These Middle Archaic burials have yielded evidence of violent death and/or warfare, such as the splinting of broken bones, as well as evidence of pathologies that may be related to diet. A division of labor between the sexes was indicated by the consistent association of certain artifacts with either male or female interments. The patterns of interments, and the presence or quantity of funerary objects, suggest that Middle Archaic societies were non-stratified (Doran and Dickel 1988).

The Middle Archaic manifestation in the vicinity of the project area has been referred to as the LaHarpe Aspect or phase by many researchers. The LaHarpe Aspect of the Middle Archaic period was identified by Johnson (1962), who analyzed artifacts collected during the Works Project Administration (WPA) era at the Yarbrough (41VN6) and Miller sites in northeastern Texas. The artifact assemblages from these sites were characterized by numerous stemmed, broad blade projectile points. The LaHarpe Aspect represented a three phase cultural sequence that began during the Middle Archaic. The use of expanded stem points was presumed to have been followed in popularity by the use of contracting stem forms. Heavy grinding and nutting stones and tools such as axes, adzes, wedges, and gouges indicated that Middle Archaic peoples were well adapted to the southern hardwood forests.

Johnson's proposed artifact assemblage for the LaHarpe Aspect seems unreliable. Recent investigations in northeast Texas have found that the LaHarpe Aspect had been defined using cultural materials from geologically mixed sites (Story et al. 1990:117). Many of the projectile points and other artifacts assigned to the LaHarpe Aspect now are recognized as dating from the Late Archaic to the Late Woodland period ca. 1000 B.C. to A.D. 1000, and Story has noted that a complete regional chronology has not been established since the demise of the LaHarpe Aspect. She attributes this to the lack of identified intact Archaic period sites in the region.

Late Archaic Period (4000 - 500 B.C.)

The Late Archaic period represents a time of population growth, as demonstrated by an increased number of sites throughout the United States (Griffin 1978). Stone vessels made from steatite, occasional fiber tempered pottery, and groundstone artifacts also characterize the Late Archaic. Late Archaic projectile point/knife types found throughout Louisiana include corner-notched and stemmed forms.

In the eastern United States, the Late Archaic riverine economy focused on a few specific wild resources, including deer, mussels, fish, and nuts. Jenkins (1979) recognized a seasonal procurement strategy in Middle Tennessee during the Late Archaic period. During the spring, macrobands formed to exploit forested riverine areas, while during the late fall and winter, Late Archaic peoples split into microbands and subsisted on harvested and stored nut foods and faunal species commonly found in the upland areas.

Archaic period sites typically are situated along the boundary of Quaternary and Tertiary areas. These zones are characterized by relatively flat or undulating bluff tops that overlook floodplains, swamps, or inundated stream basins. Archaic style projectile points/knives are found commonly throughout Louisiana. Unfortunately, very few intact archeological deposits dating from the Archaic period have been excavated systematically, analyzed, and comprehensively reported in Louisiana (Neuman 1984). Late Archaic sites that have been systematically studied in the west-central and northern part of the state have yielded projectile points/knives. These include the Bulverde, Carrollton, Delhi, Ellis, Ensor, Epps, Gary, Kent, Macon, Marcos, Palmillas, Pontchartrain, Sinner, and Yarbrough types. Groundstone objects recovered from these contexts include celts/axes, plummets, and steatite bowl fragments (Campbell et al. 1990; Smith 1975; Jeter et al. 1989). Although there is limited evidence for the proposed emergence of mortuary ceremonialism at this time, there is evidence for widespread trade in shell, copper, slate, greenstone, and jasper ornaments, including carved stone zoomorphic locust beads (Blitz 1993; Brose and Percy 1979; Smith 1986:31; Steponaitis 1986:374).

Mounds also appear for the first time during the Late Archaic sometime before 2000 B.C. (Gibson and Shenkel 1988:9-10). It is the contention of Saunders et al. (1992), that mounds originating during this time are datable based on the age of the landforms, the eluviation of fill

clays from the A and E horizons to the Bt Horizon, and a lack of post-Archaic artifacts. To date, four possible Late Archaic mounds or mound complexes have been identified in northeastern Louisiana (Lincoln, Ouachita, and Madison parishes) (Saunders et al. 1992; Saunders and Allen 1994). These include Hedgepeth Mounds (Site 16LI7), Watson Brake Mounds (Site 16OU175), Frenchman's Bend Mounds (Site 16OU259), and Hillman's Mound (Site 16MA201). More recently, Saunders (1994, 1996) has hypothesized that mound building began during the Middle Archaic period.

Around 1500 B.C., the Late Archaic inhabitants of northwest Louisiana began to be influenced by the Poverty Point culture centered in the Lower Mississippi River Valley. Poverty Point culture is named after the type site (16WC5), located in northeastern Louisiana. Poverty Point culture is characterized by the construction of extensive earthworks, by the presence of baked clay balls, and by a microlithic stone tool industry (Ford and Webb 1956; Kuttruff 1975; Webb 1968). At the time of its construction, the Poverty Point site was the largest earthwork in the Americas (Gibson 1985; Muller 1978). The site includes six concentric segmented ridges spaced 15 to 46 m (50 to 150 ft) apart. In addition, several other mounds are scattered throughout the immediate site area. The largest of these, Mound A, may have been a bird effigy. The numerous baked clay balls recovered from the site area have been interpreted as "cooking balls" which, after heating, would have been used to warm liquids. A baked clay ball recovered from Site 22PR533 in southern Mississippi was submitted for protein residue analysis. The test yielded positive results for rabbit protein, thus supporting the contention that these clay balls were used as cooking implements (Brown et al. 1995). These balls, known as Poverty Point Objects, appear to be substitutes for stone, which is scarce in the lower Mississippi River Alluvial Valley.

The Poverty Point microlithic tool industry reflects, to some degree, the need to conserve raw material. Other artifacts recovered from Poverty Point indicate increased exchange activity, which began during the Middle and Late Archaic periods (Gibson 1974:14-15). The artifact assemblage at Poverty Point includes tools and trade items from Alabama, Arkansas, Tennessee, Ohio, Indiana, and Illinois; steatite vessels originating from sources in Georgia and North Carolina; and copper originating from Michigan (Connaway et al. 1977:106-119; Gibson 1974:26; Gibson 1979; Gibson 1994; Jeter and Jackson 1994; Lehmann 1982:11-18; Webb 1982:13-14). Ceramics from the St. Johns River region in Florida also appear later during this period (Webb 1981).

Very little subsistence information has been obtained from the Poverty Point Site itself. Specialization in the procurement of deer and fish continued from Late Archaic times. Incipient horticulture focused on a variety of cultigens, including sunflower (*Helianthus*), hickory nut (*Carya*), acorn (*Quercus*), goosefoot (*Chenopodium*), and squash (*Cucurbita*) (Webb 1982:13, 71).

Poverty Point sites appear to be distributed linearly along the Mississippi River Valley and three of its major tributaries: the Arkansas River, the Ouachita River, and the Yazoo River. Typical Poverty Point locations include Quaternary terraces or older land masses that overlook major stream courses, major natural levees of active or relict river channels, river/lake junctions, and coastal estuaries or older land surfaces located within the coastal marsh (Brain 1971; Gagliano and Saucier 1963; Neuman 1984:90; Webb 1982:5). The position of the Poverty Point Site on Maçon Ridge, overlooking Bayou Maçon, has led some scholars to suggest that the location of the Poverty Point type site also allowed its inhabitants to exploit, if not control, the flow of trade goods between other communities (Gibson 1994:6; Muller 1983; Neitzel and Perry 1977).

The presence of non-utilitarian items such as lapidary work, panpipes, and animal effigies in stone and shell suggests some degree of social stratification in the Poverty Point culture (Gibson 1974:29). Evidence of a hierarchical social system during the Poverty Point period is limited to these non-burial artifacts. Webb (1982:12) states that the only reliable evidence of burial practices associated with the Poverty Point culture has been fragments of cremated human bone recovered from under Mound B at the type site; however, no grave goods were recovered in association with the remains. Jon Gibson has

speculated that the Poverty Point culture represents a chiefdom level political organization. He argues that most trade and construction activities occurred between 1300 and 1100 B.C. (Gibson 1991). If his hypothesis is correct, it would imply a degree of centralized organization. However, other researchers have argued that the Poverty Point culture does not represent a chiefdom society. Analysis of subsistence remains from the excavations at the J. W. Copes Site (16MA47), near the Poverty Point Site, has led researchers to question whether the environment could have supported a large population. This evidence has prompted Jackson (1991) to argue that the Poverty Point site represents a central trading locality, rather than a central settlement that politically controlled smaller settlements in the region.

According to Louisiana's Comprehensive Archaeological Plan no Poverty Point-like sites have been identified within Caldwell Parish (Smith, et al., 1983). However, it has been suggested that the Ouachita River was one of the probable thoroughfares for the transportation of novaculite and other lithic resources from its source in Ouachita Mountains of western Arkansas either to Poverty Point (Site 16WC5), or one of its satellites, which have been identified near or along the Ouachita River.

Woodland Stage (500 B.C. - A.D. 700)

The beginning of the Woodland stage in northwest Louisiana is defined by the introduction of ceramic technology into the region. Previously, with the exception of a small quantity of fiber-tempered ceramic sherds recovered from Late Archaic Poverty Point influenced sites, the region was primarily aceramic. Also during this stage, populations became increasingly sedentary. The Woodland stage is subdivided into three periods: Early, Middle, and Late. In north Louisiana, the Early Woodland (ca. 500 B.C.- A.D. 100) is represented by the Tchula/Tchefuncte culture, the Middle Woodland (ca. A.D. 100 - 400) is associated with the Marksville culture (it may include early Troyville (Baytown) elements), and the Late Woodland (ca. A.D. 400 - 700) includes Troyville (Baytown) culture but is dominated by peoples of the later Coles Creek and Plaquemine cultures.

Tchula Period/Tchefuncte Culture (500 B.C. - A.D. 1)

The Tchula period is characterized by the first widespread use of pottery within a Late Archaic context of a hunting/gathering tradition and tool inventory (Byrd 1994; Neuman 1984:120-122; Shenkel 1981:23). While the expansive interregional trade network of the preceding Poverty Point culture apparently deteriorated, increases in population and intensification of intra-regional relationships were established during the Tchula period. Gibson (1974:28) has suggested that the emergent Tchefuncte culture did not represent a break from Poverty Point culture, but rather that with the collapse of Poverty Point came a dispersal of its peoples into familiar ecotones in the Southeast.

Within the early Tchula period, the Tchefuncte culture, named after the type site (16ST1) located on the north shore of Lake Pontchartrain, represents the earliest widespread use of ceramics in the Lower Mississippi Valley (Ford and Quimby 1945; Weinstein and Rivet 1978). The Tchefuncte culture was defined by Ford and Quimby (1945) based on Works Progress Administration (WPA) excavations at Big Oak Island (16OR6) and Little Woods Midden (16OR1-5), situated on the southeastern edge of Lake Pontchartrain in Orleans Parish. Lacking local antecedents in Louisiana, Tchefuncte ceramics may have originated from the Stallings Island and Orange complexes of the Georgia-Florida coast.

Tchula/Tchefuncte ceramics usually are characterized by a soft, chalky paste, and a laminated appearance. They were fired at a low temperature and tempered with either sand or clay (Phillips 1970). Vessel forms consist of bowls, cylindrical and shouldered jars, and globular pots that sometimes exhibit podal supports. Many vessels are plain; however, some are decorated with punctations, incisions, simple stamping, drag and jab, and rocker stamping. Punctated types usually are more numerous than stamped types, but parallel and zoned banding, stippled triangles, chevrons, and nested diamonds also represent popular motifs. During the later portion of the Tchefuncte period, red filming was used to decorate some vessels (Perrault and Weinstein 1994:46-47; Phillips 1970; Shenkel 1974:48-54; Speaker et al.

1986:38). Ceramic materials attributable to the Tchula/Tchefuncte culture were defined by those types recovered by Ford et al. (1951) during excavations at the Jaketown Site. These temporally diagnostic types consist of Alexander Incised, Wheeler Simple Stamped, Wheeler Punctated, Jaketown Simple Stamped, three Tchefuncte types (Plain, Stamped, and Incised), and Lake Borne Incised (Ford et al. 1951). In addition, Ford et al. (1951) identified a variety of fiber tempered and fiber impressed ceramic types.

Late Archaic/Poverty Point like projectile point types found in Tchefuncte contexts include Delhi, Ellis, Epps, Gary, Macon, Motley, and Pontchartrain (Shenkel 1974:57; Webb 1982:46-49). Tchefuncte assemblages also include grooved plummets, mortars, sandstone saws, bar weights, scrapers, and chipped celts. Socketed antler points, bone awls, fish hooks, and bone ornaments also have been found associated with Tchefuncte components (Kidder and Barondess 1982:99-105).

Tchula/Tchefuncte sites have been classified as coastal middens or inland villages and hamlets. Settlements reflecting coastal adaptations tend to be located near slack-water environments of slow, secondary streams that drain the bottomlands, near floodplain lakes, and in littoral settings (Neuman 1984:132). Coastal site locations apparently were best-suited for exploiting a variety of fresh and brackish water resources, particularly clam (*Rangia cuneata*) (Shenkel 1984). Inland sites oriented toward the exploitation of terrace and floodplain habitats were not reliant on brackish water resources (Shenkel 1984). Horticulture was probably practiced to some extent at inland locations. Evidence indicative of the use of the spear and atlatl also has been recovered from these inland sites (Ford and Quimby 1945).

Ceramics of the Tchefuncte culture have been reported in southwestern Arkansas (Schambach 1982:87-88) and northeastern Texas (Johnson 1962; Webb et al. 1969:32-35). Bone and grog-tempered plainwares, associated with various Archaic-like artifacts, were identified as early Fourche Maline and late LaHarpe traits. The presence of ceramics on sites that exhibit a persistence in Archaic lifestyles appears representative of regional trends.

Marksville Period (A.D. 1 - 400)

Marksville culture, named for the Marksville Site (16AV1) in Avoyelles Parish, often is viewed as a regional version of the elaborate midwestern Hopewell culture which filtered down the Mississippi River from Illinois (Toth 1988:29-73). A more highly organized social structure than the Tchefuncte/Tchula period is implied for Marksville by the complex geometric earthworks (domed, flattopped pyramidal, and multi-tiered), conical burial mounds for the elite, and unique mortuary ritual systems that characterize Marksville culture. Some items, such as elaborately decorated ceramics, were manufactured primarily for inclusion in burials. Burial items include pearl beads, carved stone effigy pipes, copper ear spools, copper tubes, galena beads, and carved coal objects. It is likely that burial practices and material goods reflect participation in a trade network that has been identified as the "Hopewell Interaction Sphere" (Struever 1964). Toward the end of the Marksville period, Hopewellian influences declined, and mortuary practices became less complex (Smith et al. 1983; Speaker et al. 1986).

Ceramic decorative motifs such as crosshatching, U-shaped incised lines, zoned dentate rocker stamping, cord-wrapped stick impressions, stylized birds, and bisected circles were shared by Marksville and Hopewell cultures (Toth 1988:45-50). Additional Marksville traits include a chipped stone assemblage of knives, scrapers, celts, drills, ground stone atlatl weights and plummets, bone awls and fishhooks, baked clay balls, and medium to large stemmed projectile points dominated by the Gary type.

A variety of exotic artifacts commonly found at Marksville sites suggests extensive trade networks and possibly a ranked, non-egalitarian society. Some commonly recovered exotic items include imported copper earspools, panpipes, platform pipes, figurines, and beads (Neuman 1984; Toth 1988:50-73). In contrast, the utilitarian material culture essentially remained unchanged, reflecting an overall continuity in subsistence systems (Toth 1988:211).

Little is known about Marksville subsistence. Presumably, Marksville people utilized a hunting, fishing, and gathering subsistence

strategy much like earlier periods, but perhaps with an increased focus on the utilization of oily seeds (marsh elder, sunflower, curcurbits) and starchy seeds (*Chenopodium*, wild bean, maygrass, knotweed, little barley) (Fritz and Kidder 1993:7; Smith 1986:51). At the Reno Brake Site (16TE93) in Tensas Parish, Kidder and Fritz (1993) recovered subsistence remains representative of deer, squirrel, rabbit, bird, and fish as well as acorns, persimmon, palmetto, grapes, blackberries, and very minor amounts of *Chenopodium* and sumpweed. Although maize has been identified and dated from a Middle Woodland context at sites in Tennessee and Ohio (Ford 1987; Walthall 1980:128), maize does not appear to have been of economic significance until much later, i.e., ca. A.D. 1000 (Blake 1986:3; Fritz and Kidder 1993:7; Kidder and Fritz 1993:294; Smith 1986:50-51).

The majority of the information concerning the Marksville cultural period was obtained through the excavation of burial mounds. Thus, very little has been inferred about other aspects of the culture. Marksville period burial mounds have been excavated at the Marksville Site, Crooks Site (Ford and Willey 1940), Grand Gulf mound Site, and the Helena Crossing Site (Ford 1936; Toth 1988). Grave goods recovered from the Helena Crossing Site include a freshwater pearl necklace, a copper panpipe, shell bead artifacts, and copper ear spools (Ford 1936). Decorative motifs shared by Marksville and Hopewell ceramics include cross-hatching, U-shaped incised lines, zoned dentate rocker stamping, cord-wrapped stick impressions, bisected circles, and stylized bird motifs (Toth 1974). Other Marksville traits include knives, scrapers, drills, groundstone atlatl weights, plummets, bone awls, fish hooks, Gary points, and conical mounds with log tombs or platforms. A fairly high level of social organization is indicated by the presence of log tombs, abundant grave goods, conical burial mounds, and geometric earthworks. Late Marksville in northeastern Louisiana may be assigned to the subperiod referred to as the Issaquena Phase (Jeter et al. 1989). This culture variant was defined by Greengo (1964) and Phillips (1970) based on their excavations at the Manny Site (22IS506) which is located in the lower Yazoo Basin. Although this construct is based on a substantial amount of excavated data, Williams and Brain (1983:360) still consider the Issaquena Phase to be understood poorly. In fact, Gibson and Shenkel (1988:7) consider this phase to represent the Late Woodland, and not part of the Marksville period at all.

The Issaquena Phase in lower Yazoo Basin generally dates from approximately A.D. 200 to 500, and it is characterized by the ceramic types Marksville Stamped *var. Manny*, Marksville Incised *var. Yokena*, Churupa Punctated *var. Churupa,* and Baytown Plain *var. Satartia* and other related types of the "Satartia set" (Greengo 1964; Phillips 1970; Williams and Brain 1983:314). Although mounds are present at the Manny Site, they appear to have been constructed during the later occupations.

In the lower Ouachita River Valley, Gibson (1985a) identified two sequential phases (Strickland and Pritchard Landing) that appear during the Late Marksville/Issaquena period. The Strickland Phase originally was dated by Gibson (1985a) to ca. 200 - 300, while the Pritchard Landing Phase was dated from ca. 300 - 600. If the dates for these as yet undescribed phases are correct, then a portion of the Pritchard Landing phase is coeval with Troyville culture.

As of 1990, 166 Marksville sites had been documented in Management Unit II; three of these sites had been identified in Ouachita Parish, while a fourth was located in Union Parish (Saunders 1990). In addition, Saunders (1990) also reported that 19 Issaquena components had been recorded in this management unit; however, none of these are located in Ouachita, Lincoln, or Union Parishes.

Troyville-Coles Creek Period (ca. A.D. 400 - 1200)

Troyville culture, also termed Baytown, was named after the mostly destroyed Troyville mound group (16CT7) located in Jonesville, Catahoula Parish, Louisiana. (For a discussion of the Troyville/Baytown issue, see Gibson 1984 or Belmont 1984). Troyville represents a transition from the Middle to Late Woodland period and it culminated in the Coles Creek culture (Gibson 1984). Though distinct, these two cultures are similar enough that many researchers group

them as a single prehistoric cultural unit. According to Neuman (1984:169), 23 C^{14} dates for 14 Troyville-Coles Creek sites in Louisiana place the beginning of Troyville culture at A.D 395. In addition, Kidder (1988:57) places the beginning of the Coles Creek at some time between ca. A.D. 700 - 800. The continuing developments of agriculture and the refinement of the bow and arrow during this time (reflected by Alba, Catahoula, Friley, Hayes, and Livermore projectile point types), radically altered subsequent prehistoric lifeways. The appearance of large ceramic vessels during the Troyville cultural period, suggests that bean and squash agriculture may have been widespread. This shift in subsistence practices probably fostered the development of more complex social and political organization.

The Late Woodland Coles Creek culture emerged from Troyville around A.D. 750 and it represented an era of considerable economic and social change in the Lower Mississippi Valley. By the end of the Coles Creek period, communities became larger and more socially and politically complex; large-scale mound construction occurred, and near the end of the period, there is evidence for the re-establishment of long-distance trade on a scale not seen since Poverty Point times. These changes imply that a chiefdom-like society was re-emerging in the Lower Mississippi Valley (Muller 1978). The possible diffusion of raw material and sociopolitical concepts from the Midwest may be indicated by the fact that Coles Creek ceramics have been recovered from early Cahokian contexts dating from ca. A.D. 900 in southeastern Missouri (Kelly 1990:136). These changes probably initiated the transformation of Coles Creek cultural traits into what now is recognized as the Plaquemine culture sometime before A.D. 1200 (Jeter et al. 1989; Williams and Brain 1983).

Ceramics of this period are distinguished by their grog and grog/sand tempers, as opposed to the chalky, sand tempered paste of the previous ceramic series. Decorative motifs include cord marking, red filming, and simplified zoned rocker-stamping, as well as decorations with incised lines and curvilinear lines. The Coles Creek peoples continued to use Troyville wares, with some elaborations (McIntire 1958). For instance, the Churupa Punctated and the Mazique Incised designs, both of which are characteristic of the Troyville culture, were used by both Coles Creek and later Plaquemine pottery makers (McIntire 1958). Similarly, French Fork Incised, which formed the basis for many Troyville classifications, continued to be used well into the Coles Creek period (Phillips 1970).

Coles Creek peoples also developed a new ceramic complex that included larger vessels and a wider range of decorative motifs, usually positioned on the upper half of the vessel (Neuman 1984). Coles Creek Incised, Beldeau Incised, and Pontchartrain Check Stamped characterize the ceramics of this period (Phillips 1970; Weinstein et al. 1979). A distinctive decorative type, Coles Creek Incised, contains a series of parallel incised lines that were made parallel to the rim of the vessel, often accompanied underneath by a row of triangular impressions (Phillips 1970:70; Phillips et al. 1951:96-97). Several of the ceramic motifs suggest outside cultural influences. French Fork Incised motifs and decorative techniques, for example, mimic Weeden Island Incised and Weeden Island Punctated motifs from the northwest Florida Gulf Coast (Phillips 1970:84; Phillips et al. 1951:101; Willey 1949:411-422). Pontchartrain Check Stamped ceramics also appear at the same time as the resurgence of the check stamped ceramic tradition during Weeden Island III in northwest Florida (Brown 1982:31).

During the Coles Creek cultural period, sites were situated primarily along stream systems where soil composition and fertility were favorable for agriculture. Natural levees, particularly those situated along old cutoffs and inactive channels, appear to have been the most desirable locations (Neuman 1984). Most large Coles Creek sites contain one or more pyramidal mounds. Coles Creek mounds typically are larger, and they exhibit more building episodes than the earlier Marksville burial mounds. Burials occasionally are recovered from Coles Creek mounds; however, the primary function of the mounds appears to have been ceremonial. At some Coles Creek sites, mounds are connected by low, narrow causeways; sometimes, plazas are associated with these multiple mound sites (Gibson 1985).

The complexity of Coles Creek mound systems suggests a more complex social structure; a centralized authority and sizable labor force must have existed to build, maintain, and utilize these mounds. The centralized authority probably resided at the ceremonial mound centers and was of a special religious class (Gibson 1985; Neuman 1984; Smith et al. 1983). In general, small Coles Creek sites consist mostly of hamlets and shell middens that normally do not contain mounds. It is at these sites, located in the region surrounding the large ceremonial centers that the general population resided.

Recent work has dispelled the theory that an intensification of agriculture, particularly maize (*Zea mays* spp. *mays*) and squash (*Cucurbita pepo*), created the stable base from which the Coles Creek culture arose and flourished. Although Coles Creek populations exhibit tooth decay rates consistent with a diet based on starchy foods such as maize, limited archeobotanical evidence for maize in Coles Creek midden deposits suggests that consumption of some other starchy foods must be the cause (Kidder 1992; Steponaitis 1986). While researchers speculate that the utilization of cultigens, especially squash species, as a dietary supplement occurred in conjunction with the incipient Coles Creek culture, evidence of dependence on domesticated plants has been lacking at early Coles Creek and the related Plum Bayou sites (Kidder and Fritz 1993; Kidder 1992). The preponderance of evidence now available indicates that cultivation and consumption of maize was not widespread in the Lower Mississippi Valley until after the Coles Creek period, ca. A.D. 1200 (Kidder 1992:26; Kidder and Fritz 1993). Thus, while maize existed during the Coles Creek period, and has been recovered archeologically, it was not the economic staple of the society.

Within Management Unit II, Saunders (1990) documented 67 archeological sites with Troyville components, 68 Baytown components, and 318 Coles Creek components. Of these, sites containing Troyville (N=5) and Baytown (presumably Troyville; N=4) components, as well as Coles Creek (N=41) components have been recorded in Ouachita Parish. Subsequent to Saunders (1990) submittal, two sites from the Coles Creek cultural period (16UN51 and 16UN81) have been reported in Union Parish (Harty 1991; 1993).

Mississippian Period (ca. A.D. 1200 - 1700)

The Mississippian stage represents a cultural climax in population growth and social and political organization for those cultures that occupied the southeastern United States (Phillips 1970; Williams and Brain 1983). In the Lower Mississippi Valley, the advent of the Mississippian stage is represented at sites along the Lower Mississippi Valley and along the northern Gulf Coast by incorporation of traits such as shell tempered ceramics, triangular arrow points, copper-sheathed wooden earspools, and maize/beans/squash agriculture (Williams and Brain 1983). Formalized site plans consisting of large sub-structure "temple mounds" and plazas have been noted throughout the Southeast at such places as Winterville, Transylvania, Natchez, Moundville, Bottle Creek, and Etowah (Hudson 1978; Knight 1984; Walthall 1980; Williams and Brain 1983). In the Lower Mississippi Valley, the Mississippian stage may be characterized by the Plaquemine or Emergent Mississippian period (ca. A.D. 1200 - 1450) and by the Late Mississippian period (ca. A.D. 1450 - 1700). Late Mississippian culture is only found in limited portions of the Middle/Lower Ouachita River Valley and is expressed by the Keno phase (ca. A.D. 1600 - 1700). In the vicinity of the currently proposed project corridor, the Plaquemine culture probably lasted until at least A.D. 1600, when it was superseded first by the Late Mississippian Keno phase (ca. A.D. 1600 - 1700), and then by the Caddoan Glendora Focus and the historic Ouachita (Kidder 1990; Jeter et al. 1989; Swanton 1946).

Emergent Mississippian - Plaquemine Period (ca. A.D. 1200 - 1600)

The Emergent Mississippian period - Plaquemine culture appears to represent a transitional phase from the Coles Creek culture to a pure Mississippian culture (Kidder 1988). Interaction with the emerging Mississippian cultures of the Middle Mississippi Valley probably exerted enough influence during the latter part of the Coles Creek period to initiate the cultural change that eventually became known as the Plaquemine culture. The Medora Site (16WBR1), described

by Quimby (1951), typifies Plaquemine culture. Plaquemine peoples continued the settlement patterns, economic organization, and religious practices established during the Coles Creek period; however, sociopolitical structure, and religious ceremonialism intensified, suggesting a complex social hierarchy. Large sites typically are characterized as ceremonial sites, with multiple mounds surrounding a central plaza. Smaller dispersed villages and hamlets also formed part of the settlement hierarchy (Neuman 1984).

In the past, the cultural achievements of the Plaquemine period were thought to have been supported by the intensive cultivation of maize. During the early Plaquemine culture, subsistence probably shifted to agriculture, supplemented by native plants and animals; however, evidence of intensive agriculture has been inconclusive (Kidder and Fritz 1993:9).

Although Plaquemine ceramics are derived from the Coles Creek culture, they display distinctive features that mark the emergence of a new cultural tradition. In addition to incising and punctating pottery, Plaquemine craftsmen also brushed and engraved vessels (Phillips 1970). Plaquemine Brushed appears to have been the most widespread ceramic type. Plaquemine ceramic types included Leland Incised, Hardy Incised, L'Eau Noire Incised, Anna Burnished Plain, and Addis Plain. By ca. A.D. 1450, the Plaquemine culture in much of the Lower Mississippi Valley apparently had evolved into a true Mississippian culture (Kidder 1988:75).

Gregory (1969) indicates that Plaquemine sites in the Catahoula Basin demonstrate a propensity towards lowland areas, including swamps and marshes. This position is supported by both Jeter (1982) and Schambach (1981) in reference to southeast Arkansas, and the Felsenthal region of that state. In contrast Neuman (1984) cites Hall's observation that Plaquemine culture sites in the upper Tensas basin were located most frequently on well-drained natural levees characterized by sandy soils. In the Boeuf Basin, Kidder and Williams (1984) note that Plaquemine components frequently overlie earlier Coles Creek sites.

In the Lower Ouachita River Valley, three Plaquemine phases were noted by Gibson (1985a), and they subsequently were reiterated by Jeter et al. (1989). These phases include McGuffee (ca. A.D. 1200 - 1300), the Paragoud (ca. A.D. 1300 - 1450), and the Myatt's Landing Phase. This later phase may have either Late Mississippian or Caddoan influences. It is thought to have begun at ca. A.D. 1450, and may have survived until as late as A.D. 1650. As with other phases of the lower Ouachita region, those of the Plaquemine Period have been named, but have yet to be defined.

Saunders (1990) documents 239 Plaquemine cultural period components in Management Unit II. A total of 30 of these Plaquemine sites in Management Unit II are reported to be in Ouachita Parish. While it is almost certain that they exist, neither Smith et al. (1983) nor Saunders (1990) documented any Plaquemine cultural components in either Union or Lincoln parishes.

Late Mississippian Period (ca. A.D. 1600 - 1700)

As early as A.D. 1450, several traits that now are definitive of the Mississippian period were wide-spread across most of the Southeast. These traits include well-designed mound groups, a wide distribution of sites and trade networks, shell tempered ceramics, and a revival in ceremonial burial of the dead (Griffin 1990:7-9). These traits are discussed below.

Ceramic types frequently are characterized by shell tempering, an innovation that enabled potters to create larger vessels (Brain 1971; Steponaitis 1983). Ceramic vessels included such forms as globular jars, plates, bottles, pots, and salt pans. The loop handle appeared on many Mississippian vessels. Although utilitarian plainware was common, decorative techniques included engraving, negative painting, and incising; modelled animal heads and anthropomorphic images also adorned ceramic vessels. Other Mississippian artifacts included chipped and groundstone tools; shell items such as hairpins, beads, and gorgets; and mica and copper items. Chipped and ground stone tools and projectile point styles such as Alba and Bassett also were common.

Mississippian subsistence was based on the cultivation of maize, beans, squash, and pumpkins; collection of local plants, nuts, and seeds; and fishing and hunting of local species. Major Mississippian sites were located on fertile bottomlands

of major river valleys; sandy and light loam soils usually were characteristic of these bottomlands. A typical Mississippian settlement consisted of an orderly arrangement of village houses, surrounding a truncated pyramidal mound. These mounds served as platforms for temples or as houses for the elite. The planning of these communities clearly reflects a highly organized and complex social system.

In the vicinity of the current project corridor, the Late Mississippian period is represented poorly, and it is not understood clearly. As was stated previously, continuity existed between earlier Plaquemine occupation and later occupations in the region. Gibson (1985a) did not include a Mississippian phase in either the Lower Ouachita River region or the Catahoula Lake regions; however, Jeter et al. (1989, Table 9) includes the Late Mississippian Keno Phase. The Keno phase is dated from the Late Prehistoric or Protohistoric period (ca. A.D. 1600 - 1700) and it is typified by the type site, Keno Place (16MO31) on the Ouachita River. It has perhaps best been defined by Belmont (1983) and Kidder (1986) following their examination of vessels and other materials recovered by Moore (1909) during his earlier excavations. These investigations identified an artifact assemblage not unlike that found at the Jordon Site (16MO1).

Kidder (1986;1992) believes that the occupants of the Jordon Site represented the intrusion of a refugee, mound-building Mississippian population into the Boeuf Basin from the Tensas Basin following the de-stabilizing effects of initial European contact (Kidder 1992). Jordon Phase ceramic markers include local versions of many Lower Valley Mississippian types. Critical phase markers include brushed shell tempered ware, the "Jordon" rim mode (punctations on the lips of bowls), and the "Moore" mode (stamped, incised, or punctated decoration on the necks of jars).

While not recognized in the lower Ouachita River Valley, a second, nearly contemporaneous, and possibly related, phase, may have influenced the region: the Transylvania phase. Identification of the Transylvania phase is based on excavations at the Transylvania Site (16EC8), a multi-mound site located in along the Mississippi River delta in East Carroll Parish, Louisiana (Hally 1972).

Ceramic markers for the Transylvania phase include Barton Incised *vars. Arcola, Atherton,* and *Stowers*; Fatherland Incised *var. Fatherland*; Leland Incised *vars. Blanchard, Dabney*, and *Deep Bayou*; Maddox Engraved *var. Emerald*; Mississippi Plain *var. Pocahontas*; Parkin Punctated; Owens Punctated *var. Menard*; and Winterville Incised *vars. Erwin* and *Winterville*. Stone tools characteristic of the Transylvania phase include barbed stemmed arrow points and polished stone celts.

While the Mississippian cultural period remains the focus within northeastern Louisiana, there is evidence of the trade of cultural ideas and practices from other Native American groups, especially those to the west. One such group was the Caddo, a complex cultural unit that existed concurrently with the Mississippian peoples.

Caddo Cultural Unit (A.D. 900 - 1835)

The heartland of the Caddoan cultural area is located in the Trans-Mississippi South (TMS) and it encompasses southeastern Oklahoma, northeastern Texas, southwestern Arkansas, and northern Louisiana (Davis 1960:4; Schambach 1982). The Caddoan Nation has been described as a confederacy of independent tribes, some with distinct languages, that shared the same social, religious, and subsistence practices (Swanton 1946). Historically, the Caddo Indians in Louisiana were composed of three confederations. The first included the Natchitoches, Kadohadacho, and Hasinia. The other two consisted of the Eyeish and Adai (Swanton 1946:98). Northwest Louisiana Caddoan society was based on patrilineal descent groups. These groups maintained their autonomy while interacting considerably with both Caddoan and outside groups. The Caddoan occupation of northwestern Louisiana ended with an 1835 land cession to the United States government.

Archeological investigations in the region suggest that the Caddoan tradition began emerging as a distinct culture sometime during the Coles Creek period (A.D. 800 - 1200). The similarity between Coles Creek ceramic and lithic artifacts and those of early Caddoan cultures has been noted by various authors (Gregory and Curry 1978; Suhm and Jelks 1962; Webb

1960:11-14; Webb and McKinney 1975). Story et al. notes that ". . . Caddoan ceramics can be recognized as local developments with strong influence from the Lower Mississippi Valley" (1990:247). Others trace the development of the Caddoan tradition from the Fourche Maline culture in southwestern Arkansas because of similarities in projectile point types, vessel forms, burial mounds, and other characteristics (Davis 1959:9; Waddell and Blaylock 1982:19 -21). According to Waddell and Blaylock (1982), the Fourche Maline culture was not recognized in southern Arkansas until the early 1960s because the majority of the ceramic assemblage was undecorated, and among the decorated types were Coles Creek Incised. Fourche Maline plainwares include Williams Plain, a bone tempered type also found on pre-Caddoan and early Caddoan sites in Southwest Arkansas, Northeast Texas, and Northwest Louisiana (Schambach 1982:76; Webb et al. 1969:99). Bone as a tempering agent in Coles Creek ceramics of the Lower Mississippi Valley is relatively unknown (Phillips 1970). This suggests at least some continuity between the Late Fourche Maline culture and early Caddoan culture. While the origin of the Caddo has not been firmly established, the development of the culture out of the Great Bend Region of southwestern Arkansas is not questioned (Waddell and Blaylock 1982:21).

The construction of the Caddoan chronological sequence prior to the development of modern dating techniques was based primarily on ceramics. At that time, a series of aspects divided into smaller foci was constructed to order the various sites (Davis 1959:6-13). The old Gibson and Fulton Aspects that had been developed early in Caddoan archeology were found to be "too simplistic" (Story et al. 1990:171). Mott Davis, therefore, developed a five-stage sequence that better represented cultural continuity and change for both Louisiana and the adjacent states (Waddell and Blaylock 1982:22). The Gibson Aspect corresponds to Caddo I and II, and the Fulton Aspect equates to Caddo III and IV, while Caddo V is recognized as the historic Glendora Aspect (Smith et al. 1983). In Northwest Louisiana, Caddo I-V are generally equated with foci (now phase) names long used by Webb and others. Caddo I is represented by the Alto phase. Caddo II, the Haley phase in Southwest Arkansas, is represented by early to middle Bossier phase in Northwest Louisiana. Caddo III is assigned to the latter portion of the Bossier phase. Caddo IV is represented by the Belcher phase. The last period, Caddo V, has traditionally been known as the Glendora phase.

Caddo I Period (A.D. 900 - 1200)

Caddo I is represented regionally by Alto phase occupations in northwestern Louisiana, eastern Texas, and southwestern Arkansas. The Alto phase exhibits traits that have been interpreted as derivative primarily from Coles Creek/ Fourche Maline culture (Webb and McKinney 1975). Excavations at Mounds Plantation (16CD12) indicate that Caddoan settlement patterns, tool assemblages, lithic technologies, and ceramic types were similar to those of the preceding Coles Creek culture. The plaza-mound group at Mounds Plantation initially was designed and occupied during the Coles Creek period. A rapid, yet smooth, transition to Caddo I took place, as evidenced by the care taken to preserve early burials during later mound construction. A Coles Creek component also was identified in or immediately below Alto phase deposits at the Smithport Landing Site (16DS1) (Webb 1963:184-186). In addition, a pre-Caddoan construction has been recognized at the Crenshaw Site (3MI6). As at Mounds Plantation, the initial stage of mound construction was pre-Caddoan with late construction during the Alto phase (Durham and Davis 1975:7). While initially viewed as a Coles Creek activity, the early construction of the mounds at the Crenshaw Site has been reinterpreted as late Fourche Maline (Early 1982:76-77).

Lithic materials associated with Caddo I sites in Louisiana include a variety of small projectile points including Alba, Hayes, Scallorn, Catahoula, and Friley types (Webb and McKinney 1975:95-96). These were manufactured from local raw materials, which were often thermally altered prior to reduction. Quartz, quartzite, chalcedony, and chert nodules were probably obtained from local point bar gravels on the Red River and from exposed gravel deposits in the uplands. Of particular interest are Gahagan knives, large, well-made parallel-flaked knives that often were

included in Alto burials. It has been postulated that these knives were manufactured from lithic material that originated in southeastern Oklahoma (Webb and McKinney 1975:97-98).

Ceramic vessels took a variety of shapes, including bottles, carinated bowls, caldrons, deep bowls, and beakers. Various tempering materials, such as grog, grit, sand, and crushed bone were used during the manufacture of ceramic vessels. Temporally diagnostic ceramic types include Crockett Curvilinear Incised, Pennington Punctated Incised, Dunkin Incised, Holly Fine Engraved, Smithport Plain, and Carmel Engraved. Shared Coles Creek and Alto types include Evansville Punctated, Coles Creek Incised, Baytown Plain, and Hollyknowe Ridged Pinched, among others (Davis 1960:12; Thomas et al. 1980:158-188; Webb 1960:16-18). Personal items, such as adornments and pipes, also have been recovered from Caddo I sites. Mortuary practices of early Caddoan culture imply the existence of a political organization with a hierarchical framework. Log shaft tombs were constructed for the elite; sacrificed retainers and burial goods also were included (Bohannon 1973:40-43; Durham and Davis 1975; Webb and McKinney 1975).

Settlement studies conducted for Caddo I sites indicate a variety of site types within the region. Large ceremonial centers, notably Gahagan (16RR1) and Mounds Plantation (16CD12), were located on the broad natural levees of the Red River near abandoned channel systems. Small hamlets were located on terraces along smaller streams (Neuman 1984:218). Seasonal camps were located on once-active point bars. Other sites, such as Smithport Landing (16DS1), represent hamlets situated on the margins of upland terraces. In addition, special-function Caddoan sites relating to salt production have been identified. Winchell (1989) has suggested that the primary form of Caddoan settlement was the hamlet, each consisting of one to two houses and related structures, dispersed around a drainage. These hamlets formed rural communities that loosely could be called villages. Wilmsen (1959:42-44) describes early Caddoan houses as large circular forms with small, vertical posts forming the walls, occasionally with center posts, and the probable use of waddle and daub on the walls. At the Hanna Site, circular structures measuring about 8 m (26 ft) in diameter were identified (Thomas et al. 1980:111-152). Clay daub was used on the walls and around smoke holes in the roofs of these structures.

Caddo II/III Period (A.D. 1100 - 1500)

The succeeding phases of the Caddo sequence are marked by the Haley phase (A.D. 1100 - 1400) in southwestern Arkansas and the Bossier phase (A.D. 1200 - 1500) in northwestern Louisiana. The Haley phase represents cultural continuity and elaboration from earlier Alto times. Materials recovered from several sites indicate an alliance or trade with Caddoan tribes farther to the north. In contrast, the ensuing Bossier phase is characterized by a period of overall decline in northern Louisiana and eastern Texas.

Initial investigations by Webb (1948) at Bossier sites were conducted in Bossier, Caddo, and DeSoto Parishes, Louisiana. He found that Bossier (or Bossier-like) occupations occurred as far west as the McGee Bend area of Texas and they extended eastward to the Ouachita River region. He also determined that most of these sites were situated outside of the alluvial valleys (e.g., the Red River Valley), and that they had been established in upland areas overlooking streams or lakes. At present, only a few mound sites (Vanceville [16BO7], Werner Mound [16BO08], Mounds Plantation [16CD12], and Belcher [16CD13]) with Bossier phase components have been identified in the lowlands of Bossier and Caddo Parishes. No village sites have yet been reported, although, a Bossier phase component was identified at the previously mentioned Hanna Site (16RR4) in Red River Parish, Louisiana.

Ceramic types associated with the Bossier phase are comprised primarily of utilitarian wares that include Pease Brushed-Incised, Sinner Linear Punctated, Bossier Brushed, Belcher Ridged, and a late variety of Dunkin Incised (Suhm and Jelks 1962). There is a decrease in complexity of engraved wares. Straight line (linear) designs or other geometric motifs replace the complicated, curvilinear design elements present during the Alto phase. These engraved wares include the types Avery, Maddox, and Taylor (Suhm and Jelks 1962; Webb 1948). According to Webb

(1948:106-123) grog is the dominant temper, although bone and/or ground tufa occasionally were identified.

Lithic materials of this phase consist mainly of locally available cherts, which were used mostly to manufacture projectile points. Webb (1983:230) reports an absence of flake tools or modified flakes on Bossier phase sites. Temporally diagnostic Caddo II-III artifacts include Alba and Hayes projectile points, and later Bassett and Ashley types.

The Bossier phase in northwestern Louisiana represents a decline of the earlier (Alto) Caddo culture that occurred between A.D. 1200 and 1500 (Webb and Gregory 1986). During this period large settlements were abandoned in favor of small hamlets dispersed throughout the area. The majority of these hamlets are in the uplands, suggesting a preference for marginal habitats along secondary streams, and away from larger floodplains. It has been proposed that the dispersal of Bossier phase sites into the uplands was due to rafting along portions of the Red River, thus flooding traditional habitation sites in the valley (Wyckoff and Hofman 1983:229). Gregory, however, noted that this did not affect the Cane River basin area and that the Bossier phase migration into the uplands, seen further upriver, did not occur around Natchitoches (Campbell et al. 1978:21). This shift from the river valley to the uplands also changed sociopolitical aspects of Caddoan life as mound building was de-emphasized and burial practices became less elaborate (i.e., single burials with fewer grave goods). The lack of exotic materials and a reliance on local lithic sources implies a collapse of the regional trade network. As noted above, ceramics also changed to an assemblage dominated by simple vessel forms and decorative techniques. Wilmsen (1959:41-42) states that in addition to the large round house forms of the prior phase, large rounded rectangular house forms with extended entrances appeared in the Caddoan area during Caddo II.

At approximately the same time as the dispersal of the Caddo into the hills in Northwest Louisiana, ceramic types and accompanying burial offerings found at Haley phase centers in Southwest Arkansas became more elaborate (Early 1982:107). Hypothetically, if the shift of Bossier occupations into the uplands was caused by the rafting of the Red River, which was reported as extending from above Natchitoches to above the present-day Louisiana state line into southwestern Arkansas, then the continued growth of Haley phase sites could be attributed to their relocation on the northern extremity of the raft-formed lake.

Caddo IV Period (A.D. 1500 - 1700)

Caddo is represented by the protohistoric Belcher phase. Wyckoff and Hofman (1983:198) note that the Haley phase evolved into the Belcher phase in Southwest Arkansas. Subsequently, these people moved southward into the Red River Valley of Louisiana, bringing new ceramic wares and sociopolitical ideas to the region. This migration is supported, in part, by Early (1982:111-112) who states that the Belcher phase in Southwest Arkansas is little understood, but was a time of mortuary, ceremonial, and material change that could have been caused by interaction with groups outside of the area. In Louisiana, the phase was named after of the type site (Belcher [16CD13]) located approximately 32 km (19.9 mi) north of Shreveport in Caddo Parish (Kelley 1998:91). In comparison with the preceding Caddo II-III/Bossier phase, the Belcher Site exhibited a renewed movement towards complexity and expansion (Webb 1959:201-202).

The re-emergence of complex chiefdoms in the Red River Valley of Northwest Louisiana may indicate that the raft-lake had decreased in size. Settlement again shifted to the river valley, where single mounds, interspersed villages, and small hamlets appeared. Upland camps and salt extraction sites, however, continued to be part of the settlement pattern (Gregory 1980:358-358). The increase in ceremonial practices, mound building, and ceramic designs, whether spurred internally or externally, was a result of a revitalized Caddo.

Belcher phase people subsisted on an agricultural complex of maize and beans, supplemented by nuts, fish, and wild game (Webb 1959:179-180). Further evidence of the use of agriculture has been found at Caddo IV sites in Northeast Texas (Perino 1981:95-98; Pertulla et

al. 1982:96-99). Questions remain regarding the pervasiveness of tropical cultigens in the Caddoan area. No cultigens were found at four sites investigated in Northeast Texas, but numerous native plants, including hickory, acorn, knotweed, and goosefoot, were recovered from some of them (Perino 1995; Pertulla et al. 1982, 1993).

Temporally diagnostic projectile points of this period included Perdiz, Bassett, Maud, and Scallorn arrow points. A variety of other chipped stone tools were constructed from local lithic materials. Tools recovered from Belcher phase sites include varieties of drills, awls, hoes, axes, manos, and metates, as well as various other tools used for food acquisition, preparation, and processing. Belcher phase pottery was finely crafted and elaborately decorated. Ceramic vessel types included bottles, bowls, jars, with occasional bird and turtle effigies. Decorative techniques included engraving, stamping, incising, trailing, ridging, punctating, and brushing. The use of red slip and black surface finishes was common. Diagnostic ceramic types include Taylor Engraved, Cowhide Stamped, Belcher Ridged, Belcher Engraved, Bailey Engraved, Hodges Engraved, Glassell Engraved, Foster Trailed-Incised, and Karnack Brushed Incised (Webb 1959:117-178). During this time the use of crushed shell temper increased (Kelley 1994:74-75; Trubowitz 1984:109-110).

Webb (1959:59) identified seven structures at the Belcher Site and, based on size and form, they displayed two distinct structural types. Each of these examples was circular in configuration and each ranged in size from 9.1 to 12.2 m (30 to 40 ft) in diameter. The exterior of each building apparently was clad in wattle-and-daub that was placed over a vertical wooden frame, and each was characterized by a conically shaped thatched (probably grass) roof. While all buildings contained northeast facing entrances, only one of the two types exhibited evidence of an extended entrance way. The size of the structures and the additional entrance is suggestive of either a religious or political function.

Interaction with other groups led to increased ceremonialism and participation in the Southeastern Ceremonial Complex (Southern Cult; SCC), a ceremonial cult prevalent across the Southeast that is distinguished by distinct burial practices and design motifs. Shared motifs such as the serpent-eagle, ceremonial drinking cups, and various grave accouterments found at Spiro and other Caddoan sites give evidence of Caddoan familiarity with or ties to the Southeastern Ceremonial Complex (Neuman 1984:276-277; Webb 1959:197). In Northwest Louisiana, the best evidence for Caddoan interaction with the Southeastern Ceremonial Complex was found at the Belcher Site (16CD13). Webb (1959:195-196) recovered ceramic vessels and shell artifacts decorated with known Southern Cult motifs from the Belcher phase component at this site. He stated that these motifs had disappeared by the end of the Belcher phase, and were no longer present during the historic period Glendora phase (Webb 1959:198).

As explored later, investigations at the Joe Clark Site (16BO237) and the McLelland Site (16BO236), both in Bossier Parish, Louisiana, revealed aspects of Caddoan life during the late Caddo IV and early Caddo V periods (Weinstein et al. 1984; see also Hunter et al. 1992; Kelley 1994, 1998:102-106). Both sites were identified either as Caddoan farmsteads or small rural communities. Although archeological evidence at the two sites substantiated Webb's (1959) findings that exotic shell artifacts were common during the late Belcher Focus, Weinstein et al. (1984:156-162) did not remark on any artifacts bearing Southern Cult motifs.

Caddo V Period (A.D. 1700 - 1835)

An understanding of protohistoric and historic Native American cultures of the southeastern United States is limited by our frequent inability to recognize the ancestral cultures from which these historic groups were derived. This is due partially to the waning influence of Mississippian and Caddo culture, but primarily is a result of the social disruption initiated by the Hernando de Soto entrada of 1539 - 1543 and the subsequent French and Spanish exploration and colonization of the Southeast. Native American population upheavals and depletions were related to warfare, disruptive migrations, and epidemics introduced by European contact (Davis 1984; Smith 1987; Wolf 1982). In addition to natural

erosional processes, historic and modern impacts have damaged cultural resources and thereby prohibited correlation of historical accounts with the archeological record. Traditionally, a single pan-regional Caddo phase (Glendora) has been accepted in the northern part of the state; however, this currently is disputed and Caddo V is poorly understood in northern Louisiana. While Jeter et al. (1989:233-239) acknowledges the Glendora and succeeding Ouachita in northern Louisiana and the Chakinina and the Kadohadacho in the great bend region, only the historic Natchitoches is recognized in the vicinity of the current study area.

The Glendora phase is named after the extra-regional type site (16OU18) located on Glendora Plantation, in the Ouachita River Valley of northeastern Louisiana. This mound group, excavated in 1909 by C.B. Moore, is presumed to be a village. Moore (1909) initially presented the site as being of Caddo origin, an assumption that was long maintained. However, subsequent examinations of the artifact assemblage from this site, and a related site (Keno Place [Site 16MO31]), by Belmont (1983) and Kidder (1986) suggest that while each contained Caddo ceramic materials, they also contain contemporaneous artifacts that are indicative of the Lower Mississippi Valley. In addition to materials from the Lower Mississippi Valley (including some that may be Natchezan), and artifacts from apparently indigenous populations, as well as a minority of Caddo vessels, each of the two sites also contained a small number of European trade goods. Kidder (1986, 1998) suggested a date range for these sites that extended from ca. A.D. 1600 to around A.D. 1700, and he also argued (as Moore 1909 and others have previously contended) that these sites are not the remains of the historic Ouachita.

A second phase (Lawton) was proposed by Williams (1964:562-563) in reference to the historic Natchitoches Confederacy following excavations at two sites (Fish Hatchery [16NA9] and Lawton [16NA13]) located on the Cane River (Kelley 1998:100). Each of these two sites is considered to be a village, and each was excavated following the unexpected discovery of human remains during separate construction projects. Although information about the two sites was limited primarily to mortuary data (over 100 human and two horse burials were recorded at these locations), a variety of Native American ceramic material, glass and shell beads, and a small number of metal items of European origin were recovered. Ceramic types present at these sites included Natchitoches Engraved, Keno Trailed, and possibly Karnack Brushed-Incised, as well as examples of an unidentified coarse shell tempered ceramic type (Kelley 1998:100). While six other possible Lawton phase sites (e.g., 16NA14, 16NA54, 16NA461 and three without formal site numbers 16NA1-LSU, 16NA3-LSU, and 16NA4-LSU) are noted by Kelley (1998:100-101), excavation of these locations was confined primarily to burials (see Ford 1936:92-93; Gregory and Webb 1965; Webb and Gregory 1986).

In addition, and as noted earlier, excavations have been completed by Kelley et al. (1994) at two Bossier Parish sites (McLelland [16BO236] and Joe Clark [16BO237]) located on a natural levee of the Red River near Lock and Dam No. 5 (Hunter et al. 1992; Kelley 1998:102-106; Weinstein et al. 1984; see also Chapter V). Each of the two sites dates from the protohistoric to the early historic period, i.e., from Caddo IV-Caddo V, and each produced *in situ* cultural deposits. Ceramic materials at these sites included both coarse wares and fine wares. Coarse wares included Belcher Ridged, Karnack Brushed-Incised and later Emory Punctated Incised, while fine wares were comprised of Eno Trailed, Natchitoches Engraved, Hodges Engraved, and Glassell Engraved. The artifact assemblage also included examples of extra-regional ceramic types such as Cracker Road Incised and De Siard Incised, as well as one sherd of Fatherland Incised. The presence of these ceramics is an indication of trade with Lower Mississippi Valley groups such as the Tunica, the Koroa, and even the Natchez. The three identified structures (two at 16BO236 and one at 16BO237) were consistent in form with those identified at the Belcher Site (16CD13) by Webb (1959:59).

During the early portion of Caddo V, linguistically related groups of the region apparently included the Kadohadacho, Doustioni, Natchitoches, Yatasi, Ouachita, and Adaes. When encountered by Europeans, these groups were

inhabiting the area around present-day Campti, Mansfield, Robeline, Shreveport, and Natchitoches in northwest Louisiana and near Monroe, Louisiana (Kniffen et al. 1987:47, 75, 91; Swanton 1946; 1953:196-197, 204-207). According to Swanton (1946:419, 640), Caddo villages were comprised of loosely associated hamlets. Each hamlet consisted of one or two circular houses constructed of vertically set posts, covered with grass, and platformed storage structures.

In 1541, De Soto was the first European to encounter Caddo peoples. The Caddo Nation came into contact with the French when Henry de Tonti visited the area in 1690. Ten years later, in 1700, Bienville courted the Caddo at Natchitoches to form an alliance. Only two years later, in 1702, the Caddo asked Saint-Denis to help them relocate because devastating floods (possibly associated with the Great Raft) had destroyed their crops. Saint-Denis obliged and allowed the Caddo to settle near the Acolapissa on the north side of Lake Pontchartrain. In 1714 the Caddo moved back to the Red River near the French trading post at Natchitoches. Subsequently, the Acolapissa attacked the Caddo. Saint-Denis built Fort Jean Baptiste at Natchitoches to protect the Caddo and French interests in the area. Relations continued to be good between the Caddo and French, and in 1731 the Caddo assisted the French in attacking the Natchez (Swanton 1946:99, 161).

The Adai, or Adaes, apparently were members of a Caddoan group for which the Spanish established the mission Los Adaes in the 1720s. The mission and presidio, located approximately 24.1 km (15 m) west of Natchitoches, became the capital of the Spanish province of Texas (Gregory et al. 1979:8; Kelley 1998:102; Swanton 1946:83-84). Archeological investigations of the Spanish presidio of Nuestra Señora del Pilar de Los Adaes (Site 16NA16) have revealed that contact with the European settlers and explorers brought changes to Caddo culture. Gregory et al. (1979; 1982; 1984; 1985) found that European faunal and floral species dominated the diet. He also determined that ceramic bottle forms decreased dramatically, while brimmed bowls, ". . . apparently inspired by their European counterparts . . ." were common in the assemblage (Gregory et al. 1984:36). Lithic artifacts are poorly represented at Los Adaes, perhaps indicating the use of glass and metal by the Indians instead of lithic materials. European contact affected other aspects of Caddo life. Personal adornment gained a new status as the Spanish at Los Adaes, and the nearby French from Natchitoches, introduced trade beads to the Caddo (Gregory et al. 1979:80).

This period of history in Northern Louisiana also witnessed the influx of Southeastern tribes into the area that had been forced from their traditional lands. Swanton (1946:80) notes that the Alabama, Biloxi, Choctaw, Kosati, Pascagoula, and Seminole were among the groups that settled in Louisiana. Investigations at the Zimmerman Hill Site (16RA335), an Apalachee-Taensas village, revealed that migrant tribes utilized domestic animals, but still relied on local wild game and fish as a substantial part of their diet (Hunter 1990:110-112). The Apalachee-Taensas ceramics were adapted to European vessel forms. No evidence was found to suggest that Caddoan ceramic designs or vessel forms were adopted by these immigrant tribes. The presence of European artifacts at the site, as well as ethnographic information, reflects the interaction of these people with Spanish and French settlers and traders in the area (Hunter 1990; Swanton 1946, 1953).

Other Caddoan tribes from northeastern Texas and southwestern Arkansas included the Kadohadacho, Petite Caddo, Nasoni, Nanatsoho, and Upper Natchitoches (Webb and Gregory 1986). By the late 1700s, Osage raids had resulted in the absorption of the Upper Natchitoches, Nanatsoho, and Nasoni by the Kadohadacho. The Kadohadacho later moved into the vicinity of Caddo Prairie and Caddo Lake to avoid Osage incursions (Kniffen et al. 1987:91; Webb and Gregory 1986).

The sale of Louisiana to the United States by France in 1803 shifted influence in the area. In 1804 President Thomas Jefferson appointed Dr. John Sibley as "surgeon's mate" for the soldiers at Natchitoches. Soon afterward, Sibley was given the position of Indian Agent in order to learn more about the Indians in the area. Sibley wrote several journals on the Caddo Indians, including *Historical Sketches* and *A Report from Natchitoches in 1807*, detailing the activities, names, and locations of various tribes in the Red River

region (Sibley 1807). The Yattassees and Adaes were two groups listed as living on the Red River above Natchitoches. The Yattassees, or Yatasi, and the Adaes, were located in the Red River Valley, near Shreveport, along Bayou Pierre on a prairie near Mansfield, and along the Sabine River near Logansport, Louisiana (Kniffen et al. 1987:47, 75, 91; Swanton 1953:196-197, 204-207). By 1834, the Caddoan tribes were consolidated enough that the American agents treated them as though they were a single group (Webb and Gregory 1986). In 1835, they ceded their land to the United States and moved to the Brazos River in Texas (Webb and Gregory 1986). No historic tribes of Native Americans are known to have occupied the area after about A.D. 1835.

Chapter IV

Historical Background

Tribal groups lived in the Ouachita area prior to European colonization. These include the Choctaw, Chickasaw, Caddo, Washita, Tensas, and Osage peoples (Tucker 2000:1). A common characteristic among these groups as well as with the earlier Poverty Point cultures was the construction of earthen mounds in the Ouachita area. This tradition is believed to have begun around 3000 B.C.E. and continued until European colonization. Radiocarbon dates gathered at the Frenchman's Bend mound site in Monroe, Louisiana, place the mound's construction between 3700 and 3000 B.C.E. Artifacts show that early tribal groups depended on a diet that supported residents of rural Ouachita Parish well into modern day. These finds include catfish, bass, and other native Louisiana fish, as well as deer, rabbit and squirrel. People in the Ouachita area also cultivated corn in addition to relying on the area's game for subsistence. This lifestyle was relatively stable until European colonization (Tucker 2000:1).

On April 9, 1682, Réné Robert Cavalier, Sieur de la Salle, claimed all lands drained by the Mississippi River for Louis XIV, King of France (Davis 1971:28-29). French explorations continued following the organization of the Louisiana colony in 1699 by Pierre le Moyne, Sieur d'Iberville. During the spring and summer of 1700, Jean Baptiste le Moyne, Sieur de Bienville (Iberville's brother), explored the Louisiana interior west of the Mississippi River, accompanied by 20 Canadians, a Ouachita native guide, and Louis Antoine Juchereau de Saint-Denis, future founder of the Natchitoches Post. Bienville led his men through northeastern Louisiana, where they "stopped at the village of the Ouachita Indians" en route to the Red River country (Davis 1971:39-41; Goodwin et al. 1988:54; Williamson and Williamson 1939:21). Around 1718, the French established three concessions (Cantillon, De Mezieres and Des Marches, and Villemont) along the Ouachita River near present-day Monroe and southward; however, these small settlements were abandoned following the Natchez massacre at Fort Rosalie in 1729. The French made no further attempts to colonize the Ouachita area during this period. The only European travelers through the area may have been French hunters and traders from Canada and the southern part of the Louisiana colony, collecting pelts for the New Orleans market (Ditchy 1930:222, 224; Goodwin et al. 1988:58-59; Williamson and Williamson 1939:27-30, 36).

Through the 1762 Treaty of Fontainebleau, France secretly ceded the Isle of Orleans and all of the Louisiana colony west of the Mississippi River to Spain. The Ouachita Valley was virtually unaffected though, until Spanish/English hostilities from 1779 to 1782 forced the colonial government to establish a buffer zone between Spanish territory and the newly-independent American states. Frenchman Jean-Baptiste was a captain serving in the Spanish militia at the Opelousas Post. In 1783, he was placed in command of the Ouachita region. Filhiol originally set the post upriver in present-day Camden, Arkansas, but in 1785 moved it southward to present-day Monroe, which was a "point of rendezvous" for the Native Americans trading with the European hunters and trappers of the area (Goodwin et al. 1988:60; Williams 1984:8-9; Williamson and Williamson 1939:29-33).

At the time of the 1803 Louisiana Purchase, northern Louisiana remained a wild frontier, preserving little evidence of the earlier Spanish occupation (Williams 1984:21). Travelers passing through the region in the early nineteenth century noted the potential for growth in the area. In 1801-1803, M. Perrin Du Lac described the Ouachita settlement as "one of the finest places in Lower Louisiana. Capable of producing all the plants that are cultivated in the southern parts, sugar excepted . . ." (Du Lac 1807:84). The transfer of ruling governments apparently brought no change to the

general lifestyle of the Ouachita area settlers. They continued to hunt for seasonally available game and grow corn during the summer months (Dunbar 1806:93).

A portion of the original Louisiana Purchase tract called the Territory of Orleans was established in 1804 and divided into 12 counties. Three years later the Territory of Orleans was reorganized into 19 parishes. At that time Ouachita Parish encompassed all or part of several present-day parishes, including portions of Lincoln, Union, and Ouachita parishes (Davis 1971:167-168; Thorndale and Dollarhide 1985). The census of 1810 recorded only 1,081 Ouachita Parish inhabitants: 788 whites, 9 free blacks, and 284 slaves (Goodwin et al. 1990:26). Shortly thereafter, American settlers began pouring into northern Louisiana, crossing the Ouachita River at Fort Miro. Most of these pioneers were Anglo-American settlers from the Carolinas and Tennessee, although some emigrated from New England (Cook 1984:23; Goodwin et al. 1988:65).

The State of Louisiana was admitted to the Union on April 8, 1812. By 1820, the Ouachita Parish population had increased to 2,896: 2,016 whites, 44 free blacks, and 836 slaves (Goodwin et al. 1990:26). Ten years later, the Ouachita census counted 5,140 inhabitants, 2,145 of whom were slaves (Goodwin et al. 1988:65-66). Historian E. Russ Williams, Jr., wrote in 1982, "The massive migration of Americans of English origins after 1809 was so rapid and heavy that in less than two decades the Ouachita had adopted an American look and culture" (Goodwin et al. 1988:65). Although the Spanish fortifications long had been demolished, the settlement at Fort Miro remained the political seat of Ouachita Parish during the early antebellum years. On May 1, 1819, the first steamboat to travel the Ouachita River docked at Fort Miro. Enthusiasm over the arrival of the *James Monroe* inspired an impromptu celebration that culminated at day's end with the renaming of the town. Monroe was incorporated in 1855 and remains the capital of Ouachita Parish (Goodwin et al. 1990:27; Williamson and Williamson 1939:121-122, 207).

Despite the growing population and improvements in transportation, census records taken on the eve of the Civil War indicate that the study area was not a region of large planters. In Ouachita Parish, the 1860 census counted just 12 large slaveholders, with an average of 67 slaves each. Interestingly, Ouachita Parish fell to the bottom of the state list in "improved" acreage, but its cotton production in 1860 ranked fifth from the top. Other crops raised on the large Ouachita Parish plantations were Indian corn, Irish potatoes, sweet potatoes, peas, and beans. Livestock included sheep, swine (200 - 300 on the larger places), cattle, and milch [sic] cows, probably for plantation consumption (Menn 1964:34-35, 306-307, 421-422).

The Ouachita region was not a significant battleground during the Civil War; however, the area was affected by the surrounding campaigns. Monroe remained a transportation hub until July, 1863, when the respective falls of Vicksburg and Port Hudson effectively ended rail and steamer traffic in north-central Louisiana. The ensuing economic decline was disastrous for the Ouachita country. Early in the war, Union efforts in northeastern Louisiana were directed toward the capture of Vicksburg. Union troops scavenged the Mississippi River parishes, seizing slaves for manual labor and raiding plantations for provisions and livestock. Many of these river planters retreated westward with their slaves to the safer interior territory near Monroe and Shreveport; others kept going until they reached Texas (Winters 1963:211, 1984:167).

In August, 1863, Union General John D. Stevenson led forces westward from Vicksburg to clear the region of partisan soldiers and to destroy the Confederate headquarters at Monroe. The population west of Bayou Macon had remained on their farms, continuing cultivation of their cotton fields and subsistence crops. Although looting was forbidden, crops and livestock were seized along the expedition route. Prisoners were taken at various communities, and all military stores were destroyed. Alerted to the oncoming Union troops, Colonel Paul Octave Hebert and his Confederate troops withdrew from their Monroe camp and headed toward Shreveport. On August 28, Stevenson arrived in Monroe, where he found just a few supplies and some forage. The only remaining Confederate troops were the sick and wounded men who stayed behind in the crowded Monroe hospitals (Williamson and Williamson 1939:155-

156; Winters 1963:301-302, 1984:178). Following the initial raids of 1863, the Ouachita region was neglected until late January of 1865

The most devastating effect of the Civil War in the Ouachita country probably was the drain on the local economy. Plantations were neglected, and those acres that were farmed were planted in crops for home consumption -- sweet potatoes, peanuts, peas, corn and other grains -- rather than a cotton cash crop. Confederate raiding parties, both military and jayhawker, often seized those food supplies, as well as plantation livestock. Shoes and clothing became scarce, there were few goods to sell, and even with parish-issued currency, there were not enough circulating funds (Wilder 1971:29-30; Winters 1963:210-211, 1984:177).

The Reconstruction years brought more troubles to the Ouachita region: plantations had been abandoned and neglected, there were few draft animals or hands left to work the farms, and there was no money to buy supplies and equipment or to pay workers. It was several years before economic stability began to return to the region. Plentiful game and fish in the hilly woods and bayous of the Ouachita region attracted displaced families looking for a place to make a new start after the Civil War. By the 1870s, Ouachita Parish agriculture had begun to recover. In 1870, parish cotton fields yielded 14,239 bales (475 lbs each); a decade later, Ouachita Parish produced 18,729 bales of cotton (Goodwin et al. 1990:35; Wilder 1971:41-44, 66-68).

Even though cotton prices rose in the latter part of the century, area planters still found it difficult to move the crop to market. During dry seasons, cotton bales had to be hauled overland to Ouachita City or to other landings on the Ouachita River. A rainy season, though, meant greater prosperity for the region because the Ouachita tributaries could be used for steamer commerce. When water was high, small steamboats could make regular runs up Bayous D'Arbonne, Corney, and Bartholomew. These waterways were considered important enough to regional commerce to have been cleared of snags just before the turn of the century in order to allow a longer navigational season (Goodwin et al. 1988:89-90; Wilder 1971:41-42, 44, 70-71; Williamson and Williamson 1939:219-226).

In addition to meeting the transportation needs of the cotton planters, steamers became vital to the development of the timber industry in the region. Prior to the Civil War, there were few sawmills in north-central Louisiana. Early settlers cut wood for their houses and outbuildings, for fuel, and to clear land for planting, but lumber did not become a "cash crop" until the late nineteenth century. Steamboat commerce facilitated the transport of logs from the abundant inland forests to New Orleans and local markets. As the lumber demand increased, so did the number of area sawmills. The timber industry growth, in turn, gradually reduced the regional dependence upon cotton and its attendant tenant-farm and share-cropping systems (Goodwin et al. 1988:92-93; Wilder 1971:67-68, 70).

The "Steamboat Era" came to an end with the increased development of rail lines through the region. Towns based around the steamboat landings died out, while new communities grew up along the railway (Goins and Caldwell 1995:68-69; Rand, McNally & Company 1895; Union Parish Development Board 1954:20; Wilder 1971:72; Williamson and Williamson 1939:251-253). The railroads brought a tremendous boost to the area timber industry, expediting the conveyance of lumber to market. Another factor in the growth of the timber industry was the demand for southern pine to replace the lumber supply formerly provided from the depleted white pine forests of the northern lake states (Goins and Caldwell 1995:69; Goodwin et al. 1988:93-96). From 1903 through 1913, and again in 1915, Louisiana ranked second among timber-producing states; in 1914, it was first. Unfortunately, the surge in timber operations meant overexploitation of the woodland resources. Reforestation was not initiated in north-central Louisiana until the 1930s (Goodwin et al. 1988:95-96).

Careful conservation and reforestation have permitted forestry to remain a dominant industry in the Ouachita valley through the present time. Farming also remains of primary importance, although the rural farm population has dropped since mid-century. Cotton, once the principal crop in the region, has fallen behind soybeans, peaches, vegetables, and livestock, in terms of gross farm value. Today, the poultry business generally has

outdistanced other livestock, crop, and timber production in portions of north-central Louisiana. (Calhoun 1995:225, 231, 251; Goodwin et al. 1988:96-97, 100; Louisiana County Agricultural Agents Association 1984:56; Louisiana Cooperative Extension Service 1988:176-179; Public Affairs Research Council of Louisiana, Inc., post-1960:14).

Natural gas was discovered in the Monroe vicinity in 1909; however, the first well was abandoned due to the presence of excessive salt water. In 1917, 13 natural gas wells were drilled, and by 1923, the number had risen to 124. Thirty years later, the Monroe Gas Field included 1,400 producing wells; by the end of 1951, 2,044 natural gas wells had been completed there. Until the Texas fields dominated the petroleum industry in the 1930s, the Monroe Gas Field was considered "one of the largest gas fields in the world;" two decades later, it remained the largest gas field in the state of Louisiana. (Goodwin et al. 1990:35-36; History of Farmerville 1967:13; Union Parish Development Board 1954:41-43; Williamson and Williamson 1939:135).

The petroleum boom accelerated the development of carbon black, natural gas, and paper mill industries in the Ouachita Valley. Besides a readily available source of inexpensive fuel, the area also offered cheap labor, creating an irresistible draw for industry. A network of pipelines and plants quickly developed throughout the region, further easing the processing and transport of the local petroleum output. Carbon black manufacture became a particularly significant industry in the Monroe vicinity; production peaked in 1924 at 144,000 lbs, 75 per cent of the worldwide yield (Goodwin et al. 1990:36; Hansen 1971:469; Williamson and Williamson 1939:135).

Chapter V

Previous Investigations

Introduction

Prior to initiating fieldwork, a records review was completed to identify all previously completed archeological investigations and previously recorded archeological sites, historic standing structures, and National Register of Historic Places listed properties situated within 1.6 km (1.0 mi) of the proposed project area (see Figure 1.2). This review included examination of relevant archeological site forms and cultural resource surveys currently on file with the Louisiana Division of Archaeology; a review of the historic standing structures files maintained by the Louisiana Division of Historic Preservation and housed at the Louisiana State Library; and examination of the online National Register of Historic Places (NRHP) databases for those properties listed in Orleans Parish, Louisiana. No standing structures were identified within the current project area. The results of this research are summarized below.

In total, one previously completed cultural resources survey and four previously recorded archeological sites were identified within 1.6 km (1.0 mi) of the two proposed project areas. No historic standing structures or properties listed on the National Register of Historic Places (NHRP) were identified during this review.

156 Acre Parcel (Survey Area B)

A single cultural resources survey was undertaken within 1.6 km (1 mi) of the 160 acre project area and was conducted by Pritchett Engineering and Planning for the Louisiana Department of Economic Development (Fedoroff, Michael Peter 2012). The field methodology used during this Phase I investigation included shovel testing at 60 m (197 ft) intervals as well as pedestrian survey. Three historic sites (16OU406, 16OU407, and 16OU408) were located, two of which were positioned less than 1.6 km (1 mi) from the 160 acre area.

Both of these identified sites were immediately east of the project area and were classified as historic artifact scatters located in an agricultural field. Site 16OU406 consisted of brick fragments, nails, and rusted plow parts and was determined to be associated with a historic barn that had since been demolished. All recovered artifacts were either collected from the ground surface or from a single positive shovel test. Due to the disturbed context of the site from farming activity and lack of research potential, Site 16OU406 was determined to be ineligible for the National Register of Historic Places and no further work was recommended.

Site 16OU407 was also identified through surface collections and a single positive shovel test. However, artifacts recovered from this site were domestic in context (mostly consisting of unidentified glass and whiteware) and determined to be associated with a tenant house built in the 1940s and demolished in the 1960s, according to the oral history of the landowner. This structure could be seen on aerial maps in the vicinity of the site. Like Site 16OU406, Site 16OU407 was deemed as lacking research potential and was considered not eligible for the National Register of Historic Places (NRHP) with no further work being recommended.

99 Acre Area (Survey Area A)

Due to the proximity of the 99 acre area to the 156 acre area, the cultural resources survey conducted by Pritchett Engineering and Planning and discussed above was also located within 1.6 km (1.0 mi) of the 99 acre area. Additionally, one of the three sites recorded during this survey, Site 16OU408, falls within 1.6 km (1.0 mi) of the project area. Another site, Site 16OU104, was not

Table 5.1 Cultural resource investigations conducted within a 1.6 km (1.0 mi) radius of the temporary work space.

Report #	Title (Author/Date)	Sponsoring Agency	Contractor	Study Type	Methods	Site(s) / Loci / Structures Identified	Recommendations
22-4053	*Phase I Investigations for Millhaven Development Site, Section 5, T17N R5E and Sections 29 and 32 T18N R5E of the Crew Lake and Swartz USGS Quadrangles of Ouachita Parish, Louisiana* (Federoff 2012)	Louisiana Depart of Economic Development	Pritchett Engineering and Planning, LLC.	Phase I	Background research, pedestrian survey, shovel testing	Site 16OU406, 407, and 408	No further work recommended

Table 5.2 Previously recorded archaeological sites within a 1.6 km (1.0 mi) radius of the temporary work space.

Site Number	Site Name	USGS 7.5 Quad	Site Description	Cultural Affiliation	Field Methodology	NRHP Eligibility
16OU104	Unnamed	Monroe North	Prehistoric surface scatter	Post Archaic	Grab Surface Collection	Unknown
16OU408	John Wallace Jr. House	Swartz	Historic artifact scatter	Historic	Subsurface testing and surface collection	Not Eligible
16OU406	Green Barn Site	Crew Lake	Historic artifact scatter	Historic	Subsurface testing and surface collection	Not Eligible
16OU407	Ed and Polly Reed's House Site	Crew Lake	Historic artifact scatter	Historic	Subsurface testing and surface collection	Not Eligible

associated with the survey conducted by Pritchett Engineering and Planning but also fell within the 1.6 km (1.0 mi) perimeter.

Like sites 16OU406 and 16OU407, Site 16OU408 was a historic scatter observed in an agricultural field and consisting of artifacts recovered from the ground surface as well as a single positive shovel test. This site, located to the south of the 99 acre area, was thought to be associated with a tenant house built in the 1940s and razed in the late 1960s according to the oral history of the landowner. No structural features remained intact at the time of the cultural resource survey. Due to the lack of research potential, this site was determined to be ineligible for the National Register of Historic Places (NRHP) and no further work was recommended.

Site 16OU104, located northwest of the 99 acre project area, was recorded in 1978 on behalf of the East Ouchita Sewer District. This site, a small prehistoric scatter, was located in an agricultural field and all artifacts were recovered during surface collections. These artifacts were dated to the Post-Archaic period and included a chert projectile point, lithic debitage, and a fragment from a cup stone. Research potential was listed as "unknown" on the State of Louisiana Site Record Form and no recommendation for further work was given.

CHAPTER VI

METHODOLOGY

This chapter describes the field methodology used to complete the Phase I cultural resources survey of the proposed Denmon Petty Project area in Ouachita Parish, Louisiana (Figure 1.2). It also includes a discussion of the laboratory methods and the procedures utilized to process and analyze the recorded cultural material, and presents information pertaining to the curation of all records, photographs, and field notes generated as a result of this investigation. This investigation was conducted under the direct supervision of qualified individuals who meet the "Professional Qualifications" presented in 36 CFR Part 61, Appendix A, and was performed with reference to, and consistent with the National Historic Preservation Act of 1966, as amended; the regulations of the Advisory Council on Historic Preservation (36 CFR Part 800); the National Environmental Policy Act of 1969, as amended; "Archeology and Historic Preservation; Secretary of the Interior's Standards and Guidelines" (48FR 44738); and *Louisiana's Comprehensive Archaeological Plan* (Smith et al. 1983).

The investigation was designed to identify all cultural resources and/or historic standing structures located within or immediately adjacent to the study areas (Figure 1.2). The project areas currently lie within fallow agricultural fields east of Monroe, on the north side of I-20 and the east and west sides of Hwy 594/Millhaven Road. Project area vegetation consists of majority fallow agricultural fields with a small grassy area noted in Area A. Fieldwork was comprehensive in nature; planning took into account the results of those archeological surveys previously completed within 1.6 km (1.0 mi) of the study area, as well as an assessment of the probability of each portion of the project area to contain cultural resources. The survey area was divided into both high and low probability areas based on geomorphological and geological factors and on previously recorded site distributions in the project area vicinity.

Field Methodology

The Denmon Petty Project area consisted of two parcels designated Areas A and B (Figure 7.1). The beginning and ending points of each survey transect corresponded to a known physical or cultural feature such as a canal, road, or property line. Each survey crew was equipped with a sub-meter accurate Trimble GPS unit that was used to record precisely the corners of each survey area and the beginning and ending points of each survey transect. As part of this investigation, each survey area was inspected visually and systematically shovel tested for cultural material and/or evidence of intact cultural deposits. (Figure 7.1).

Shovel Testing and Pedestrian Survey

This archeological inventory was based on methods that provided for consistency and quality control, as well as for the precise location of all cultural resources located during survey. Fieldwork included both surface reconnaissance throughout the entire length and width of the proposed project area and the implementation of a stratified and systematic subsurface testing regime. Locations of survey transects and shovel tests, changes in vegetation and topography, as well as the presence of natural and artificial features were recorded on shovel test and transect record forms. Transect survey was utilized to assure complete and thorough coverage of the proposed project area and to control the delineation and recordation of all archeological sites or loci identified during survey.

The stratification of the survey area into areas of high and low probability for the presence of cultural resources was based on settlement

data as recorded in previously completed archeological investigations in the project area vicinity and a review of geological and geomorphological data collected for the overall project area (see Chapter II). The frequency and distance between shovel tests reflected this perceived probability of an area to contain cultural resources. In areas with a high probability for containing intact cultural deposits, shovel tests were excavated at 30 m (98.4 ft) intervals along survey transects spaced no more than 30 m (98.4 ft) apart. In low probability areas, shovel tests were excavated at 50 m (164 ft) intervals along survey transects spaced 50 m (164 ft) apart.

Each excavated shovel test measured approximately 30 cm (11.8 in) in diameter, and each was excavated to a minimum depth of 50 cm (19.7 in), to sterile clay or to clay-like subsoil, or until an influx of ground water hindered the archeological excavation process. All shovel test fill was screened through 0.64 cm (0.25 in) hardware cloth; extremely wet soils and clays were hand-sifted, troweled, and examined visually for cultural material. Each shovel test was excavated in 10 cm (3.9 in) artificial levels within natural strata; the fill from each level was screened separately. Munsell Soil Color Charts were used to record soil color; texture and other identifiable characteristics were recorded using standard soils nomenclature. All shovel tests were backfilled immediately upon completion of the archeological recordation process. Shovel tests were not excavated in areas with little or no archeological potential, i.e., areas covered by standing water or in areas that exhibited excessive land disturbance.

Archeological Site Recordation and Delineation

All cultural resources identified during the archeological inventory were examined to ascertain the nature, size, depth, integrity, age, and affiliation of the cultural deposits. Delineation also was used to assess the stratigraphic placement, density, and research potential of each identified site. In addition, information was gathered to assist in the subsequent assessment of whether or not a site was assessed as not significant, potentially significant, or significant applying the National Register of Historic Places Criteria for Evaluation (36 CFR 60.4 [a-d]). Archeological recordation included a combination of the following: (1) establishment of a site datum; (2) intensive surface reconnaissance of the site area; and (3) excavation of tightly spaced shovel tests along rays emanating from datum to delineate both the horizontal and vertical extent of the site and its configuration.

Delineation shovel tests were excavated at 15 m (49.2 ft) intervals to better define vertical and horizontal boundaries of the large site and 10 m (32.8 ft) intervals for the isolate. Supplemental pedestrian survey transects spaced 3 to 5 m (9.8-16.4 ft) apart were utilized to establish the horizontal dimensions of surface brick scatters. Louisiana Site Data Forms were completed for all archeological sites identified and delineated as a result of this field effort. Artifact distributions and the stratigraphic positions of all cultural material recovered were used in compiling each site description, as well as to support a clear and concise statement regarding site integrity and significance for each site recorded during survey.

Laboratory Methods

Laboratory analysis of all recovered cultural material followed established archeological protocols. All field specimen bag proveniences first were crosschecked against the field notes and the specimen bags inventoried for accuracy and completeness. Following this quality-control process, all recovered material was washed by hand, air-dried, sorted into basic material categories, and then encoded into computerized site catalogs to allow for further manipulation of the data. The nature and structure of the analyses was guided by the goals of the project. The first requirement of the research was to determine whether or not a cultural resources locus had the potential to meet the legal definition of an historic property. Therefore, particular care was taken to observe and record chronologically sensitive attributes of historic artifacts, and to evaluate, for example, whether or not the material was more than 50 years in age.

Beyond the determination of minimum age, the artifact analysis consisted of making and recording a series of observations for each specimen. The observations were chosen to provide the most significant and diagnostic information available for each specimen. Separate relational databases were used to store, organize, and manipulate the data generated by the analytical process. A database was used for the analysis of historic artifacts recovered during survey to thoroughly study the different types of material.

Prehistoric Lithic Analysis

The lithic analysis protocol was a "technological" or "functional" one designed to identify prehistoric reduction trajectories, lithic industries, and tool functions. The protocol therefore focused on recording technological characteristics of the recovered lithic artifacts. The lithic artifact database was organized by lithic material group, type, and subtype. The first level described the raw material type of the artifact. Lithic materials were identified utilizing recognized geological descriptions and terminology, and with the use of type specimens from a known source. The materials then were divided into distinct categories based on three factors: texture, color, and translucence. The second analysis level, type, was used to define the general class, e.g., unmodified flake, core, or preform, of lithic artifact, while the last level, subtype, was employed to specify morphological attributes, e.g., primary cortex, extensively reduced, or corner-notched. Typological identifications for temporally and regionally diagnostic tools also were included in the analysis; such identifications were made by reference to established local and regional lithic artifact typologies.

Prehistoric Ceramic Analysis

The prehistoric ceramic taxonomy was organized by type, variety, surface decoration, aplastic inclusions, and vessel portion. The database was designed to allow the analyst to record established ceramic types, as well as ceramic modes and attributes. The first level, type, represented the established named ceramic type, with names coinciding with local and regional published sources. The second level, variety, was used to identify the named ceramic variety utilizing published typologies. Decoration was used to describe the basic type of surface decoration present on the sherd, e.g., plain, brushed, engraved, ridged, or incised. The aplastic inclusion category listed the principal temper types observed in the paste of each sherd. Aplastic inclusion combinations (e.g., sand/grog) were used to denote only the presence of those inclusions, not the numerical predominance of one over the other. The vessel portion column listed that portion of the ceramic vessel from which the sherd was derived. Possible values in this field included body, rim, base, neck/collar, and so forth.

Faunal Material Analysis

Faunal materials recovered as a result of this investigation were examined using standard zooarcheological protocols. The identification of faunal specimens was based on comparing the recovered material to a skeletal reference collection maintained by R. Christopher Goodwin & Associates, Inc. The analysis was augmented by consulting standard reference works. The selected samples were identified to class, order, family, genus, or species. Taxonomic classes included Aves (birds), Mammalia (mammals), Osteichthyes (fish), Reptilia (reptiles), Invertebra (invertebrates), and Indeterminate specimens. If specimens could not be identified below class, fragments were classified into size categories: large, large-medium, medium, medium-small, and small. Classification into size classes was determined subjectively based on cortical thickness, amount of cancellous bone present, and fragment curvature. Within each taxon, efforts were made to determine element, portion, and side of each specimen.

Historic/Modern Cultural Material Analysis

The analysis of the historic/modern cultural material was organized by class, functional group, type, and subtype. The first level, class, represents the material category, e.g., ceramic, glass, or metal. The second level, functional group (e.g., architecture, kitchen, or personal) is based on generally accepted classifications. The third and fourth levels, type and subtype, describe the temporally and/or

functionally diagnostic artifact attributes recorded for a particular specimen.

Curation

Following the completion and acceptance of the final report, all records, photographs, and field notes will be curated with the State of Louisiana, Department of Culture, Recreation & Tourism, Office of Cultural Development, Division of Archaeology and housed at the facility located at 1835 North Third St. 2nd Floor, Baton Rouge, LA 70802.

CHAPTER VII

RESULTS AND RECOMMENDATIONS

Introduction

The Phase I cultural resources investigation of the Denmon Petty Project area was completed by RCG&A between December 16 and December 30, 2014. The survey resulted in the identification of two cultural resources; Locus B-01 of Site 16OU407 and Isolated Find B-02. Site 16OU407 was found to extend to the western side of Hwy 594 during the current survey effort and is subsequently referred to as Locus B-01. The project area consisted of two parcels; Survey Area A [40.1 ha (99 ac)] and Survey Area B [63.1 ha (156 ac)] (Figures 7.1 and 7.2). Both areas and the identified cultural resources are discussed in more detail below.

Results of Archeological Field Investigations

As stated previously, the project area consisted of two parcels (Survey Areas A and B) that totaled 103.2 ha (255 ac). Survey Area B consisted of an area of high probability along the west end of the property where Bennet Bayou was located. In addition, due to the possibility of historic structures along the highway on the eastern edge and the two previously recorded historic sites (Sites 16OU406 and 16OU407) high probability was conducted along this portion of the parcel. The remaining area in the middle of the parcel was considered low probability. Survey Area A was considered low probability due to the lack of a consistent water source nearby.

Only 5.2 per cent (n=28) of the 533 project area shovel test locations produced cultural material, either collected from the ground surface or recovered from an excavated shovel test. In all, an Isolated Find (B-02) and a locus (Locus B-01) to a previously identified site (Site 16OU407) were identified within the examined portions of the project area. Potentially intact subsurface deposits were identified within the prehistoric component of Locus B-01. Additional cultural resources investigations or avoidance are recommended for this component of the site. No intact subsurface deposits were identified within the historic component of Locus B-01 and no additional cultural resources investigations are recommended for this portion of the site. The prehistoric component of Locus B-01 (Site 16OR407) exhibits those qualities of significance and integrity as defined by the National Register of Historic Places Criteria for Evaluation (36 CFR 60.4 [a-d]).

Survey Area A

Survey Area A was a nearly level area located in a fallow agricultural field located on the east side of Hwy 594 and the south side of Hwy 80 (Figures 7.1 and 7.3). Ground surface visibility within this 40.1 ha (99 ac) parcel averaged approximately 75 per cent. A total of 166 shovel tests were excavated along 13 transects placed at 50 m (164 ft) intervals within the survey area.

A typical profile of a transect shovel test in Survey Area A extended to a depth of 50 cm below surface (bs) (19.7 inbs) and was comprised of two strata. The uppermost stratum was a 20 cm (7.9 in) thick layer of grayish brown (10YR 5/2) silty clay loam positioned over 30 cm (11.8 in) of gray (10YR 5/1) silty clay mottled with strong brown (7.5YR 5/6) (Figure 7.4).

No cultural material, intact cultural deposits, or cultural features were identified during the cultural resources investigations completed within Survey Area A. No further cultural resources investigations are recommended for Survey Area A.

Survey Area B

Survey Area B was situated north of existing railroad tracks and west of Hwy 594 (Figures 7.2 and 7.5). At the time of the survey, this nearly level 64.7 ha (160 ac) area was fallow bean field with 0 to 50 per cent visibility. A total of 329

Figure 7.1 **Aerial photograph depicting Survey Area A.**

Figure 7.2 **Aerial photograph depicting Survey Area B.**

Figure 7.3 **Overview photograph of Survey Area A facing west.**