CULTURAL RESOURCES SURVEY OF 245 ACRES AT THE WHITE OAK CREEK WILDLIFE MANAGEMENT AREA, CASS, MORRIS, AND TITUS COUNTIES, TEXAS

by
Steven M. Hunt
Maynard B. Cliff

for
U.S. Army Corps of Engineers
Fort Worth District

MISCELLANEOUS REPORT OF INVESTIGATIONS
NUMBER 153

GEO-MARINE, INC.

US Army Corps
of Engineers
Fort Worth District

REPORT DOCUMENTATION PAGE	Form Approved OMB No. 0704-0188

1. AGENCY USE ONLY *(Leave blank)*	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	January 1998	Final Report July 1997 - January 1998

4. TITLE AND SUBTITLE

Cultural Resources Survey of 245 Acres at the White Oak Creek Wildlife Managment Area, Cass, Morris, and Titus Counties, Texas

5. FUNDING NUMBERS

Purchase Order No. DACW63-97-D-0884

6. AUTHOR(S)

Steven M. Hunt and Maynard B. Cliff

7. PERFORMING ORGANIZATION NAMES(S) AND ADDRESS(ES)

Geo-Marine, Inc.
550 East Fifteenth Street
Plano, Texas
75074

8. PERFORMING ORGANIZATION REPORT NUMBER

Geo-Marine, Inc.
Miscellaneous Report of Investigations
Number 153

9. SPONSORING/MONITORING AGENCY NAMES(S) AND ADDRESS(ES)

U.S. Army Corps of Engineers, Fort Worth District
PO Box 17300
Fort Worth, Texas
76102-0300

10. SPONSORING/MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION AVAILABILITY STATEMENT

Approved for public release

12b. DISTRIBUTION CODE

13. ABSTRACT *(Maximum 200 words)*

In order to gain additional access roads into the White Oak Creek Wildlife Management Area (WMA), the U.S. Army Corps of Engineers (CE), Fort Worth District, has obtained three additional properties totaling 245 acres. Geo-Marine, Inc., of Plano, Texas (GMI), was contracted by the CE to perform a cultural resources inventory of these properties. This work was conducted in accordance with, and in partial fulfillment of, the CE's obligation under the National Historic Preservation Act of 1966, as amended through 1992 (PL 89-665; 80 Stat. 915; 16 U.S.C. § 470 *et seq.*); the Archeological and Historical Preservation Act of 1974, as amended (PL 93-291); the National Environmental Policy Act of 1969 (PL 90-190); and Executive Order No. 11593, "Protection and Enhancement of the Cultural Environment."

The fieldwork for this purchase order was conducted on July 16-17, 1997, July 23, 1997, and August 20, 1997. The third trip was required to complete coverage of the 35-acre tract in Cass County, which had not been completely surveyed due to some confusion regarding the tract's specific location. A total of 12 person-days was expended during the period of fieldwork, for an average of 20.4 acres surveyed per person-day. As a result of the survey, one prehistoric locality was discovered.

Name of Federal Technical Responsible Individual: Jay Newman
Organization: U.S. Army Corps of Engineers, Fort Worth District, CESWF-EV-EC
Phone #: (817) 978-6388

14. SUBJECT TERMS

Cultural resources survey of 245 acres at the White Oak Creek Wildlife Management Area

15. NUMBER OF PAGES

29 + Appendix

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Unclassified	Unclassified	Unclassified	UL

CULTURAL RESOURCES SURVEY OF 245 ACRES AT THE WHITE OAK CREEK WILDLIFE MANAGEMENT AREA, CASS, MORRIS, AND TITUS COUNTIES, TEXAS

by
Steven M. Hunt
Maynard B. Cliff

Principal Investigator
Maynard B. Cliff

for
U.S. Army Corps of Engineers
Fort Worth District

MISCELLANEOUS REPORT OF INVESTIGATIONS
NUMBER 153

Geo-Marine, Inc.
550 East 15th Street
Plano, Texas 75074

January 1998

CONTRACT DATA

The preparation of this document was accomplished under Purchase Order No. DACW63-97-P-0884 (GMI project no. 1521-111), with the U.S. Army Corps of Engineers, Fort Worth District, 819 Taylor Street, Fort Worth, Texas 76102.

EXECUTIVE SUMMARY

This report is concerned with the cultural resources survey of 245 acres of the White Oak Creek Wildlife Management Area (WMA), located within Cass, Morris, and Titus counties, Texas. This work was undertaken in order to identify any cultural resources located within the newly acquired areas and to evaluate their potential for inclusion in the National Register of Historic Places (NRHP).

The present survey resulted in the identification and recording of one nonsite locality. The locality is of an undetermined prehistoric period and is considered to be ineligible for inclusion in the NRHP.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ABSTRACT

In order to gain additional access roads into the White Oak Creek Wildlife Management Area (WMA), the U.S. Army Corps of Engineers (CE), Fort Worth District, has obtained three additional properties totaling 245 acres. Geo-Marine, Inc., of Plano, Texas (GMI), was contracted by the CE to perform a cultural resources inventory of these properties. This work was conducted in accordance with, and in partial fulfillment of, the CE's obligation under the National Historic Preservation Act of 1966, as amended through 1992 (PL 89-665; 80 Stat. 915; 16 U.S.C. § 470 *et seq.*); the Archeological and Historical Preservation Act of 1974, as amended (PL 93-291); the National Environmental Policy Act of 1969 (PL 90-190); and Executive Order No. 11593, "Protection and Enhancement of the Cultural Environment."

The fieldwork for this purchase order was conducted on July 16-17, 1997, July 23, 1997, and August 20, 1997. The third trip was required to complete coverage of the 35-acre tract in Cass County, which had not been completely surveyed due to some confusion regarding the tract's specific location. The field crew consisted of Mr. Steven Hunt (Field Supervisor), Mr. Michael Brack, Mr. Brad Cole, Ms. Melissa Zabecki, Mr. Steven Baird, and Ms. Kellie Krapf. A total of 12 person-days was expended during the period of fieldwork, for an average of 20.4 acres surveyed per person-day. As a result of the survey, one prehistoric locality was discovered.

ACKNOWLEDGMENTS

The authors would like to express their appreciation to the many individuals and organizations who contributed to the successful completion of this report. Mr. Jay Newman and Mr. Dan McGregor, archeologists with the U.S. Army Corps of Engineers (CE), Fort Worth District, were supportive of our efforts and provided administrative support and guidance. In addition, Mr. John Jones, of the Texas Parks and Wildlife contingent at the White Oak Creek Wildlife Management Area, cheerfully gave us his assistance when it was requested.

In the field, the diligence and dedication of the able crew members were essential to the successful completion of the fieldwork. These included Mr. Michael Brack, Mr. Brad Cole, Mr. Steven Baird, Ms. Kellie Krapf, and Ms. Melissa Zabecki. Mr. Steven Hunt acted as Field Supervisor. In the laboratory, artifact analysis and data input were undertaken by the staff of Geo-Marine, Inc. The prehistoric lithic materials were analyzed by Mr. Kenneth Vander Steen, who also undertook the analysis of historical artifacts. Prehistoric ceramics were analyzed and described by Dr. Maynard Cliff. Type identifications were made by Dr. Cliff. CAD maps were produced by Ms. Sandy Carr. Text and copy editing and report production were overseen by Ms. Sharlene Allday. Final formatting and report layout was done by Ms. Denise Pemberton.

CHAPTER 1
INTRODUCTION

The construction of Cooper Lake in northeastern Texas required that, as a form of natural resources mitigation, an area of about 25,000 acres downstream in Bowie, Cass, Morris, and Titus counties, known as the White Oak Creek Wildlife Management Area (WMA), be developed and utilized for wildlife habitat (Figure 1). In 1997, the U.S. Army Corps of Engineers (CE), Fort Worth District, acquired an additional 245-acres in three tracts in order to provide better access into the White Oak Creek WMA. Geo-Marine, Inc. (GMI), of Plano, Texas, was contracted under Purchase Order DACW63-97-P-0884 to undertake a cultural resources investigation of these properties. This work was conducted in accordance with and in partial fulfillment of the CE's obligation under the National Historic Preservation Act of 1966, as amended through 1992 (PL 89-665; 80 Stat. 915; 16 U.S.C. § 470 *et seq.*); the Archeological and Historical Preservation Act of 1974 as amended (PL 93-291); the National Environmental Policy Act of 1969 (PL 90-190); and Executive Order No. 11593, "Protection and Enhancement of the Cultural Environment."

This report presents the results of an intensive pedestrian survey of 245 acres within the White Oak Creek WMA in Cass, Morris, and Titus counties. Fieldwork was undertaken on July 16-17, July 23, and August 20, 1997, by Mr. Steven Hunt (Field Supervisor), Mr. Michael Brack, Mr. Brad Cole, Mr. Steven Baird, Ms. Melissa Zabecki, and Ms. Kellie Krapf, all of GMI. Dr. Maynard Cliff, also of GMI, served as Principal Investigator for the project. As a result of this project, one prehistoric locality was identified. The locality is considered to be ineligible for inclusion in the National Register of Historic Places (NRHP).

This report contains four chapters. Chapter 2 provides information on the natural and cultural setting of the project area. Research goals and methods for the survey are presented in Chapter 3. Chapter 4 presents the research results, including a description of the single identified locality, and recommendations for its treatment. A list of references follows the main body of the report. Included as an appendix is a listing of curated material resulting from the 245-acre survey (Appendix A).

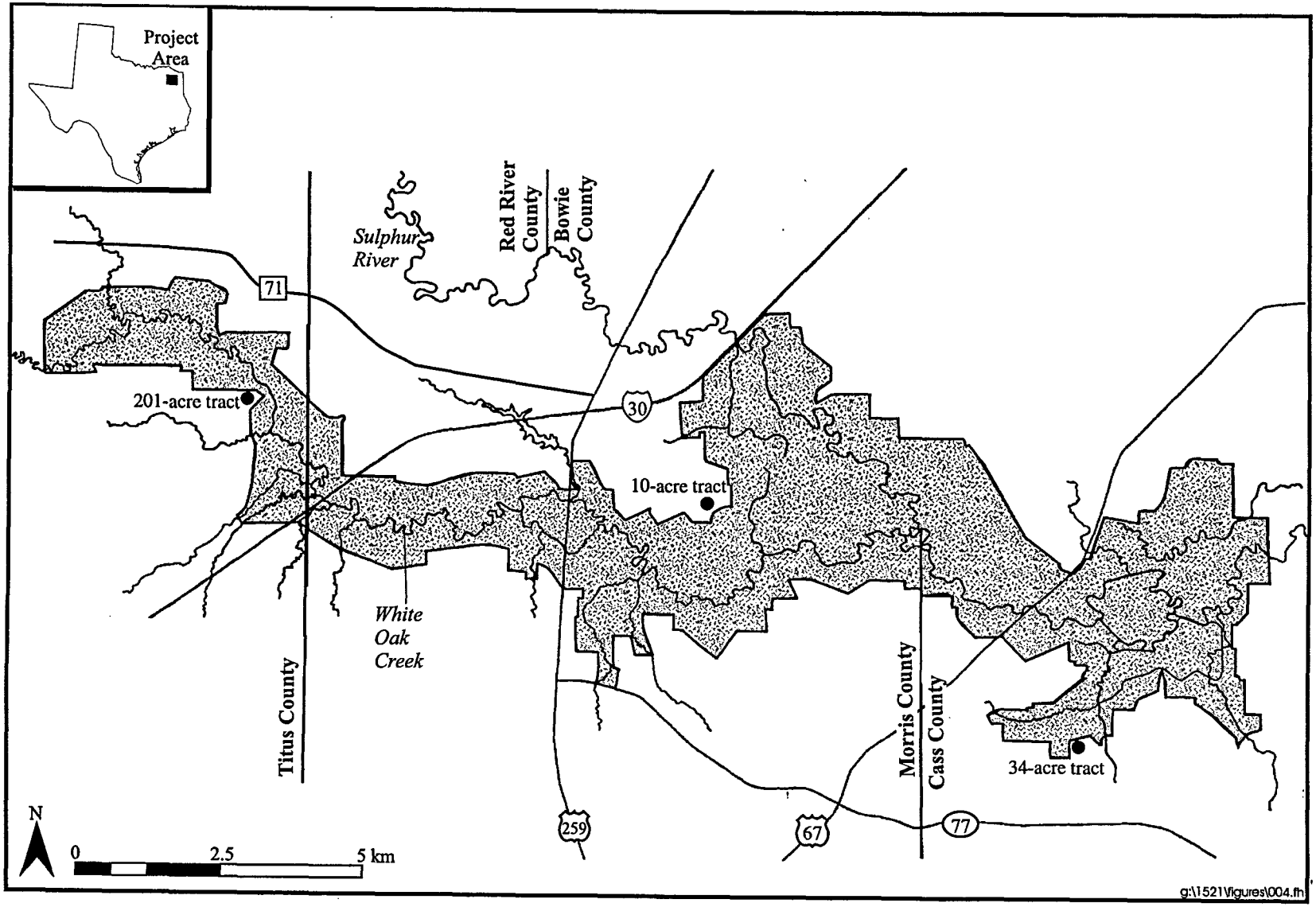

Figure 1. Location of the White Oak Creek Wildlife Management Area (WMA) in Bowie, Cass, Morris, and Titus counties, Texas, and the location of the three survey areas.

CHAPTER 2
NATURAL AND CULTURAL SETTING OF THE PROJECT AREA

NATURAL SETTING

Geology and Geomorphology

The White Oak Creek Wildlife Management Area (WMA) occupies parts of Bowie, Cass, Morris, and Titus counties in Northeast Texas, and includes the lower portion of the flood plain of White Oak Creek, as well as parts of the flood plains of the Sulphur River and several of its tributaries. The region lies within the Gulf Coastal Plains physiographic province which is a segment of the Mesozoic-Cenozoic coastal geosyncline (Murray 1960). This geosyncline forms a gradually sloping basin which dips toward the Gulf of Mexico and contains formations of limestone and sandstone deposited along the margins of an ancient receding coastline. The geologic strata forming Cass, Morris, and Titus counties, as well as the southern portion of Bowie County, were deposited during the Eocene, Pleistocene, and Holocene periods (Bureau of Economic Geology [BEG] 1964, 1966). Extensive areas of recent (i.e., Holocene) alluvium are found within the flood plains of White Oak Creek, the Sulphur River, and their associated tributaries, as well as several small areas of Pleistocene fluviatile terrace deposits located south of the Sulphur River in northeastern Cass County, south of White Oak Creek in northwestern Morris County, and north of the Sulphur River in Bowie County (BEG 1966).

Soils associated with the survey areas in Morris and Titus counties include: Ashford clay, 0 to 1 percent slopes; Besner-Talco complex, 0 to 2 percent slopes; Estes clay loam, frequently flooded; Freestone fine sandy loam, 1 to 3 percent slopes; Gladewater clay, frequently flooded; Talco-Raino complex, 0 to 1 percent slopes; and Woodtell fine sandy loam, 5 to 20 percent slopes. Soil mapping at this level of detail is not available for Cass County; however, the *General Soil Map: Cass and Marion Counties, Texas* (United States Department of Agriculture, Soil Conservation Service [USDA, SCS] 1974) shows that the survey area in Cass County falls within the Kirvin-Bowie association.

The Kirvin-Bowie association is an area of gently undulating to gently rolling, well-drained, loamy upland soils. This association is used for pasture and woodlands. Kirvin soils make up about 45 percent of the association and Bowie soils about 35 percent, with the remaining 20 percent being composed of soils in narrow flood plains or soils that are moderately well drained. Both the Kirvin and Bowie soils are ultisols. Kirvin soils consist of a brown fine sandy loam A horizon that is underlain by a red clay subsoil. Bowie soils consist of a fine sandy loam A horizon underlain by a yellowish brown sandy clay loam (USDA, SCS 1974).

Ashford clay, 0 to 1 percent slopes, is an alfisol, found on nearly level and poorly drained soil in low-lying areas on stream terraces. A very dark grayish brown clay A horizon is underlain by a light brownish gray clay subsoil with brown mottling (USDA, SCS 1990:19-20).

Besner-Talco complex, 0 to 2 percent slopes, is an area of well-drained, nearly level to gently sloping soils found on terraces adjacent to large streams. Both soils comprising the complex are alfisols. Besner soil is found in ridges and mounds 30-120 cm higher than the surrounding Talco soil. The complex is composed of approximately 65 percent Besner soil and 20 percent Talco soil, with the remaining 20 percent of the complex composed of small areas of Derly, Freestone, and Nahatche soil. Besner soil consists of a dark brown fine sandy loam over a loamy subsoil. Talco soil consists of a brown to gray loam A horizon over a grayish brown to light brownish gray clay loam subsoil (USDA, SCS 1990:22).

Estes clay loam, frequently flooded, is an inceptisol found on nearly level and poorly drained soil in the flood plains of large streams. It consists of a dark grayish brown clay loam strata underlain by grayish brown clay subsoil (USDA, SCS 1990:32-33).

Freestone fine sandy loam, 1 to 3 percent slopes, is an alfisol found on gently sloping interfluves, along foot slopes, and at the heads of drainages. It consists of a brown sandy loam surface horizon over a clay subsoil (USDA, SCS 1990:33-34).

Gladewater clay, frequently flooded, is an inceptisol, consisting of nearly level, poorly drained and very slowly permeable soil on frequently flooded bottomlands. It is characterized by a very dark grayish brown clay surface layer underlain by a gray clay subsoil (USDA, SCS 1990:34-35).

The Talco-Raino complex, 0 to 1 percent slopes, is found on nearly level to slightly depressional, moundy stream terraces. Both the Talco and Raino soils are alfisols. The complex is composed of about 60 percent Talco and 25 percent Raino soil, with the remaining 15 percent of the complex consisting of small areas of Freestone, Derly, and Woodtell soils. The Talco soil consists of a brown silt loam surface layer underlain by a brownish yellow to light brownish gray clay subsoil. Raino soil begins with a brown to yellowish brown loam A horizon, underlain by a yellowish brown, grayish, brownish, and reddish clay subsoil (USDA, SCS 1990:46-47).

The Woodtell fine sandy loam, 5 to 20 percent slopes, is an alfisol that occurs on gentle to moderately steep slopes and is moderately well drained. It consists of a brown fine sandy loam underlain by a red and gray clay. The substratum consists of a stratified light gray shale and strong brown sandy clay loam (USDA, SCS 1990:51).

Climate

The climate of the WMA area is subtropical, marked by long hot summers and short cool winters. The primary influences on the climate are the latitude, warm winds from the Gulf of Mexico, and cooler northern winds from the continental land mass to the north. Cold waves in the winter are rare and not severe, usually lasting only one or two days. The average summer temperature is around 27° C and the average daily maximum temperature is 33 to 34° C. In winter, the average temperature is 6 to 7° C. The last freezing temperature in spring is usually attained before April 11, and the first freezing temperature in fall usually does not occur until after November 1. The number of days in the growing season with temperatures above the freezing mark averages about 209 (USDA, SCS 1980:2, 81, 1990:2-3, Tables 1, 2, and 3).

Precipitation is fairly heavy throughout the year; prolonged droughts are rare, and the frequent afternoon thunderstorms in summer are adequate to maintain crops. Such afternoon thunderstorms occur about 50 days of the year in Bowie County and about 44 days out of the year in Morris County. Severe storms, including

tornadoes, strike the area occasionally and often cause flooding and erosion. Every few years in the summer or fall, a tropical depression moves inland causing extremely heavy rains for one to three days. Mean annual precipitation is about 1,110 to 1,140 mm, with 52 to 53 percent of this falling between April and September. The growing season for most crops falls within this period. As the average winter temperature is above freezing, snowfall is variable but rare (USDA, SCS 1980:2, 1990:3).

Flora

The WMA area falls near the ecotone between the Pineywoods and the Post Oak Savannah of East Texas and includes within it several vegetation zones: the Willow Oak-Water Oak-Blackgum Forest and White Oak-Elm-Hackberry Forest within the bottomlands, and the Pine-Hardwood Forest (Shortleaf Pine-Post Oak-Southern Red Oak subtype), Other Native and/or Introduced Grasses, Post Oak Woods/Forest, and Post Oak Woods, Forest, and Grasslands Mosaic on the uplands (McMahan et al. 1984).

The most extensive vegetation group on the uplands within the survey area is the Post Oak Woods, Forest, and Grasslands Mosaic. It is closely associated with another major vegetation type within the WMA uplands, the Post Oak Woods/Forest. Both vegetation types are most apparent on the soils of the Post Oak Savannah. Plants commonly associated with the Post Oak Savannah include blackjack oak, eastern redcedar, mesquite, black hickory, live oak, sandjack oak, cedar elm, hackberry, yaupon, poison oak, American beautyberry, hawthorn, supplejack, trumpet creeper, dewberry, coral-berry, little bluestem, silver bluestem, sand lovegrass, beaked panicum, three-awn, sprangle grass, and tickclover (McMahan et al. 1984:19).

The Pine-Hardwood Forest (Shortleaf Pine-Post Oak-Southern Red Oak subtype) covers a large portion of Northeast Texas, including portions of all four WMA counties, and occurs on sandy uplands. The most common trees present within this vegetation zone are red oak, post oak, hickory, and shortleaf pine (USDA, SCS 1990:52). Other associated species for this vegetation zone are: loblolly pine, black hickory, sandjack oak, flowering dogwood, common persimmon, sweetgum, sassafras, greenbriar, yaupon, wax myrtle, American beautyberry, hawthorn, supplejack, winged elm, beaked panicum, spranglegrass, Indiangrass, switchgrass, three-awn, bushclover, and tickclover (McMahan et al. 1984:25).

The least extensive of the upland vegetation groups within the WMA is Other Native Grasses and/or Introduced Grass. This vegetation type was created by the clearing of the ancient forests. The plant communities are a mixture of native or introduced grasses and forbs on grassland sites or mixed herbaceous communities resulting from the clearing of woody vegetation and may represent the early stages in the development of the Young Forest vegetation type (McMahan et al. 1984:29).

Fauna

Probably the most important faunal resources in the region would have been species such as deer, squirrel, rabbit, and turtle, which have generally been among the most numerous animal remains recovered from archeological sites in Northeast Texas (Bruseth and Perttula 1981). Deer, due to its large size, actually provided the bulk of protein in the diet of prehistoric and early historic peoples. Remains of reptiles other than turtle, and small rodents, have also been recovered from archeological contexts at many sites in Texas, but it is difficult to discern whether or not they contributed to the diet or were simply intrusive into the deposits (Martin et al. 1987). In addition, it is safe to say that numerous types of invertebrates were abundant within the WMA, along with various types of molluscs, including both bivalves and gastropods, and crustaceans known to have been used by southeastern Native American tribes (Swanton 1946). Among the fish resources, economically important families for both prehistoric and historic populations probably would have included gar, crappie, bass, buffalo, shad, sucker, carp, bowfin, shiner, pickerel, catfish, sunfish, and drum (Heartfield and Dieste 1984a:2-5, 1984b:2-5). Of the amphibians, only true frogs are

valued for dietary purposes today, while the full range of frogs, turtles, turtle eggs, salamanders, and alligators would have been useful for both prehistoric and early historic populations. A wide variety of migratory birds, such as ducks, geese, and cranes, would have been most numerous in the late fall and early winter, while other resident birds, such as turkeys, doves, and pigeons, would have been available on a year-round basis.

CULTURAL SETTING

Introduction

The area of extreme Northeast Texas, which includes the WMA, is included within the archeological region known as the Great Bend (Schambach 1982:1), which takes its name from the Great Bend of the Red River at Fulton, Arkansas. It includes that portion of the Red River drainage between extreme southeastern Oklahoma and the vicinity of Shreveport, Louisiana. As an archeological area, the Great Bend includes portions of Oklahoma, Texas, Louisiana, and Arkansas, and is centered in Arkansas and Louisiana (Schambach 1982:Figure 1-2). In Northeast Texas, the Great Bend region includes the lower reaches of the Sulphur River and White Oak Creek, on which the WMA is located.

The following sections are intended to provide a general background to the archeology of Northeast Texas. The first section gives a brief summary of previous archeological research carried out within the general area of the Sulphur River basin. The second briefly discusses the nature of the prehistoric and historic Native American archeological records in broad terms, and the third considers the historic Euro-American and African-American settlement in the area.

Previous Archeological Research

In recent years, several detailed overviews of the development of prehistoric archeology in the WMA specifically (Cliff and Peter 1992; Perttula 1988a; Peter et al. 1991:Appendix I), and in East Texas in general (Guy 1990), have been written and the interested reader is referred to them for more detail. Organized archeological research in Northeast Texas has a relatively long history, going as far back as 1911 with Clarence B. Moore's river boat survey of sites along the Red River in Louisiana, Arkansas, and Texas (Moore 1912). In the 1920s and early 1930s, researchers from the University of Texas undertook intermittent investigations in Northeast Texas, aimed primarily at the many large mound sites in this region, although the research was limited by difficulties in funding (Barnard 1939; Dickinson 1941; Goldschmidt 1935; Jackson 1932; Krieger 1946; Lewis 1987; Pearce 1932; Scurlock 1962). This situation improved in the late 1930s, when additional funding for archeology became available through the Works Progress Administration (WPA), a federal jobs program (Creel 1984; Davis 1970; Hamilton 1972; Schambach 1982). At the same time, avocational archeologists from Dallas and Texarkana also began to work in the region (see for example, Harris 1953 and Miroir n.d.).

Following World War II, the federal government began a program of reservoir construction in many states, including Texas. These investigations, conducted by the River Basin Survey (RBS) and its successors, were undertaken at, among others, Wright Patman Lake (Jelks 1961; Stephenson 1950) and Cooper Lake (Duffield 1959; Gilmore and Hoffrichter 1964; Johnson 1962; Moorman and Jelks 1952). Additional research was subsequently undertaken at Wright Patman Lake (Briggs and Malone 1970) and Cooper Lake (Doehner and Larson 1978; Doehner et al. 1978; Hyatt and Doehner 1975; Hyatt and Skinner 1971; Hyatt et al. 1974) during the 1970s. The Cooper Lake project became active again in the mid-1980s and, as part of this effort, additional archeology was undertaken (Bailey et al. 1991; Bousman et al. 1988; Cliff et al. 1995; Fields et al. 1991, 1993, 1994; Gadus, Fields, and Bousman 1992; Gadus, Fields, Bousman, Tomka, and Howard

1992; Gadus et al. 1991; Green et al. 1996; Jurney and Bohlin 1993; Jurney et al. 1993; Lebo 1988; McGregor et al. 1996; Perttula 1988a, 1988b, 1989, 1990; Perttula, ed. 1989; Winchell et al. 1992). In the 1990s, several archeological projects have been undertaken at Wright Patman Lake and Lake O' the Pines prior to timber harvesting (Cliff, Hunt, Pleasant, Procter, and Ensor 1996; Hunt et al. 1995; Linder-Linsley and Lindsay 1997; White et al. 1995).

Research at the WMA began with the preparation of a research design for the project (Peter et al. 1990). Soon after, intensive pedestrian survey of selected portions of the WMA began (Cliff, ed. 1994; Cliff and Peter 1992; Cliff, White, Hunt, Pleasant, and Shaw 1996). This was followed by test excavations at three sites (41CS150, 41CS151, 41CS155/156) in 1992-1993 (Cliff and Hunt 1995) and two sites (41BW553 and 41TT670) in 1996 (Largent et al. 1997). Finally, mitigation of Area C at site 41CS151 was undertaken in 1993 (Cliff, Green, Hunt, Shanabrook, and Peter 1996).

A concern for historic Euro-American and African-American archeological remains in Northeast Texas is an extremely recent development compared to prehistoric research in the area. Prior to the 1970s, historic archeological and architectural sites in Northeast Texas generally were not considered to have a significant research potential (Perttula 1988a:16). Historic archeology in Northeast Texas has largely concentrated on mid-nineteenth to twentieth century occupations, reflecting the limited nature of prior European contacts. One important exception to this is the Roseborough Lake site, the location of an eighteenth-century French trading post and a later, early-nineteenth century component (Gilmore 1986).

This increased interest in historic archeology has been expressed primarily through the recording and evaluation of historic sites during intensive pedestrian surveys. Large numbers of historic sites were identified during the University of North Texas' Red River Archeological Project (Gilmore and McCormick 1980, 1982), as well as in recent surveys at Cooper Lake (Bailey et al. 1991; Jurney and Bohlin 1993; Jurney et al. 1993; McGregor and Roemer 1989) and the Lone Star Army Ammunition Plant/Red River Army Depot (Cliff and Peter 1994; Espey, Huston and Associates, Inc., 1980; Peter and Cliff 1990a, 1990b). More extensive investigations have been undertaken at historic sites at Cooper Lake, including test excavation (Green et al. 1996; McGregor et al. 1996; Perttula 1989), the relocation of the Tucker and Sinclair cemeteries (Lebo 1988; Winchell et al. 1992), and the mitigation of the James Frank site (41DT97; Perttula, ed. 1989).

Native American Culture History

The following brief discussion of the prehistoric archeological record in the vicinity of the WMA in Northeast Texas draws from previous summaries by Perttula (1988a), Story (1981, 1990), and Thurmond (1990). Following Kenmotsu and Perttula (1993), the period of Native American occupation in Northeast Texas has been subdivided into eight temporal divisions, with the later periods being the best dated (Table 1).

The Paleo-Indian period (ca. 9500-7000 B.C.) is the earliest generally recognized period of human occupation of Eastern North America. Sites of this period are characterized by the presence of lanceolate projectile points, such as Clovis, Plainview, Dalton, Scottsbluff, and San Patrice. The use of nonlocal lithic materials, often derived from considerable distances, suggests a high degree of group mobility (Meltzer and Smith 1986; Shafer 1977; Story 1990:177). These groups are usually characterized as 'big game hunters' from their association with extinct megafauna kill sites; however, more recent work at sites such as Aubrey (41DN479) in North Central Texas (Ferring 1989), suggests that other resources were also being exploited. Most of the Paleo-Indian materials from Northeast Texas are either isolated surface finds or mixed with later

Table 1
Native American Cultural Sequence for the Great Bend Region of Northeast Texas

Temporal Period		Date
Paleo-Indian	9500 - 7000 B.C.	
Archaic	7000 - 200 B.C.	
Early Ceramic	200 B.C. - A.D. 800	
Formative Caddoan		A.D. 800 - 1000
Early Caddoan	A.D. 1000 - 1200	
Middle Caddoan	A.D. 1200 - 1400	
Late Caddoan	A.D. 1400 - 1680	
Historic Caddoan		A.D. 1680 - 1860

materials (Carley n.d.; Perttula 1988a:17); only rarely have Paleo-Indian sites in good stratigraphic context been found (Perttula 1988a:17; Preston 1972, 1974), and fewer have received any sort of systematic excavation. Horizontally stratified early Paleo-Indian deposits may have been present at the Forrest Murphey site (41MR62), at Lake O' the Pines, but the site was reportedly destroyed by dam construction before being excavated (Perttula 1988a:17; Perttula et al. 1986:47; Story 1990:184-185). The discoveries of the Forrest Murphey and Aubrey sites suggest that well-preserved Paleo-Indian sites in Northeast Texas will only be found by examining deeply stratified terraces or by penetrating more recent Holocene alluvium in modern flood plain situations.

The Archaic period is characterized by increasing complexity of settlement systems, increasing population size and density, increasing sedentism, and the development of distinct group territories (Perttula 1988a:17; Story 1985:52). It is subdivided into three "subperiods:" Early (7000 to 4000 B.C.), Middle (4000 to 2000 B.C.), and Late (2000 to 200 B.C.). (Fields and Tomka 1993; Peter et al. 1991:Appendix I; Story 1985, 1990). Archaic remains are usually found in upland settings and are frequently mixed with later material (Campbell et al. 1983; Story 1981). Although definite steps toward food production were being taken elsewhere in the eastern United States during this period (Ford 1985:347-349; Watson 1988), no such evidence of food production has been reported for Northeast Texas in the Archaic (Perttula 1988a:17; Story 1990:Table 56).

The Early Ceramic period (200 B.C.-A.D. 800) is generally not well defined and is largely identified by similarities in pottery and projectile points to sites of the Fourche Maline tradition north of the Red River (Perttula et al. 1993; Peter et al. 1991:Appendix I; Story 1990). Despite these similarities to Fourche Maline, no Early Ceramic period burial mounds are known in the Texas portion of the Great Bend. The few that are known in East Texas occur to the south, in the Sabine and Neches river basins around the Toledo Bend and Sam Rayburn areas (see Story 1990:Figure 41), and at the Coral Snake (16SA48) and Jonas Short (41SA25) mound sites (Jensen 1968; McClurkan et al. 1966, 1980). The lack of such evidence in Northeast Texas leaves open the question of whether or not this area was undergoing the same processes of cultural evolution presumably responsible for the development of burial mound building elsewhere (see Perttula 1988a:18; Story 1990). Perttula (1988a:18) has noted an apparent concentration of Early Ceramic period sites within the Sulphur River basin, although this may be more the result of intensity of research or factors of site preservation rather than the actual presence of an unusually large Early Ceramic population.

The Formative (A.D. 800-1000) and Early Caddoan (A.D. 1000-1200) periods in Northeast Texas are not well defined. These periods are characterized by what may best be termed the Alto complex or Alto sphere, a widespread manifestation related to the Alto phase, originally defined at the George C. Davis site in Cherokee County, Texas, south of the Great Bend area (Newell and Krieger 1949). The Alto complex is strongly influenced by the Coles Creek culture, which it appears to partially overlap in time. There are, however, a number of differentiating characteristics (Neuman 1970), such as new projectile point types (i.e., Hayes and Homan arrow points), new ceramic vessel forms (i.e., the carinated bowl and the bottle), and new modes of vessel decoration (i.e., fine engraving with red pigment filler). It has been suggested that these and other cultural innovations, including the introduction of the bow and arrow and increased food production based on maize, may have led to increases in population and sociopolitical complexity during these periods (Perttula 1988a:18).

The Middle Caddoan period (A.D. 1200-1400) in the Great Bend region includes what is known as the Haley phase. The Haley phase appears to represent a development out of the earlier Alto complex and continuities from the earlier period include the use of shaft grave burials for some members of the society, who were accompanied into the afterlife by relatively rich grave offerings (Kelley et al. 1988:26). This phase was centered in the Great Bend area in Arkansas, but northwestern Louisiana and Northeast Texas did fall within its peripheral influence and a Haley phase component has been recognized at the Hatchel site in Bowie County (Davis 1970:44). Despite its presence in Texas, however, the Haley phase was apparently most fully elaborated in the Arkansas portion of the Great Bend. The complexity of the mortuary ceremonialism and apparent status ranking evident in the burials recovered from Haley phase sites, as well as the presumed organizational control necessary to construct the mound centers, strongly suggests that there was "a political and religious hierarchy that operated throughout the Haley Focus [sic] society" (Wyckoff 1974:110).

The Late Caddoan period (A.D. 1400-1680) includes the final part of the prehistoric period and the initial years of European contact (for a recent overview of this period and the subsequent Historic Caddoan period, see Perttula 1992). The survivors of the de Soto entrada apparently entered Northeast Texas about midway through the Late Caddoan period, and the latter part appears to have overlapped with the initial movements of European explorers and traders into the area. In the lower Sulphur River basin in Northeast Texas, two archeological complexes have been defined for the Late Caddoan period—the Titus phase and the Texarkana phase (Schambach 1982; Thurmond 1985). The Titus phase appears to be centered in Titus and Camp counties, while the Texarkana phase is located in the upper portion of the Great Bend of the Red River and extends southward to include a portion of the lower Sulphur River drainage (Wyckoff 1974:Figure 4). Both the Titus and Texarkana phases appear to be characterized by small hamlets or farmsteads which were probably occupied by small family groups of shifting agriculturalists. These farmsteads contain a limited number of structures and a small family cemetery (see Brewington et al. 1995; Jelks 1961; Perttula 1988a) and were presumably associated with larger, more permanent suprahousehold sites (both mound centers and nonmound cemeteries) which served to integrate the scattered households into a united social group. In the case of the Titus phase, this function appears to have been served solely by large mortuary sites which served as cemeteries for a portion of the society. In contrast to this, the Texarkana phase appears to have retained the older pattern of mounded ceremonial centers, such as the Hatchel site.

The Historic Caddoan period (A.D. 1680-1860) began with the explorations of the survivors of La Salle's Texas colony and ended with the expulsion of the Caddo from Texas in 1859. European contacts with the region were intermittent until the late seventeenth century, when French explorers entered the area. This prompted Spanish expeditions to emphasize Spanish claims to the region and also resulted in the founding of missions among the Caddo. The group closest to the project area was the Kadohadacho Confederacy, originally composed of five groups: the Kadohadacho, the Petit Caddo, the Upper Natchitoches, the Upper Nasoni, and the Nanatsoho. According to Williams (1974:286), the Upper Yatasi and the Cahinnio joined the confederacy at a later time, possibly in the early eighteenth century in the case of the Cahinnio and in the 1760s in the case of the Yatasi.

Between 1788 and 1800, the groups of the Kadohadacho Confederacy were forced south into Louisiana by the severity of Osage raids (Smith 1995:82-83; Williams 1974:297), where they settled on Caddo Lake. The Kadohadacho remained here until they agreed to leave Louisiana and enter Texas following the signing of the Caddo Treaty of 1835 (Williams 1974:309). By 1854, they were residing, along with other Native American groups, on a tract of land on the Brazos River in North Central Texas which had been selected for them (with their help) by the federal government. Subsequently, they were moved to what was then Indian Territory in 1859 (Swanton 1946:99).

European and American Historical Background

The period of European exploration and settlement, and the subsequent North American and African-American development of Northeast Texas, is briefly covered in the remaining section of this chapter. For more extensive treatments of this period in Northeast Texas, the reader is referred to Peter and Cliff (1990a:Chapters 3 and 7) and Peter et al. (1991:Appendix J).

The earliest Europeans known to have visited Northeast Texas were the remnants of the de Soto expedition under Luís de Moscoso de Alvarado. However, regular contact between the Europeans and Caddo did not begin until the late sixteenth century, when French explorers, probing down the Mississippi River and along the Gulf Coast, established the colony of Louisiana. In order to bolster their claims to the region and defend the border of New Spain against French encroachment, the Spanish sent several expeditions into the region and established the first missions among the Caddo. Texas was established by the Spanish during the eighteenth century, but Spanish influence among the Caddo remained minimal due to the distance from their base in New Spain, and the superior attractions offered by the French. Following the Seven Years' War, the colony of Louisiana was ceded by France to Spain, obviating the need for a strong Spanish presence along the border. In the early 1800s, Spain retroceded Louisiana to France, from whom it was purchased by the United States in 1803.

Aggressive American settlers soon began to infiltrate Northeast Texas, which was considered part of Miller County, Arkansas. The Spanish and, after 1821, Mexicans were unable to stop the flow of Americans into Texas. Incompatibilities between Mexican practice and American expectations led to increasing turmoil within Texas and, in 1836, to the Texas Revolution. The economy of the region at first consisted of subsistence agriculture by yeoman farmers; however, after the 1830s cotton plantations became an increasingly important segment of the local economy. In both 1850 and 1860, slaves made up over half of the population of Bowie County, while the other three counties were not far behind (see Campbell 1989:Maps 4 and 5).

Given the origins of most of its inhabitants, it is not surprising that Texas supported secession in 1860. Northeast Texas was fortunate to escape the direct impact of the Civil War, although its inhabitants suffered from the interruption in trade and the collapse of the southern economy after the war. Following the war and the emancipation of the slaves, a new economic system arose based on tenancy and sharecropping, preserving as much of the antebellum social structure as possible. The extension of the railroads into Northeast Texas during this period allowed other resources, such as lumber, iron, and coal, to be exploited.

Dramatic changes occurred in Northeast Texas during the 1920s and 1930s. The discovery of oil and gas deposits in the region added a strong economic underpinning for the area, while the Depression led to the abandonment of many farms in the region—largely those of tenants and sharecroppers. Since World War II, the region has been characterized by economic stability and increasing urbanization, with the expansion of medium-size urban centers such as Texarkana and Mount Pleasant. While agriculture, lumbering, and coal have remained significant industries, tourism and recreation have become increasingly more significant in the region.

CHAPTER 3
RESEARCH OBJECTIVES AND METHODS

The cultural resources investigations reported on here were undertaken in order to identify any prehistoric or historic archeological sites, or any other important cultural resources, contained within 245 acres of the White Oak Creek Wildlife Management Area (WMA), in Cass, Morris, and Titus counties, Texas (Figures 2, 3, and 4). This cultural resources work was undertaken with three primary management goals in mind:

1. to locate cultural resources occurring within the designated survey areas;
2. to assess the significance of those resources in regard to their potential for inclusion in the National Register of Historic Places (NRHP); and
3. to make recommendations for the treatment of those resources based on their NRHP assessments.

For the 245 acres considered in this report, the first of these goals was accomplished by a program of intensive pedestrian survey and shovel testing undertaken using the field methodology described in the second part of this chapter. As a result of this investigation, one prehistoric locality was discovered. The locality is considered to be ineligible for inclusion in the NRHP.

INTENSIVE SURVEY METHODOLOGY

The intensive pedestrian survey of the 245 acres discussed in this report was undertaken in three phases. The main part of the effort was undertaken on July 16-17, 1997, by a five-person crew (one field supervisor and four crew members), with additional visits made to the area on July 23, 1997, and August 20, 1997, by a crew of two persons. In all, the pedestrian survey involved a total of 12 person-days in the field, for an average daily work figure of 20.4 acres surveyed per person-day. A literature and archival search was conducted to determine if any previously recorded sites are present within the project area. Site records of the Texas Archeological Research Laboratory (TARL) at the University of Texas at Austin were consulted. No previously recorded sites were found within the survey areas.

In undertaking their work, the field crews systematically traversed the survey areas in parallel transects at varying intervals of 20-30 m. Since ground cover hindered site detection in most areas, shovel tests were excavated frequently in all locations which were judged to have any probability of archeological deposits, such as (1) level to moderately level upland edges at the tops of slopes overlooking stream bottoms; (2) level to moderately level terraces adjacent to stream flood plains; (3) level to moderately level knolls or benches on or at the base of slopes adjacent to stream flood plains; and (4) flood plain rises or levee remnants. These shovel tests usually were excavated to (or into) the clay subsoil, or to a depth of 50 cm, whichever was

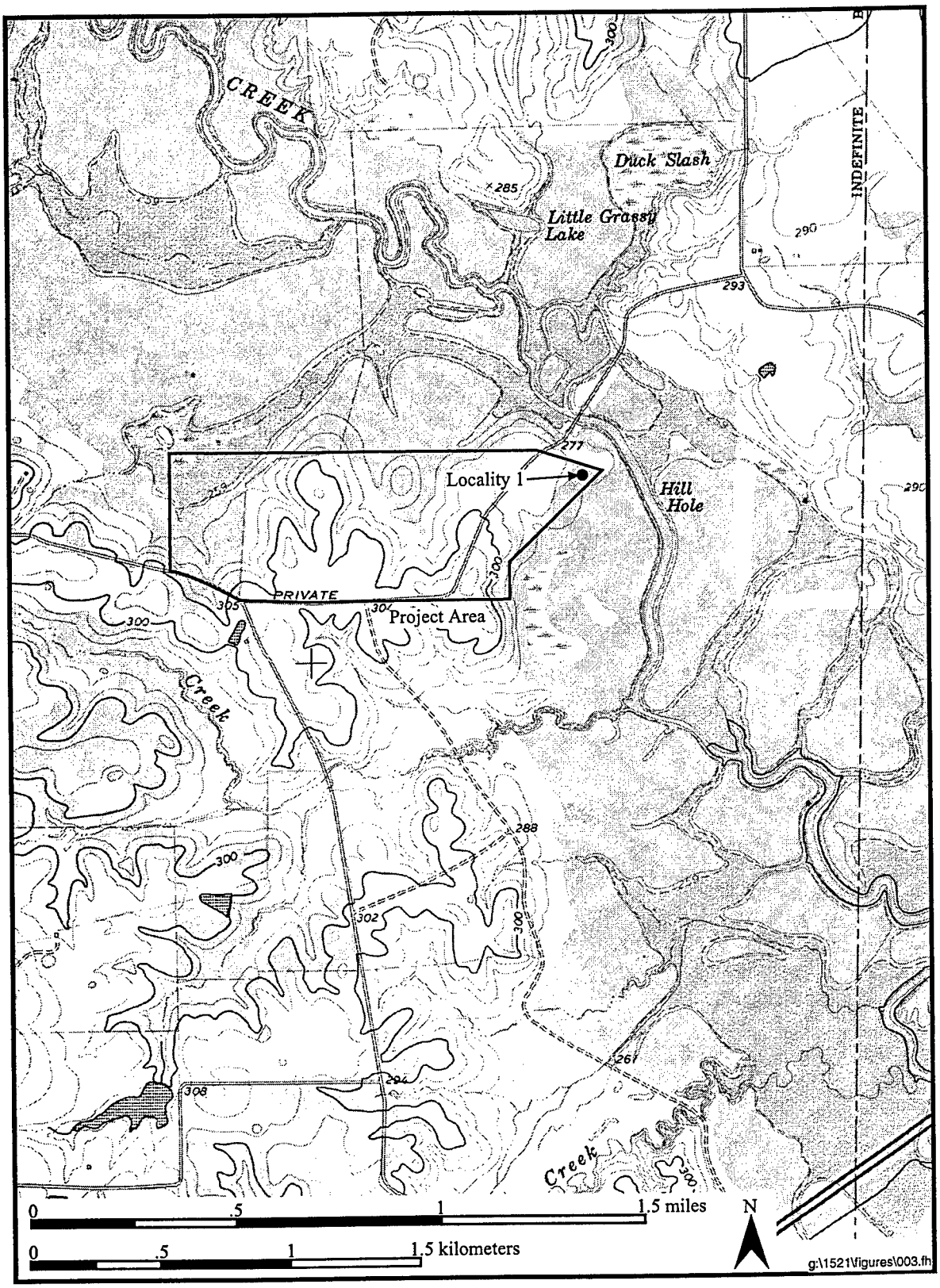

Figure 2. Topographic map of the 201-acre survey area in Titus County.

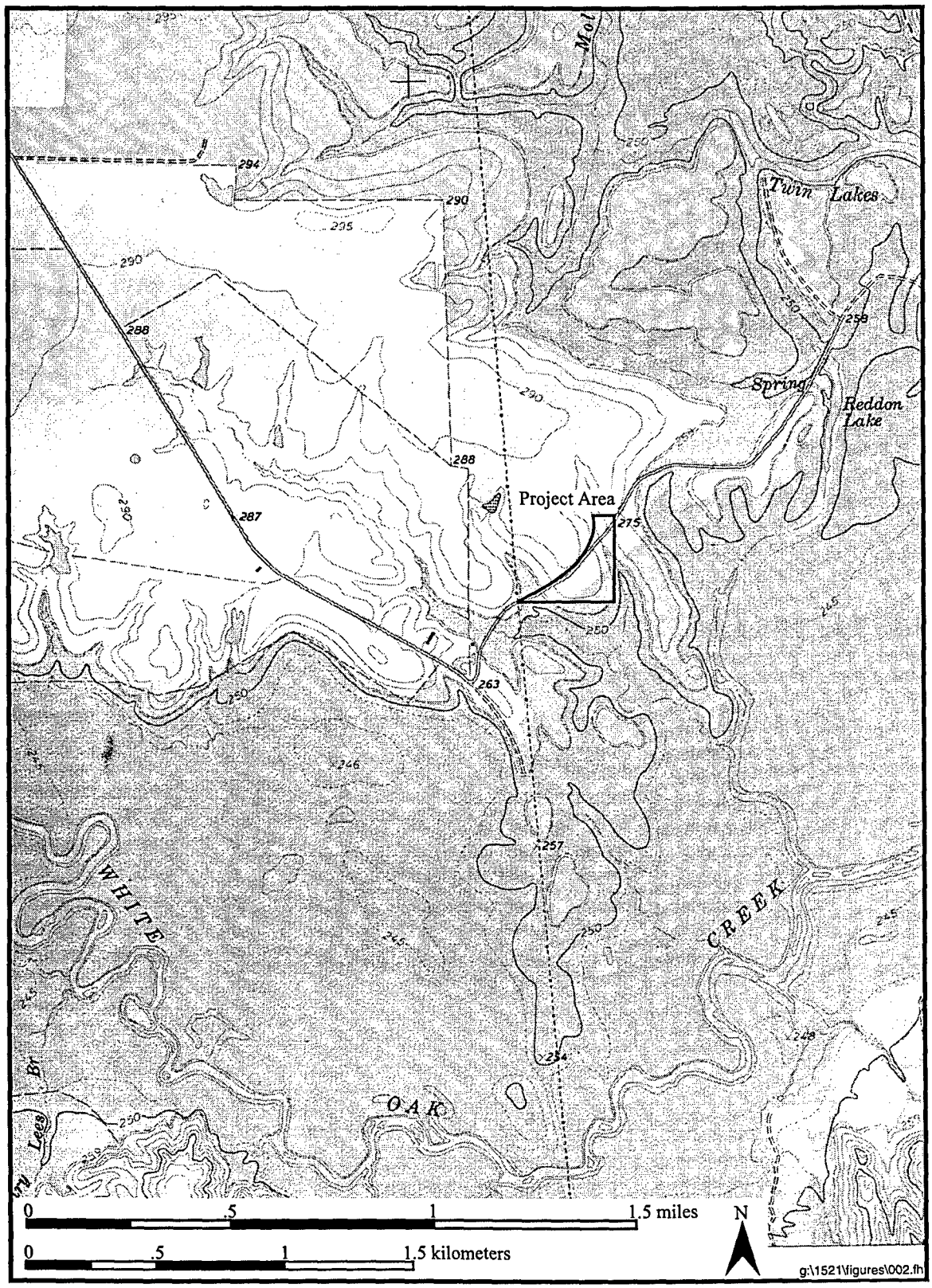

Figure 3. Topographic map of the 10-acre survey area in Morris County.

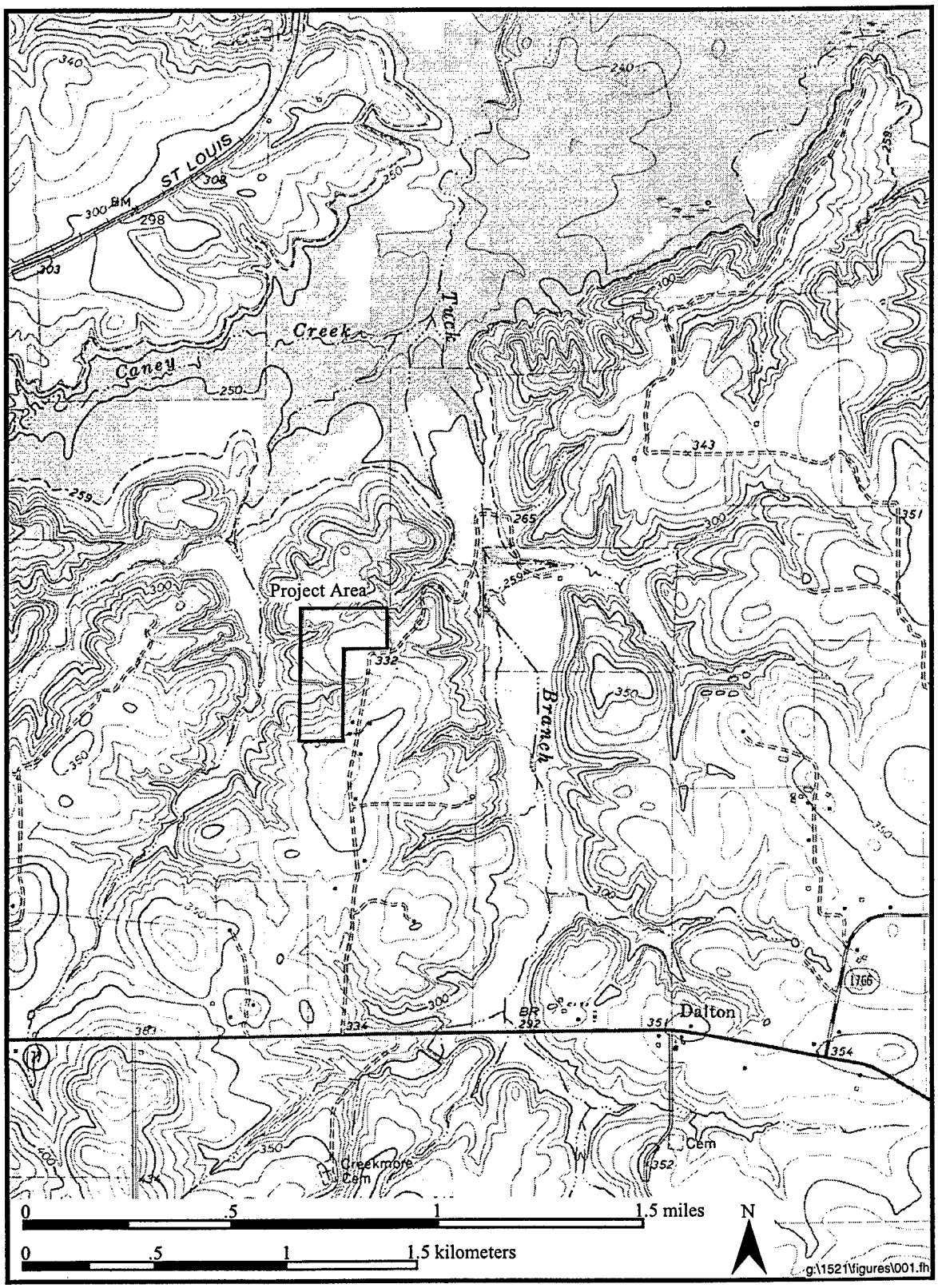

Figure 4. Topographic map of the 34-acre survey area in Cass County.

applicable. The fill from these survey shovel tests was screened through 6.4-mm hardware cloth. An area was considered to contain a site when cultural materials were collected from two or more shovel tests excavated at approximately 20-m intervals. Cultural properties that fell below this threshold were considered nonsite localities or isolated finds. A standardized Survey Unit Form was completed for each shovel test which contained cultural remains. These forms described, at a minimum, the soil colors and textures observed in the unit and the cultural materials recovered.

Fifty-four shovel tests were excavated during the period of fieldwork for this project, for an average of one shovel test for every 4.5 acres surveyed. The number of shovel tests is unusually low, since much of the survey area consisted of steep slopes or the bottom of drainage gullies (see Figures 2, 3, and 4). The upland portions of the survey areas all appeared to have been cleared for cultivation at one time, with the 201-acre survey area in Titus County having been under the plow most recently. This apparently resulted in thin to nonexistent topsoil across much of the upland portions of the survey area. Surface erosion was especially severe in the 10-acre and 34-acre survey areas, in Morris and Cass counties, respectively.

ARTIFACT TREATMENT AND ANALYSIS

Cultural artifacts collected during this phase of survey at the WMA were removed to the laboratory facilities of Geo-Marine, Inc. (GMI), in Plano, Texas, where all artifacts were washed, catalogued, and labeled in compliance with TARL standards. Artifact analysis was undertaken at GMI's facilities by GMI personnel.

CHAPTER 4
RESULTS AND RECOMMENDATIONS

RESULTS

As previously described, only one cultural property was found within the three survey areas—a prehistoric locality.

Locality 1

Locality 1 consists of an isolated find of one flake in a shovel test in a heavily dissected area near the eastern edge of the 201-acre survey area in Titus County (see Figure 2). Four additional shovel tests were dug at 20- to 30-m intervals surrounding the initial unit, with the interval varying in order to place the shovel tests in areas that were not eroded. None of these additional shovel tests contained any other cultural material. The artifact recovered is an unmodified, chert, secondary flake that has been heat treated. It is between 6.3 and 9.5 mm in size and weighs .3 g. Based on the ephemeral nature of Locality 1, it is believed to have no research potential, and it is recommended that it be considered ineligible for inclusion in the National Register of Historic Places (NRHP).

RECOMMENDATIONS

As a result of the intensive pedestrian survey of 245 acres at the White Oak Creek Wildlife Management Area (WMA) in Titus, Morris, and Cass counties, only one cultural resource, a prehistoric locality, was identified. This locality consisted of an isolated flake in a single shovel test. Additional shovel testing in this vicinity uncovered no other material. This locality is considered ineligible for inclusion in the NRHP and no further work is required.

REFERENCES CITED

Bailey, G. L., D. K. Boyd, and C. B. Bousman

1991 *Archeological Survey of the City Lakes Area and Geomorphological and Magnetometer Surveys, Cooper Lake Project, Delta and Hopkins Counties, Texas.* Technical Report No. 11. Prewitt and Associates, Inc., Austin.

Barnard, H. D.

1939 *Early History of Research in Texas Archeology by the Department of Anthropology, and the History of the Anthropology Museum of the University of Texas.* Unpublished Master's thesis, University of Texas, Austin.

Bousman, C. B., M. B. Collins, and T. K. Perttula

1988 *Quaternary Geomorphology at Cooper Basin: A Framework for Archeological Inquiry, Delta and Hopkins Counties, Texas.* Report of Investigations No. 55. Prewitt and Associates, Inc., Austin.

Brewington, R. L., J. E. Dockall, and H. J. Shafer

1995 *Archaeology of 41MX5: A Late Prehistoric Caddoan Hamlet in Morris County, Texas.* Reports of Investigations No. 1. Center for Environmental Archaeology, Texas A&M University, College Station.

Briggs, A. K., and J. Malone

1970 *An Archaeological Survey of the Texarkana Reservoir Enlargement Area.* Archaeological Survey Report No. 7. Texas Historical Survey Committee and Texas Water Development Board, Austin.

Bruseth, J. E., and T. K. Perttula

1981 *Prehistoric Settlement Patterns at Lake Fork Reservoir.* Texas Antiquities Permit Series Report No. 2. Archaeology Research Program, Southern Methodist University, Dallas.

Bureau of Economic Geology (BEG)

1964 *Geologic Atlas of Texas, Tyler Sheet.* University of Texas at Austin, Bureau of Economic Geology.

1966 *Geologic Atlas of Texas, Texarkana Sheet.* (Second printing, 1979). University of Texas at Austin, Bureau of Economic Geology.

Campbell, L. J., C. S. Weed, M. T. Swanson, and J. E. Keller
1983 *Background and Literature Review for Three Proposed Alternatives—Northwest Louisiana Water Supply Study—Bossier, Caddo, DeSoto, and Webster Parishes, Louisiana; Harrison and Marion Counties, Texas; Lafayette County, Arkansas.* Report of Investigations No. 93. New World Research, Inc., Pollock, Louisiana.

Campbell, R. B.
1989 *An Empire for Slavery—The Peculiar Institution in Texas, 1821-1865.* Louisiana State University Press, Baton Rouge.

Carley, D.
n.d. *Evidence of Early Man in Northeast Texas.* Preliminary report submitted to the Texas Historical Commission, Austin.

Cliff, M. B. (editor)
1994 *Cultural Resources Survey of a Portion of the White Oak Creek Mitigation Area (WOCMA), Bowie, Cass, and Morris Counties, Texas: 1990-1992.* White Oak Creek Mitigation Area Archeological Technical Series, Report of Investigations No. 2. Geo-Marine, Inc., Plano, Texas.

Cliff, M. B., M. M. Green, S. M. Hunt, and D. Shanabrook
1995 *Archeological Test Excavations at Two Prehistoric Sites (41DT59 and 41DT247) at Cooper Lake, Delta County, Texas, 1994.* Miscellaneous Report of Investigations No. 90. Geo-Marine, Inc., Plano, Texas.

Cliff, M. B., M. M. Green, S. M. Hunt, D. Shanabrook, and D. E. Peter
1996 *Excavations in Area C of the Unionville Site (41CS151), White Oak Creek Mitigation Area (WOCMA), Cass County, Texas.* White Oak Creek Mitigation Area Archeological Technical Series, Report of Investigations No. 4. Geo-Marine, Inc., Plano, Texas.

Cliff, M. B., and S. M. Hunt
1995 *Cultural Resources Testing of Three Sites within the Moist Soils Management Area (MSMA) of the White Oak Creek Mitigation Area (WOCMA), Cass County, Texas.* White Oak Creek Mitigation Area Archeological Technical Series, Report of Investigations No. 3. Geo-Marine, Inc., Plano, Texas.

Cliff, M. B., S. M. Hunt, D. Pleasant, R. Procter, and H. B. Ensor
1996 *Cultural Resources Survey of 600 Acres at Wright Patman Lake, Bowie and Cass Counties, Texas.* Miscellaneous Report of Investigations No. 108. Geo-Marine, Inc., Plano, Texas.

Cliff, M. B., and D. E. Peter (editors)
1992 *Cultural Resources Survey of the Moist Soils Management Area, White Oak Creek Mitigation Area (WOCMA), Cass County, Texas.* White Oak Creek Mitigation Area Archeological Technical Series, Report of Investigations No. 1. Geo-Marine, Inc., Plano, Texas.

1994 *Cultural Resources Survey of 2,226 Hectares within the Red River Army Depot and Lone Star Army Ammunition Plant, Bowie County, Texas.* RRAD/LSAAP Archeological Technical Series, Report of Investigations No. 4. Geo-Marine, Inc., Plano, Texas.

Cliff, M. B., W. D. White, S. M. Hunt, D. Pleasant, and G. L. Shaw
1996 *Cultural Resources Survey of 5,000 Acres within the White Oak Creek Mitigation Area (WOCMA), Bowie, Morris, and Titus Counties, Texas: 1993-1994.* White Oak Creek Mitigation Area Archeological Technical Series, Report of Investigations No. 5. Geo-Marine, Inc., Plano, Texas.

Creel, D.
1984 Hatchel-Mitchell Site. Draft submitted to the *Handbook of Texas.* Ms. on file, Texas Archeological Research Laboratory, University of Texas, Austin.

Davis, E. M.
1970 Archaeological and Historical Assessment of the Red River Basin in Texas. In *Archeological and Historical Resources of the Red River Basin*, edited by H. Davis, pp. 25-65. Research Series No. 1. Arkansas Archeological Survey, Fayetteville.

Dickinson, S. D.
1941 Certain Vessels from the Clements Place, an Historic Caddo Site. *Bulletin of the Texas Archeological and Paleontological Society* 13:117-132.

Doehner, K., and R. E. Larson
1978 *Archaeological Research at Proposed Cooper Lake, Northeast Texas, 1974-1975.* Research Report No. 108. Archaeology Research Program, Southern Methodist University, Dallas.

Doehner, K., D.E. Peter, and S. A. Skinner
1978 *Evaluation of the Archaeology at the Proposed Cooper Lake.* Research Report No. 114. Archaeology Research Program, Southern Methodist University, Dallas.

Duffield, L. F.
1959 *Archeological Reconnaissance at Cooper Reservoir, Delta and Hopkins Counties, Texas, February, 1959.* Texas Archeological Salvage Project, University of Texas, Austin. Submitted to the National Park Service, U.S. Department of the Interior.

Espey, Huston and Associates, Inc. (EHA)
1980 *An Archaeological/Historic Survey of Sections of the Proposed Welsh-N.W. Texarkana 345 KV Transmission Line, Cass and Bowie Counties, Texas, Department of the Army Permit No. SWF-80-CASS-329.* Submitted to Southwestern Electric Power Company, Shreveport.

Ferring, C. R.
1989 The Aubrey Clovis Site: A Paleoindian Locality in the Upper Trinity River Basin, Texas. *Current Research in the Pleistocene* 6:9-11.

Fields, R. C., D. K. Boyd, C. B. Bousman, and J. B. McLerran
1991 *Review of Cultural Resource Investigations at Cooper Lake, Delta and Hopkins Counties, Texas.* Prewitt and Associates, Inc., Austin. Submitted to the U.S. Army Corps of Engineers, Fort Worth District.

Fields, R. C., E. F. Gadus, L. W. Klement, C. B. Bousman, and J. B. McLerran
1993 *Excavations at the Tick, Spike, Johns Creek, and Peerless Bottoms Sites, Cooper Lake Project, Delta and Hopkins Counties, Texas.* Report of Investigations No. 91. Prewitt and Associates, Inc., Austin.

Fields, R. C., E. F. Gadus, L. W. Klement, and K. M. Gardner
1994 *Excavations at the Spider Knoll Site, Cooper Lake Project, Delta County, Texas.* Report of Investigations No. 96. Prewitt and Associates, Inc., Austin.

Fields, R. C., and S. A. Tomka
1993 Historic Context: Hunter-Gatherer Mobility in Northeast Texas, 10,000 - 200 B.C. In *Archeology in the Eastern Planning Region, Texas: A Planning Document,* edited by N.A. Kenmotsu and T.K. Perttula, pp. 69-95. Cultural Resource Management Report 3. Department of Antiquities Protection, Texas Historical Commission, Austin.

Ford, R. I.
1985 Patterns of Prehistoric Food Production in North America. In *Prehistoric Food Production in North America*, edited by Richard I. Ford, pp. 341-364. Anthropological Papers No. 75. Museum of Anthropology, University of Michigan, Ann Arbor.

Gadus, E. F., R. C. Fields, and C. B. Bousman
1992 *Archeological Investigations at 41DT11, 41DT21, 41DT50, 41DT54, and 41DT63 at Cooper Lake, Delta County, Texas.* Report of Investigations No. 86. Prewitt and Associates, Inc., Austin.

Gadus, E. F., R. C. Fields, C. B. Bousman, S. A. Tomka, and M. A. Howard
1992 *Excavations at the Finley Fan Site (41HP159), Cooper Lake Project, Hopkins County, Texas.* Report of Investigations No. 78. Prewitt and Associates, Inc., Austin.

Gadus, E. F., R. C. Fields, L. W. Klement, C. B. Bousman, M. A. Howard, and K. M. Gardner
1991 *Testing, Revisitation, and Evaluation of Selected Sites at Cooper Lake, Delta and Hopkins Counties, Texas.* Report of Investigations No. 81. Prewitt and Associates, Inc., Austin.

Gilmore, K.
1986 *French-Indian Interaction at an Early Eighteenth Century Post: The Roseborough Lake Site, Bowie County, Texas.* Contributions in Archaeology No. 3. Institute of Applied Sciences, North Texas State University, Denton.

Gilmore, K., and N. Hoffrichter
1964 Preliminary Investigations of the L.O. Ray Site, Delta County, Texas. *The Record* 19(1):3-17.

Gilmore, K., and O. McCormick
1980 *Red River Archaeological Project, Phase I.* Institute of Applied Sciences, North Texas State University, Denton.

1982 *Red River Archaeological Project, Phase I and II.* Contributions in Archaeology No. 2. Institute of Applied Sciences, North Texas State University, Denton.

Goldschmidt, W. R.
1935 A Report on the Archaeology of Titus County in East Texas. *Bulletin of the Texas Archeological and Paleontological Society* 7:89-99.

Green, M. M., D. E. Peter, and D. K. Shepard
1996 *Friendship: An African-American Community on the Prairie Margin of Northeast Texas.* Miscellaneous Report of Investigations No. 81. Geo-Marine, Inc., Plano.

Guy, J. A.
1990 Previous Archeological Investigations. In *The Archeology and Bioarcheology of the Gulf Coastal Plain*, vol. 1, by D.A. Story, J.A. Guy, B.B. Burnett, M.D. Freeman, J.C. Rose, D.G. Steele, B.W. Olive, and K.J. Reinhard, pp. 27-130. Research Series No. 8. Arkansas Archeological Survey, Fayetteville.

Hamilton, D. L.
1972 An Analysis of the Engraved Sherds and Vessels from the A.R. Hatchel Place, Bowie County, Texas. Ms. on file, Texas Archeological Research Laboratory, University of Texas, Austin.

Harris, R. K.
1953 The Sam Kaufman Site, Red River County, Texas. *Bulletin of the Texas Archeological Society* 24:43-68.

Heartfield, L., and T. Dieste
1984a *An Archeological Overview and Management Plan for the Lone Star Army Ammunition Plant.* DARCOM Report No. 17. Submitted to the National Park Service, U.S. Department of the Interior, Atlanta, by Woodward-Clyde Consultants, Walnut Creek, California.

1984b *An Archeological Overview and Management Plan for the Red River Army Depot, Bowie County, Texas.* DARCOM Report No. 18. Submitted to the National Park Service, U.S. Department of the Interior, Atlanta, by Woodward-Clyde Consultants, Walnut Creek, California.

Hunt, S. M., D. Pleasant, and M. B. Cliff
1995 *Cultural Resources Survey of 550 Acres at Lake O' the Pines, Marion County, Texas.* Miscellaneous Report of Investigations No. 103. Geo-Marine, Inc., Plano, Texas. Submitted to the U.S. Army Corps of Engineers, Fort Worth District.

Hyatt, R. D., B. H. Butler, and H. P. Mosca
1974 *Archaeological Research at Cooper Lake, 1970-1972.* Contributions in Anthropology No. 12. Southern Methodist University, Dallas.

Hyatt, R. D., and K. Doehner
1975 *Archaeological Research at Cooper Lake, Northeast Texas, 1973.* Contributions in Anthropology No. 15. Southern Methodist University, Dallas.

Hyatt, R. D., and S. A. Skinner
1971 *Archaeological Resources of the Cooper Reservoir, Texas.* Department of Anthropology, Southern Methodist University. Submitted to the National Park Service, U.S. Department of the Interior.

Jackson, A. T.
1931 Department of Anthropology Field Notebook No. 3 for 1931: April 17, 1931 (Tom N. Cole or Mustang Creek Site). On file at the Texas Archeological Research Laboratory, University of Texas, Austin.

1932 Exploration of a Burial Site on E.H. Moores Plantation in Bowie County, Texas. Ms. on file, Texas Archeological Research Laboratory, University of Texas, Austin.

Jelks, E. B.
1961 *Excavations at Texarkana Reservoir, Sulphur River, Northeastern Texas.* River Basin Survey Papers No. 21, B.A.E. Bulletin No. 179. Bureau of American Ethnology, Washington, D.C.

Jensen, H. P., Jr.
1968 Coral Snake Mound X16SA48. *Bulletin of the Texas Archeological Society* 39:9-44.

Johnson, L., Jr.
1962 The Yarbrough and Miller Sites of Northeastern Texas, with a Preliminary Definition of the LaHarpe Aspect. *Bulletin of the Texas Archeological Society* 32:141-284.

Jurney, D. H., and J. Bohlin
1993 *Archaeological Survey of Cooper Lake, Delivery Order Number 6, 1989: Cultural Resources Studies for Cooper Lake, Hopkins and Delta Counties, Texas.* Archaeology Research Program, Institute for the Study of Earth and Man, Southern Methodist University, Dallas.

Jurney, D. H., J. Bohlin, M. Masucci, B. A. C. Cole, and S. Linder-Linsley
1993 *Archaeological Survey of Cooper Lake, Delivery Order Number 7, 1989: Cultural Resources Studies for Cooper Lake, Hopkins and Delta Counties, Texas.* Archaeology Research Program, Institute for the Study of Earth and Man, Southern Methodist University, Dallas.

Kelley, D. B., S. S. Victor, and M. D. Freeman
1988 *Archaeology in the Flatwoods: An Intensive Survey of Portions of the Louisiana Army Ammunition Plant, Bossier and Webster Parishes, Louisiana.* Coastal Environments, Inc., Baton Rouge.

Kenmotsu, N. A., and T. K. Perttula (editors)
1993 *Archeology in the Eastern Planning Region, Texas: A Planning Document.* Cultural Resource Management Report 3. Department of Antiquities Protection, Texas Historical Commission, Austin.

Krieger, A. D.
1946 *Culture Complexes and Chronology in Northern Texas.* Publication No. 4640. University of Texas, Austin.

Largent, F. B., Jr., D. L. Beene, M. B. Cliff, and S. M. Hunt
1997 *Cultural Resources Testing of Two Sites within the White Oak Creek Wildlife Management Area, Bowie and Titus Counties, Texas.* White Oak Creek Mitigation Area Archeological Technical Series, Report of Investigations No. 6. Geo-Marine, Inc., Plano, Texas.

Lebo, S. A.
1988 *The Tucker (41DT104) and Sinclair (41DT105) Cemeteries of Delta County, Texas: An Archaeological and Bioarchaeological Perspective.* Institute of Applied Sciences, University of North Texas, Denton.

Lewis, G. A.
1987 *The Clements Brothers' Farm Site 41CS25.* Unpublished Master's thesis, University of Texas, Austin.

Linder-Linsley, S. E., and L. D. Lindsay
1997 *Cultural Resources Survey 1996: Wright Patman Lake and Lake O' the Pines, Bowie, Cass, and Marion Counties, Texas.* LL Consultants, Dallas and Atlanta, Texas. Draft report submitted to the U.S. Army Corps of Engineers, Fort Worth District.

McClurkan, B. B., W. T. Field, and J. N. Woodall
1966 *Excavations in Toledo Bend Reservoir, 1964-65.* Paper No. 8. Texas Archeological Salvage Project, University of Texas, Austin.

McClurkan, B. B., E. B. Jelks, and H. P. Jensen
1980 Jonas Short and Coral Snake Mounds: A Comparison. In *Caddoan and Poverty Point Archaeology: Essays in Honor of Clarence Hungerford Webb*, edited by Jon L. Gibson. *Louisiana Archaeology* 6:173-206, for 1979.

McGregor, D. E., M. M. Green, D. H. Jurney, W. A. Martin, R. W. Moir, and J. W. Saunders
1996 *Archaeological Investigations at Cooper Lake, Delivery Orders Numbers 2, 3 & 4, 1987.* 2 volumes. Archaeology Research Program, Southern Methodist University, Dallas.

McGregor, D. E., and E. Roemer
1989 *Archeological Survey at Cooper Lake, Proposed Water Intake Easement for North Texas Municipal Water District, Hopkins County, Texas.* Letter report prepared by the U.S. Army Corps of Engineers, Fort Worth District.

McMahan, C. A., R. G. Frye, and K. L. Brown
1984 *The Vegetation Types of Texas, Including Cropland.* (Illustrated Synopsis and Map). Wildlife Division, Texas Parks and Wildlife Department, Austin.

Martin, W. A., J. Bruseth, G. Fritz, P. Murry, and R. Fullington
1987 Subsistence Patterns. In *The Bird Point Island and Adams Ranch Sites: Methodological and Theoretical Contributions to North Central Texas Archaeology*, edited by J. Bruseth and W. Martin, pp. 127-142. Richland Creek Technical Series Volume II. Archaeology Research Program, Southern Methodist University, Dallas.

Meltzer, D. J., and B. D. Smith
1986 Paleoindian and Early Archaic Subsistence Strategies in Eastern North America. In *Foraging, Collecting and Harvesting: Archaic Period Subsistence and Settlement in the Eastern Woodlands*, edited by S.W. Neusius, pp. 3-31. Occasional Paper No. 6. Center for Archaeological Investigations, Southern Illinois University, Carbondale.

Miroir, M. P.
n.d. Site Notes. On file at the Texarkana Historical Museum, Texarkana.

Moore, C. B.
1912 *Some Aboriginal Sites on Red River.* Volume XIV, second series, Journal of the Academy of Natural Science of Philadelphia.

Moorman, E. H., and E. B. Jelks
1952 *Appraisal of the Archeological Resources of the Cooper Reservoir, Delta and Hopkins Counties, Texas.* River Basin Surveys, Smithsonian Institution, Texas Area, Austin.

Murray, G. E.
1960 *Geologic Framework of the Gulf Coastal Province of the United States.* Association of Petroleum Geologists, Tulsa.

Neuman, R. W.
1970 Archaeological and Historical Assessment of the Red River Basin in Louisiana. In *Archeological and Historical Resources of the Red River Basin*, edited by Hester Davis, pp. 1-24. Research Series No. 1. Arkansas Archeological Survey, Fayetteville.

Newell, H. P., and A. D. Krieger
1949 *The George C. Davis Site, Cherokee County, Texas.* Memoir No. 5. The Society for American Archaeology, Washington, D.C.

Pearce, J. E.
1932 The Archaeology of East Texas. *American Anthropologist* 34:670-687.

Perttula, T. K.
1988a Cultural Setting. In *Test Excavations at Sites 41BW182 and 41BW183, Red River Army Depot, Bowie County, Texas*, edited by M. B. Cliff and D. E. Peter, pp. 11-25. RRAD/LSAAP Archeological Technical Series, Report of Investigations No. 1. Geo-Marine, Inc., Plano, Texas.

1988b *Cultural Resources Survey at Cooper Lake, Delta and Hopkins Counties, Texas.* Institute of Applied Sciences, North Texas State University, Denton.

1989 *Test Excavations at Three Late Nineteenth/Early Twentieth Century Farmsteads at Cooper Lake, Delta and Hopkins Counties, Texas* (with contributions by H. Brown and B.C. Yates). Contributions in Archaeology No. 8. Institute of Applied Sciences, University of North Texas, Denton.

1990 *The Hurricane Hill Site (41HP106): Excavations at an Early Ceramic-Caddoan Settlement at Cooper Lake, Hopkins County, Texas.* Contributions in Archaeology No. 9. Institute of Applied Sciences, University of North Texas, Denton. Draft report submitted to the U.S. Army Corps of Engineers, Fort Worth District.

1992 *"The Caddo Nation": Archaeological and Ethnohistoric Perspectives.* University of Texas Press, Austin.

Perttula, T. K. (editor)
1989 *The James Frank Site (41DT97): Excavations at a Mid-Nineteenth Century Farmstead in the South Sulphur River Valley, Cooper Lake Project, Texas* (with contributions by R.I. Birnie, H. Brown, and B.C. Yates). Contributions in Archaeology No. 7. Institute of Applied Sciences, University of North Texas, Denton.

Perttula, T. K., R. C. Fields, J. E. Corbin, and N. A. Kenmotsu
1993 The Emergence of Sedentism in Northeast Texas, ca. 500 B.C. to A.D. 1000. In *Archeology in the Eastern Planning Region, Texas: A Planning Document,* edited by N.A. Kenmotsu and T.K. Perttula, pp. 97-120. Cultural Resource Management Report 3. Department of Antiquities Protection, Texas Historical Commission, Austin.

Perttula, T. K., B. D. Skiles, M. B. Collins, M. C. Trachte, and F. Valdez, Jr.
1986 *"This Everlasting Sand Bed": Cultural Resources Investigations at the Texas Big Sandy Project, Wood and Upshur Counties, Texas.* Reports of Investigations No. 52. Prewitt and Associates, Inc., Austin.

Peter, D. E., and M. B. Cliff (editors)
1990a *Intensive Archeological Survey and Archival Investigations at the Red River Army Depot and Lone Star Army Ammunition Plant, Bowie County, Texas.* RRAD/LSAAP Archeological Technical Series, Report of Investigations No. 2. Geo-Marine, Inc., Plano, Texas.

1990b *Cultural Resources Survey of Historic Sites at the Lone Star Army Ammunition Plant, Bowie County, Texas.* RRAD/LSAAP Archeological Technical Series, Report of Investigations No. 3. Geo-Marine, Inc., Plano, Texas.

Peter, D. E., M. B. Cliff, and J. T. Abbott
1990 *Research Design for Cultural Resources Investigations at the White Oak Creek Mitigation Area, Bowie, Cass, Morris, and Titus Counties, Texas.* Geo-Marine, Inc., Plano, Texas. Submitted to the U.S. Army Corps of Engineers, Fort Worth District.

Peter, D. E., T. K. Perttula, M. B. Cliff, S. M. Hunt, C. Stiles-Hanson, and N. G. Reese
1991 *Red River Army Depot and Lone Star Army Ammunition Plant Cultural Resource Management Plan.* Geo-Marine, Inc., Plano, Texas. Submitted to the Red River Army Ammunition Plant/Lone Star Army Ammunition Plant and the U.S. Army Corps of Engineers, Fort Worth District.

Preston, N. E.
1972 Multiple Paleo Finds in Hunt County, Texas. *Missouri Archaeological Society Newsletter*, October 1972:6-8.

1974 Waco Sinkers in Association with Paleo-Indian Artifacts. *The Record* 30(4):4-5.

Schambach, F. F.
1982 The Archaeology of the Great Bend Region in Arkansas. In *Contributions to the Archeology of the Great Bend Region of the Red River Valley, Southwest Arkansas*, edited by F.F. Schambach and F. Rackerby, pp. 1-11. Research Series No. 22. Arkansas Archeological Survey, Fayetteville.

Scurlock, J. D.
1962 The Culpepper Site, A Late Fulton Aspect Site in Northeast Texas. *Bulletin of the Texas Archeological Society* 32:285-316.

Shafer, H. J.
1977 Early Lithic Assemblages in Eastern Texas. *The Museum Journal* 17:187-197. West Texas Museum Association, Lubbock.

Smith, F. T.
1995 *The Caddo Indians: Tribes at the Emergence of Empires, 1542-1854.* Texas A&M University Press, College Station.

Stephenson, R. L.
1950 *Archaeological Survey of Texarkana Reservoir, Bowie and Cass Counties, Texas.* River Basin Surveys, Smithsonian Institution, Washington, D.C.

Story, D. A.
1981 An Overview of the Archaeology of East Texas. *Plains Anthropologist* 26-92:135-158.

1985 Adaptive Strategies of Archaic Cultures of the West Gulf Coastal Plain. In *Prehistoric Food Production in North America*, edited by R.I. Ford, pp. 19-56. Anthropological Papers No. 75. Museum of Anthropology, University of Michigan, Ann Arbor.

1990 Cultural History of the Native Americans. In *The Archeology and Bioarcheology of the Gulf Coastal Plain: Volume 1*, by D.A. Story, J.A. Guy, B.A. Burnett, M.D. Freeman, J.C. Rose, D.G. Steele, B.W. Olive, and K.J. Reinhard, pp. 163-366. Research Series No. 38. Arkansas Archeological Survey, Fayetteville.

Swanton, J. R.
1946 *The Indians of the Southeastern United States.* Bulletin 137. Bureau of American Ethnology, Smithsonian Institution, Washington, D.C.

Thurmond, J. P.
1985 Late Caddoan Social Group Identifications and Sociopolitical Organization in the Upper Cypress Basin and Vicinity, Northeastern Texas. *Bulletin of the Texas Archeological Society* 54:185-200.

1990 *Archeology of the Cypress Creek Drainage Basin, Northeastern Texas and Northwestern Louisiana.* Studies in Archeology No. 5. Texas Archeological Research Laboratory, University of Texas, Austin.

United States Department of Agriculture, Soil Conservation Service (USDA, SCS)
1974 *General Soil Map: Cass and Marion Counties, Texas* U.S. Department of Agriculture, Soil Conservation Service, Temple, Texas.

1980 *Soil Survey of Bowie County, Texas.* United States Department of Agriculture, Soil Conservation Service in cooperation with Texas Agricultural Experiment Station, College Station.

1990 *Soil Survey of Camp, Franklin, Morris, and Titus Counties, Texas.* United States Department of Agriculture - Soil Conservation Service, in cooperation with Texas Agricultural Experiment Station and Texas State Soil and Water Conservation Board.

Watson, P. J.
1988 Prehistoric Gardening and Agriculture in the Midwest and Midsouth. In *Interpretations of Culture Change in the Eastern Woodlands during the Late Woodland Period*, edited by R.W. Yerkes, pp. 39-67. Occasional Papers in Anthropology No. 3. Ohio State University, Columbus.

White, W. D., Jr., S. M. Hunt, and M. B. Cliff
1995 *Cultural Resources Survey of 1,290 Acres at Wright Patman Lake, Bowie and Cass Counties, Texas.* Miscellaneous Report of Investigations No. 99. Geo-Marine, Inc., Plano, Texas.

Williams, S.
1974 The Aboriginal Location of the Kadohadacho and Related Indian Tribes. In *Caddoan Indians I*, pp. 281-330. Garland Publishing, Inc., New York.

Winchell, F., J. C. Rose, and R. W. Moir
1992 *Bioanthropological Investigation of Nineteenth Century Burials at Site 41DT105: Cultural Resource Studies for Cooper Lake, Delta County, Texas.* Archaeology Research Program, Department of Anthropology, Southern Methodist University, Dallas.

Wyckoff, D. G.
1974 The Caddoan Cultural Area: An Archaeological Perspective. In *Caddoan Indians I*, pp. 25-279. Garland Publishing, Inc., New York.

APPENDIX A

CURATED MATERIALS
RESULTING FROM THE 245-ACRE SURVEY
AT THE WHITE OAK CREEK
WILDLIFE MANAGEMENT AREA (WMA)

CURATED MATERIALS

The materials from this investigation are curated at the Texas Archeological Research Laboratory (TARL) at the University of Texas, Austin. The following list of items enumerates the materials curated at this facility under Purchase Order DACW63-97-P-0884, with the U.S. Army Corps of Engineers, Fort Worth District:

1. One copy of the Scope of Work;
2. One copy of the Final Report;
3. All of the original field notes, maps, and records; and
4. One acid-free copy of all field notes, maps, and records.