

**ST. LOUIS DISTRICT CULTURAL RESOURCE
MANAGEMENT REPORT NUMBER 21**

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**REPORT OF
PHASE II LEVEL TESTING OF SITE 23SL449,
GRAVOIS CREEK DRAINAGE BASIN,
ST. LOUIS COUNTY, MISSOURI**

CONTRACT NO. DACW43-83-M-3649

**Prepared by
ARCHAEOLOGICAL SURVEY,
University of Missouri, St. Louis**

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**US Army Corps
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St. Louis District**

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) The Archaeological Survey, University of Missouri - St. Louis conducted testing for National Register of Historic Places eligibility (Phase II) at Site 23SL499 in the Gravois Creek Drainage Basin, St. Louis County, Missouri, under a contract with the U.S. Army Corps of Engineers, St. Louis District. The site was one of 12 located during a Phase I survey of 13 parcels along Gravois Creek. Site 23SL499 is a Late Woodland and possibly Mississippian		

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ridge top sparse artifact scatter (probably representing temporary hunting camps), surrounded by the creek on three sides. Subsurface testing indicated the lack of site integrity due to disturbance from railroad construction, dumping and 4-wheel drive recreational use. The site was considered ineligible for the National Register due to its lack of integrity and low data producing potential (sparse artifacts, lack of subsurface features).

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ABSTRACT

In August, 1982, a phase I level cultural resource survey was conducted at 13 discrete parcels along Gravois Creek in south St. Louis. All parcels were in floodplain/terrace contexts. Shovel testing and walk-over inspection methods located twelve cultural resources. Three of these, 23SL446, 448, and 451 are currently disturbed beyond reclamation. Representing an existing sample of cultural resources in an otherwise heavily impacted area, the remaining nine of these sites contained Archaic, Woodland, Mississippian, and Historic components. As some of the few surviving cultural resources that have escaped the growth of the city, it was considered that each of these has the potential to be unique and locally significant. It was recommended that should proposals or projects be contemplated at these site locations, these nine sites (23SL58, 59, 205, 443-445, 447, 449, and 450) either be avoided or be tested on a phase II level to determine their potential eligibility for nomination to the National Register of Historic Places.

The field work segment of phase II testing of site 23SL449 in T44N, R6E, was initiated in late November and December, 1983. Negotiations for property access to site 23SL447, although lengthy, were never successful and the site could not be tested. A combination of shovel testing, soil probing and excavation of three 2 x 2 m test units were implemented on site 23SL449 in order to determine the horizontal and vertical distribution of artifactual materials on the site. It was learned that previous disturbances (railroad construction, dumping, and use of the area for 4-wheel drive recreation) had occurred, resulting in loss of site integrity. No evidence of cultural material, intact features, or structured relationships between artifactual materials was found. It is recommended that no further evaluative or mitigative activity be pursued at site 23SL449.



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FOREWORD

Current work at site 23SL449 was conducted as part of a larger research project that began in 1982. In that year, an overview of the River des Peres drainage basin was prepared. One result was the location of several prehistoric sites along Gravois Creek. In response to this overview, an intensive survey of accessible parcels along the creek was performed. It was on the basis of this survey that current work was undertaken. Although federally sponsored, the energy and impetus that initiated this work, nurtured it, and guided it forward came from a single individual: Robert Wilson. It is the wish of the authors, illustrators, analysts, and contributors to this research that this report be dedicated to the memory of our friend and colleague, Bob.

INTRODUCTION

The U.S. Army Corps of Engineers (USACOE), St. Louis District, has undertaken a series of studies focused on the River des Peres drainage basin. Initial researches were performed on an overview level and included several tributaries, the largest of which was Gravois Creek (Nixon, Hamilton, and Kling 1982). This overview revealed that several prehistoric sites have been reported along Gravois Creek, and that more might exist. Following this possibility, a phase I level cultural resource survey was undertaken to locate and define any resources which might be present. Crossing several land grant areas, portions of this survey area were located west of the confluence of Gravois Creek and River des Peres near N 42.69+800, E 7.37+475 (UTM Zone 15). From here, the creek strikes southwest for approximately 4 miles, then turns northwest for another 4.5 - 5 miles. The area surveyed included 13 discrete parcels between the confluence and a point near N 42.70+240, E 7.29+875, approximately 9 miles upstream. Altogether, nine sites were considered to possess the potential for nomination to the National Register of Historic Places; all were recommended for phase II level testing (Nixon, Kling and Harl, 1982) should local construction be undertaken. Phase II testing of site 23SL449 (Map 1) was conducted in November and December, 1983. No evidence was found which indicated that cultural materials extended into the subsoil.

To the north, south, and west of the project area are dissected uplands of the Ozark Rim province; these regions lie within southern St. Louis and have been developed for many years. To the east are the low to medium bluffs of the west valley wall of the Mississippi River. Including floodplains and terraces, the project area is in the Mississippi 2 drainage basin (Map 2) as defined by the Missouri Historic Preservation Program (after Weichman, n. d.). Locally the area drains directly into Gravois Creek, indirectly into the River des Peres, and ultimately into the mainstem of the Mississippi River.

Among the legislation providing the legal mandate for these investigations are the National Historic Preservation Act of 1966 (Public Law 89-665, as amended by PL 91-243, 93-54, 94-442, 94-458, and 96-515), and the National Environmental Policy Act of 1969 (PL 91:190). Current work was performed according to guidelines prepared by the Missouri Department of Natural Resources and according to standards described in 36CFR305 and 36CRF1210 (previously 36CFR Part 66).

To facilitate these investigations, a records and literature review of data pertinent to the area was conducted. Repositories at the Missouri Department of Natural Resources were consulted as were the library and archives at the University of Missouri, St. Louis, along with holdings of the Missouri Historical Society, Jefferson Memorial. The primary objectives of testing these sites was first to ascertain the horizontal and vertical distribution of cultural materials on each site. Second, efforts were made to

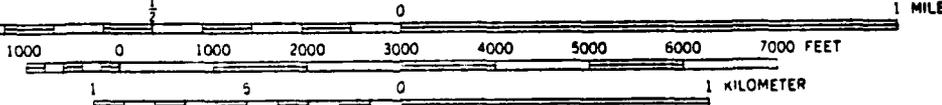
MAP 1: Location of Project Area
Webster Groves 7.5' U.S.G.S. Quadrangle

Legend:

○ Site Tested



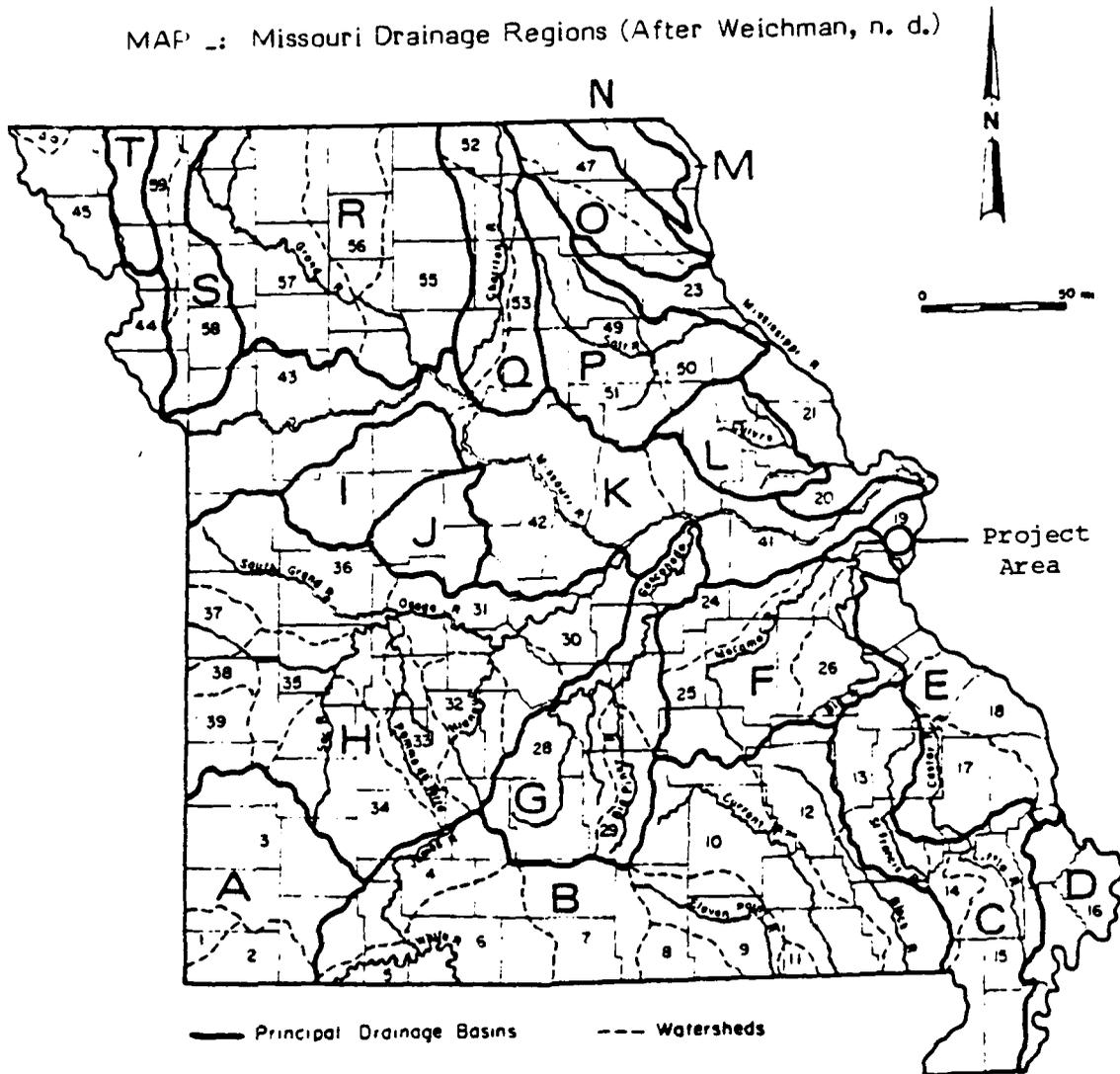
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CONTOUR INTERVAL 10 FEET
DOTTED LINES REPRESENT 5-FOOT CONTOURS

ST. LOUIS

MAP 1: Missouri Drainage Regions (After Weichman, n. d.)



- | | | |
|--|---|--|
| <p>A. Arkansas
 1. Lost Creek
 2. Elk
 3. Spring</p> <p>B. White
 4. James
 5. Table Rock
 6. White
 7. North Fork
 8. Spring
 9. Eleven Point
 10. Current
 11. Fourche Creek
 12. Black</p> <p>C. St. Francis
 13. Upper St. Francis
 14. Lower St. Francis
 15. Little River</p> <p>D. Lower Mississippi
 16. Lower Mississippi</p> <p>E. Upper Mississippi
 17. Whitewater/Castor
 18. Mississippi 1
 19. Mississippi 2
 20. Mississippi 3
 21. Mississippi 4
 22. Mississippi 5
 23. North River</p> | <p>F. Meramec
 24. Bourbeuse
 25. Meramec
 26. Big</p> <p>G. Gasconade
 27. Lower Gasconade
 28. Upper Gasconade
 29. Big Piney</p> <p>H. Osage
 30. Lower Osage
 31. Lake of the Ozarks
 32. Niangua
 33. Pomme de Terre
 34. Sac
 35. Upper Osage
 36. South Grand
 37. Marais des Cygnes
 38. Little Osage
 39. Marmaton</p> <p>I. Blackwater</p> <p>J. Lamine</p> <p>K. Missouri
 41. Missouri 1
 42. Missouri 2
 43. Missouri 3
 44. Missouri 4
 45. Missouri 5
 46. Nishnabotna</p> | <p>L. Cuivre</p> <p>M. Des Moines</p> <p>N. Wyaconda/Fox</p> <p>O. Fabius
 47. North Fabius
 48. South Fabius</p> <p>P. Salt
 49. North Fork
 50. Salt 1
 51. Salt 2</p> <p>Q. Chariton
 52. Upper Chariton
 53. Lower Chariton
 54. Middle/East Fork</p> <p>R. Grand
 55. Grand 1
 56. Thompson
 57. Grand 2</p> <p>S. Platte
 58. Platte
 59. One Hundred & Two</p> <p>T. Nodaway</p> |
|--|---|--|

evaluate the potential for remaining intact subsurface features or systematic relationships among materials on the site. Third, a temporal placement and a cultural affiliation was approximated, based on recovered materials. Once complete, site 23SL449 was compared to other similar sites to formulate its local and regional significance. Finally, all data was consolidated in order to assess the potential eligibility of site 23SL449 for nomination to the National Register of Historic Places, and a report of investigations was prepared. Field investigations were performed in November and December, 1983. Following field investigations, a report of findings was prepared and distributed.

At the time of field investigations, the weather was warm and sunny with highs around 80° F. Visibility varied from good on trails used by off-road vehicles to poor in the wooded areas. A shovel test transect methodology was used and a total of three 2 x 2 meter units were placed on the site. Field investigations were conducted by Joseph Harl, Gwen K. Holder, Patti Wright, and Barbara Vogler.

ENVIRONMENTAL SETTING

Geomorphology and Topography

The project area is located within the Mississippi River drainage basin on the northeastern edge of the Salem Plateau section of the Ozark Plateaus province (Thornbury 1965:267). This physiographic region is characterized by maturely dissected, moderately low plateaus, developed mainly on rocks of Ordovician and older age. Limestones and dolomites are the predominant rock type throughout the Ozark Plateaus province. Pennsylvanian and Mississippian age rocks are also present, the combined strata exhibiting a regional dip of 1 to 2° to the northeast (Shannon and Wilson 1976).

Local uplands in south St. Louis County are maturely dissected. The geomorphology and topography of the project area is partly a result of the underlying rocks and their structure, and partly a result of geologic processes such as uplift, weathering, erosion, and aeolian deposition. The upland surface of the Salem Plateau is considered to be a peneplane surface, the product of periods of uplift and base leveling in the geologic past. This is evidenced by the near accordance of interstream tract altitudes, by a topographic surface which truncates the dipping strata, and by the entrenched sinuous meanders of many modern streams (Bretz 1965:13; Thornbury 1965:268; Linebach 1977:10).

The project area is located specifically along the channel of Gravois Creek in south St. Louis County, Missouri. The topography of this locale ranges from gently undulating to steeply dissected. Along the Mississippi River bluffline and for about 1.0-1.5 km into the interior, the uplands are characterized by karst topography with many circular to elongated solution features. These sinkholes are considerably less numerous further west and southwest, away from the Mississippi River bluffline. Elevations along Gravois Creek range from ca. 420 to ca. 500 ft MSL; elevations in the surrounding uplands reach 600+ MSL in some areas.

The bulk of the project area lies within the karst region as defined by Brandt and Sieb (1979). This region is underlain by highly permeable St. Louis Formation limestones. Here the drainage is underground, through numerous sinkholes and underground caves, which tend to occur in linear clusters, some up to 10 m deep and as large as 350 m across (Brandt and Sieb 1979:32).

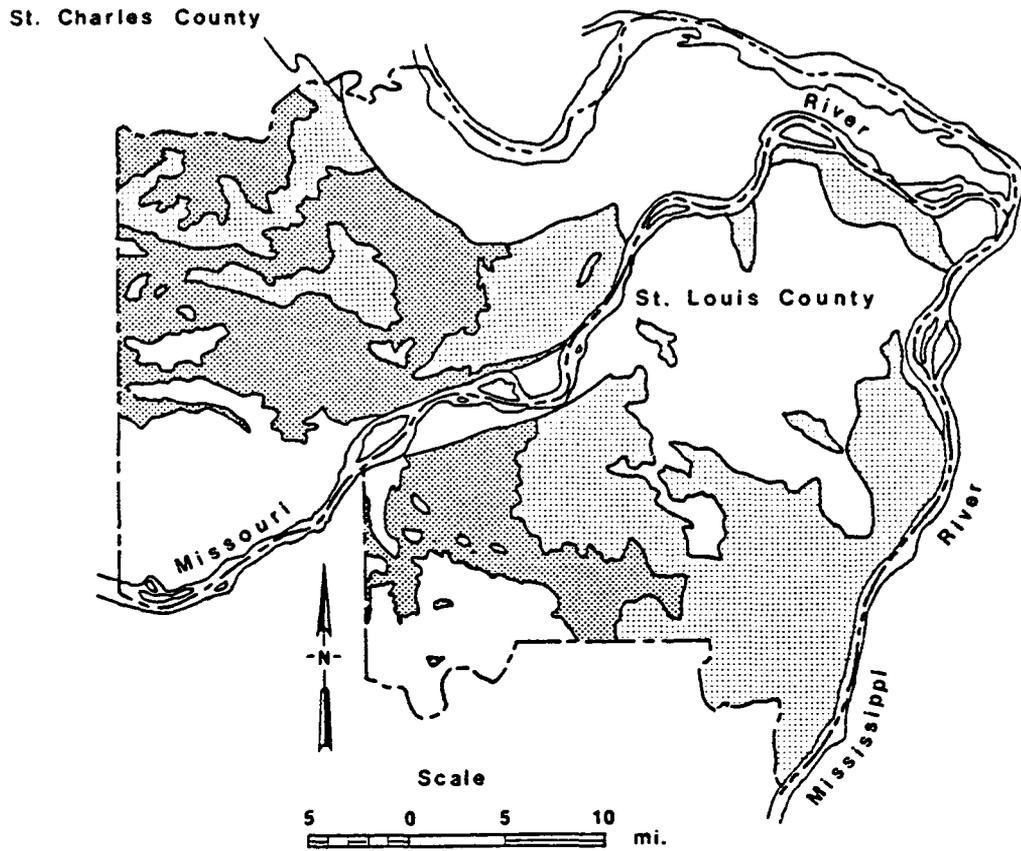
Geologic Stratigraphy

The formations which are exposed at the surface and along the bluffs within vicinity of the project area are predominantly Mississippian in age (Figure 1). Also present are deposits of Pennsylvanian, Tertiary, and Quaternary age. Five major Mississippian formations and a Quaternary deposit dominate the stratigraphic sequence. The general distribution of the major Mississippian chert-bearing formations is represented on Map 3.

FIGURE 1: Local Geologic Succession

ERA	SYSTEM	SERIES	FORMATION OR GROUP	THICKNESS (FT.)	DOMINANT LITHOLOGY
CENOZOIC	QUATERNARY	PLEISTOCENE	RECENT ALLUVIUM	0-20	silt, sand
			COLLUVIUM AND RESIDUUM,		clay, soil, loess, and chert
			LOESS	0-30	light brown to red brown clayey silt
			REMNANT TERRACES	25-50	sand, silt
			REMNANT ALLUVIUM	35-65	sand, gravel
	TERTIARY	PLIOCENE	GROVER GRAVEL	9	sand and gravel, stream rounded silicates
PALEOZOIC	PENNSYLVANIAN	ATOKAN	CHEROKEE GROUP	0-75	limestone, shale, and coal
			CHELTENHAM	0-30	refractory clay
	MISSISSIPPIAN	MERAMECIAN	ST. LOUIS	100+	pure limestone
			SALEM	140	oolitic and dolomitic limestone
			WARSAW	70	Shale, limestone, cherty
		OSAGEAN	KEOKUK-BURLINGTON	170	cherty limestone
		FERN GLEN	20-45	limestone, cherty, shaley	
	DEVONIAN		BUSHBERG	5-15	sandstone
			GLEN PARK	1-2	fossiliferous and oolitic limestone
	ORDOVICIAN	CINCINNATIAN	MAQUOKETA	20-30	clacareous and dolomitic shale
		CHAMPLAINIAN	KIMMSWICK	80-115	crystalline limestone
			DECORAH	25	shale, and shaley limestone
			PLATTIN	125-160	fine grained limestone
			JOACHIM	125	argillaceous dolomite
			ST. PETER	100	sandstone

MAP 3: Major Chert Bearing Deposits, St. Louis and St. Charles Counties



Locator Map



Key:

Mississippian System Deposits:

 Meramecian Series Strata

 Osagean Series Strata

Fern Glen Formation

The Mississippian-age Fern Glen Formation is exposed in many areas locally. The type locality is near the town of Fern Glen in a Missouri-Pacific Railroad cut (Bousfield 1949:32). This formation contains three stratigraphic subunits. The lower unit is a non-cherty, brown, thickly bedded crinoidal limestone. It is 1 to 5 m thick and contains quartz geodes. The middle unit is variable. It sometimes consists of beds of red cherty crystalline limestone overlain by calcareous red or green shale. At other places the red limestone beds are absent, and the middle unit contains only cherty, calcareous tan shale. Upper Fern Glen strata are 3 to 10 m thick and consist of thin bedded, dense, blue-gray limestone containing beds and nodules of bluish-gray to greenish-gray chert. The Fern Glen Formation is very fossiliferous and contains many brachiopods, corals, and crinoids. Many fossil species are restricted to the formation. The Fern Glen Formation grades into the overlying Burlington-Keokuk Formation, with beds above and below the contact being quite similar in lithologic characteristics (Bousfield 1949:31; Spreng 1961:62; Shannon and Wilson 1976:6).

Burlington-Keokuk Formation

The Burlington and Keokuk formations are grouped together because of their lithologic similarity and the lack of a well-defined contact. Together, these two formations are found throughout most of the rugged hills and bluffs in the area. The Burlington Formation is generally a massive, coarsely crystalline, crinoidal, brown or gray limestone, containing both bedded and nodular chert. The basal part is often more thinly bedded and finer grained than the rest of the formation. Burlington Formation deposits grade upward into the Keokuk Formation which is a blue, gray, or brown, coarsely crystalline limestone, with thick lenses of white to gray chert. A 1.5 m thick oölitic zone is present in the upper part of the Keokuk Formation in some places. The combined thickness of the Burlington-Keokuk Formation is about 50 m in most locales. It contains as much as 70% chert in some places, but averages about 50%. Weathering of Burlington-Keokuk material often produces a thick residuum of chert and red clayey soil which is very porous but resistant to erosion.

Burlington chert was widely exploited as a valuable material for manufacturing chipped stone tools. Aboriginal chert quarries have been discovered on the higher ridges and hilltops near Crescent and High Ridge. Burlington chert, however, occurs abundantly in eroding slope contexts in sinkholes, in stream beds, in outcrops, and in gravel bars of most streams of southern St. Louis County. High relief contributes to weathering and disaggregation of chert from the parent bedrock. The chert is fine-grained, dense, often pure, and of a quality well-suited for tool making. It ranges widely in color, though the dominant color is a chalky to milky white.

Warsaw Formation

The Warsaw Formation is composed of blue, gray, and buff shale and gray thin-bedded limestone. Warsaw Formation limestones contain lenses and

nodules of blue-gray chert. It is fossiliferous and is about 22 m thick in the area. Its contact with the underlying Keokuk Formation is gradational.

Salem Formation

The Salem Formation is composed of two basic parts. The lower part is an oölitic limestone and siltstone containing gray shale. The upper part consists of a variety of interbedded limestone types: calcarenite, argillaceous limestone, finely crystalline dolomite, sublithographic limestone, and limestone breccia. The Salem Formation grades upward from the more shaley Warsaw beds and there is no distinct contact between them. Chert ranges from common to rare in local abundance and was apparently suitable for manufacturing chipped stone tools. Salem chert is normally very granular and often fossiliferous. Typically, it occurs as a bedded, sometimes banded, light gray to grayish brown material. The Salem Formation averages about 45 m in thickness in southern St. Louis County.

St. Louis Formation

The St. Louis Formation is widespread, outcropping in stream beds, sinkholes, and bluffs. This formation is a gray lithographic to finely crystalline limestone. It is massively bedded in the middle of the formation and medium-bedded near the top and bottom. Blue and blue-gray shale occurs as thin beds throughout the formation. Fossil corals are present. Chert is not common. The St. Louis Formation is about 30 m thick in the area. It is a relatively pure limestone, and local quarries mine these materials for cement manufacture and aggregate (Spreng 1961:69; Shannon and Wilson 1976:4). The contact between the St. Louis Formation and the underlying Salem Formation is gradational.

Quaternary System

Pleistocene deposits within the project area include glacially derived loess as well as recent colluvium and residuum. Loess is a wind-blown deposit derived from the sediment-choked Missouri and Mississippi alluvial valleys of glacial times. Today, loess occurs stratigraphically above the bedrock residuum, and consists of brown to reddish brown clayey silt or silty clay. It is coarser grained and thicker near the Mississippi River, becoming thinner west of the Meramec where it does not exceed about 5 m (Shannon and Wilson 1976:15). Soil columns in the project area indicate that loess deposits on the Mississippi River blufftops are locally deep, ranging up to 7 - 8 m or more in depth.

Recent colluvial deposits occur on the slopes in the uplands and along creeks and tributaries. Colluvium consists of bedrock residuum and loess which has been redeposited by processes of weathering, gravity, and erosion. Colluvial deposits are often found as broad, thin deltaic like fans at locations where tributaries outfall onto the floodplain of Gravois Creek.

Soils

Deposits of bedrock residuum at the immediate surface are subject to intensive biological breakdown and to weathering processes. In portions of the project area, soils contain scattered pieces of limestone and chert which appear to increase in abundance with depth. The occurrence of such bedrock residuum typifies local soils, which in turn support the distinctive plant life characteristic of the Ozark Plateau region.

A good portion of soils along Gravois Creek have been modified by road, railway, residential, industrial, and other types of ground altering construction. Along the side slopes of small drainageways are Menfro-Urban land series soils. For the most part, the topography in these contexts is artificial. These soils consist of a mixture of Menfro series materials and various types of imported fill. Also along side slopes and in more elevated upland contexts are Harvester-Urban land soils. Patches of this soil are irregular in shape and have been compromised by construction. Closer to drainageways, on the more level floodplain and terraces, are Fishpot-Urban land soils. These are nearly level and, like the others above, have suffered from construction related activities.

Occasional areas have not been disturbed to date and in these are Winfield and Haymond silt loam soils. Winfield soils are situated on moderate slopes and in irregular patches on uplands. These soils are utilized today as croplands, pastures, nurseries, and smaller gardens. Haymond silt loam soils are located in long, narrow patches, in small stream bottoms, and adjacent to the channels of larger streams. They are fertile but are subject to flooding if not protected.

Floral Resources

The project area is within the northeasternmost part of the Ozark plant region, as defined by Steyermark (1963:xviii-xxii). This region is floristically diverse, reflecting the diversity in topography, parent soil materials, and localized climatic conditions. In general, the Ozark Plateau province tends to be dominated by oak-hickory forests, especially at lower altitudes and along its margins. The structure and composition of vegetation within different portions of the Ozarks is considerably complex, however even in a relatively small area such as south St. Louis County.

Hus (1908) conducted an extensive study of the vegetation lying, in part, between the mouths of River des Peres and the Meramec River, as his doctoral thesis at Washington University, St. Louis. He discusses several different natural vegetation "zones" for interior portions of the upland plateau, two specific to the Mississippi River bluffline, and five on the floodplain and along the river itself (Hus 1908:160-189). With respect to the Ozark Plateau section, these include the dominant upland oak-hickory forest formation, dry hilltops, limestone glades, dry sinkholes, wet sinkholes or wooded ponds, shaded hillsides, ravines, creek banks, forest-prairie thickets, and prairies. The cliff and steep talus are distinguished for the Mississippi River bluffline. Finally, natural vegetation zones for the floodplain and river include dry bottoms, wet bottoms, mudflats, river shores, and islands.

Prairies and perhaps thickets were present in the uplands immediately surrounding the project area during the early 19th century, at the time the General Land Office surveys were conducted. Relatively extensive expanses of prairies are known to have been present even during the late 1700s. These prairies occupied various areas within present-day St. Louis, as well as western and northern portions of St. Louis County, based on early French accounts and maps.

Upland forest communities were relatively diverse in character, partly reflecting the abundant presence of sinkholes and partly reflecting the variability in terrain, including steep bluffs. As expected, oaks and hickories predominate in the more xerophytic forested areas. Besides these edible nut-bearing species, many other trees, shrubs, vines, and herbaceous species would have been occasional to common in abundance. Among the many that would produce potentially edible products, are walnuts, red mulberry, persimmon, sumacs, elderberry, blackhaw, hawthorns, and hazelnut. Fruit-producing vines, such as wild grapes, would have been dispersed throughout.

The rolling upland forests would have been fairly dense, with a relative paucity of understory herbaceous species. The sinkholes and bluff edges, however, were remarkably different. Whether classified as dry or wet, sinkholes maintained floral communities more representative of mesophytic and hydrophytic conditions. Herbaceous plants producing edible plant parts include maidenhair fern, jack-in-the-pulpit, green dragon, violet wood sorrel, Solomon's seal, and false Solomon's seal, among others. Wetter sinkholes, including those which became ponded, would have had such nonwoody plants as sedges, bulrushes, rice cutgrass, and duck potato. Buttonbush would fringe these ponds, along with trees and vines such as sycamore, bladdernut, wild grape, and greenbrier.

Tali, shaded hillsides, ravines, and creek banks, would have supported a much more diversified assortment of deciduous and herbaceous species than the rolling uplands. Whereas oaks and hickories would have been common, these four zones would have been characterized by more mixed forest stands, including a greater number of different oaks and hickories, elms, black walnut, butternut, pawpaw, ash, redbud, hackberry, wild black cherry, wild plum, silver and sugar maple, and others. A considerably wider variety of vines and herbs having potential edible and medicinal stems, greens, subterranean parts, fruits, and seeds, would have been present in these four zones.

The floodplain of the Mississippi River is little developed in the local area. Though the basic zones defined by Hus (1908) existed in the past, the configuration of these zones and the location of the main river channel have changed considerably in the middle Mississippi Valley during at least the past 4-5000 years. It may be noted, however, that this particular section of the Mississippi River has remained fairly entrenched in the recent past. At different times in the past, it could be assumed that the river channel was positioned further to the east and the floodplain on the Missouri side of the river was more developed.

Floodplains, shorelines, and islands would have been characterized by the greatest floral diversity. Chiefly linear in arrangement, vegetation zones would have contained everything from very early stage pioneer or successional communities to well-developed climax forests. Besides the five above-mentioned zones, floodplain prairies also were common in this segment of the middle Mississippi Valley. These include both wet and dry prairies. A list of resources from these zones would be virtually endless. For purposes of brevity, it is noted only that the full gamut of resources could have been obtained within a very small area, given the linear orientation of vegetational resources, including saps, twigs, fungi, greens, tubers, corms, rhizomes, barks, fruits, seeds, grains, and nuts.

Faunal Resources

Because of the great variation in topography and vegetation, dependent fauna would have been equally diverse. White-tailed deer, raccoon, squirrel, opossum, and other medium to small forest-dwelling terrestrial mammals were common, as were box turtle and many other kinds of reptiles. Fish could have been obtained in the many different types of aquatic habitats, as well as other aquatic mammals, birds, (especially migratory waterfowl), amphibians, turtles, and mussels. Most archaeozoological evidence suggests that main river channels were not exploited very heavily. Instead, quieter oxbow lakes, sloughs, backwater lakes, swamps, and tributary creeks were emphasized. Part of this reflects the more treacherous nature of the Mississippi River. Harvesting of aquatic resources simply would have been much easier in the more shallow, quiet-water habitats, especially during the middle to late summer when they tended to dry either in part or completely. Populations occupying either side of the Mississippi River, where the floodplain was absent or poorly developed, would probably have focused procurement strategies on terrestrial and tributary resources.

LOCAL HISTORY

Gravois Creek is a small upland drainageway now flowing through portions of suburban south St. Louis. Ultimately, this creek drains northeast into the River des Peres and via this channel into the Mississippi River. The surrounding area is primarily residential in character and developed secondarily to the core of the city of St. Louis. This interdependency has its roots in the early history of the Gravois area.

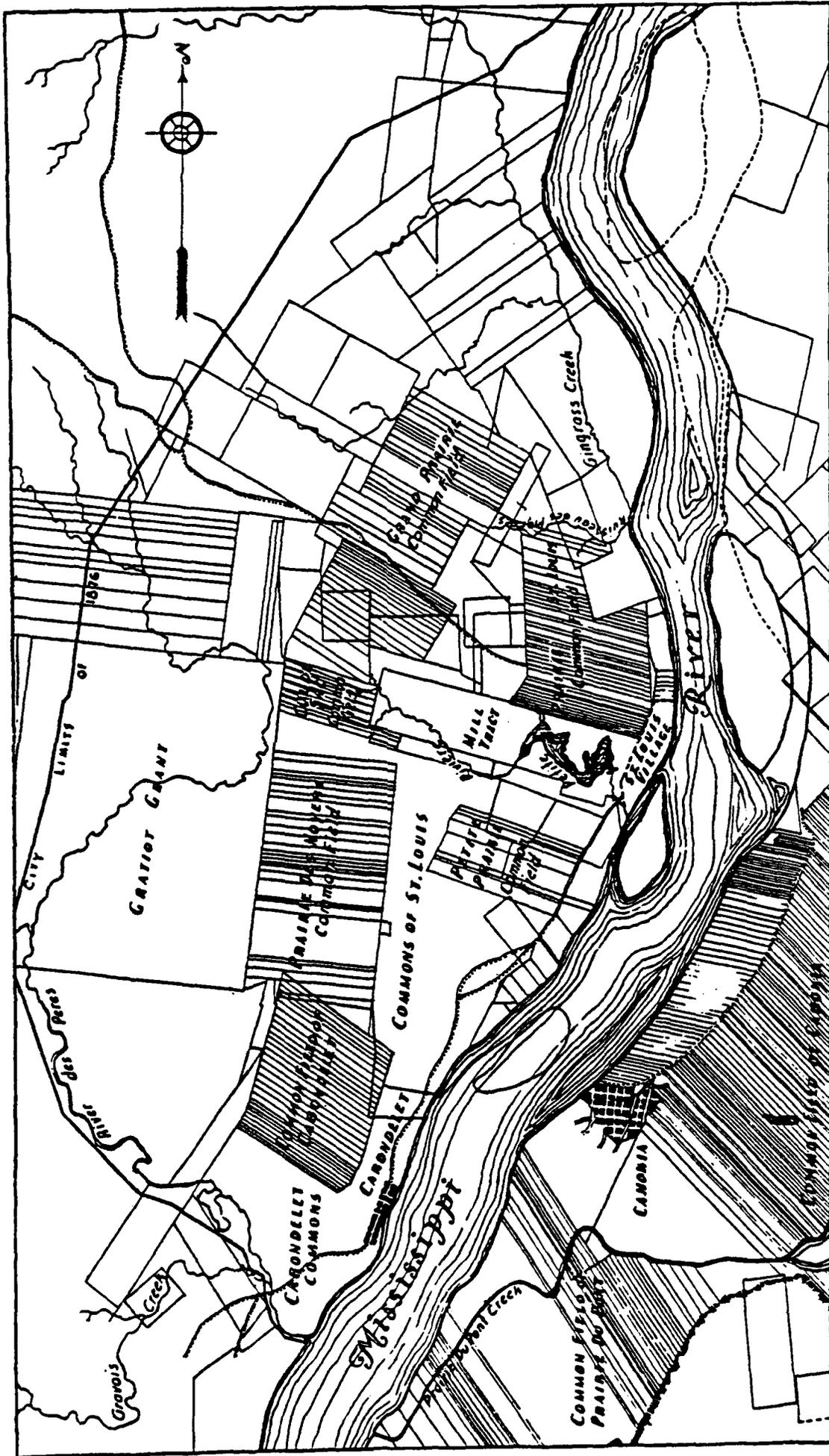
Little is known about the Protohistoric development (1500-1673) and subsequent early European exploration (1674-1764) periods in the Gravois Creek area. Based on a regional evaluation of the Mississippi and Missouri Confluence region, it has been speculated that before European frontiersman arrived in the area, the Little and Big Osage, Missouri, Illini Confederacy, Fox, and Sauk Indians only sporadically utilized the land which constituted the St. Louis Metropolitan area. Generally, these tribes followed a prairie farm subsistence, supplemented by foraging and hunting activities. Abundantly available local resources may have attracted many of these groups to the River des Peres and Gravois Creek areas for special function gathering or exploitation activities. Among the locally attractive resources are numerous springs that feed into the latter drainage (Wasson 1974:2). In addition, Salem and St. Louis formation cherts are known to outcrop within this region and would have been unavailable in sinkholes, stream beds, and local outcrops.

In the seventeenth and eighteenth century, the Little Osage and Missouri Indians were known to reside on the Upper Missouri River near modern Miami, Missouri between Jefferson City and Kansas City. The Big Osage tribes were reportedly living along the Osage River, southwest of modern St. Louis County (Chapman and Chapman 1983:99-101). In the mid 1600s the Fox and Sauk Indians, traditionally northeastern Algonquian tribes, had been displaced to the west of the Mississippi River by the Iroquois and Huron. By 1667, these groups were established within the region of Green Bay, Wisconsin (Temple 1977:85). By the late 1700s they were known to range as far south as St. Louis. They frequently visited this frontier post seeking tribute and Spanish traded goods.

The various Illini tribes (Cahokia, Kaskaskia, Michigamea, Moingwena, Peoria, and Tamaroa) were the most likely aboriginal groups to frequent the River des Peres and Gravois Creek area in early historic times. Traditionally, these groups occupied the upper Illinois River Valley, occasionally ranging west of the Mississippi River, into Iowa and Missouri. During the mid-1600s, however, the Illini tribes were temporarily forced west of the Mississippi River by marauding Iroquois bands. Later, a band of Kaskaskia and Tamaroa migrated south from northern Illinois and established a village on the east bank of the Mississippi River, at Cahokia. By 1699, a Catholic mission, sponsored by the Seminary of Quebec, was operating in this village.

The following year a mission was established on the west bank of the Mississippi River at the mouth of the River des Peres. It continued to exist from 1700 to 1703. A group of Kaskaskia Indians, accompanied by a Jesuit priest, moved from the Cahokia settlement in Illinois, to the mouth of the River des Peres, near Gravois Creek (Map 4). They were later joined by numerous Tamaroa Indians and French traders (Nixon, Hamilton and Kling,

MAP 4: Settlement near Gravois Creek
 (Peterson 1949: Figure 8)



1982:31-32). Early historic descriptions of the settlement suggests it may have been fortified. The village site was abandoned in the spring of 1703, when the Kaskaskia Indians traveled south and settled on the east bank of the Mississippi River, below Fort des Chartres.

By the late 1770s, several French villages had been established along the Mississippi River. Ste. Genevieve was founded ca. 1735, St. Louis by 1764 and St. Charles by 1768. During this period St. Louis served as the Spanish capitol, being located on the northern frontier of Louisiana. Prior to this, French-Canadian frontiersmen were active in the confluence region, exploiting the lucrative fur trade and the local mineral resources. After the capitulation of the French-Canadian provinces of Quebec and Montreal to the British in 1759 and 1760, many established merchants, traders, and trappers removed to the Mississippi Valley (Stevens 1926:24-25). Finally, in 1763, the Illinois territory east of the river was ceded to the British. Immediately thereafter, French inhabitants abandoned British territory for the region west of the Mississippi River. Unknown to them, this territory had passed to the Spanish the previous year as dictated by the secret Treaty of Fontainebleau (Houck 1908,I: 287; McDermott 1974:vii).

While the village of St. Louis was growing and flourishing, the Gravois Creek area remained peripheral, if not mostly uninhabited by European homesteaders. It was not until 1767 that Carondelet was established to the north of the River des Peres, near the current study area. Clement Delor de Treget received a grant of 6720 arpents. The village that developed around his grant was known locally by several names including "Delor's Village", "Catalan's prairie", and "Vide Poche" (Houck 1908, II:64). When it became known that the Spanish controlled the territory west of the Mississippi River, Delor de Treget changed the name of this settlement to "Carondelet" as Francois Carondelet was appointed the Spanish Governor-General of the Louisiana Territory (Toft 1975:3).

This town, Carondelet, was planned in the traditional French colonial pattern, as were St. Louis, St. Charles and Ste. Genevieve. Primary streets were laid out parallel to the riverfront, with adjoining properties granted consecutively in order to make the village compact and easy to defend (Houck 1908,II:216; Nixon, Hamilton and Kling, 1982:33). Common fields utilized for agriculture and grazing were platted outside of the village. These fields occupied a large tract of land which stretched across the River des Peres and included portions of the Gravois Creek basin. In 1799 Carondelet had a population of 134 (Hertich 1934:5). The town was basically agriculturally oriented, providing surplus crops to the markets of St. Louis (Nixon, Hamilton and Kling, 1982:35). It also served as a way stop on the public road between Ste. Genevieve and St. Louis (Toft 1975:3). This route, established in the late 1700s, extended from St. Louis south to New Madrid; it was referred to as "el camino real," literally the Royal Road and colloquially "King's Highway" (Houck 1908,II:150).

Aside from the Delor de Treget land grant, other settlers names appear on an early plat map designating the tract of land each claimed (Map 5). Among those granted along Gravois Creek were John Colgin and Charles Valle (Survey #2995); Pierre Delor (Survey #2993); Sophia Colgin and Charles Valle and; Peter Didier (Survey #2994).

The years between 1765 and 1803 represented a frontier developmental phase for St. Louis, Carondelet, and the surrounding region. By 1804, following the retrocession of the Louisiana Territory to the United States, local population gradually increased. Early settlers to the Gravois Creek region included William L. Long (1796), John Sappington and his family (1804), Joseph Wells (1806), Jonah Parke (1807-08), James Mackay (1800), and John Long (early 1800s). There are several family history versions of John Sappington's arrival to St. Louis County. A popular version is that he came to the Missouri Territory in 1804 and purchased a Spanish grant from Pierre Didier (Wasson 1974:2-3). Thomas Sappington, John's brother, married Mary Ann Kinkead in 1808, providing the first marriage recorded in St. Louis County (Wasson 1974:4). The subsequent generations of Sappingtons continued to live along Gravois Creek.

James Mackay, another early landowner on Gravois Creek, was a locally renowned Scottish trader and surveyor for the Spanish government. As a reward for his explorations along the Upper Missouri River, he was granted a vast amount of real estate distributed throughout portions of St. Louis and St. Charles counties (Black 1955:189). One tract was situated along the Gravois Creek, near its junction with Grant Road (Wasson 1974:7).

Mackay deeded a portion of his land to his brother-in-law, William Long. Sometime between 1796 and 1800, a one-story, French style, (vertical post) log cabin was built on this property. The land was later sold to William Lindsay, who, in 1808, built a second, large frame house nearby. The French log cabin was said to have been "moved up" to become another room in the house. The property passed to Wilson Hunt, and then to Frederick Dent in 1821. Dent affectionately named to the house/cabin and the surrounding estate White Haven. This 1100 acre, 30 slave estate was the childhood home of Julia Dent, Ulysses S. Grant's wife (Wasson 1974:9). Frederick Dent, his father-in-law, gave Grant some land. It was at this location that Grant built his "hard-scrabble" farm, later known as Grant's Cabin (McFeely 1981:59-63). Grant resided on the Gravois Creek property for three years (1855 to 1858) prior to embarking on his military and political career. Today, the cabin has been moved from its original location and reconstructed where it now stands by the current owner, August Busch; it is maintained as a historic landmark today (Simon 1979:34-37).

Many German immigrants arrived in St. Louis during the mid to late 1800s. Some of these individuals selected to settle in dispersed communities along Gravois Creek. At that time the region was chiefly rural in character, dependent on agriculture. This pattern continued well into the twentieth century, as local residents maintained small truck gardens and marketed their produce at St. Louis markets. An 1857 survey map of Carondelet and the

surrounding region portrays a large community labeled simply as "German Settlement" (Schaeffer and Brothers 1887).

Charles Mehl, a German veteran of the Mexican War, settled in the area prior to 1865. Gradually, a small community developed at this location and today is referred to as Mehlville. A similar south St. Louis suburb developed around the rural homestead of Johann George Aff, now known as Affton.

The Gravois Settlement, an early rural community believed to be in existence by at least 1850, was located near the point where Gravois Road traverses the creek (Nixon, Hamilton and Kling 1982:42). This little understood crossroads may have been occupied as early as 1838 (Wasson 1974:26). Another source describes the community as ". . . past the Hunt Home and Mackay place at Gravois Creek, at what was known as the Gravois Settlement" (Hertich 1934:28). This community is often mentioned but never fully described in existing literature.

In 1837, the trustees of Carondelet employed Joseph Meyer to survey the area south of the River des Peres, encompassing much of the current study area. It was known as the "Carondelet Commons South of the River des Peres". Union Boulevard is the northwest border, Lindbergh Avenue demarks the southern edge, while Jefferson Barracks Park is defined as the eastern boundary (Toft 1975:4). The common fields were resubdivided into square lots at this time.

By 1870, Carondelet was annexed into the City of St. Louis, as the River des Peres became the city's southern and western boundary. Prior to that time, local rural settlements had been more closely associated with Carondelet than with distant St. Louis. However, the re-adjustment of the city limits and gradual changes in transportation patterns and technology resulted in a closer dependence on the metropolitan area.

Gravois Road existed as early as 1804 and quickly became the primary thoroughfare serving south St. Louis County. In 1818, a petition was made to the court for a road from Sappington's horse mill to Wilson P. Hunt's mill on the River des Peres, then on to St. Louis (Wasson 1974:28). It remained a dirt road until 1840, when planks were set. In 1860 macadamized roads formed of loose gravel were introduced locally; the fresh surface was then treated with oil. In 1914, Gravois was the first road in St. Louis County to be surfaced with concrete. As an "experiment", 6000 ft. of concrete were laid from the city limits to Busch's (or Grant's) farm. (Hertich 1934:27).

In 1872, the Carondelet Branch of the Missouri Pacific Railroad was established. As a result, many of the southern rural settlements along Gravois Creek were able to maintain still closer ties to the mercantile city. As St. Louis grew, so did the need for suburban housing. In the mid to late twentieth century this urbanization began to penetrate into the rural Gravois Creek area.

LOCAL CULTURAL SEQUENCE

Archaeological evidence indicates that the physiographic region near Gravois Creek and the River des Peres was occupied early. Nevertheless, evidence of the earliest phases of cultural development in the region (? - 12,000 BC, Early Man, and 12,000 - 8,000 BC, Paleo-Indian) are not well represented in or around the immediate project area (Figure 2). Scattered occurrences of diagnostic materials suggest the presence of populations during at least the Paleo-Indian Period, but little direct evidence concerning settlement patterns or subsistence strategies is known.

Based on a survey of fluted point distributions in Missouri, Chapman (1975) indicates that most Paleo-Indian sites occur along the major rivers, atop the bluffs on high terraces. The prevailing view is that Paleo-Indian bands of hunters roamed over broad areas of the Midwest in pursuit of megafaunal species, such as mammoth, mastodon, and caribou. Extensive Pleistocene bone beds situated to the south at Kimmswick, in Mastodon State park, demonstrate the presence of megafauna in this portion of the state. More importantly, some clear associations of early tools and extinct megafaunal remains come from these deposits (Graham 1980; Graham et al. 1981:1115:1117). Other than this, only scattered finds of diagnostic artifacts allude to transient utilization of east-central Missouri during early periods.

The Dalton Period (ca. 8,000 - 7,000 BC) is better represented in the archaeological record. This period represents a transition from an earlier and more nomadic subsistence strategy based on exploitation of mobile megafauna, to a later, more territorial subsistence strategy predicated on intensified hunting and foraging. Still, settlements appear to have comprised mostly short-term campsites, indicative of a relatively mobile subsistence strategy dominated by hunting. Dalton Period tool kits included fluted lanceolate points, snub-nosed scrapers, concave-based drills, bone tools, and Dalton Serrated projectile points/knives (Chapman 1975:105-107).

Following the close of the Pleistocene, there was a very long period of increased dryness and warmth, precipitated by shifts in circulation patterns. This shift catalyzed climatic and consequent vegetational changes which peaked in Missouri and adjacent states around 5000 BC. These effects were certainly being felt by peoples living in the transitional Pleistocene-Holocene, Late Dalton-Early Archaic periods.

During the Early Archaic Period (7,000 - 5,000 BC), the patterns that began to develop in the Dalton Period continued to be refined. In response to the accelerating drying trend, a diversified foraging strategy became increasingly important. Exploitation was not limited to following migrating herd species, but broadened to include a variety of plant resources such as nuts and fleshy fruits. Still, the continued dominance of hide working and animal hunting tools likely reflects the importance of faunal exploitation as the primary determinant of settlement-subsistence strategies. Nuclear groups

FIGURE 2: Local Cultural Sequence (After Chapman 1975:27)

Climatic Episodes	Rough Date	Period	Absolute Date
Recent	A.D. 1970		1970
	A.D. 1850	Historic	
Neo-Boreal			1700
	A.D. 1550	Late Mississippian	
Pacific II			1450
	A.D. 1450	Middle Mississippian	
Pacific I			1200
	A.D. 1200		
Neo-Atlantic		Early Mississippian	
	A.D. 900		900
Scandic		Late Woodland	
	A.D. 400		400
			A.D. 1
		Middle Woodland	1 B.C.
Sub-Atlantic			500
		Early Woodland	
	940 B.C.		1000
Sub-Boreal		Late Archaic	
	2730 B.C.		3000
Atlantic IV		Middle Archaic	
	4030 B.C.		5000
Atlantic III			
	5100 B.C.		
Atlantic II		Early Archaic	
	5780 B.C.		
Atlantic I			
	6500 B.C.		
Boreal II			7000
	7190 B.C.	Dalton	
Boreal I			
	7700 B.C.		8000
Pre-Boreal		Paleo-Indian	
			12,000
		Early Man	

apparently became more territorial than was the case during previous periods. It is likely that core groups cohabited in seasonal base camps from which extended family units dispersed for hunting and foraging purposes.

The artifact assemblages found in association with these sites reflect the changes in subsistence strategy. Tool kits of earlier periods were adapted to new needs, or were modified through experimentation. Lanceolate points and Dalton Serrated blades continued to be used, but the technique of fluting disappeared. Among others, Rice and Graham Cave style points were added to the tool kit, as were plant collecting tools and a variety of scrapers (Chapman 1975:127-129). Projectile point styles became more diverse during the Early Archaic Period than during previous periods, indicating the increased regional specificity of cultural groups.

The Middle Archaic Period witnessed the continuation of adaptation to changing climatic and biotic conditions, one of the most notable of changes being the maximum expansion of the Prairie Peninsula and peripheral prairie isolates. By late Middle Archaic times, base camps were located mainly near or within riverine and lacustrine environments where the effects of Hypsithermal conditions were less severe than in the adjacent uplands. Asch et al. (1972) have argued that the lower Illinois River valley, and by analogy the lower Missouri and Mississippi valleys, were buffered against the effects of the dryer and warmer climatic regime because of characteristically diverse topography. Exploitation of resources diversified during the Middle Archaic Period to include a variety of small game, fish, mussels, and seeds, as well as larger mammals, turkey, and nuts (Chapman 1975:153).

Several notable changes in the tool kit occurred during this period. Projectile points gradually became smaller and side-notched types became common. Heat treatment of chert became an important part of the chipped stone manufacturing process. Projectile points and knives were frequently modified in this manner. Full grooved axes, celts, bone tools, and twined fabric either appeared for the first time, or at least are currently first noted on Middle Archaic Period sites (Chapman 1975:158-159).

The intensity of the foraging tradition culminated in the Late Archaic Period. Because of increased population and reduction of procurement territories, a subsistence strategy based on an even more diverse array of resources was adopted (Ford 1974). Regional preferences and specializations in resource exploitation developed. These regional adaptations are reflected in the chipped stone tool assemblages; where foraging was relatively important, functionally related tools were well represented. Tool kits of Late Archaic Period foragers were adapted to local environmental conditions. These formed the base upon which later Woodland Period agricultural tool kits were predicated. In remote areas, where prairies were limited and where a subsistence base other than foraging was dominant, tool kits were equally well adapted to the variety of different subsistence bases.

In Missouri, in particular, the Early Woodland chronological period was characterized by a continuation and refinement of forager lifestyles.

Populations retreated to locations along the mainstems of major riverways and their tributaries; the geographic range of periodic hunting and gathering activities increased. Tool kits appear to change little in this period.

Associated projectile points and flake tools were similar to those characteristic of Late Archaic Period complexes. Ceramics, which represent the hallmark of the Early Woodland Period elsewhere, have not been reported for most of Missouri. There is some indication that Black Sand pottery found along the western boundaries of the northeast prairies may date from an Early Woodland context, though further evidence is needed for verification (Chapman 1980:19-20). The Black Sand complex is better represented in adjacent parts of Illinois, where it dates from ca. 500 - 300 BC (Griffin 1983:257). Whereas at least seven sites occur along the Missouri River from St. Louis to Kansas City (Chapman 1980:12), little else is known about the lifeways of those groups utilizing Black Sand pottery in Missouri. The absence of local Early Woodland sites may reflect the difficulties in distinguishing nonceramic artifacts representing this period.

The Middle Woodland development in Missouri was greatly influenced by an interregional communication and exchange network. Ideas and resources spread along major river systems. Centers with associated burial complexes were established throughout the Mississippi and Ohio River valleys. Contact with these centers brought exotic goods and ideas into Missouri. Hierarchically organized villages and religious centers were established; highly decorative pottery styles became common. These communications and trade networks have been referred to as the "Hopewell Interaction Sphere".

Toward the end of the Middle Woodland Period and the beginning of the Late Woodland Period, some of these exotic commodity exchange networks began to wane. Trade of certain items and some aspects of the communication system broke down; concurrently, pottery styles became less elaborately decorated. Populations appear to have increased in density, and settlements became more dispersed than during the Early and Middle Woodland periods (Chapman 1980:15). One of the most important developments during Late Woodland times was the rapid and widespread introduction of the bow and arrow. Ford (1974) has suggested that the bow and arrow could have led to disruption of Middle Woodland trade networks because it enhanced ambushing and increased local economic efficiency.

There does appear to be local continuity in the development of Late Woodland adaptations from the earlier Middle Woodland Period. Generally, it had been assumed that Late Woodland represented a period of cultural degeneration and increased social isolation, because of the reduction in elaborate ceramic decorative techniques and in the exchange of exotic commodities. More recently, however, others have suggested continued evolutionary development with increasing social interaction (e.g., Braun 1977).

The subsistence strategy was very diversified, at least during early Late Woodland times (ca. AD 400 - 700). The cultivation of starchy seeds (maygrass, knotweed, and chenopod) became increasingly important, through a

wide array of naturally available resources continued to be exploited. During the beginning of late Late Woodland times, ca. AD 700 - 800, maize rapidly attained an important role in the settlement-subsistence strategies of many groups.

The Mississippian Period began ca. AD 900 and continued to ca. AD 1600. Current theory suggests that the Mississippian cultural development began in the Ohio Valley or the lower Mississippi Valley and spread north along the major river systems. These developments appeared to have reached a zenith in the Cahokia locale along the Mississippi River to the north. It then restimulated regions to the south along the Mississippi River. This interaction is manifest by the appearance of trade items in the artifact assemblage.

The Mississippian settlement pattern was characterized by fortified ceremonial centers, towns, and even villages often with numerous associated hamlets and farmsteads. The subsistence strategy was based in part on maize agriculture. Population densities may have increased during Mississippian times; however, it seems more likely that there was only increased aggregation in the fertile river valleys, rather than actual population increase. Complex religious systems were formed, as evidenced by ceremonial centers consisting of numerous mounds. These centers occur throughout the floodplains of the Mississippi River and its major tributaries. Plain wares predominated, and crushed shell became an extensively used tempering agent.

During the Mississippian Period, agriculture became increasingly important. Naturally available floral and faunal resources also served to balance the diet. A chiefdom-type of socio-political organization is well-represented and the occurrences of stockaded ceremonial centers, towns, and even villages might imply the incidences of intergroup warfare. Exchange of exotic goods also appears to have been rekindled during the Mississippian Period.

PREVIOUS INVESTIGATIONS

In order to determine if any significant cultural resources were located at or near the project area, a search of relevant records and literature was conducted. Cultural resources which were considered significant included previously reported archaeological sites, historical buildings, or National Register properties. The study area has been defined as T44N, R6E, located in south St. Louis County, Missouri. The site files were consulted at the Department of Natural Resources, State Historic Preservation Office, Jefferson City. In addition, cultural resource management reports, other pertinent reports, the Historic American Buildings Survey, and the National Register of Historic Places were reviewed. A similar search was conducted of the records and holdings at the Archaeological Survey and the Thomas Jefferson Library, University of Missouri, St. Louis. A further search for relevant historical information was conducted at the Missouri Historical Society, Jefferson Memorial. The results of this review are presented in Table 1. Sites with known topographic and temporal characteristics are summarized in Table 2. The locations of previously reported sites are represented on Map 6.

The earliest work in this area was conducted by Leonard Blake, who located 4 sites: 23SL40, 23SL57, 23SL58, and 23SL59. Site 23SL40 was located on a ridge overlooking Gravois Creek. This site yielded a heavy concentration of cordmarked pottery sherds, some with large particles of limestone protruding from the surface. Also located were lithic debris, lithic tools, small pieces of limestone, bone, occasional mussel shells, and one worked deer bone. The temporally diagnostic material indicated that the site was utilized during the Middle Woodland Period, although some of the body sherds indicated another occupation during the Late Woodland Period. A Late Woodland Period site, 23SL57, was located on a ridge above Gravois Creek just north of site 23SL40. Materials recovered from this site included 4 cordmarked, limestone tempered sherds, and a hoe flake with a high degree of polish. In addition, three red slipped, shell tempered sherds were also found, indicating a possible use in the Early Mississippian Period. A multicomponent site, 23SL58, was found on a terrace just north of 23SL57. This site incorporated two moderate artifact concentrations. Concentration A contained three areas, each covering ca. 50 sq. ft., containing lithic debris and tools. Diagnostic materials from these areas were attributed to the Archaic Period. Concentration B yielded 16 grog tempered, cordmarked sherds along with lithic debris. Finally, Site 23SL59, situated on the first terrace of Gravois Creek, contained several pieces of thin, grog tempered sherds. Stemmed tools were also recovered, possibly suggesting a general Woodland Period occupation.

The earliest reported and best known site within the project area is Sugar Loaf Mound, 23SL59. This platform mound originally was a multiple terraced mound, with two separate levels. Today the mound has been severely impacted by home construction and borrowing activities. No diagnostic materials from the mound have been reported in the existing literature.

TABLE 1: Previously Reported Local Sites, T44N, R6E

Site No.	Topography	Site Size (m ²)	Component	Function
23SL9*	Terrace	?	Mississippian	Mound
23SL40	Ridge	561	Middle Woodland?/	Camp
23SL57	Ridge	?	Late Woodland/ Mississippian	Camp
23SL58*	Floodplain	50	Archaic?/Woodland/ Mississippian	Camp
23SL59	First terrace	8094	Woodland	Camp
23SL205*	Floodplain	6000	Middle Woodland	Camp
23SL443	Terrace	3200	?	Camp
23SL444	Terrace	100	?	Camp
23SL445	Terrace	900	?	Camp
23SL446	Floodplain	100	?	Camp
23SL447*	Terrace	3600	?	Camp
23SL448*	Floodplain	48,000	Historic-early 1900's	Village
23SL449*	Terrace	9600	Late Woodland/ Mississippian	Village
23SL450*	Floodplain	900	Prehistoric/Historic	Camp/Residence
23SL451*	Floodplain	?	?	Camp

* Partially or Completely Destroyed

TABLE 2: Previously Reported Sites by Topography
T44N, R6E

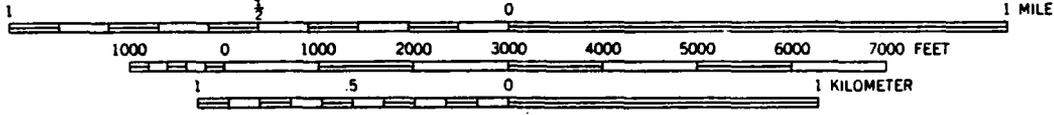
CULTURAL PERIOD	TOPOGRAPHIC CONTEXT				Total
	Floodplain	Terrace	Slope	Ridgetop	
Paleo-Indian					0
Dalton					0
Early Archaic					0
Middle Archaic					0
Late Archaic					0
Undefined Archaic	1				1
Early Woodland					0
Middle Woodland	1			1	2
Late Woodland		1		1	2
Undefined Woodland	1	1			2
Early Mississippian					0
Middle Mississippian					0
Late Mississippian					0
Undefined Mississippian	1	3			4
Historic	2				2
TOTAL	6	5		2	13

MAP 6: Location of Previously Reported Sites, T44N, R6E.
Kirkwood, Webster Groves, Maxville, and Oakville
7.5' U.S.G.S. Quadrangles

Legend:

 Previously Reported Site

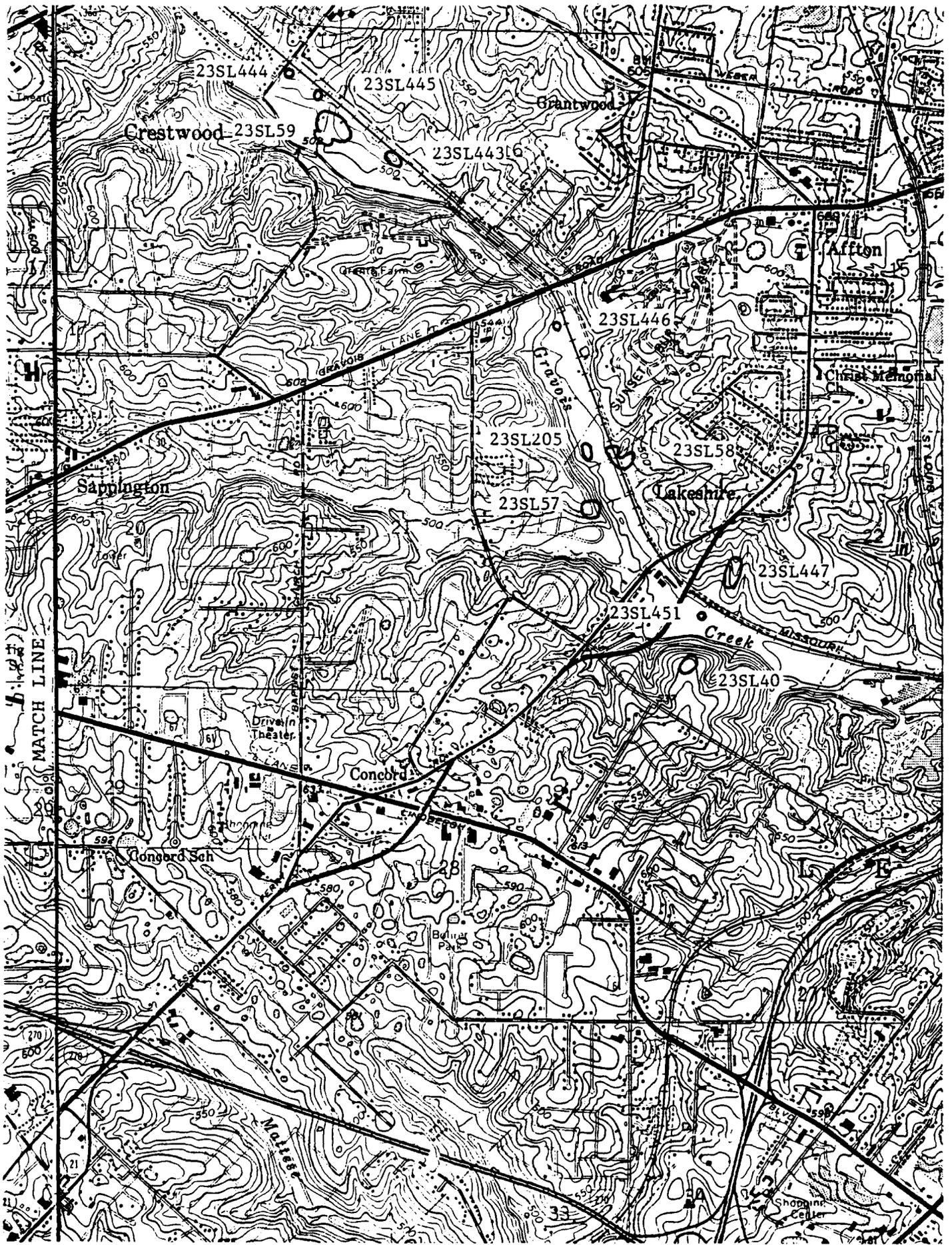
SCALE 1:24 000



CONTOUR INTERVAL 10 FEET



23SL449





Because of the similarity to other mounds and because of its proximity to the St. Louis Mound Group, this earthwork is assumed to date to the Mississippian Period (Weigers 1981).

Two cultural resource management studies have been conducted near the current project area within recent years. David Browman from Washington University (Browman, et. al. 1977, 1980), conducted a phase I survey of three parks for the City of St. Louis. These parks were scheduled to be impacted by construction activities to improve recreational facilities. The only park within the current project area, Carondelet Park, had been highly disturbed by past construction activities and no significant cultural materials were found.

Other cultural resource management investigations in this area were conducted by the Archaeological Survey, University of Missouri, St. Louis. In 1982, an overview of the protohistoric and historic resources within this area (Nixon, Hamilton, & Kling 1982) was performed. This review covered a large portion of St. Louis City and County. Finally, a phase I survey conducted for the Army Corps of Engineers, St. Louis Division, covered 13 parcels of land along Gravois Creek scheduled to be impacted by future construction. This survey re-evaluated three sites, 23SL58, 23SL59, and 23SL205, and defined nine new sites, 23SL443-451 (Nixon, Kling, and Harl:1982). Of these sites, three (23SL446, 448, and 451) were heavily disturbed. No further evaluative or mitigative activity was recommended. It was considered that the remaining 9 sites had the potential for significance. It was recommended that they be tested on a phase II level in order to determine their eligibility for nomination to the National Register of Historic Places.

METHODOLOGY

The overall goal of these investigations was to determine the potential eligibility of site 23SL449 for nomination to the National Register of Historic Places. To accomplish this goal, five research steps were formulated: 1) definition of the horizontal distribution of artifactual materials across the surface and definition of the vertical distribution of materials beneath the surface of the sites; 2) recovery of artifactual remains suitable for the establishment of temporal placement and cultural affiliation of the site, if possible; 3) determination of the presence/absence of intact subsurface features beneath the plow zone and the examination of soil morphology below ground surface; 4) collection of data appropriate to determine site function and to assess the local and regional significance of the site, and; 5) formulation, on the basis of these investigations and evidences, of a determination of the potential eligibility of the sites for nomination to the National Register of Historic Places.

As stipulated by the scope of services, shovel tests/soil probes were placed in transects 10 meters wide and placed at 10 meter intervals to form a grid across the site. Shovel tests were ca. 30 cm square and were excavated to a depth of 50 cm, or to the first change in soil types. Soil probes extended to the maximum depth possible, generally ca. 80+ cm. Features encountered by this systematic survey were to be exposed and excavated to completion. Test units were placed across the site to determine the potential for integrity. These tests measured 2 x 2 meters and were located in areas that were considered to be potentially positive. Soils were screened through 1/4 inch wire mesh. Excavations were conducted in arbitrary 10 cm levels. If no features were encountered, a soil probe was placed in each corner of the units to a maximum depth of 90 cm to determine the potential for deeply buried features and to examine deeper soil morphology. In addition, one area on each site was excavated to a depth of 2 meters in an attempt to locate deeply buried features. Additionally, bank cuts were scraped along profiles exposed by previous railroad construction.

Artifacts recovered were washed, separated into descriptive categories, and inventoried. This material was compared to artifacts found at other local sites in order to determine the temporal placement and cultural affiliation of site 23SL449. Following analysis, a draft report of investigations was prepared and distributed. Artifactual materials are curated at the Archaeological Survey, University of Missouri, St. Louis, Building 32.

RESULTS

SITE 23SL449

Site 23SL449 was first defined during a phase I level reconnaissance survey for the USACOE - St. Louis District. It is located in south St. Louis County on the Webster Groves USGS Quadrangle in T44N R6E. Current field work was conducted on site 23SL449 during late November and December, 1983. It became apparent that the site had been previously impacted by off-road vehicles and by erosion in disturbed areas. Visibility was poor in the undisturbed areas that were covered with weeds and vegetal remains. The primary goal of these investigations was to re-establish the site boundaries and determine the subsurface integrity of the site. The field crew consisted of Joseph L. Harl, Gwen Holder, Barbara Vogler, and Patti Wright.

Site 23SL449 is located at an elevation of 440-450 feet on a ridge finger which overlooks a "U" shaped bend in Gravois Creek, situated some 60 meters away. The phase I surface survey revealed that the site covered approximately 9600 square meters. Artifacts recovered consisted mostly of lithic debris although 2 diagnostic projectile points were also found. This site had been severely impacted by several forces. The ridge on which the site is situated had been cut through by Missouri Pacific Railroad. Areas north of this cut had been highly disturbed due to construction of factories and a Union Electric transmission line. South of the cut, the ridge was heavily scarred by off-road vehicles forming dirt roads subject to severe erosion. Finally, a sloped embankment had been built on the south end of the ridge extending from the ridge top to the creek. This embankment may have been used as a road at sometime in the past.

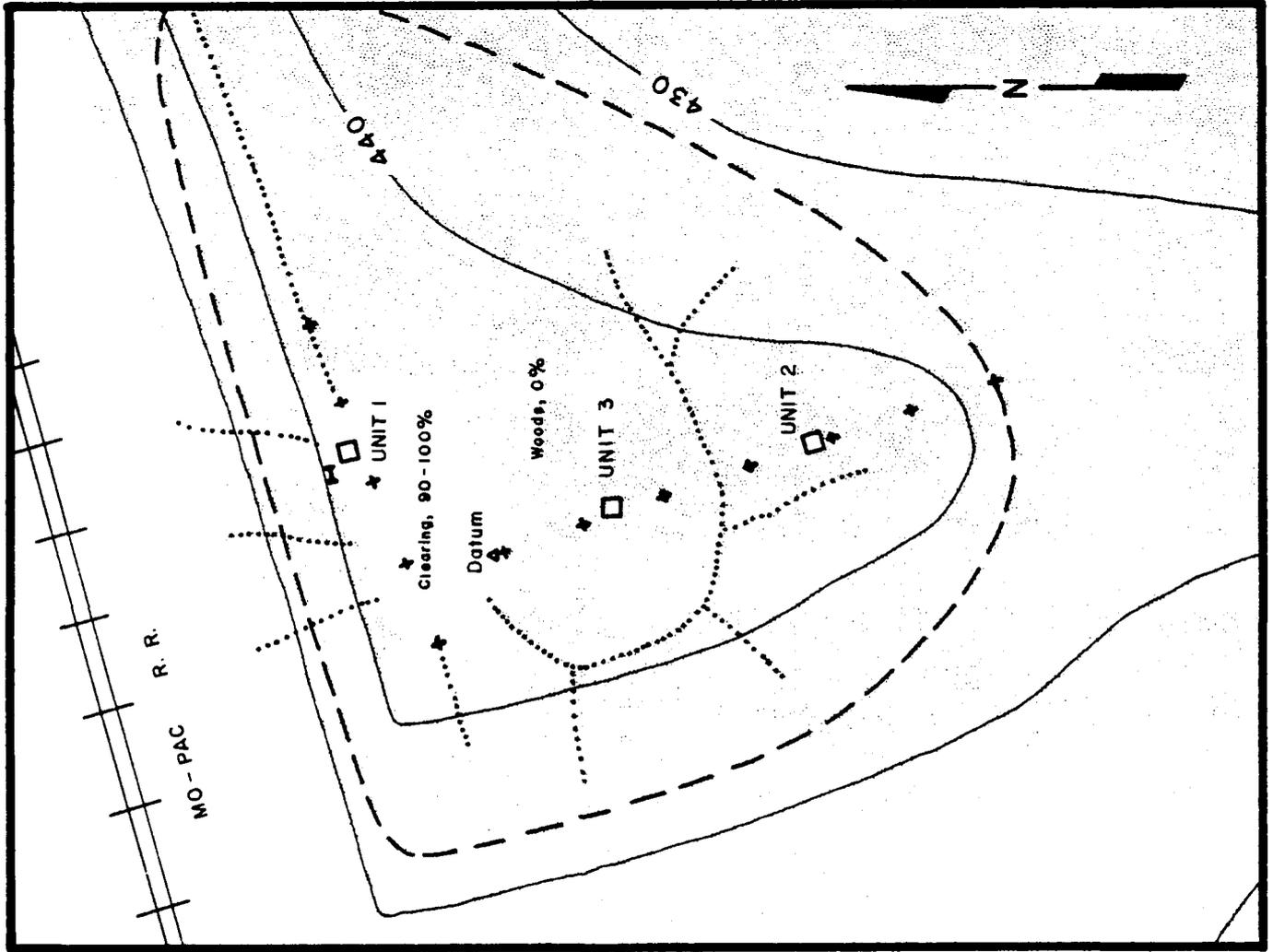
Horizontal Distribution

The horizontal distribution of artifactual materials on 23SL449 (Map 7) was determined by the use of shovel test transects spaced at 10 m intervals and by direct observation of the surface. Visibility was good in areas disturbed by recreational vehicles, but was only 0 - 10% over the rest of the site. The latter areas were wooded and covered with underbrush; the trees were approximately 40 - 50 years old. A moderate concentration of lithic debris was discovered across the ridge top south of the railroad cut. Areas north of the cut were covered in weeds and visibility was poor. The area north of the railroad cut was outside of the project areas and was not accessible.

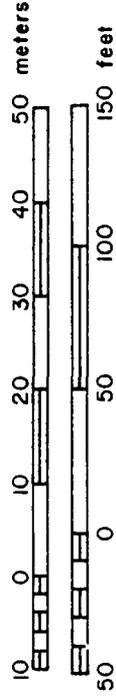
Vertical Distribution

The possibility of subsurface features within the area south of the railroad cut was first checked by placing two soil probe transects across the site. The soil probes placed 10 meters apart failed to reveal any evidence of subsurface features. Next, three 2 x 2 m test units were placed roughly in a north-south line across the ridge. Unit 1 was placed on the ridge top just above the Missouri Pacific tracks. This area contained several flakes but had been heavily impacted by recreational vehicle use. Unit 2 was placed at the

MAP 7: Site 23SL449



Scale



Contour Interval 10 Feet

LEGEND:

--- Site Boundary

□ 2 x 2 meter Test Unit

⊥ Soil Profile - cut into N face of railroad cut

⊕ Soil Probe Location

..... Bike/Foot Path - approximate location

▭ Woods

Woods, 0% Ground Cover, Visibility

southern tip of the ridge finger overlooking the bend in Gravois Creek. Unit 3 was placed in the woods between the other two units.

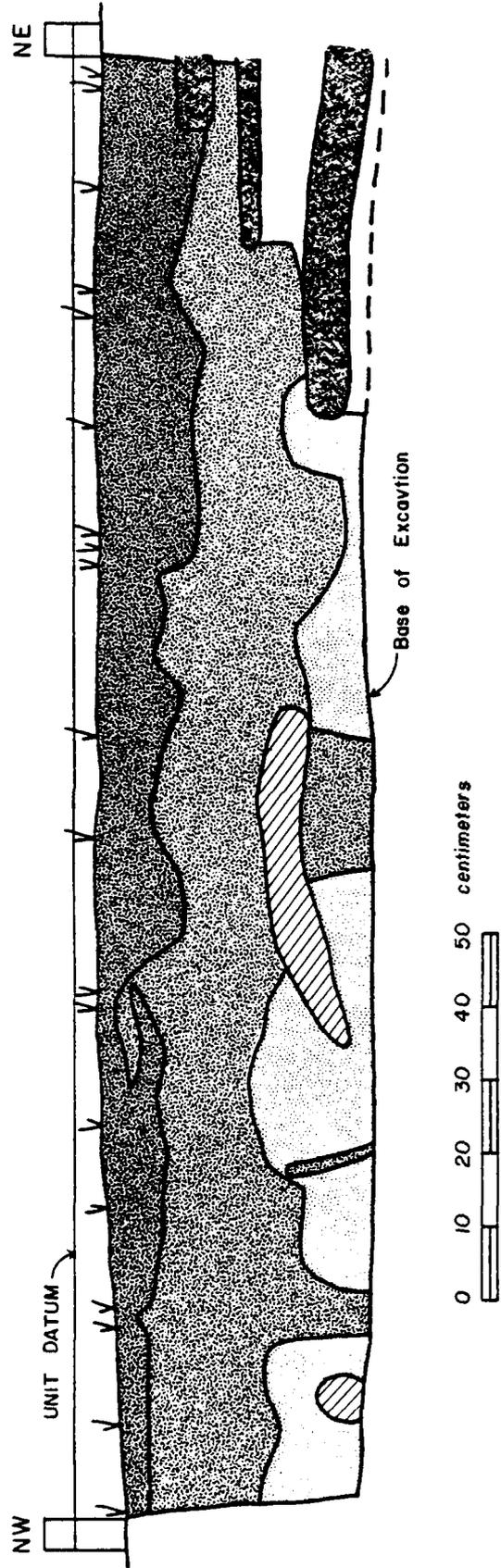
These test units revealed that the soil morphology consisted of Harvester-Urban silt loams (Benham 1982). This soil contained 3 distinct zones. Zone 1 (Figure 3) was a recent humus deposit 7 - 10 cm deep. It was composed of a very dark grayish brown (10YR 3/2), silt loam, which contained heavy amounts of small roots and decaying vegetal remains. Unit 3, for example, was composed almost entirely of modern nutshells/debris. Artifacts recovered from this level included 31 (21.4 gm) flaking debris and various historic artifacts of recent origin. Most of the flaking debris was found at the base of this level. Beneath this level, zone 2 was a compact, brown (10YR 4.5/3), silty loam which had a maximum depth of 30 cm below the surface. Only an occasional tree root was found in this zone. Most of the prehistoric and historic artifacts recovered from the site were found intermixed in the top 10 - 15 cm, while the last 5 - 10 cm contained only an occasional artifact. No features or stained areas were identified. Zone 3 was a compact, light yellow brown (10YR 6/4), silty clay. No artifacts or features were located in this level. This soil type continued to the limit of current excavations.

Unit 1 varied from this soil sequence in that it did not contain the humus lens. Instead, zone 1 was a dark yellow brown (10YR 4/4), clay loam. This clay was thickest near the edge of the railroad cut at a depth of 5 cm and gradually disappeared 15 - 20 cm from the edge. Also, zone 2 appeared to have been truncated as it was only 20 cm below the surface. A portion of the ridge was profiled at the railroad cut to a depth of 1 meter, revealing that zone 3 graded into the same yellow brown clay loam as was found at the top of the unit, 65 cm below the surface. This clay loam had probably been redeposited on top of Unit 1 either during the removal of the ridge by the railroad or by the continuing action of off-road vehicles. At one point during the excavation, two-four wheel drive trucks were racing up the steep grade formed by the cut near Unit 1. It was noted that a large quantity of mud was brought up in this manner and redeposited on the top of the ridge.

Excavations indicated that relevant cultural materials and information was limited to zone 2. The humus zone was of recent origin as indicated by the presence of modern historic artifacts. Zone 2 appeared to have been disturbed in the past; historic and prehistoric remains were found mixed throughout most of this zone. Because the site was covered by trees ca. 50 years old, it was concluded that disturbances had occurred in the past. Features, if present, have been impacted by these various disturbances activity.

Artifact Assemblage: Lithic Materials

Lithic materials were divided into two major categories: tools and manufacturing debris. These categories were further subdivided into finer categories based on function (see Table 3). Lithic artifacts were composed entirely of Burlington cherts, available from local limestone formations, from sinkholes, outcrops, and from the bed of Gravois Creek.



Key:

-  Artifact Bearing Humus, very dark grayish brown silt (10YR 3/2).
-  Artifact Bearing Level 2, brown silt (10YR 4.5/3).
-  Sterile Subsoil, brownish yellow silt (10YR 6/5).
-  Tree Root
-  Root Cavity

FIGURE 3: Site 235L-449, Unit 2, North Wall Profile

TABLE 3: Artifact Assemblage, Site 23SL449

Material	Phase I Surface Collection	Phase II Surface Collection	Phase II Test Excavation	TOTAL
Chipped Stone Tools				
Bifacial tool (BfT)	3	1		4
Heavy duty BfT	1			1
Unifacial tool	3			3
Manufacturing Debris				
Cores	3	3		6
Interior flakes	37	22	84	143
Exterior flakes	4	10	24	38
Interior shatter	4		9	13
Exterior shatter	6		3	9
Utilized flakes	6	2	2	10
Ground stone tools		1		1
Clay temper ceramics		2		2
Glass			2	2
Historic limestone			3	3
Metal			2	2
Miscellaneous			8	8
TOTALS	67	41	137	245

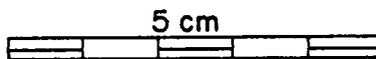
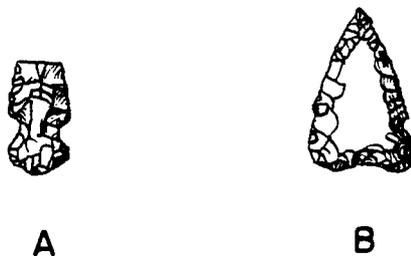
Tools represented only a small ca. 1% (N=4), of the total artifact assemblage. Tools recovered from this site were found only on the surface and they consisted of two types: bifaces and projectile points. The bifaces consisted of only two fragments, a portion of a base and a tip. The bifacial base was crudely flaked all over, but secondary flaking occurred on the base. The tip varied in that it was more finely flaked, exhibiting secondary and tertiary flaking along its edges. The two projectile points recovered were both temporally diagnostic, one a Roxana style (Figure 4A) point (Munson and Harn 1971:75) and the other a Madison style (Figure 4B) point (Perino 1968:52-53). The Roxana point was missing only a small portion of its tip; complete it would have been less than 2 cm long. The entire point had been finely flaked and contained "U" shaped side notches ca. 4 mm wide. The convex base was the widest portion of the point, measuring 8 mm. The Madison point was complete and was also 2 cm. long. This point had been re-worked from a flake and exhibited flaking only around its edges forming a triangular shape. Each side contained a slight notch ca. 1 mm wide and 1 mm deep which positioned on the sides near the base. A third notch occurred on the base. It was slightly wider and deeper than the side notches.

Manufacturing debris was divided into cores and flaking debris. Three (177.5 gm) core fragments were found on the surface. These cores had been randomly flaked and did not contain any cortex. Flaking debris consisted of flakes and shatter. The majority of this debris 87.6% (N=177) had a length less than 2 cm (Figure 5; Figure 6). Cortex was present on only 4 (7.9 gm) pieces of shatter. This would indicate that, although tool maintenance occurred at this site, very little primary manufacturing was done. Three (7.5 gm) of the flakes exhibited evidence of utilization/retouching. Of these artifacts, two had uniform flakes removed from only one side, possibly indicating use as scrapers. The third was utilized as a spokeshave.

Artifact Assemblage: Ceramic Materials

Altogether 26 ceramic sherds were recovered from test units. These sherds were mostly small with 73% (N=19), measuring 2 cm or less. They appeared to have been extremely weathered and the edges of the sherds were rounded. The paste varied in color from brown to yellowish red and it contained 20 - 30% sand. The only tempering agent identified was grog; the temper of 11 (4.9 gm) sherds could not be identified. Most were body sherds with a thickness between 2-5 mm. Two rimsherds were found, both had been extremely weathered but appeared to vary in their forms. One sherd contained a flat lip with exterior cord marking which was barely discernable. The rim was incurvate towards the lip which was 2 mm thick. The second rimsherd became thinner towards the lip. The lower portion of the sherd was 5 mm thick while the lip was only 2 mm. The exterior of the rimsherd was plain, but its interior was decorated with a thumb nail impression.

FIGURE 4: Selected Artifacts, Site 23SL449



KEY

A: Roxana Style Projectile Point
(Munson and Harn 1971:75)

B: Madison Style Projectile Point
(Perino 1968:52-53)

FIGURE 5: Distribution of Manufacturing Debris by Size

FREQUENCY

PERCENT

FREQUENCY									PERCENT
151	+	XXXXX							74.8
	I	XXXXX							
	I	XXXXX							
	I	XXXXX							
	I	XXXXX							
	I	XXXXX							
126	+	XXXXX							56.1
	I	XXXXX							
	I	XXXXX							
	I	XXXXX							
	I	XXXXX							
	I	XXXXX							
101	+	XXXXX							37.4
	I	XXXXX							
	I	XXXXX							
	I	XXXXX							
	I	XXXXX							
	I	XXXXX							
76	+	XXXXX							18.7
	I	XXXXX							
	I	XXXXX							
	I	XXXXX							
	I	XXXXX							
	I	XXXXX							
51	+	XXXXX							0.0
	I	XXXXX							
	I	XXXXX							
	I	XXXXX							
	I	XXXXX							
26	+	XXXXX	XXXXX						
	I	XXXXX	XXXXX						
	I	XXXXX	XXXXX	XXXXX					
	I	XXXXX	XXXXX	XXXXX					
	I	XXXXX	XXXXX	XXXXX	XXXXX				
	I	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX			
0	+	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX			

0.0 10.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0

SIZE (MM)

FIGURE 6: Frequency Distribution and Descriptive Statistics, Manufacturing Debris

FREQUENCY DISTRIBUTION				
Variable: Size in Millimeters				
Interval		Frequency	Percent	Cumulative %
00.000	to 9.999	26	12.8	12.9
10.000	to 19.999	151	74.8	87.6
20.000	to 29.999	19	9.4	97.0
30.000	to 39.999	5	2.5	99.5
40.000	to 49.999	1	0.5	100.00
50.000	to 59.999	0	0.0	100.00
60.000	to 69.999	0	0.0	100.00
70.000	to 79.999	0	0.0	100.00
TOTAL		202	100.00	

DESCRIPTIVE STATISTICS			
Variable: Size in Millimeters			
Sample Size (N) = 202			
Sample Statistics:			
Mean	=	12.1535	Range = 35.0
Variance	=	34.3478	Minimum = 5.0
Std. Dev.	=	5.8607	Maximum = 40.0
Unbiased Estimates of Population Parameters:			
Variance	=	35.5186	Std. Dev. = 5.875
Data Distribution Coefficients:			
Skewness	=	1.845	Kurtosis = 4.482

Artifact Assemblage: Historic Material

A total of 69 historic artifacts were recovered from level 2 of the site. Most of these artifacts (75%) consisted of slag. The slag was mixed with the flaking debris throughout level 2. Other historical material recovered from this level included 10 indeterminate metal fragments, 4 brick fragments, 1 piece of clear glass, 1 white earthenware sherd, and 1 lead ball shot which had been flattened due to impact. The brick, found in Unit 2, could indicate that a historic structure may have once been present near this area. The remains of such a structure were not found either on the surface or in the shovel tests.

Temporal Placement

Appropriate carbonized material for a carbon-14 date was not encountered during excavations. The temporal affiliation of site 23SI_449 was determined based on diagnostic artifacts such as projectile points and pottery types. These artifacts indicated that the site was used during the Late Woodland Period and possibly during the Mississippian Period. The occupation during the Late Woodland Period was indicated by presence of the Roxana point which is characteristic of the Late Bluff Phase of the Late Woodland Period (Munson and Harn 1976). The sample size of pottery was too small to make any definitive statements on temporal affiliation, but the sherds recovered did indicate a possible Late Woodland occupation. The only temper identified was grog. Kelly (1981) found that grog was used as the main tempering agent during the Patrick Phase (AD 600 - 800) of the Late Woodland Period. A better indication of temporal affiliation than tempering agent is rim decoration. Unfortunately, only 2 rimsherds were recovered from this site and only one of these exhibited decoration. This rimsherd contained interior decoration which was indicative of the Patrick Phase (Finney 1983).

A possible occupation during the Mississippian or the Historic Period was indicated by the Madison point which was common from AD 900 - 1800 (Perino 1968:52). This point was found on the surface of the dirt road near the base of the ridge so its association with 23SI_449 could not be firmly established. The historical material in level 2 failed to contain any diagnostic artifacts, thus the temporal affiliation of the historic occupation of the site could not be determined.

Cultural Affiliation

The collection from site 23SI_449 was small, but it indicated that this site could have served as a special function area, probably being utilized as a temporary hunting camp. This use of the site was indicated by the lack of tool diversity. The only tools recovered were bifaces and projectile points which were associated with hunting activities. Tools were occasionally manufactured as indicated by the three cores found, but tool resharpening and maintenance appears to have been the main activity at this camp. The reworking of tools was implied by the flaking debris of which 88% were less than 2 cm long with the mean flake size at 1.2 cm. Also, only 2% of this debris contained any cortex. The small amount of artifacts and lack of diversity indicated that this camp was used only for a short period of time.

Most of the materials recovered came from the southern tip of the ridge overlooking Gravois Creek, with 142 prehistoric artifacts coming from Unit 2. The amounts of remains decreased significantly north of this area with only 30 artifacts at Unit 3 and 26 artifacts at Unit 1. This could indicate that most of the activity at this site occurred at the southern edge of the ridge overlooking the creek. This observation was supported by the surface scatter which appeared to have been slightly heavier and more diverse with all the bifaces and cores being found in this area.

Summary

Data from 23SL449 indicated that this site once covered an area ca. 9600 square meters. The site was located on a ridge top which provided access to Gravois Creek on 3 sides. The vertical distribution of materials was limited to zone 2, between 10 - 30 cm below the surface. This material revealed that the major occupation at this site occurred during the late Late Woodland Period (AD 700 - 900). The tools recovered lacked diversity consisting only of bifaces and projectile points. The lithic debris indicated one of the main activities at this site was tool maintenance which was centered at the southern end of the ridge. The small quantity of artifacts and their lack of diversity would indicate that this site was used on a temporary basis as a hunting camp.

SUMMARY AND RECOMMENDATIONS

In August, 1982, phase I level field investigations were conducted on 13 discrete parcels along Gravois Creek. Gravois Creek drains into the River des Peres and through it, into the mainstem of the Mississippi River. It is in the Mississippi II drainage basin. Altogether, 12 prehistoric resources were located during field investigations. Because these sites represent a dwindling and non-renewable resource, it was recommended that they be tested on a phase II level, should local construction be undertaken. The results of testing at one of these, site 23SL449, are detailed above.

Discussion of Significance

Being at a confluence area, St. Louis and vicinity straddled the communication network of first, the Hopewell Interaction Sphere in the Middle Woodland period, and second, the later Mississippian efflorescence in the period by that name. As such, there is little doubt that the River des Peres and Gravois Creek drainages were utilized at least during these prehistoric periods. Evidence suggests that the area was utilized in earlier periods as well. The development of St. Louis city and county, however, has destroyed most evidences of prehistoric utilization; only ca. 13 prehistoric sites (some now destroyed) were located through a comprehensive records and literature search conducted in association with an overview of the area (Nixon, Hamilton, and Kling 1982). Because so little evidence remains, it is thought that all intact prehistoric data located in the Gravois Creek drainage could contribute to the current understanding of local prehistory and, consequently, has the potential for significance.

Testing of site 23SL449 was accomplished through a combination of surface collections, soil probing, hand excavated test units and bank cuts. A light amount of cultural debris was located in disturbed zones between a humus lens and deeper soils. No cultural material or evidence of cultural activity was located in any except disturbed zones. All evidence indicates that site 23SL449, as it exists today, has been impacted beyond the point where it could yield information pertinent to enhancement of the local cultural sequence. No evidence was located on which to formulate arguments for significance on either a local or a regional level.

Discussion of Impact

At this point, no known plans or proposals for work in the current research area are made. It is not possible, therefore, to predict the particular effects of any proposed work. Because of the unique nature of remaining cultural resources, it is noted that any potentially impactful activity could pose a threat to remaining significant cultural resources.

Recommendations

The management of cultural resources is predicated on recommendations formulated on the basis of criteria established for nomination of properties to

the National Register of Historic Places. These criteria state that (Federal register 1974:1595):

The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and

- (a) That are associated with events that have made a significant contribution to the broad patterns of our history, or;
- (b) That are associated with the lives of persons significant in our past, or;
- (c) That embody distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction, or;
- (d) That have yielded or may be likely to yield, information important in history or prehistory.

Because of the idiosyncratic nature of each cultural resource, somewhat fluid interpretations of these criteria are often necessary. Where this is the case, the judgement and experience of the investigator become factors in the formulation of recommendations.

Architectural/Historic Resources

A records and literature search revealed no architectural or historic resources within the immediate project area. Intensive surface and subsurface investigations yielded only recent and intrusive material. No evidence was located on which to construct arguments for significance on a local or a regional level. Additionally, no evidence of significant subsurface features (wells, cisterns, basements, foundations) were defined. Based on all observations and evidences, it is recommended that no further evaluative or mitigative activity be pursued and that construction at this location may proceed without threat to intact or significant historic or architectural resources.

Prehistoric Resources: Site 23SL449

Site 23SL449 covers an area of ca. 120 x 80 m. It was first defined along mini-bike trails criss-crossing a ridge. Materials from the site suggest a Middle Woodland/Mississippian period usage. Field investigations revealed that cultural material on this site was limited to disturbed zones and, further, that the integrity of the site has been compromised beyond reclamation by a variety of factors. It is not thought that this site has the potential to yield information of such a nature as to enhance the current understanding of the

local prehistoric sequence, nor is it considered to be significant on a local or regional level. Based on all evidences, it is recommended:

- (a) That site 23SL449 contains mixed, shallow deposits and that it be considered extensively disturbed;
- (b) That it lacks integrity and that it not be considered potentially eligible for nomination to the National Register of Historic Places, and;
- (c) That no further evaluative or mitigative activity be pursued and construction activities at site 23SL449 may be undertaken without threat of destruction of intact or significant prehistoric deposits.

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