excavations at the Tobias site (14RC8) revealed a circular pattern of semi-subterranean structures and Baugh suggests that “rings” visible around the structures may be ditches. Wedel (1967:57) tentatively termed the semi-subterranean structures “pithouses,” but in their shape and construction they seem reminiscent of semi-subterranean shelters described historically, as well as the semi-subterranean structure found at Bryson-Paddock. Without testing to identify ditches or a circular pattern of post molds indicative of a palisade, doubts persist concerning the function of these council circles.

THE IMPETUS TO FORTIFY

Anthropologists and archaeologists use various types of evidence to document or infer warfare on the Plains, including oral history, historical documentation, human osteology, settlement patterns, weaponry, iconography, and the construction of fortifications (Bamforth 1994; Ewers 1975; Lambert 2002; Lowie 1935; Newcomb 1950; Robarchek 1994; Willey 1990). Until recently evidence of conflict on the southern Plains before European contact primarily depended on human osteological studies, although defensive site locations in west Texas have been noted for the Late Prehistoric period (Brooks 1994; Lintz 1986). Early evidence of violence in the southern Plains has been proposed (Baugh 2007; Boyd 1996; Dial and Black 2010; Lambert 2002). However, before AD 1200 or 1300 warfare seems to have been predominantly small-scale and low-intensity raiding, probably resulting in few deaths. After about AD 1300, consolidation of populations into large but dispersed sites along the Arkansas River in central and southern Kansas may represent increased

emphasis on defense (Baugh 2007; Blakeslee and Hawley 2006; see Jordan 2010 for a discussion on concentrated populations and defense). A similar change in settlement pattern may have occurred in western Oklahoma and west Texas after AD 1450. In addition, the appearance of fortifications at this time represents the clearest evidence for the rise of warfare at the end of the Late Prehistoric period.

Archaeologists speculate as to why fortifications initially appear in the southern Plains after AD 1450, and why they continue to be used into the historic era (Brooks 1994; Drass 1998; Drass and Baugh 1997; Drass and Savage 1992). Construction of fortifications is generally seen as symptomatic of intensified conflict (Arkush and Allen 2006; Dye 2006). Warfare on the Plains has frequently been explained by applying ecological/economic or sociocultural models (Bamforth 1994, 2006; Biolsi 1984; Ferguson 1984). Concerning the latter model, factors such as prestige, social stratification, revenge, and/or competition have been posited as causing conflict among historic groups. Archaeologists frequently assume similar motivations for earlier conflicts. Ecological/economic explanations, on the other hand, center on environmental changes impacting subsistence. Subsequent population movements led groups to compete, sometimes violently, for access to resources. Other scholars envision the arrival of Europeans as further impacting native warfare: the horse expanded group territories, increasing intergroup conflict, and the acquisition of guns affected the technology of warfare and defense (Dye 2006; Newcomb 1950).

In the case of the Wichita, however, other consequential immigrants arrived prior to Europeans, perhaps contributing to the development of fortifications. By 1500, frontier areas formed as Apache groups moved south into the High Plains of the Texas and Oklahoma panhandles. Wichita villagers lived just to the east on the rolling prairies where archaeological evidence suggests population consolidation (coalescence) occurred during the late fifteenth and early sixteenth centuries. Contemporaneous faunal evidence indicates bison hunting intensified among Wichita groups at this time (Drass 1997; Savage 1995). Conflicts over hunting territory likely developed as the Apache moved into the Wichita's western hunting grounds. Significantly, our earliest evidence of southern Plains fortifications appears in this western frontier area.

Long-distance trade also became significant at this time. With coalescing populations, social stratification and the search for prestige would further contribute to inter- and intratribal conflicts (Vehik 2002). Struggle over the control of Plains–Southwest trade routes may also have stimulated conflict and defensive measures. Alternatively, fortified sites such as Duncan near

the western frontier may have served as trade centers. Defensive structures could have discouraged conflict and protected valuable goods during fall trading fairs.

During the next two centuries, Wichita populations concentrated into large, often paired, villages in the eastern Plains, and these villages were typically fortified. Wichita groups remained in the short- and mixed-grass prairies to the west, but to date archaeologists have not found any western fortifications after approximately 1600. Increasing mobility associated with greater specialization in hunting dispersed bison populations in the western prairies could have rendered fortifications impractical.

By the early eighteenth century, conflict may have intensified as evidenced by the larger fortification complexes present at Bryson-Paddock, Deer Creek, and Neodesha Fort. This intensification probably resulted from a variety of ecological, economic, and social factors. The historic record documents the presence of horses at this time and trade with Europeans was escalating. The arrival of horses expanded the ranges of tribes and the potential for increased raiding, especially for the coveted horses, which were probably more abundant for southern Plains tribes than for other Plains peoples. Greater mobility also brought tribes such as the Comanche and Cheyenne south into the southern Plains, heightening the potential for conflict and also possibly disrupting some of the Wichita trade with the Southwest. At the same time, the Osage were intensifying pressure on the Wichita from the northeast. Uneven distribution of guns may also have changed the balance between some eastern and western tribes' defenses, and epidemics from European diseases would have impacted populations, encouraging coalescence of groups into larger and/or closely spaced villages as a means to improve defenses. Considerable labor and organization would be necessary for construction of defensive structures, and social stratification among the Wichita may have increased at this time.

The Wichita of the southern Plains occupied one of the last areas in the region to receive significant European trade. This changed rapidly between the seventeenth and eighteenth centuries as French traders moved up the Arkansas River to obtain bison hides, meat, horses, Apache slaves (Barr 2005), and other items from the Wichita in exchange for a variety of European goods (Vehik et al. 2010). At this time, conflict mounted with eastern tribes, especially the Osage, as they attempted to control the Wichita's access to trade (Morris 1970; Vehik 2006). Historic documents also indicate Wichita groups raided and probably traded with Apache (Newcomb 1950:324) and later Comanche groups to the west to obtain more horses and bison products for trade with the French. Thus, by the latter part of the eighteenth century, the Wichita had

moved from the extreme periphery of the European market to a position as middle men in an intensifying trade in bison products as well as other goods. Conditions that once favored increasing conflict prior to European contact accelerated in the eighteenth century. Opportunities to broker trade between the French and the Comanche grew, as did hostilities against the Apache. Hostilities eventually culminated in the Wichita and Comanche raid on the Lipan Apache at the mission of San Sabá in 1758, followed by the Spaniards' retaliatory strike on the Red River site in 1759. With these hostilities, Wichita fortifications firmly entered the historic record.

SUMMARY

Unlike northern Plains fortifications, which encircled entire villages, southern Plains forts functioned as places of refuge within villages. Most houses and activity areas remained external to a smaller circular fort situated in the center of the village. These forts were constructed with ditches and ramparts that held wooden-pole stockades. In addition, the presence of substantial semi-subterranean structures ringing the inside of some of the palisades (possibly as early as the seventeenth century) suggests further protection for noncombatants as well as a storage place for valuable goods and supplies. The shelters encircled the interior of the entire Bryson-Paddock fortification, an area 90–100 m in diameter. Evidence from the Longest site reveals that the fortification protected access to water from a spring and the river. Maps of the Deer Creek fort show similar protected access to a spring. At Bryson-Paddock, a now-dry creek may have had a spring in the eighteenth century, or the Wichita may have caught water in a basin at the head of this creek.

Data from fortified southern Plains sites indicate that the size and complexity of Wichita fortifications changed significantly between the sixteenth to eighteenth centuries. Yet, only the early eighteenth-century Bryson-Paddock site has been extensively excavated. We now recognize not simply a fortification “ring” but a true fortification complex of multiple ditches and embankments in a circular pattern with one ditch serving as an interior semi-subterranean shelter. This fortification complex resembles those noted historically by a number of eighteenth- and nineteenth-century eyewitnesses on the southern Plains. That the Wichita spent so much time digging ditches to construct, rebuild, and expand their defensive complex over time demonstrates the urgent salience of defense at Bryson-Paddock and related villages between the seventeenth to nineteenth centuries.

ACKNOWLEDGMENTS

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NOTE

1. The original documents and English transcriptions of Treviño's account are available online through the Béxar Archives, Briscoe Center for American History, The University of Texas at Austin, under catalog number E.3/20/1765-8/26/1765, pp. 11-6v. Treviño's testimony is found on folios 51-5v. of the document. All quotes come from the English translation of these folios provided by the Briscoe Center. Approximations of distances and measurements have been added in brackets.