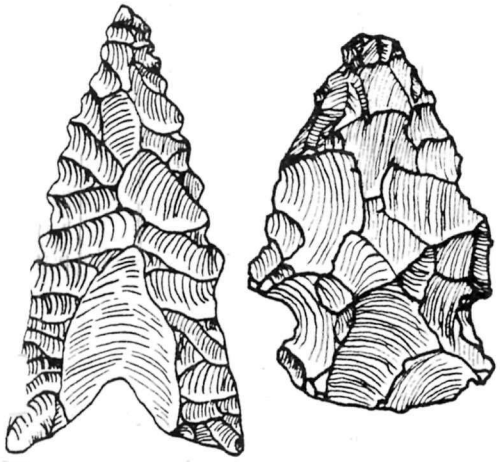
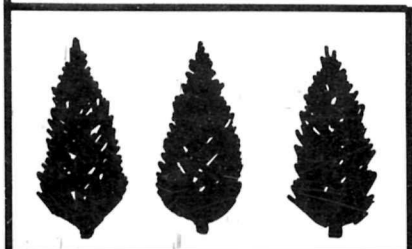
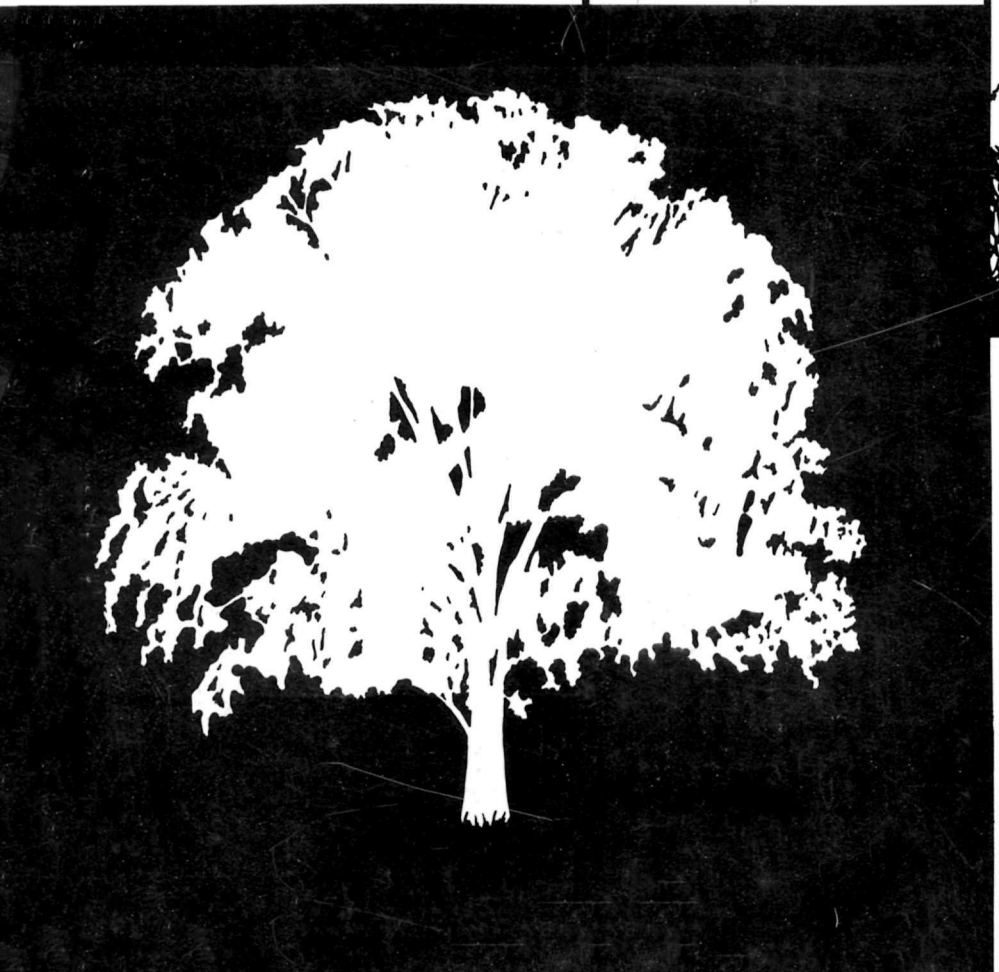
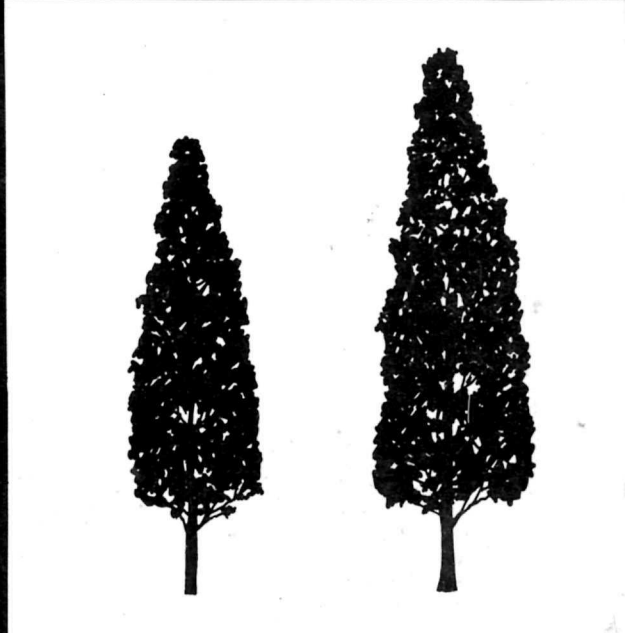
ARCHEOLOGICAL RESOURCES AT OZARK NATIONAL SCENIC RIVERWAYS









Archeological Survey of Development Areas, Ozark National Scenic Riverways

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Lincoln, Nebraska

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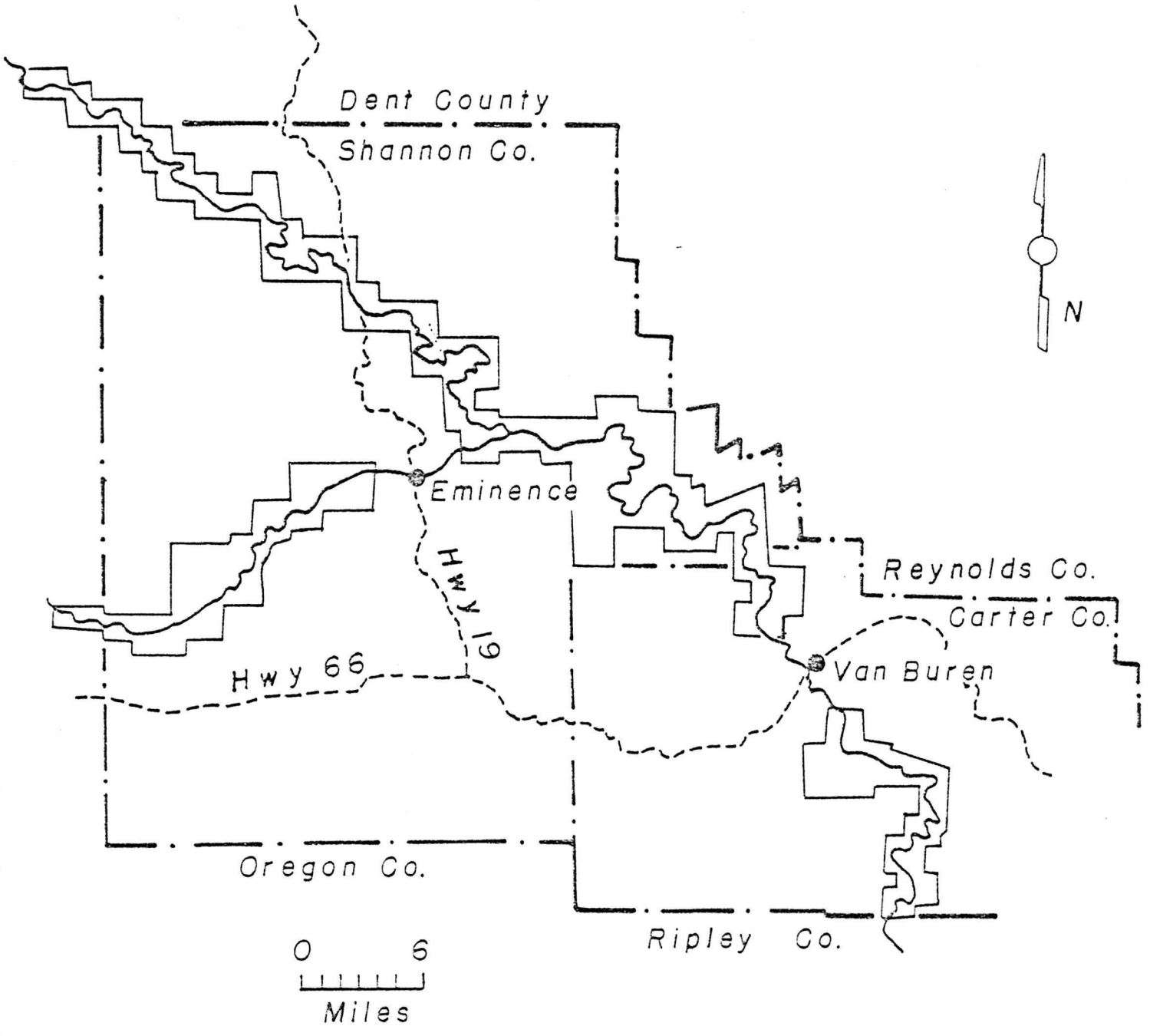
I. INTRODUCTION

The Ozark National Scenic Riverways is located in southeast Missouri approximately 175 miles south of St. Louis and 250 miles southeast of Kansas City (Figure 1). The park is situated in the eastern Ozarks along the Current and Jacks Fork Rivers in Carter, Shannon, Texas and Dent Counties. Consisting of over 130 miles of riverway, the park is noted for large springs, numerous caves and beautiful Ozark scenery. Since it was authorized in 1964, Ozark National Scenic Riverways has become a very popular area for river recreation. The increasing popularity of the park has resulted in large visitation rates, particularly during summer months.

Management of natural and cultural resources within the boundaries of the National Scenic Riverways requires planning and an inventory of resources within the management unit. Management practices for the park are being formalized through the development of a General Management Plan. The General Management Plan serves as a park-wide plan for achieving the management objectives of the park. As a component of the General Management Plan, the National Park Service is also preparing a Development Concept Plan. The Development Concept Plan is intended as a planning guide of facilities needed to serve visitors in the park. Although no new major developments will be proposed, plans for redesign, replacement or upgrading of current facilities will be offered.

The archeological investigations reported here were conducted in association with the development of the General Management Plan, and Development Concept Plan for Ozark National Scenic Riverways.



OZARK NATIONAL SCENIC RIVERWAYS

FIGURE 1

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The purpose of the study was to inventory archeological resources in minor development areas and review the available inventory data from previous investigations in major development zones. The resultant inventory data may be used by managers and planners to select development alternatives which will have the least impact possible on known archeological resources. It must be emphasized that this study is not a comprehensive investigation of all archeological resources in the park or even within development areas. The study has concentrated on identifying archeological sites in development zones, additional research to evaluate the significance of these resources is needed. The Ozark National Scenic Riverways contains a wealth of archeological sites, and the inventory reported here is the first step toward obtaining the data necessary for managing these resources for public benefit.

The Nature of Archeological Resources

For many years, the archeological profession focused the majority of its energy on exciting and exotic discoveries relating to spectacular civilizations of the past. In recent years, a growing awareness among the general public of the importance of local heritage has coincided with a dramatic change in the goals of archeology. Whereas past studies emphasized investigation of large unusual sites, archeologists are now concerned with reconstructing the regularities of the past. This growth and maturation of archeological interests has led archeologists to greater awareness of the range of cultural resources.

In general, the subject matter of archeology consists of past material

culture recovered from the top or immediately beneath the earth's surface. In the narrow sense of the word, archeological sites do not include standing historic structures. However, it must be noted that archeological deposits are frequently associated with standing structures. Although a structure may be outside the realm of archeological research, the soil around the structure may contain significant archeological data. Archeological sites include all locations where past material culture is preserved in an archeological context.

Archeological sites are formed by a combination of cultural and natural processes. The cultural processes which deposit artifacts on the ground are the major focus of study, but natural processes may alter cultural patterns. Thus, natural processes must be considered in interpreting archeological patterns. Due to the complexity of archeological site formation, the data preserved at most archeological sites is unique and is not fully duplicated anywhere else. The destruction of an archeological site can be compared to removing a page from a book, making it more difficult to understand the complete story. If enough archeological sites are lost, reconstruction of past events and cultural patterns may be impossible.

In addition to being unique, archeological resources are also finite. Only a given number of sites were created by past activities of a particular time period, and the cultural processes which created them are no longer in operation. The cultural patterns which are in operation today may differ greatly from those reflected in the archeological record. Once the last archeological site of a given period is expended, the archeological record of that period is gone.

In many ways, it is tempting to compare the destruction of archeological resources with the extinction of biological species. But unlike most biological resources, cultural resources are non-renewable. Whereas an animal like the bison may be exploited and reach critically low numbers, wise management will allow the resource to reproduce and regenerate itself. This is not the case with archeological resources. Once an archeological site is destroyed, it is lost forever.

Archeological resources in particular and cultural resources in general present unusual and often crucial management problems. Being unique, finite, non-renewable and located near the earth's surface, archeological resources are often vulnerable to any land-modification activities. Whether the impact comes from riverbank erosion, highway construction or heavy visitation in a park, cultural resources are very vulnerable to surface alteration. Recognizing the peculiar problems of archeological resource management, legislators and policy-makers have generated a large body of law designed to protect and preserve our cultural heritage. The following section is a brief summary of legislation relevant to the Ozark National Scenic Riverways.

Archeology and Historic Preservation Law

Since its establishment in 1916, the National Park Service has been the nation's major conservation agency. In addition to a long history of natural resource preservation, the National Park Service has also vigorously participated in the preservation of cultural resources. With the growing threat to cultural resources in the United States,

it is essential that the National Park Service maintain a prominent role in the management and preservation of archeological resources.

The tremendous impact of land modification for highways, agriculture, reservoirs and urban growth is gradually reducing the number and quality of archeological sites. In some areas, it has been estimated that 25% of the archeological sites were destroyed in a recent ten-year period (McGimsey 1972). In most areas, archeologists believe that at the current rate of destruction, investigation of intact archeological sites will only continue for another 20-40 years. Thus, only those archeological sites which are actively preserved are likely to survive for study by future generations of archeologists and the appreciation of the public. Through a variety of Federal laws and implementation of National Park Service policy, the National Parks may be considered archeological preserves. The National Parks represent some of the few places where active preservation of archeological resources is possible.

The philosophy of archeological conservation is derived from the recognition that archeological resources are finite and non-renewable. There are a fixed number of sites, and once these have been altered or destroyed, they cannot be replaced. Thus, loss of an archeological site is equivalent to losing the only copy of an important book. As finite and non-renewable resources, archeological sites are best managed in a descending order of priority through preservation, avoidance, or mitigation of impact. Active preservation of sites is preferred, avoidance of threatened sites is encouraged and salvage or some other mitigatory activity is conducted as the last resort.

The principles of archeological conservation are derived from a relatively large body of Federal legislation. In concert with local

and State legislation, guidelines for implementation of Federal historic preservation legislation have created a working system that insures that concern for the national heritage is incorporated into the Federal planning process. The legislative mandates discussed below represent official recognition of public concern for the management and protection of archeological resources.

The Antiquities Act of 1906 was the first act designed to protect archeological remains on public lands. The act made it illegal to destroy, disburb or remove antiquities from Federal lands, and provided a punishment of up to a five hundred dollar fine, imprisonment of up to ninety days, or both. The act also provided the President with the authority to designate National Monuments and provided a permit system for study of archeological sites on public lands. Recent judicial confusion about the meaning of the term "antiquity" and law enforcement concern about the minimal penalties imposed by the 1906 Act have led archeologists to propose more contemporary legislation (Collins and Green 1978).

The establishment of the National Park Service in 1916 (39 Stat. 535) authorized the protection of historical as well as natural resources within the National Park System. The responsibility of the Park Service to cultural resources was enlarged by the Historic Sites Act of 1935. This law stated that it is National policy to preserve for public use historic sites, buildings and objects of National significance. The Secretary of Interior was authorized through the National Park Service to investigate historic and archeological sites, evaluate the significance of historic properties, and obtain by gift, purchase or otherwise sites of significance. The Act empowers the National Park Service to restore, reconstruct, rehabilitate, preserve and maintain significant cultural resources for public benefit.

The role of the National Park Service in managing cultural resources became even greater at the end of World War II. Recognizing that a large number of the nation's archeological record would be destroyed by the ambitious post-war reservoir construction program, the Committee for the Recovery of Archeological Remains in cooperation with the National Park Service and the Smithsonian Institute organized the River Basin Surveys (Brew 1961). Initially the role of the park Service was largely administrative, but as the program developed the National Park Service's involvement in archeological salvage research increased. The Reservoir Salvage Act of 1960 provided official authority for the River Basin Surveys program.

During the last 15 years, the emphasis of historic preservation has shifted from preconstruction salvage to planning and resource preservation. This change in orientation has been a product of public concern for archeological and historical resources, which has ultimately been reflected in the passage of several important laws and the issuance of executive directives.

The National Historic Preservation Act of 1966 is the foundation of current historic preservation policy, and provides the Secretary of the Interior with the authority to expand and maintain a National Register of "districts, sites, buildings, structures and objects significant in American history, architecture, archeology, and culture" (Public Law 89-665; Section 101:a:1). The law provides protection for National Register properties which will be adversely affected by actions sponsored totally or in part by the Federal government, and authorizes a program of matching grants to state historic preservation projects. The act provides for the establishment of an Advisory Council on Historic Preservation,

and Section 106 of the act provides an opportunity for the Advisory Council to comment upon any project sponsored by a Federal agency which may impact a National Register property. This law is particularly important to management of archeological resources in the National Parks, because it directs the Service to take positive action to preserve sites and avoid or mitigate impacts which threaten sites located in the Parks. The Act was amended in 1981 to incorporate many of the provisions of Executive Order 11593 (P.L. 96-515).

The National Environmental Policy Act of 1969 provides a mandate for assessment of environmental impacts of proposed Federal action prior to initiation of a project. The Council on Environmental Quality authorized by the act is intended to advise the President on the status and condition of natural and cultural resources. The environmental assessment required by the Act includes an archeological assessment of any resources to be affected by a proposed project. In the National Parks, any construction or land modification should be preceded by an archeological assessment of resources likely to be affected by the project.

Executive Order 11593 instructs all Federal land managing agencies to inventory and evaluate archeological resources under their control. To date, few Federal agencies have complied fully with this directive. The National Park Service is no exception. A complete inventory and assessment in any of the larger parks will be very expensive and legislative appropriations are sufficient to only achieve partial compliance at this time. The importance of an inventory and evaluation of cultural resources on Federal lands has recently been reinforced by the passage of the National Historic Preservation Act Amendment of 1980 (P.L. 96-515), which codifies the inventory and evaluation directives of E.O.11593 into law.

The previously mentioned concerns about the judicial weaknesses of the Antiquities Act of 1906 were alleviated in 1979 with the passage of the Archeological Resources Protection Act. The law provides strict criminal and civil punishment for actions which damage or destroy archeological remains on Federal lands. The Act also recognizes that archeological remains are vulnerable, non-renewable, and threatened. Of particular significance, the law encourages the cooperation of Federal agencies, professional archeologists, and private citizens in sharing information that will result in a more complete understanding of the archeological record.

This combined body of historic preservation legislation directs the National Park Service to plan for the protection of cultural resources in their care. Wise management of archeological resources requires the collection of data pertaining to the cultural resource base. The Midwest Archeological Center is actively involved in research at the Ozark National Scenic Riverways with the goal of acquiring useful information that will benefit the management of archeological resources in the park. The research reported here is intended to provide basic information about the number, location, and nature of archeological resources in development areas.

Previous Investigations

Archeological investigations in the upper Current River drainage are a relatively recent phenomenon. Many sites in the Mississippi alluvial valley in southeast Missouri were studied during the late nineteenth and early twentieth centuries, but the heavy vegetation and rugged terrain

in the eastern Ozarks served as a deterrent to systematic study. Most early archeological data was derived from local farmers. Houck (1908) reports the presence of 189 sites in Carter county and 81 sites in Shannon county. Some of these sites are likely to be in the Ozark National Scenic Riverways, but precise locational data for individual sites is not available.

Prehistoric occupation of caves and rockshelters in the Ozark region has been recognized by professional archeologists for quite some time. Most noteable is the work of Harrington (1924; 1960) in sites attributed to the Ozark Bluff Dweller culture in southwest Missouri and northwest Arkansas. Fowke (1922) visited several caves in the upper Current River area as part of a regional study of caves in central Missouri, including Bat Cave, Fishing Cave, Welch's Cave and Big Creek Cave. No archeological remains were noted in any of these caves.

The majority of archeological data pertaining to the upper current River prior to 1960 was a result of amateur archeological investigations. Leo Anderson of Van Buren and A.A. Seamon of Alley actively recorded sites in Carter and Shannon Counties. Particularly important during this period is a report of 36 prehistoric sites in Carter County by James L. Lowe (1940). The amateur archeological contribution to the study of Ozark archeology is significant and provided considerable background for later studies by professional archeologists.

During the late 1950's and early 1960's, sporadic archeological investigations at Round Spring State Park were conducted as artifacts and human burials were exposed by erosion or construction. In 1948, Mr. Manuel Banks, Superintendent of Round Spring State Park discovered

a burial in an extended supine position exposed by erosion near the lip of the Round Spring sinkhole. A shell tempered elbow pipe and oval flint biface were associated with the burial. Mr. Leo Anderson visited the site and sent the skeletal material to the University of Missouri - Columbia. In 1959, a cache of flint blades and an extended burial associated with a shell tempered ceramic vessel were excavated (Haslag 1959). In 1964, another eroding burial was excavated (Bray 1964). The individual was buried in a fully extended, prone position and seemed to represent a sub-adult. The burial was made in midden deposits relating to Woodland occupation of the spring site, but was interpretted as relating to Mississippian culture. In 1966, James E. Price and Wayne Shields visited the site after a major flood. They made a large surface collection and excavated part of another burial.

Initial study of the archeology of Ozark National Scenic Riverways was initiated in the early 1960's. Chapman (1960) provided an overview of the archeology in the upper Current and Eleven Point River valleys and reported the presence of 45 sites. The study did not include field activities of any consequence, and most of the known sites located in the Current River drainage were recorded by members of the Missouri Archaeological Society.

Following the authorization of the Ozark National Scenic Riverways in 1964, the limited archeological investigations focused on development areas where construction was planned. Williams (1968) did a surface reconnaissance of the Owls Bend area and described a collection from 23SH10. More intensive survey of the Alley Spring area resulted in the recording of six sites, and testing indicated that the sites were

occupied primarily during the Archaic and Woodland stages (Born and Chapman 1972). Archeological survey and testing in the Round Spring, Big Spring and Owls Bend areas of the park provided data on 16 additional sites (Garrison et al 1976). These pre-construction studies were funded by contacts with the National Park Service.

In 1971, the University of Michigan conducted archeological excavations at the Gooseneck site. The investigations were conducted under an Antiquities Permit from the U.S. Forest Service which managed the site at that time. Results of the investigation have not yet been fully reported, but selected data from the study has been reported in several papers (Smith 1971, 1974).

The Midwest Archeological Center became involved in the archeology of Ozark National Scenic Riverways in 1974, when non-NPS archeological services were transferred to the Interagency Archeological Service. Between 1975 and 1979, archeologists from the Midwest Archeological Center conducted several pre-construction surveys. Most of these were of very limited scope and produced negative findings. A notable exception is a study of the Akers Ferry area identifying two rock cairn sites and a large terrace site (Nickel 1975).

The participation of amateur archeologists in the study of upper Current River archeology was renewed in 1978 with the publication of Indians of the Upper Current River by Alan Banks. The book describes the author's research in Shannon County, and illustrates a large number of private collections.

Underwater survey of Round Spring and Alley Spring as part of an innundation experiment by the National Reservoir Innundation Study in 1978 and 1979 resulted in the recording of 23SH96 in the grotto at Round

Spring (Carroll, May and Garrison 1980). This study and the inventory of caves in the park (Aley 1980, 1981) provide data about prehistoric occupation of cave environments in the Current River area.

In 1978, the Midwest Archeological Center began a long-term program of inventory and evaluation in the Ozark National Scenic Riverways. The study has emphasized inventory and evaluation of sites in or near existing development areas, location and evaluation of sites which are of potential significance to resource management and impretive programs, and preconstruction survey of minor construction projects. The study has been largely conducted by staff of the Midwest Archeological Center and several reports describing these investigations are being prepared. In addition, research by Southwest Missouri State University (C. Price 1980; 1981) has made substantial contributions to the program. Contined cooperation between the Midwest Archeological Center and Southwest Missouri State University will be oriented toward a multi-year contract for archeological research in the park.

Research Plan

The archeological investigations described in this report were initiated to provide data which could be used by managers and planners to provide for the long-term protection of archeological resources within Ozark National Scenic Riverways. Recognizing that preservation of these resources may at times conflict with other programs and/or needs in operating the National Scenic Riverways, this study was undertaken to provide information so that management may make effective decisions based upon a reasonable knowledge of the resource base. Although the study has been largely motivated by management concerns, an effort

has been made to incorporate regional research concerns into the project. The success of this latter aspect of the study has been inhibited by a shortage of systematic research in the upper Current River valley.

The management of the Ozark National Scenic Riverways is based upon general principles defined in the legislation creating the National Park Service, authorizing the park, and mandating standards for resource management, health, and safety, etc. The management program for the park will be defined in the General Management Plan. As a component of this plan, the National Park Service will develop a Development Concept Plan which is intended to identify plans for park development and construction of facilities to meet the operating needs of the park. The archeological investigations reported here were conducted to provide intensive survey coverage of those areas under consideration for potential development.

The survey areas were identified by the Landscape Architect stationed at the park. The study was intended to provide intensive survey coverage of all areas being considered for future development. Thus, the major goal of the project was identification of archeological sites located within these potential development zones. In this regard, the study was designed to:

1. Determine the number, and if possible location, of sites situated within potential development zones,
2. Determine the general integrity of individual sites and estimate the potential need for additional evaluation of site significance.

Recognizing that vegetative cover would frequently inhibit traditional pedestrian surface survey techniques from identifying archeological

remains, it was decided to use shovel testing at regular intervals to augment surface examination of exposed areas.

The survey of potential development areas in the upper Current River valley also provided the opportunity to contribute to the understanding of regional archeological patterns. Due to a general paucity of previous archeological survey in the park, reliable estimates of general site density and distribution were lacking. This study was designed to provide intensive coverage of selected areas and thereby permit some (albeit biased) estimates of the number of archeological sites located in the park. In situations where temporally diagnostic materials could be identified, it might also be possible to identify changes in past patterns of land use in the Current River valley. Finally, since the survey would provide coverage of a variety of different topographic/geomorphologic settings throughout the valley, it was also designed to study the potential variability of site locations in regard to specific landforms. This final aspect of the study would hopefully also reflect upon changes in patterns of human land use.

The research plan which guided field investigations during the course of this study was relatively simple. The needs of management to know the number, location and potential significance of archeological resources within selected areas was given top priority, but the potential for data from the study to contribute to regional research problems was also given consideration. The investigations were designed to provide intensive survey coverage of potential development zones, generate an inventory of archeological sites, and make recommendations about the need for additional evaluative testing at individual sites.

II. Natural Environment

The Ozark plateau is located in Missouri, Arkansas, Oklahoma and Illinois. It is distinguished from the surrounding area by its generally greater elevation and associated greater topographic relief. The Ozarks are a broad asymetric dome with a general accordance of summit levels believed to represent an ancient peneplain surface. The eastern margin is characterized by a relatively steep escarpment, but in the north and west the flanks are more gently sloping. The climate of the Ozark region is characterized by hot and humid summers and mild winters. The steep hills and valleys of the Ozark region are usually forested, with small prairies and open woodlands in the undissected upland plateau zones. Geological formations in the area form the basis for widespread karst topography in much of the area. The Ozark highlands of Missouri consist of eight geographic provinces (Sauer 1920: 61-70). The majority of the Ozark National Scenic Riverways is located within the Curtois Hills province, but a small area of the park in the upper Jacks Fork drainage in Texas County is located in the Central Plateau province.

The Ozark region is a diverse area with a wide range of natural resources. A complete description of the natural environment is well beyond the scope of this report. The discussion which follows provides a brief introduction about those aspects of the natural environments which relate most directly to past patterns of human adaptation in the eastern Ozark region. The discussion includes remarks about climate, topography, geology and soils, hydrology, botanic and zoologic resources. The description of each of these aspects of the natural environment is oriented toward the late prehistoric and early historic period and

is generated from historic studies and observations of the natural environment. The chapter concludes with a consideration of changes in past environmental conditions based upon paleoecological studies of the Ozark region.

Climate

The climate of the eastern Ozarks is continental, with hot summers and mild winters. The average annual temperature for the region is 56.8 degrees (U.S. Weather Bureau 1963), with considerable annual variation in temperature. Average daily high temperatures in summer are about 85°, while average daily high temperatures in winter are about 40° (Sauer 1920). Winter temperatures are particularly variable, with changes being related to storm systems and upper air patterns. Average daily low temperatures during winter months are sufficiently cold for humans to require some form of shelter. This is particularly true of Ozark valleys, where cold air is likely to settle during the night.

Prevailing winds are out of the south and a shift to winds out of the west or northwest usually signals a change in weather patterns. Most storms come from the northwest, particularly in winter. The Ozark area is frequently subject to lesser cyclones and anticyclones moving southeast across the central plains from the Rocky Mountains (Sauer 1920).

Average annual precipitation is about 45-50 inches (National Park Service n. d.). Most precipitation falls as rain, but winter snow accumulations of 16 inches are common (Sauer 1920). Most rain

falls in spring and early summer. Falls are usually dry and sleet is relatively common during the winter months, making travel in the hill country particularly hazardous.

In terms of human adaptation several climate conditions are particularly important. Although prolonged cold periods are rare, winter temperatures are sufficiently cold to require some form of shelter for human survival. The area enjoys 190-200 frost-free days in an average year. This is an adequate growing season for most horticultural crops. Rainfall is generally adequate to support local agriculture without irrigation, but historic droughts have recorded severely reduced yields (Sauer 1920). Irregular precipitation during growing seasons may severly limit the agricultural potential of the area during dry years.

Topography

The Ozark National Scenic Riverways is located mainly in the Curtois Hills province of the Ozarks (Sauer 1920: 68). A small area of the park in the upper Jacks Fork basin is located within the Central Plateau province, but the majority of the Current River is related to the Curtois Hills. The Curtois Hills is associated with the major area of Gasconade-Potosi limestone outcroppings. Indeed, the topography of the entire region is largely related to local geological conditions.

The Curtois Hills province consists mainly of steep hills and narrow ridges. Timber is the principal resource of the area; mineral and agricultural potential being particularly limited (Sauer 1920: 68). The best farming conditions are associated with the river valleys. The wider bottoms of major rivers are the most desirable agricultural lands in the province, and it is most likely that these areas were

given high priority by early 19th century settlers. The steep hills narrow ridges make cross country travel difficult, even in areas where roads are present.

The rough topographic conditions have served to isolate the area from outside influence. The Curtois Hills was one of the last areas of Missouri to be settled, and the wooded hollows have been a natural haven for outlaws and fugitives (Oakley 1970). During the war of the rebellion, the area suffered greatly from the destruction forces of guerrilla warfare. The rough topography limited major military movements to the few main roads in the state, and subsequently eliminated the Curtois Hills province from any major military encounters.

Hydrology

One of the more noteable characteristics of the Ozark region, is the large number of beautiful springs that issue from underground drainage systems. Although springs are present in all areas of Missouri, they are most plentiful in the Ozark region. The large subsurface dolomite formations which form the Ozark highland provide a massive storage system for underground water, and the karst conditions which form caves in the dolomite also permit the formation of spring systems. The springs of the Ozarks are a network of underground drainages which move water along systems of faults, fractures and solution cavities in the dolomite.

The Salem Plateau, which includes the Ozark National Scenic Riverways, is the largest concentration of large permanent springs in Missouri (Vineyard and Feder 1974). Big, Blue, Alley, Welch and Round Spring rank among the largest springs in Missouri in terms of average daily

flow. At least 27 large springs are present in the park, details about individual springs are provided by Vineyard and Feder (1974).

In addition to the underground drainage system, the Ozark region is recognized for its numerous and beautiful surface streams. Many of the surface streams are spring-fed, and some disappear into sinks and become underground streams. The relationship of surface and subsurface drainage systems is complex. Larger springs may drain huge areas, including areas underlying other surface drainage systems. Water tracing experiments demonstrate that Big Spring drains a large area to the west of the Current River, including parts of the Eleven Point drainage in Shannon, Oregon and Howell County (Vineyard and Feder 1974: 86-87). Similar drainage situations are likely in regard to other major springs.

The year around availability of clean water in the Ozarks is important to human occupation of the area. The numerous springs and streams provide ample local water supplies. The regularity of available water made it possible for man to settle in a place and remain there throughout the year without developing systems to transport water. In many areas of North America, permanent water is available only along major riverways. In the Ozarks, permanent or regular springs are present in many small valleys making water availability a less important concern in choosing a habitation site. The regular flow of streams and springs in the Ozarks makes the area attractive for development of small milling operations. This is particularly important to the historic development of the region, when several types of mills were in operation in the upper Current River valley.

Geology and Soils

The geology of the Ozark National Scenic Riverways has not been intensively studied. This description was developed from Branson (1944), Bridge (1930), and Bratz (1965).

The Ozark region is developed upon Pre-Cambrian volcanic deposits that represent one of the oldest land surfaces in North America. Principally composed of granite and rhyolitic porphyries, some of the Pre-Cambrian deposits show evidence of originating as lava flows. These early formations are deeply buried in the area of the Ozark National Scenic Riverways and are only exposed in deep well corings.

The Pre-Cambrian deposits are overlain by dolomites of Upper Cambrian age. An erosional epoch of unknown duration removed evidence of the Lower Cambrian. The Upper Cambrian is composed of two formations. The Potosi is a thick bedded crystalline dolomite containing large quantities of quartz, chalcedony and chert. The Eminence formation is mainly dolomite with some shale and sandstone beds. Chert is abundant within this formation.

The Upper Cambrian is overlain by a series of Ordovician sedimentary formations. The earliest of these is the Gunter sandstone. This is highly variable in composition, and represents an important aquifer that was once the shoreline of an ancient sea. The Van Buren dolomite overlies the Gunter sandstone. This formation is well bedded and contains high quality vitreous white chert. Above the Van Buren formation is the Gasconade dolomite, which is light gray in color and also contains abundant chert. Above this formation are a series of interbedded sandstones and dolomites. The upper formation in the Ordovician series is the Cotter-Jefferson City formation, a series of limestone and sandstone beds. This formation is important because it is the source of cotton rock (argillaceous siliceous dolomite) in the area.

The geology of the Current River area is important to the interpretation of the archeological record for three reasons. As the foundation for local topography and the source material for local soils, the geology of the Current River valley has had a major impact on movement of people and agricultural potential of the region. The steep hills and deep valleys were a deterent to road and railroad construction in the 19th century, and thus had a major impact on the history of the area. The soils which are developed on the local geological formations are shallow and very rocky on hills, ridges and hillsides, making agriculture ineffective. The deeper and more fertile soils of the bottomlands were more attractive for agriculture, and early historic settlements of the region concentrated in these areas. These valley soils may have attracted prehistoric agriculturalists to some degree also.

The calcareous and soluable dolomites combined with the permeable sandstone aquifers of the region have produced a vast network of underground caverns. Many of these contain major underground streams and are the source of the numerous springs in the area. Other caverns are dry and may have served as shelter for prehistoric and historic inhabitants. It is likely that the distribution of springs and caves has had some impact on the distribution of population during both the prehistoric and historic periods.

The abundance of local cherts in the many dolomites and limestones in the area were an important resource during the prehistoric period. Since this resource is abundant throughout the area, it is unlikely that it was an important consideration in the selection of camp or village sites. High quality chert is not available in all areas of the eastern United States. This is particularly true of the lowland

areas of the Mississippi valley. It is possible that good quality chert from the Ozark region was procured by inhabitants of the Mississippi valley through short-term excursions into the highlands or by trade with the highland peoples.

It seems highly likely that the geology and soils of the Current River area have had an impact on the configuration and nature of settlement in the area during the prehistoric and historic periods. The steep hills and ridges served as barriers for movement of people, goods and ideas and are largely responsible for the backward image of the Ozarks. The generally poor agricultural soils also served as a deterrent to historic settlement, and the more fertile bottomland zones were important to historic agriculture and possibly prehistoric agriculture as well. The abundant chert resources in the area are so widespread that it is unlikely that availability of chert had any effect on the location of camps and villages during the prehistoric period.

Vegetation

The natural vegetation of the eastern Ozark region is the oak-hickory forest, which includes areas of mixed deciduous-coniferous and pure coniferous vegetation. Intensive logging during the late 19th and early 20th centuries has greatly altered the configuration of vegetational communities. Through the study of remnant mature vegetation, Steyermark (1940, 1959) has defined a series of vegetation associations. These have been discussed in relation to the Little Black River drainage by Price, Price and Harris (1975). This description of natural vegetation in the upper Current River has been generated from these studies.

The Ozark region is a mosaic of vegetation communities that are evolving through a succession of stages toward a mature or climax community. The process is a continuous one, because after climax communities are destroyed by logging, fire, or storms, the succession begins again. The discussion included here emphasized the climax vegetation communities. Readers with an interest in successional stages are urged to consult the previously mention sources.

The floodplain and terraces of the Current River and the Jacks Fork are the habitat for the sugar maple-bitternut hickory community. This includes hornbeam, buckbrush, flowering dogweed, spicebrush and greenbriar on terraces and gravel bars. The Wards-Willow, witch hazel, sycamore, alder, sour grape, water willow and bullrush occur as initial stages in the floodplain succession along rocky streams of the floodplain. Silvermaple, cottonwood, birch, willow, sycamore, button bush, chairmaker's rush and gagittaria occur in bottomland zones frequently subjected to overbank flooding. Mature bottomland settings support elm, green ash, shumard oak, box elder, bur oak, sweetgum, cut and barnyard grass, and cane on shaded alluvial banks. The diverse floodplain zones of the Current River provide a variety of plants resources and support a variety of annual resources which are important to man.

The numerous limestone bluffs that border the Current River are the location of sugar maple-white oak communities. These locations evolve through four stages of succession before reaching the climax state. The sugar maple-white oak plant association becomes dominant on north and east facing slopes with good soil development. Chinquapin oak and white ash become dominant on west and south facing slopes with hop hornbeam, red bud, slippery elm, blue ash and greenbriar.

Vegetation of the hillslopes, ridges, uplands, and plateaus are variable, and highly dependent upon slope and soil acidity. The Black Oak-Hickory association is the most common, and consists of hickory with a wide range of oaks. The oak-pine association is most common on ridgetops near heads of tributaries, and in draws and ravines. The White Oak-Red Maple association occupies very similar settings.

This brief description of vegetation in the Eastern Ozarks does not include the complete range of plants that are of potential use to man. Future studies are needed to isolate the plants which were important to prehistoric and historic economic patterns. At this time, it is sufficient to note that the eastern Ozarks provides a wide range of nuts, fruits, berries, seeds, leaves and plants which have contributed to human subsistence patterns.

Fauna

The zoological resources of southeast Missouri in general, and the eastern Ozarks in particular, have never been fully studied. Smith (1975) has discussed the animal resources exploited by Mississippian people in the central Mississippi River valley. The brief description presented here is derived from that monograph and the description of floodplain and oak-hickory forest fauna presented by Shelford (1963). It should be noted that these two sources are in disagreement over relative density of several of the animals under consideration. The disagreement stems from the massive alteration of native habitats in the historic period due to lumbering and agriculture.

White-tailed deer represents the single most important animal in prehistoric subsistence strategies beginning with the Early Archaic Dalton occupation of the eastern Ozarks. The diverse floodplain and oak-hickory environments of the eastern Ozarks provide ample browse and acorn mast to support a relatively dense population of white-tailed deer, perhaps 40 to 50 per square mile. Smith (1975: 36-37) argues that deer were most efficiently and productively hunted during the fall and winter.

Wild turkey are plentiful in the oak-hickory forest, because acorns of black-jack and post oak are abundant and form a major part of their diet. Smith (1975) estimates a density of between 10 and 20 turkeys per square mile, and that they are best hunted during the winter when flocks are larger. Turkeys prefer mature forests with open understories, so it is possible that pre-lumbering forests supported larger numbers than are present today.

Raccoon is an important inhabitant of the Ozark area. Estimates of their density are extremely variable, ranging from a 3-4/sq. mile to around 40/sq. mile. Racoons have extremely variable diets, with major dietary constituents varying with seasonal availability. As nocturnal feeders, raccoons are best hunted with dogs, traps or by capturing them in denning trees.

Rabbits in southeastern Missouri include both the Cottontail and Swamp rabbit. Cottontail rabbits are highly adaptable, but occur most abundantly in areas with thick underbrush. Swamp rabbits occur primarily in areas adjacent to wetlands in the Mississippi valley. Both types of rabbits were probably hunted most productively with snares in the prehistoric period.

Other mammals that were present and may have contributed to prehistoric subsistence in the region include bear, elk, squirrel, oppossum and beaver. All have been reported from Mississippian sites and identified in local histories as being hunted by early settlers and trappers.

Riverine resources of the eastern Ozarks include a variety of fish, shellfish, reptiles, amphibians and waterfowl, many of which contributed in some way to prehistoric subsistence strategy. Turtles are a common animal recovered from most archeological sites, and were probably captured with nets. Smith (1975) identifies a wide range of fish exploited by Mississippian populations. Shellfish occupy a wide range of river bottom habitats in the eastern Ozarks, but were probably more important to subsistence strategies in the Mississippi Valley. Likewise, migratory waterfowl occur in the eastern Ozarks, but exploitation was more systematic in the Mississippi valley.

Other animals were present in the Ozarks, but those mentioned above were the most important as reflected in the current archeological record. Certainly fur bearing animals were important to early Euro-American trappers, but these are not reflected in the archeological record. Numerous questions about the seasonality of exploitation of individual animals require that additional archeological data be gathered. Systematic recovery of faunal remains from sites in the Current River valley will shed additional light on this problem.

Discussion

Studies of past climatic conditions in the eastern Ozarks have been extremely limited. The Midwest Archeological Center has sponsored preliminary research relating to geomorphology, fossil pollen, and plant phyholith remains in an effort to collect data pertaining to paleoenvironments. These preliminary studies have been encouraging, but have not produced substantive data. Likewise, research into the potential value of tree-ring patterns for interpretation of past climatic conditions is encouraging (Guyette 1981), but the full potential of this approach is yet to be realized.

Fortunately, extensive paleoenvironmental research in the western Ozarks has produced a reasonable body of data (Wood and McMillan 1976). The brief description which follows is extracted from the Pomme de Terre River valley. At the end of the last glaciation (10,000-12,000 B.P.), the Ozarks were probably covered by a mixed spruce and deciduous forest inhabited by mastodon, tapir, ground sloth, deer, giant beaver and horse. Between 10,000 B.P. and 6000 B.P. vegetation shifted to more open grassland conditions. This is followed by a period of increased tree cover reflecting the pre-logging vegetative conditions seen in the eastern Ozarks.

The applicability of this general model to the eastern Ozarks has yet to be demonstrated. The changes in vegetative conditions proposed above almost certainly would have had an impact on residents human and non-human animal populations. Future studies in the Current River valley must emphasize aquisition of paleoenvironmental data, in order to provide a basis for interpretting man's interaction with the environment.

III. Cultural Environment

Reconstruction of past lifestyles through the study of material culture remains has always been a major aspect of archeological research. In the last decade, many archeologists have adopted a systemic approach to research. Using this approach, each archeological site is viewed as a component of a larger cultural system. Thus, the pattern of material cultural remains identified at one site can only be explained in light of patterns observed in the rest of the cultural system. Archeological sites must be viewed within a regional framework if the regularities and irregularities of the archeological record are to be fully understood (Binford 1964).

The regional concept was developed by geographers as an analytical tool (Grigg 1972) and is well suited for the systemic approach to archeological research. As an analytical construct, the parameters of a region can be established and adjusted to the requirements of particular research problems. In the study of past adaptive systems, regions should be defined on effective environmental grounds in order to select an area which supports all the critical elements of the regional adaptive patterns. Selection of too large an area is likely to result in a mixing of several adaptive strategies, making interpretation of the patterns difficult. Definition of too small an area may result in the exclusion of critical elements of the cultural systems.

In this report, the particular unit of study is the Ozark National Scenic Riverways. Despite its seemingly large size, it is unlikely that the boundaries of this area contain all the critical elements of any past adaptive systems. For example, the park boundaries include only

limited areas which are not adjacent to major streams and rivers. If past adaptive strategies were in part dependent upon aquisition of resources available only in the uplands and near headwaters of intermittent tributaries, it is likely that those elements of the adaptive strategy will not be included within the Ozark National Scenic Riverways.

The environmental and geographic region most appropriate for study in relation to the Ozark National Scenic Riverways is the eastern Ozarks area. Due to the inadequacy of archeological data within the direct region of study, data from beyond the eastern Ozarks region is used to generate hypotheses and model adaptive strategies which have yet to be identified or studied in the eastern Ozarks. This broad regional summary is intended to aquaint the reader with nature of the archeological record in southeast Missouri. The next chapter of this report will provide specific descussion of the archeological record within Ozark National Scenic Riverways.

Early Man/Paleo-Indian Period

The first humans to occupy southeastern Missouri were part of a migration that seems to have originated in Asia. Archeologists are generally convinced that inhabitants of Siberia entered North America across a land bridge that connected Siberia and Alaska during the last major glacial period. The land bridge was created by world-wide shrinkage of the oceans. During the glacial periods, ocean water became absorbed in ice form in the massive glaciers that covered the poles and Alpine areas of the northern hemisphere. The waters in this area are shallow and reductions in sea level of 200 feet would have exposed a land surface nearly 1000 miles wide. Geological and radiocarbon evidence suggests that a land bridge

connecting Alaska and Siberia was present from 24,000 B.C. to 9000 B.C.

The massive continental glaciers that reduced the level of the ocean and permitted man and animals to cross from Asia to North America presented an obstacle in themselves to the peopling of the New World. These huge ice sheets, some several miles thick, covered most of western Canada and Alaska during the peak of the last ice age. The Laurentide ice sheet originating from the Hudson Bay area and the Cordilleran ice sheet orginating in the Canadian Rocky Mountains merged together in western Canada to create a major barrier to the southward movement of humans from Alaska to central North America. It has been suggested that human migration was possible through a narrow ice free corridor in western Canada. Wendorf (1966) has suggested that these conditions were present from 24,000 B.C. to 18,000 B.C. and from 11,000 B.C. to 9,000 B.C. During the period 18,000 - 11,000 B.C. a massive ice barrier impeded the southward movement of humans from Alaska. The archeological evidence for Early Man can be best interpretted in view of these major environmental constraints, and the glacial model of a land bridge and ice-free corridor.

The ice bridge and ice free corridor were critical elements for man's entry in the New World. Krieger (1964) has suggested that a number of sites are indicative of ice age occupation in North America. The majority of these sites are surface remains, and are considered early on the basis of topological and geological grounds.

In the review of the chronological evidence for Early Man in the New World, Haynes (1969) has suggested that the evidence can be divided into three temporal stages. These stages date prior to 30,000 B.P., from 30,000 B.P. to 12,000 B.P. and from 12,000 B.P. to 8,000 B.P. Archeological evidence from these time periods is rare in southeastern Missouri. The

discussion which follows is intended to aquaint the reader with the nature of Early Man sites in the United States, with the assumption that good context sites of this time period probably exist in southeast Missouri.

Archeological evidence for the pre-30,000 B.P. period in the New World is scanty at best. The Calico site in California is the only site on note which has been attributed to this time period (Leakey, Simpson and Clements 1968). In a definitive study of the site and material recovered from it, Haynes (1973) has convincingly argued that none of the lithic material from the site is unquestionably of human origins. Thus, it seems unlikely that the migration of human population from Asia to North American occurred prior to 30,000 years ago.

Archeological data pertaining to the period from 30,000 B.P. to 12,000 B.P. is also limited, but the data base is more believable and steadily growing. At Old Crow Flats in Alaska, a bone tool of definite human manufacture has been recovered from a Pleistocene fossil bed. The tool was directly dated by the apatite radiocarbon method at 27,000 $\pm$ 3000 B.P. (Irving and Harington 1973). This date is consistant with other non-cultural bone dates from the site.

In Pennsylvania, excavations at the Meadowcroft Rockshelter have revealed a stratified sequence beginning with an occupation dated about 19,000 B.P. (Adavasio et al 1978). Cultural material from this horizon of the site includes firepits, and a small lithic assemblage composed of flakes, retouched flakes and a biface. This site provides the best evidence available for Early Man in North America prior to 10,000 B.C.

In Idaho, excavations at Wilson Butte Cave provide evidence of human occupation which has been radiocarbon dated at about 12,500 B.C. (Gruhn 1965). The limited cultural material relating to this early occupation

includes a biface, a flake, a blade, and a piece of bone which appears to have been intentionally modified (Crabtree 1969). Although the artifact assemblage is small, it provides solid evidence for the presence of early man.

The third stage of the Early Man period, 12,000 B.P. - 8,000 B.P., is frequently called the Paleo-Indian stage. Artifacts characteristic of this period include lanceolate projectile points, frequently in association with the remains of extinct big game animals (Figure 2). Sites of this time period are best known from the plains and southwestern United States, but artifacts characteristic of the stage have been found throughout the continental United States.

The Clovis complex, 11,200 B.C. - 10,000 B.C. is the earliest manifestation of the Paleo-Indian stage. It is characterized by parallel-flaked, lanceolate shaped points with basal fluting. The Clovis complex is consistantly associated with mammoth or mastodon remains. Examples of kill sites attributed to the Clovis complex include Domebo in Oklahoma (Leonhardy 1966), Blackwater Draw in New Mexico (Hester 1972), Lehner in Arizona (Haury, Sayles and Wasley 1959) and Kimmswick in Missouri (Graham n.d.). The Clovis Complex seems to disappear with the general extinction of mammoths and mastodons in North America.

The next Paleo-Indian complex is called Folsom. Named after a bison killsite in New Mexico, the complex is characterized by smaller lanceolate points than are associated with the Clovis Complex. Folsom points are widest at the midsection, have fine-edge retouch flaking and possess channels or flutes that extend across almost the complete length of both sides of the point (Willey 1966). Folsom Complex sites are consistantly associated with remains of extinct bison and dates between 9200 B.C. and 8500 B.C. In addition to kill site like the Lindemeier site in Colorado

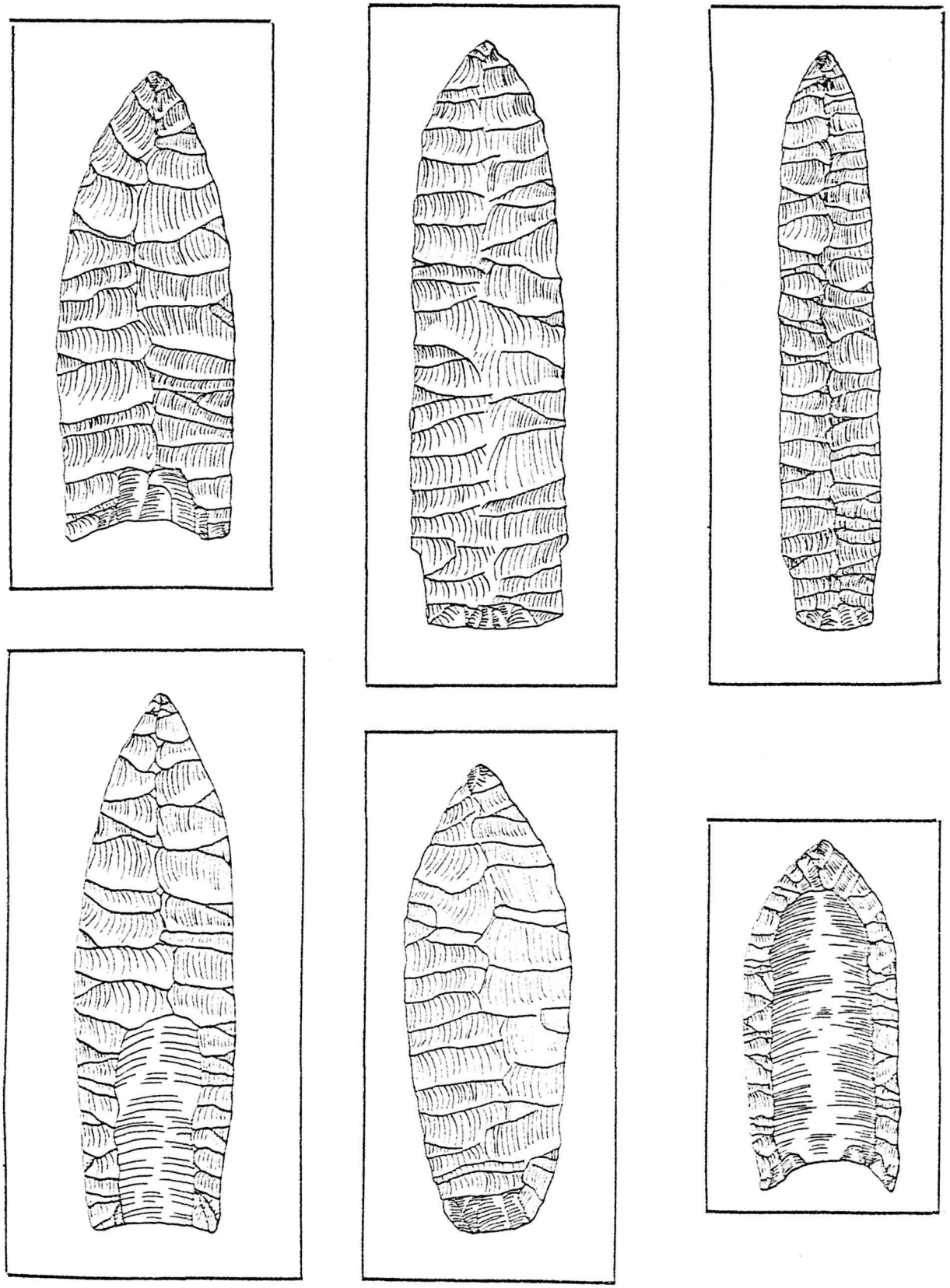

FIGURE 2 PALEO-INDIAN
PROJECTILE POINTS

(Roberts 1935, 1936, Wilmsen and Roberts 1978) appears to be a Folsom complex camp site. The Folsom complex appears to be limited to the Great Plains, and is of limited relevance to the eastern Ozarks.

The Plano complex is the last recognized manifestation of the Paleo-Indian stage 8500 B.C. - 8000 B.C. The Plano complex is characterized by a diversity of lanceolate, parallel-flaked projectile point forms, such as Plainview, Scottsbluff, Agate Basin, Meserve, and Hell Gap (Figure 2). These point styles generally lack basal fluting, but generally have obvious basal grinding. Plano complex sites are frequently associated with the remains of extinct forms of bison or other animals. Examples of sites attributed to the Plano complex include the Holcombe Beach site in Michigan (Fitting, Devisscher and Wahla 1966), Debert in Nova Scotia (MacDonald 1968), Scottsbluff in Nebraska (Barbour and Schultz 1932) and Plainview in Texas (Sellards, Evans, Meade and Krieger 1947).

The end of the Paleo-Indian period is marked by the continent-wide disappearance of numerous big game animals. Coincident with the disappearance of Pleistocene megafauna is the initiation of localized hunting traditions based upon modern fauna. The explanation for this abrupt cultural and ecological change has been debated by numerous scholars (Martin and Wright 1967). One of the more interesting theories proposes that prehistoric man, newly arrived from Asia, was largely responsible for the extinction. Introduction of new predators with new hunting techniques may have resulted in overkill of North American megafauna. The more traditional explanation for the disappearance of Pleistocene megafauna is the widespread climatic changes which occurred in association with the end of the ice age. Bryson, Baerreis and Wendtland (1970) have argued that these climatic changes occurred as a series of abrupt shifts followed by periods of stability. It is quite likely that both climatic change and prehistoric hunting practices contributed to the extinction of big game.

ARCHAIC PERIOD

The end of the Paleo-Indian period is considered to coincide with a shift to environmental and climatic conditions approximating those of today. Throughout the southeastern United States there is believed to be a major change in subsistence patterns from the big game hunting of the Paleo-Indian period to a pattern emphasizing deer hunting and foraging strategies. The transition from Paleo-Indian to Archaic is generally believed to occur at about 8000 B.C. The first archeological complex associated with woodland adaptive patterns is known as the Dalton complex.

The Dalton complex appears as the earliest Archaic horizon throughout much of the southeast. It is characterized by lanceolate or pentagonal projectile points with basal grinding and thinning, gravers, burins, steep-edge scrapers, notches, backed blades and adzes. Other projectile point forms which appear to roughly contemporary with the Dalton complex include Harden Barbed, Rice-Lobed and Graham Cave Sidenotched (Figure 3).

The study of Dalton complex sites in southeast Missouri and eastern Arkansas have led to the generation of three settlement models to explain site patterns during this time period. In the L'Anguille drainage of Arkansas, Morse (1973) and Goodyear (1974) have defined a Dalton pattern similar to that called Central Based Wandering (Beardsley et al 1956). The pattern is characterized by a few large sites containing the full-range of Dalton tools and a number of small sites with a limited number and diversity of Dalton tools. The larger sites are believed to be base camps, occupied by most members of a particular band during all or part of the seasonal round. The smaller sites are thought to be hunting camps, occupied almost solely by males engaged in hunting and butchering. The territories occupied by Dalton bands are hypothesized to be banana-shaped basins of the Western lowlands region.

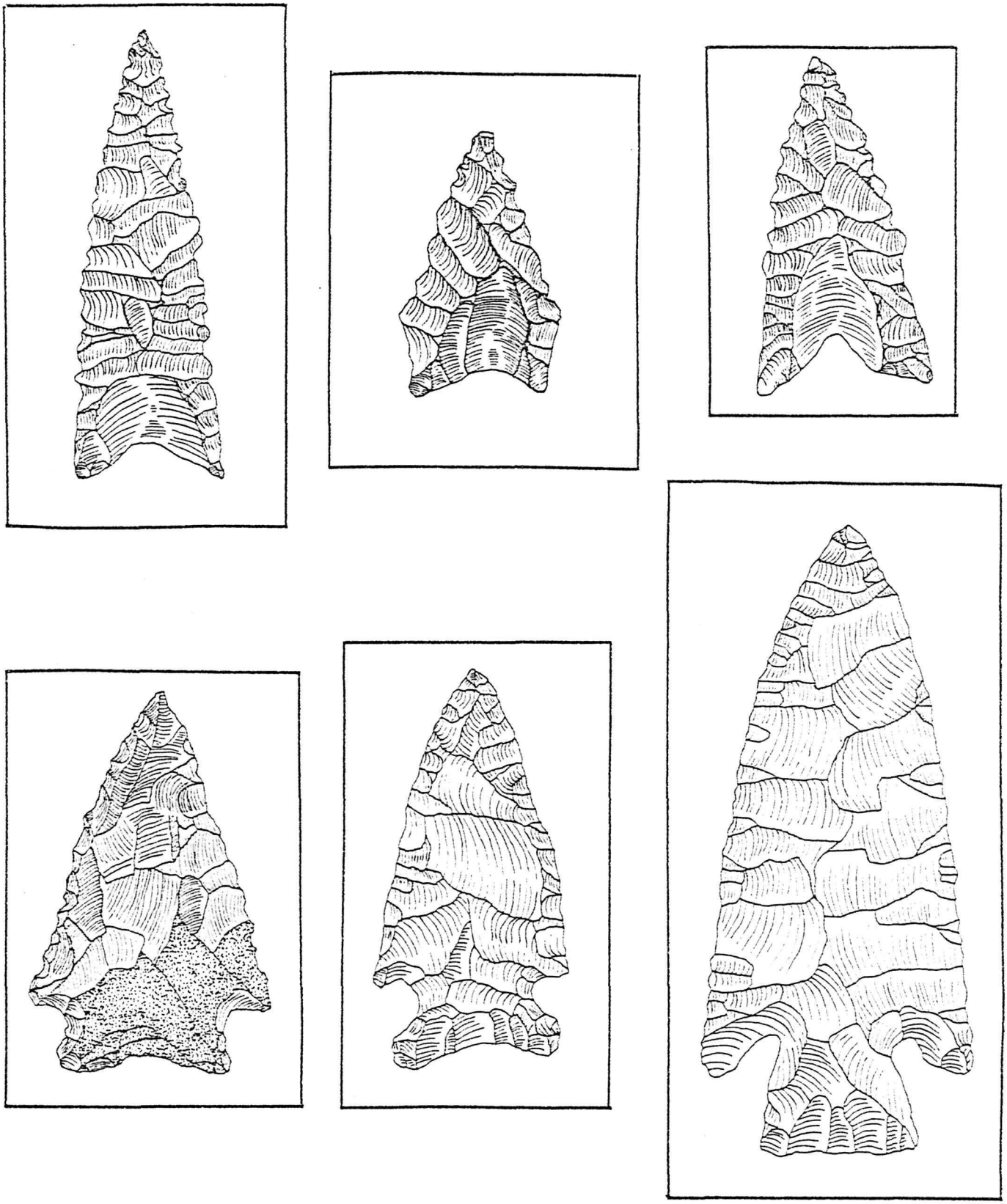

FIGURE 3 EARLY - MIDDLE ARCHAIC PROJECTILE POINTS

An alternative model explaining Dalton settlement patterns in the L'Anguille drainage has been proposed by Schiffer (1974). This model proposes greater population mobility and seasonal movement of bands. Schiffer believes Dalton territories crosscut several environmental and physiographic zones, making various exploitable resources available at differing seasons of the year. This model proposed that base camps were occupied for two seasons of every year, during the winter/spring and summer/fall. Short-term hunting camps are believed to have produced insufficient material remains to be detected by archeology. Dalton territories under this model are believed to be hexagonal in shape.

In the Little Black River watershed in Butler and Ripley Counties, Missouri, Price and Krakker (1975) have generated a model to explain Dalton settlement patterns on the Ozark border. They propose that the Dalton settlement system in that area is based upon semi-permanent base camps like the ones proposed by Schiffer (1974). These were intensively occupied sites, exhibiting material remains representative of the full range of group activities. Winter/Spring base camps were located in places protected from floods and north winds. Substantial structures for winter shelter are also expected. Summer/Fall base camps are expected in a wider range of environmental situations and structural remains are less likely to be present. Hunting camps and other extractive sites are represented as singular Dalton finds. This model suggests that territories occupied by Dalton social groups in the Little Black River drainage cross cut environmental zones but did not have a regular shape.

The Middle Archaic substage (5000 - 3000 B.C.) is poorly understood in the eastern Ozarks region. Projectile points which are believed to be diagnostic of the time period have been reported from the Current River area (Banks 1978: 9-10; Born and Chapman 1972:46-47; Garrison et al 1976:57),

particularly Jakie and Table Rock Stemmed (Figure 4). Data relating to associated toolkits is lacking from the area, and most interpretation about technology and subsistence are extrapolated from more intensively studied areas of the western Ozarks.

Evidence from Rodgers shelter in westcentral Missouri indicates a shift from heavy reliance on hunting deer and small game in the Early Archaic to a more diversified foraging strategy in the Middle Archaic (McMillan 1976:224-225). Middle Archaic levels at Rodgers Shelter suggest that exploitation of small game, particularly squirrel, and gathering of plant foods were major subsistence activities. It is uncertain whether the identified change represents an adaptive shift in response to changing environmental conditions (McMillan 1976: 230) or a change in the activity patterns of that one shelter. If a major climatic change is responsible for the recognized change in activities at Rodgers Shelter, it may or may not have had an impact on the eastern Ozarks. Climatic changes can be regional in scope or very localized.

Settlement patterns in the eastern Ozarks during the Middle Archaic are believed to be very similar to those of the preceding Early Archaic as described for the Ozark border (Price and Krakker 1975). Base camps occupied during the winter/spring are situated in areas which are protected from winter winds and floods. Summer camps are located in a wider range of settings. Structures are more likely to be present on winter/spring base camps. Isolated finds of Middle Archaic projectile points are probably representative of hunting activities. Special activity sites for procuring resources will be situated near the resource being exploited.

The Late Archaic stage in the eastern Ozarks is characterized by a change in the style of projectile points (Figure 4), the appearance of a refined ground stone industry and the widespread use of quartzite in the manufacture of chipped stone tools (C. Price 1979:46). Projectile points

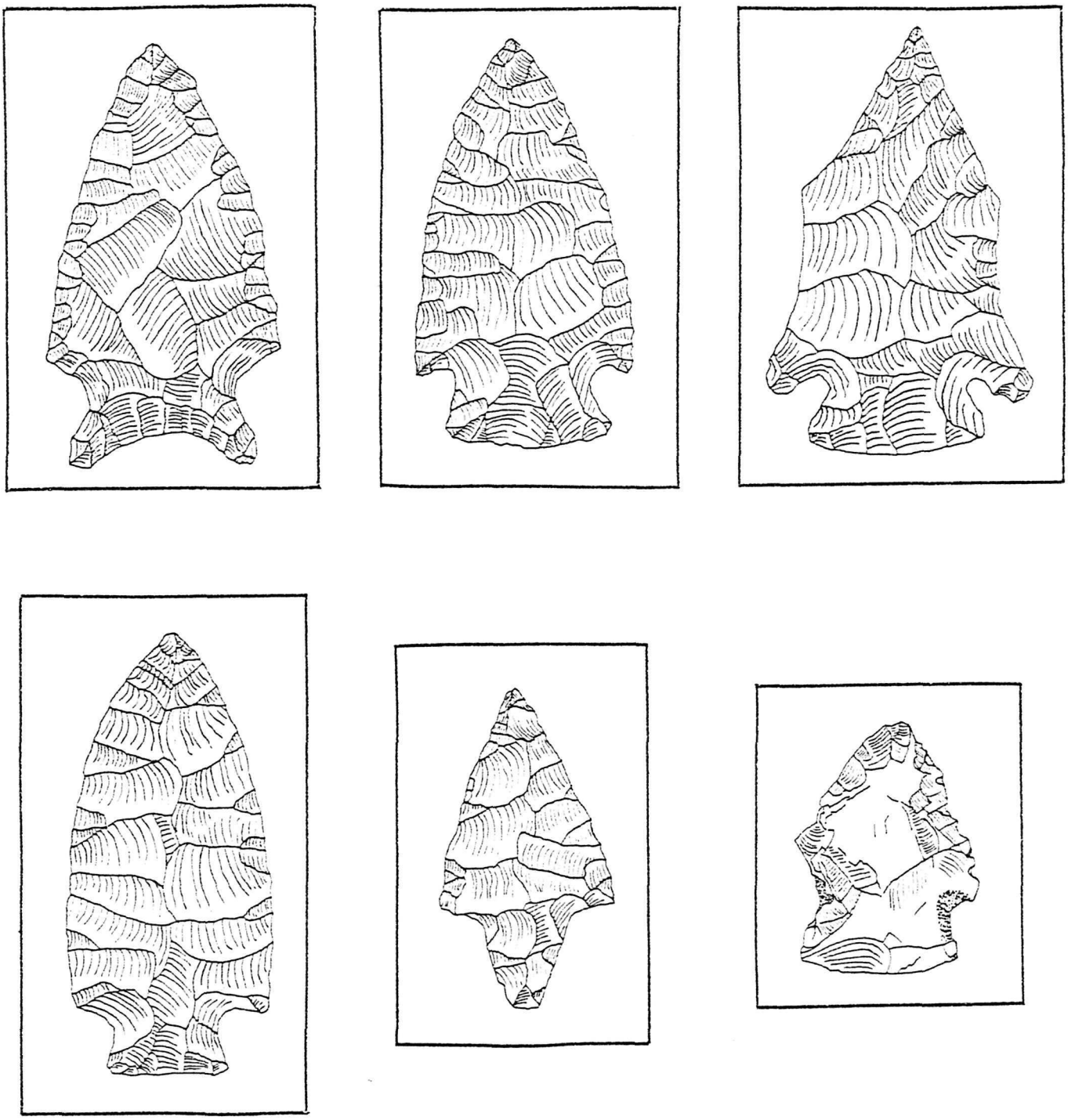

FIGURE 4 MIDDLE - LATE ARCHAIC PROJECTILE POINTS

attributable to this time period include many forms of broad corner-notched or stemmed dart points, such as Afton and Smith (Chapman 1976). Ground stone tools from this substage include manos, axes, bannerstones, plummets and beads. The reason for increased use of quartzite, particularly in areas with abundant chert resources, is unknown.

The Late Archaic substage in the eastern Ozarks seems to represent a period of population expansion. Sites attributable to this time period are particularly numerous and frequently very extensive. A shift in the settlement-subsistence system during this substage is indicated. Whereas freshwater shell-fish were only marginally exploited by earlier occupants of the region, heavy shellfish exploitation during the Late Archaic has been interpretted (Price and Price 1975:50; McMillan 1976:225-226). The presence of cultigens, particularly squash and gourd are known from the western Ozarks (Chomko and Crawford 1978), but their presence in the eastern Ozarks has yet to be documented.

The increase in the number of sites during the Late Archaic corresponds with a diversification in the location of sites (C. Price 1979). In addition to sites on terraces of major rivers (Born and Chapman 1972; Garrison et al 1976), Late Archaic sites are located on levees, ridge slopes and ridge tops overlooking major stream valleys (C. Price 1979:46). The reason for the dispersal of settlement-subsistence systems during the Late Archaic is uncertain. It may be related to an increasing regional population, or perhaps a change in regional climate.

WOODLAND PERIOD

The Woodland Period in the eastern United States is differentiated from the Archaic Period by the widespread appearance of ceramics and burial mounds. Conical and flat-bottomed ceramic vessels appear in association

with burial mounds about 1000 B.C. in many areas of the eastern United States. Horticulture may be associated with these former developments, since native and tropical cultigens have been recovered from several sites of this time period. Large scale regional exchange networks involving exotic goods as mortuary offerings develop during the Woodland Period. Despite numerous technological, economic, and social innovations, the Woodland Period is a continuation of adaptive practices developed during the preceding Archaic Period.

Extensive research in major river valleys have established the validity of three stages of the Woodland Period for many areas of the eastern United States. The Early Woodland (1000 B.C. - 200 B.C.) is characterized by the first widespread appearance of ceramics and burial mounds. In southeast Missouri, this time period is poorly understood. It is known by a variety of names, including Pascola, Burkitt and Tchula. Chapman (1980) has argued that all of these components are temporally affiliated with the Middle Woodland. The Middle Woodland (200 B.C. - A.D. 400) in the eastern United States is most frequently associated with the Hopewell complex. The Hopewell Complex integrated much of the eastern United States through a ceremonial and exchange network which involves a well developed mortuary cult, mound building, and a wide variety of beautiful and exotic mortuary offerings. Non-Hopewellian sites area also present in the eastern United States during this time period. The Late Woodland Stage (A.D. 400 - A.D. 800) follows the decline of Hopewell, and is characterized by a more diverse pattern of local subsistence and technological adaptations. The use of the bow and arrow probably begins during this time period.

The Woodland Period in the eastern Ozarks region is poorly understood. The three stage sequence identified above does not directly apply to the Woodland Period in the Ozarks (Roper 1979). The limited research conducted

in the eastern Ozarks to date has failed to produce evidence of a stratified Woodland sequence. A general shortage of relevent radiocarbon dates also contributes to the problem. At this time, it is possible to distinguish geographic variability in the Woodland Period of the eastern Ozarks, but it is not possible to distinguish many temporally diagnostic characteristics. The presence of large and small projectile points, indicative of atlatl and bow and arrow use probably indicate Early-Middle and Late Woodland occupation. Projectile point forms which are characteristic of dated Early, Middle, and Late Woodland occupations in other areas are found in the Current River valley. Considerable research is needed to refine the local Woodland chronology in the eastern Ozarks.

In the Ozark highlands, the Woodland Period is known as the Meramec Springs Focus (McMillan 1965). The complex is known mainly from shelters, but open village sites adjacent to streams are also known. The village sites have localized middens, and some have subsurface pits. Houses have not yet been identified. Ceramics related to the Meramec Springs Focus are limestone tempered with either plain or cordmarked surfaces. Decorative techniques include incising and punctations around the rim, neck or shoulder of vessels. Projectile points include small arrow points characteristic of the Late Woodland stage, and larger dart point forms probably characteristic of the Early and Middle Woodland stage (Figure 5). The Meramec Springs complex is best known from the Gasconade and Meramec River drainages.

In the Eastern Ozark Border area and the Western Lowlands of southeast Missouri, the Woodland Period is related to the Barnes complex (S. Williams 1954; Phillips 1970). Ceramics during this period are sand tempered with either plain or cordmarked surfaces. Decorative techniques include pinching, bossing, punctates, fabric impressions and net impressions. Projectile points are generally large dart styles with contracting stems. No definite

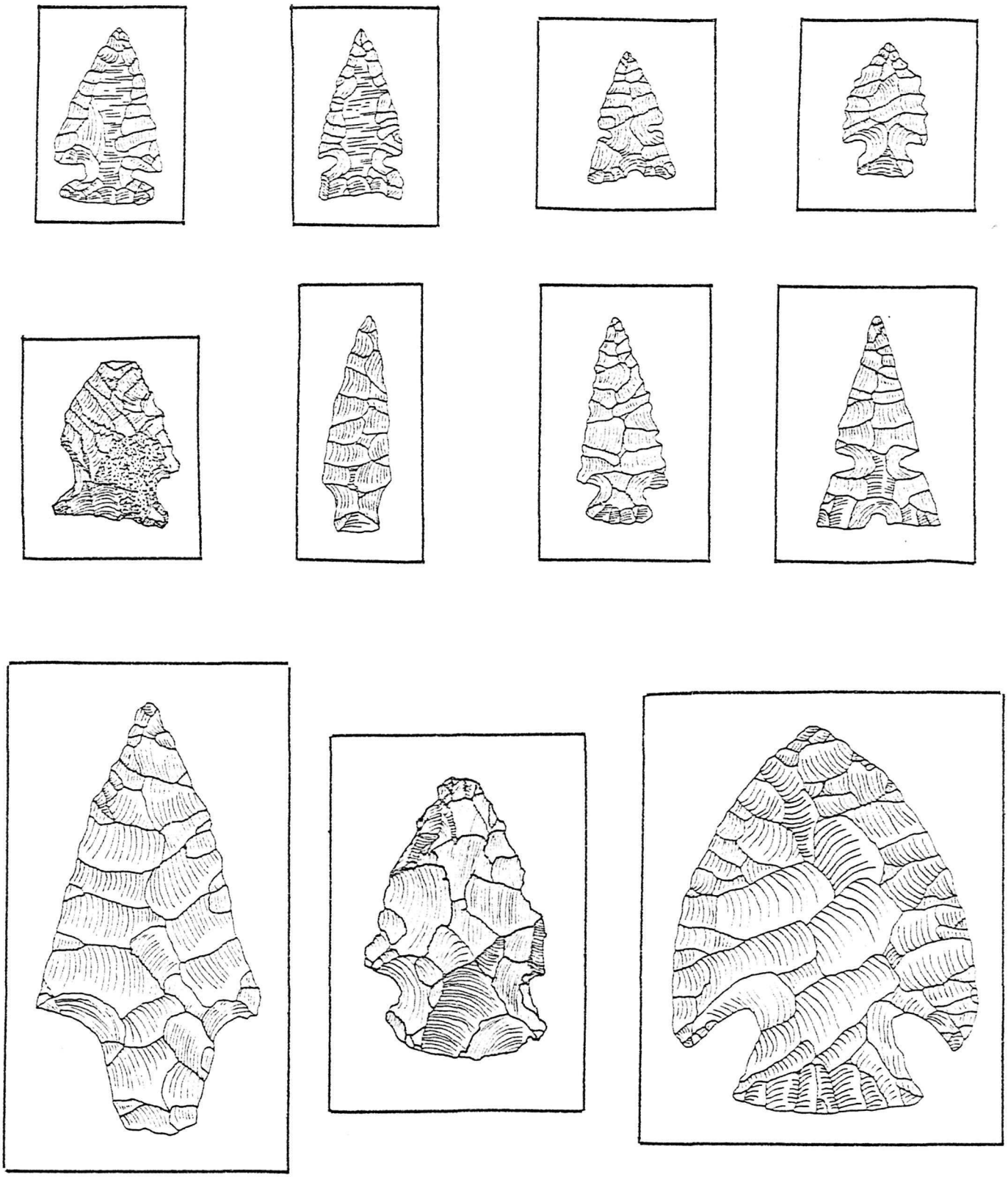

FIGURE 5 WOODLAND and MISSISSIPPIAN PROJECTILE POINTS

evidence of temporal subdivisions within the Barnes complex is available. The sand tempered Barnes ceramic series appears to be replaced in the Ozark border region by a transistional Late Woodland/Developmental Mississippian complex. This has been defined as the Buckskull Phase (Price, Price and Harris 1976). It is characterized by shell, sand and limestone tempered ceramics, occasionally decorated with a simple stamp motif. Shallow side-notched projectile points are part of the assemblage, which is estimated to date between A.D. 750-900 or earlier. Barnes complex sites in the Eastern Ozarks have been reported by Berry, Wrench and Chapman (1940) and C. Price (1976).

The Woodland sequence in the Cairo lowlands has been defined by S. Williams (1954) and extensively revised by J. Williams (1974). Woodland ceramics in the Cairo lowland are generally clay tempered, and are known as Baytown. The earliest phase is called Burkett and is believed to date from 300 B.C. to A.D. 1. Ceramics are cord-impressed, fabric-impressed or plain with incised, punctate or net-impressed decorative motifs. Projectile points are large stemmed forms, with contracting stem forms being most common (Figure 5). A burial mound associated with the Burkett Phase is reported from the Weems site. In the Ten Mile Pond Phase (A.D. 1-A.D. 500), projectile points are generally smaller than those of the Burkett phase and consist of corner and side-notched forms. In this phase, cordmarked ceramics become common and cord-impressed and fabric-impressed ceramics become rare. Burial mounds are not associated with sites attributed to the Ten Mile Pond Phase. The final phase of the Woodland Period in the Cairo lowlands is called Hoecake (A.D. 500 - A.D. 1100). It appears to be a definite mix of Late Woodland and Developmental Mississippian attributes. The appearance of shell tempered ceramics probably occurs at the end of the phase. Most of the Hoecake Phase ceramics are clay tempered and have either plain or cordmarked surfaces. Circular ceramic items called Kersey Clay objects are also characteristic

of the phase. Small arrow points appear along with larger styles during the Hoecake Phase and include triangular and stemmed forms. Small rectangular semi-subterranean houses have been excavated at the Hoecake site and conical mounds with log-lined tombs are also present. It is likely that further study in the Cairo lowland will refine the definition of the Hoecake Phase and show that distinct Late Woodland and Developmental Mississippian components are present. Until that happens, the Hoecake Phase is best treated as transitional.

Woodland settlement patterns in the eastern Ozarks are very poorly understood. C. Price (1979) suggests that two site types are recognizable: small villages and limited activity loci. Villages in the Woodland stage were probably more permanently occupied than the Archaic base camps. Village sites are usually located on terraces of major streams and probably represent year-round occupation by a few families. Limited activity loci are situated near exploited resources and represent short-term occupation with a limited range of artifactual material.

MISSISSIPPIAN PERIOD

The Mississippian period in the eastern United States is generally characterized by maize agriculture, shell tempered ceramics, complex social-political organization, and a settlement system based upon ceremonial centers and/or sedentary villages. The origins of Mississippian culture are uncertain. It has been suggested that Mississippian culture developed as a specific adaptive pattern within the meander belt of the central Mississippi valley, and that Mississippian settlement-subsistence patterns are largely linked to exploitation of this segment of the natural environment (Smith 1978). This model implies that Mississippian exploitation of the eastern Ozarks is limited to temporary excursions for exploitation of particular resources, with little likelihood of seasonal, semi-permanent of year around habitation.

A growing body of data from the eastern Ozarks tends to refute this interpretation of Mississippian adaptation and cultural development (Price and Price et al 1975; Lynott 1980). It appears that Mississippian culture adapted to a wide range of environmental settings in the eastern United States. Although each has some or all of the attributes which link it to the broader Mississippian pattern, each regional Mississippian complex developed a particular adaptive system.

The Developmental Mississippian substage is poorly recognized at this time. Most texts acknowledge the beginning of the Mississippi substage at A.D. 900 - 1000 (Chapman 1980). Radiocarbon dates from the Zebree site in northeast Arkansas (Morse and Morse 1976, 1977), the Narrows site in the Eleven Point River valley (C. Price 1978a, 1978b) and thermoluminescence dates from the Gooseneck site on Current River (Ross and Sutton 1980) provide evidence for an earlier development. These dates suggest that the developmental Mississippian substage dates between A.D. 600 and A.D. 1000.

The presence of shell tempered ceramic vessels with inverted rims and a lack of decoration and appendages appears to be characteristic of the Developmental Mississippian substage in southeast Missouri. Red filmed wares are present in varying frequencies, and vessel forms include large jars, medium jars, bowls and perhaps pans. Projectile points are small and include expanding stems or corner-notched forms (Figure 6).

The Developmental Mississippian substage is called the Big Lake Phase in northeast Arkansas (Morse and Morse 1976, 1977), and the Naylor Phase in the eastern Ozarks of southeast Missouri (Price and Price et al 1975). In addition to these two complexes, Developmental Mississippian occupations are represented at the Hoecake site in the Cairo lowlands (J. Williams 1974), and Old Varney River site in the Malden Plain (S. Williams 1954), and the Kersey site in the Little River Lowlands (Marshall 1965:79) of southeast Missouri.

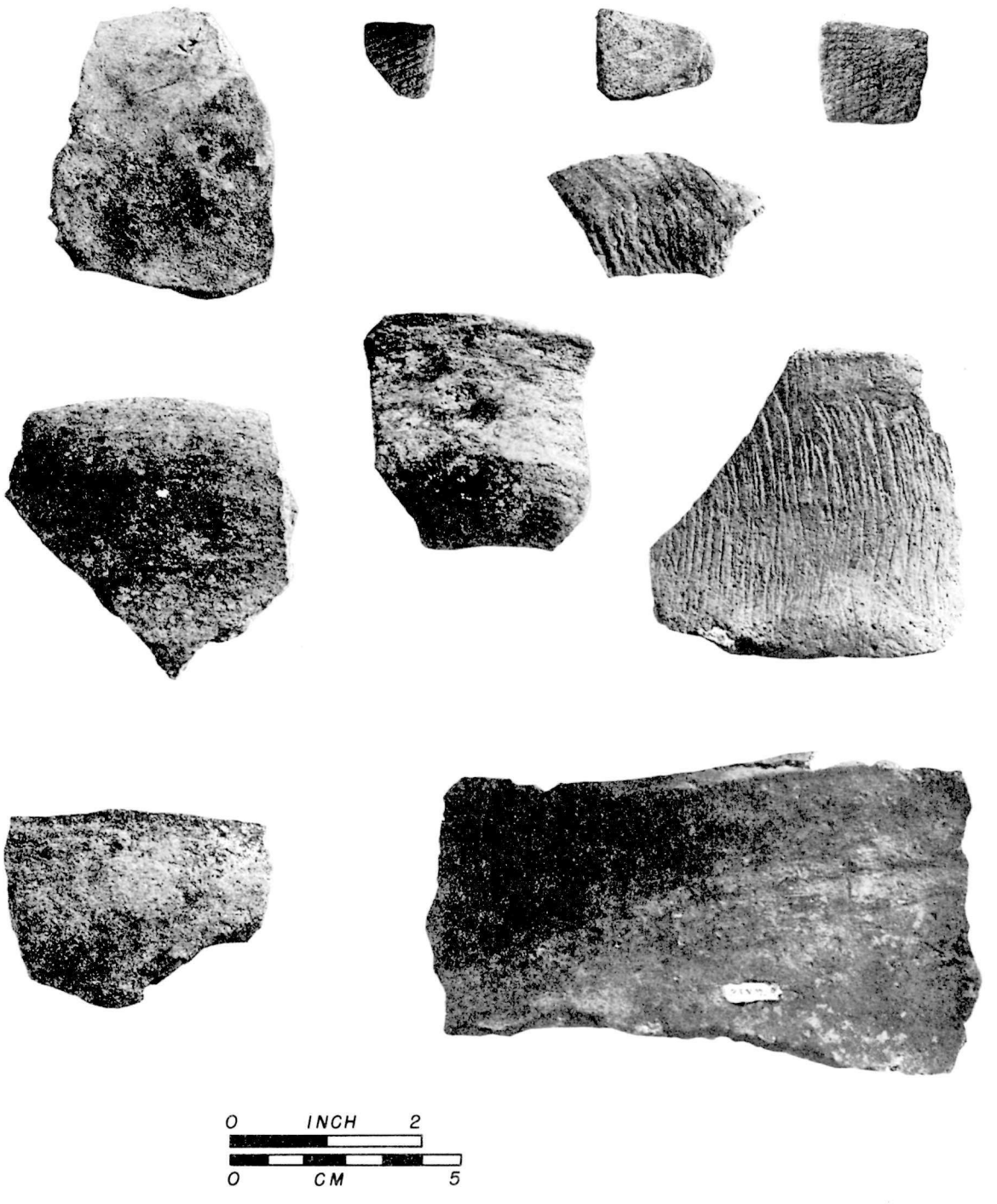

FIGURE 6 WOODLAND and MISSISSIPPIAN CERAMICS

Three types of sites are recognizable for the Developmental Mississippian in the eastern Ozarks (C. Price 1980). The Pigman Mound (Anderson n.d.) is believed to be a temple mound in the Eleven Point valley. The limited data available indicates the mound was probably constructed during this substage, and it may represent a ceremonial center. The Gooseneck Site is representative of small villages or hamlets which occur on terraces of the major rivers in the eastern Ozarks. These sites are the basic unit of the settlement system. Less well known in the existing data base are special activity sites. These extractive sites are located in areas in close proximity to resources being exploited.

The next substage has been called Expansion Mississippian (Price and Price et al 1975) and is associated with the Powers Phase (J. Price 1978; Price and Griffin 1979; Smith 1975) in the Western Lowlands and Ozark border of southeast Missouri. The Powers Phase has been extensively studied by the University of Michigan and the University of Missouri through grants from the National Science Foundation.

The Powers Phase is characterized by a stratified settlement system (Price 1978). Powers Fort (Thomas 1894) is the civic-ceremonial center and the largest site of the Powers Phase. A major temple mound, three smaller mounds, a plaza and an extensive number of houses are enclosed within a fortification trench. The next largest element of the Powers Phase settlement system are villages. These occur in two sizes. Larger villages cover 2.5 acres, while smaller villages cover 1.5 acres. Both contain houses, specialized structures, courtyards, streets and fortifications. Villages sites tend to occur in pairs during the Powers Phase. The smaller villages (1.5 acres) tend to contain cemeteries that serve a larger community than the village itself. Hamlets cover about .25 acres, and are the next site level in the settlement system. No hamlets have been excavated, so little is known about

their structure and function. The smallest sites in the settlement system are special activity sites, which consist of only a few houses on an isolated sand ridge. The Gypsy Joint site appears to be year around habitation for a single family, participating in a wide range of maintenance and extractive activities (Smith 1978).

Powers Phase ceramics include a wide variety of jars, bowls and bottles. Surface decorations include incising, punctating, noding, bossing, and painting. Other significant artifacts include a variety of arrow point styles, shaft straighteners, pottery trowels, ceramic discs, ceramic ear ornaments, ceramic effigies, and a full range of domestic habitation debris (Price and Griffin 1979).

The Powers Phase seems to represent a colonization effort by Mississippian people during the late thirteenth and early fourteenth centuries. There is little evidence of earlier Mississippian occupation and nearly all Powers Phase sites show evidence of being abandoned and burned between A.D. 1320 and A.D. 1350 (Price and Price et al 1975:60). Thus, the sites were occupied only a brief time and lack extensive middens and superimposed houses which are usually associated with prolonged village habitation.

The significance of the Powers Phase to Mississippian occupation of the eastern Ozarks is unclear. Mill Creek chert hoes, which are relatively common on Powers Phase sites, are present in the upper Current River area. It is uncertain whether this represents trade, short-term exploitation of Ozark resources by occupants of the Mississippi valley, or prolonged habitation and settlement.

Shortly after the abandonment of the Western Lowlands by Powers Phase people, there is little evidence of human activity in the region. This is particularly true of the eastern Ozarks. A few large sites are present in the Mississippi valley. These are known as the Armorel Phase (Williams 1980).

The abandonment and limited use of the eastern Ozarks during the end of the prehistoric period is reflected in part in the early historic archeological record as well.

Historic aboriginal settlement

The abandonment of the eastern Ozarks during the late prehistoric period carries over into the early historic archeological record. Although the Osage claimed the area between the Missouri and Arkansas Rivers from the Mississippi River to the Rocky Mountains (Mathews 1968: 345), the permanent villages were located in western Missouri. The eastern Ozark region was probably utilized mainly as hunting territory. Continued movement to the south and west resulted in the Osage abandoning Missouri by 1825 (Chapman 1946:26).

Westward expansion of Euro-American settlement pushed native American groups consistantly westward in the late 18th and early 19th centuries. The Shawnee and Delaware entered southeast Missouri and settled on the west bank of the Mississippi River in about 1784 (Houck 1908:208). The Shawnee-Delaware received lands around Cape Girardeau as part of a treaty with the Spanish government. After an initial period of conflict with the Osage, the Shawnee and Delaware began to move west. In 1806, a Shawnee-Delaware village is reported on the Current River (Houck 1908:218). In 1925, the Shawnee ceded their claim to lands near Cape Girardeau to the U.S. Government (Royce 1896:714). The affiliation of Indian villages located on the Jacks Fork in 1869 (Colton 1979) is uncertain, but these may represent remnants of the Shawnee-Delaware before their final movement into the Oklahoma area. Local histories report the presence of the Shawnee-Delaware and possibly the Choctaw at several localities in Shannon and Carter Counties (Pennington 1971:10-13).

Early Euro-American Settlement (1800-1860)

It is quite likely that the eastern Ozark region was visited and exploited by hunters and trappers prior to the Louisiana Purchase in 1804, but historical and archeological records documenting these activities have yet to be located. The first permanent settlements in the region were established in the early nineteenth century. Zimri Carter settled near present day Van Buren on the Current River in 1807 (Oakley 1970:3). Other settlers followed, and towns began to spring up. Greenville was platted about 1818 (Price and Price 1979), and Chilton was established in 1812 (Oakley 1970). Greenville was established as the seat of Wayne County. In 1833, Ripley County was established with Old Van Buren as county seat. Ripley County was later subdivided in Butler, Carter, Oregon, Shannon, Howell and Ripley counties (C. Price 1979). The present location of Van Buren was selected as county seat for the newly organized Carter County in 1859 (Oakley 1970:6). Shannon County was organized in 1841, with the site of Old Eminence on the Current River near Round Spring as the county seat. During the early nineteenth century, settlement of the eastern Ozarks was slow, and towns were usually limited to a few houses associated with a mill and/or store.

Early historic settlement patterns in the Ozark border region have been intensively studied in recent years (C. Price and J. Price 1978; C. Price 1977; J. Price and C. Price 1978; 1979). Nucleated settlements served as trading centers, and goods were brought into the Ozarks from trade centers along the Mississippi River. The majority of these settlements were not formally platted. Usually the county seat was the only formally platted town. Towns probably served the same economic function as nucleated settlements (trade centers), but also served the additional function of being political centers (county seat). As trade centers, nucleated settlements and towns were located on roads, frequently where they crossed major streams.

C. Price and J. Price (1978:7) recognize three general types of settlement below the level of the nucleated settlement. Hunter-squatters were highly mobile settlers that lived by hunting, trapping and trading. They did not remain long at any single settlement, moving regularly west to stay in advance of civilization. Family farmsteads were the basic settlement unit in many areas of the eastern Ozarks during the early 19th century. Participating only marginally in the marketing of cash crops, small scale farmsteads were oriented toward a multi-crop/animal complex, augmented by hunting wild game. Plantations were based on production of a single cash crop through the use of a captive labor force. Settlements were large and concentrated, including several class levels.

The role of roads and rivers as lines of communication was vital to political, social and economic interaction in the early historic period. Many of the early roads probably developed along aboriginal trails. Houck (1908:227) describes a trail which connected Virginia with the Rocky Mountains. The trail crosses the Ozark plateau through the valley of Big Barren Creek. As primitive as they were, these early roads were the only consistant means of travel and communication in the rough Ozark region.

Mills were also an important aspect of early historic life in the eastern Ozarks. Both grist mills and saw mills were present in region, and these often served as the impetus for the growth of small nucleated settlements. Mills were in operation in many areas in the upper Current River valley before the War of the Rebellion. Pottenger (1945) mentions mills above and below the present town of Chilton, and at the mouth of Mill Creek. Powder mills for the manufacture of gun powder were also significant contributors to the economy of the eastern Ozarks, mainly owing to the presence of saltpeter in many of the local caves (Sauer 1920:153-154).

The mineral resources of the eastern Ozarks were an important part of the early settlement of the region. The French began mining lead deposits near Potosi about 1720 (Pennington 1971:29). Joseph Slater moved from St. Genevieve to Shannon County in 1837 and purchased the mineral rights from a local hunter. Slater established several shallow pit copper mines in the area (Bridge 1930). One of these, the Jerktail Prospect, is located immediately adjacent to the Ozark National Scenic Riverways on the east side of Jerktail Mountain. This early copper mining industry was limited to shallow, surface sites, and business played out as the limited surface deposits were exploited. Bridge (1930) reports that a small town, including a boarding house, general store, blacksmith shop and a copper smelter were built by copper miners on Shawnee Creek. Although copper was by far the most important mineral in the Shannon-Carter county area, manganese was mined on Rocky Creek in Shannon County and granite was quarried near Van Buren in Carter County (Pennington 1971).

Population growth and regional economic development in the eastern Ozarks was slow in the first half of the 19th century. Frontier conditions persisted over much of the area. Although slavery was established by the Missouri Compromise, the Ozarks were in practice a non-slavery area. The majority of inhabitants lived on family farmsteads, growing crops for subsistence with only limited marketing of cash crops. Hunting supplemented swine husbandry in meat procurement. Major items produced in the Missouri territory for exchange were lead, shot, whiskey, flour, wheat, corn, hemp, flax, tow-cloth, horses, beef, pork, dried venison, deer skins, furs, peltries, butter, pecans, iron, zinc, chalk, oil, hops, tobacco, salt, nitre, sulphur, arsenic, antimony, alum, serpentine and graphite (Schoolcraft 1819). Pork in particular may have been an important export (Hilliard 1969).

War of the Rebellion

The slow but gradual settlement and economic development of the eastern Ozarks in the 19th century was abruptly terminated by the start of the Civil War. Situated on the border between two feuding factions, occupants of the eastern Ozarks were generally sympathetic to the Confederate cause (Oakley 1970:18). Although the Curtois Hills area was generally marginal to the major campaigns of the western border, the steep wooded valleys housed numerous bands of thieves, murderers and bushwackers. The terror and unrest associated with widespread lawless conditions resulted in a general depopulation of the eastern Ozarks and tremendous disruption of regional economic patterns.

Most of the major battles along the western frontier were associated with the Wire Road which connected St. Louis, Springfield, Fort Smith and Fayetteville. This military road and telegraph line permitted movement of troops, supplies, and information (Flanders 1979). The battles of Wilson's Creek and Pea Ridge were associated with the road and the logistical advantages of controlling it.

The Curtois Hills and the eastern Ozarks did not witness any significant battles during the Civil War. Military roads connecting Greenville and Van Buren, and Plot Knot and Pocohontas resulted in some movement of regular troops through the area. The most noteable was the battle at the Kinnard farm. Union forces on a mission to procure supplies encountered a Confederate troop and a skirmish ensued. Wounded were treated at the cabin of Widow Mary Ann Snider near the modern intersection of Highway 60 and Highway C on Pike Creek valley (Oakley 1970:18-22). In another encounter, Union cavalry attacked a Confederate camp near Van Buren, driving them from the area and inflicting an unknown number of casualities (Pennington 1971:42).

More typical of the violence associated with the Civil War in the eastern Ozarks were the attacks by outlaws, bushwackers and jayhawkers on local farmsteads and towns. Examples of the violence are provided by Pennington (1971:43), Flanders (1979:206-214), and Oakley (1970). Some of the bands acted as recruiters for their respective army; others acted to capture or kill enemy sympathizers. The net result was widespread destruction of crops, property, and loss of human life. It was nearly impossible to remain neutral. If a farm was not burned by one side, the other side would burn it thinking it was owned by opposing sympathizers. Men were either conscripted into the militia, shot as sympathizers of the enemy, or forced to join an outlaw band. The original site of Eminence, the county seat of Shannon County, was burned by outlaws, and the havoc associated with the conflict totally destroyed the pioneer economic and social networks.

The net result of the Civil War in the eastern Ozarks was a violent disruption of early 19th century economic and social life. A large part of the population fled the border conflict and greatly reduced regional population (Flanders 1979). The tremendous destruction of property greatly retarded economic development, and the loss of a large portion of the adult male population had profound impacts on the demographic and social aspects of life in the region. The war had a very drastic impact on life in the eastern Ozarks, and in a sense created a new frontier and a definite break with past traditions.

Post Civil War Settlement: 1870-1930

In the years following the Civil War, the eastern Ozarks remained sparsely populated and rural. Some families that fled the havoc of the war years returned to their land, but many did not. New immigrants settled and the

region generally retained its dependence upon agriculture. The character of settlement changed somewhat after the war. Family farmsteads were still the basic settlement unit, but the development of towns became increasingly important. After being burned by outlaws, the town of Eminence was rebuilt at its current location on the Jacks Fork and the town of Van Buren was moved to its current locality in 1867 and established as the seat of Carter County (Oakley 1970). The return to law and order stimulated the growth of new towns and local businesses, like the construction of a mill and blacksmith shop at Alley Spring in the 1870's (Curtis 1973). In general, population growth during the post-war era was slow. The only exception was the rapid growth associated with the exploitation of timber resources by lumber companies.

The vast oak and pine forests of the eastern Ozarks remained pretty much intact through the Civil War years. Small scale agriculture did little to diminish the vast quantity of timber in the region. After intensively logging the forests of the northeast and the Great Lakes, national lumber interest turned their attention to the eastern ozarks in the 1880's. The presence of local labor, good railroad transportation and low cost timberland, coupled with a mild climate permitting year around logging and proximity to the plains area lumber market attracted the eastern logging companies (Hill 1949:14-21).

The construction of railroads to serve the lumber industry brought economic and social change to the Ozarks. Railroads created the stimulus for the development of towns. Initially serving as depots and growing into economic centers, the towns of Mountain View, Winona, Low Wassie, Fremont and Hunter sprang up along the Current River Railroad after its construction in 1888 (Flanders 1979). Those towns without access to the railroads, like

Eminence, lagged behind. In addition to the major railroad lines connecting mills, depots and market centers, numerous local tramways were built to assist lumber companies in moving the timber to the mills. Major tramlines were in use 5 to 10 years, while minor lines were in service a year or less (Hill 1949:53).

The significance of the railroad and the lumber industry to the growth of towns is best illustrated by the Mill towns of Grandin and West Eminence. Grandin was established in 1875 as the depot of Tolliver Pond, but in 1887 the Missouri Lumber and Mining Company moved its main offices there. The town was renamed after a major stockholder and became the largest sawmill complex in Missouri (Oakley 1970). A natural millpond covered 3.5 acres (Hill 1949:33), and was used to store up to 500,000 board feet of logs (Harris, Price and Price 1978). The intensive timber harvesting of the Missouri Lumber and Mining Company gradually reduced the supply of locally available timber in the Grandin area. In 1907 a railroad was built to West Eminence on the Jacks Fork and the company moved its mills and equipment there. Ferguson (1969) provides an excellent description of West Eminence during the lumber boom. The town covered 160-200 acres, including a 60 acre mill complex. Over 300 structures, including general store, post office, doctors clinic, railroad depot, ice house, slaughter house, a 28-room office complex, community hall, two hotels, warehouse, shingle mill, hub mill and residences were present in 1910. It remained a beehive of activity until the closing of the mill in 1927.

In addition to major mill towns, lumber era sites in the eastern Ozarks included large and small logging camps without mills. Larger camps like King Bee on the Little Black River were small towns with a commissary, barracks,

residences, blacksmith shop, and possibly an engine repair shop (Harris, Price and Price 1978). Smaller camps were used to house loggers, and were usually located along tramlines (Hill 1949:50).

The Missouri Lumber and Mining Company specialized in harvesting yellow pine from the uplands (Hill 1949:40). After it was depleted in the eastern Ozarks the company moved on. Smaller lumber companies harvested oak and other hardwoods for barrels, railroad ties, wagon axles, and interior woodwork for houses. Chicopee on the Current River Railroad became a collection center for railroad ties (Oakley 1970). The ties were floated down Current River to Chicopee and loaded on railroad cars for shipment to the west.

Settlement patterns during the post Civil War era changed from those of the early 19th century. The family farmstead in well watered valleys with good soil were still numerous, and a large part of the population was devoted to small-scale agriculture. However, towns became larger and more numerous, filling the role of economic, social and political centers. During the lumber boom, four additional types of sites were part of the lumber industry (C. Price 1978:100). Large sawmill towns like Grandin and West Eminence were the center of lumber industry activities. These towns included company offices, warehouses, sawmills and residential quarters. Rough and finished grades of lumber were produced and shipped to markets in the plains. Large collection camps served as secondary centers in major cutting areas. These camps served as collection centers for logs and dispersal centers for supplies and instructions to workers in cutting camps. Collection centers, like the Mule Camp associated with the Missouri Lumber and Mining Company, included quarters, stores, shops and barns (Price and Price et al 1975:242). Small cutting camps were temporary housing for workers in a cutting area.

These camps were only operational for brief periods, and then crews and camp equipment were moved to new cutting areas. Tram lines were the heart of the logging industry. Miles of track were laid into areas to permit large-scale removal of timber. While in operation, tram lines carried logs, loggers, food and supplies and all the equipment of the logging industry. When cutting in an area was completed, tramlines were taken up and reused in a new area (Hill 1949:53).

The end of the lumber era brought about a major change in the economic and social pattern of life in the eastern Ozarks. The railroads and lumber industry brought a cash economy and all the acouterments of modern living to an isolated rural area. Traditional economic and social patterns were disrupted as farming was abandoned in exchange for jobs with the railroad or lumber companies. When the lumber industry moved on, the forests were gone and so were the jobs. The period since 1930 is the story of the eastern Ozarks adaptation to post-lumber era problems. The problems relating to this era are current and beyond the scope of this study.

IV. Survey Methods and Results

The areas investigated during the course of this survey were identified by the park staff as being areas which receive heavy visitation, and may therefore require development of additional facilities at some point in the future. Survey techniques were developed to provide efficient and effective coverage of areas with variable vegetative cover. Although the survey coverage of each survey zone has not been completely systematic, investigations have been sufficiently intensive to determine whether substantial archeological remains are present. The nature of archeological manifestations in the Ozark National Scenic Riverways is not totally understood as a result of this study, but the study has been contributed considerable data toward this problem. It should be emphasized that the focus of this study has been on identification of archeological resources in selected areas of the National Scenic Riverways. To meet these goals and provide maximum protection for the resources during the course of the investigation, methods which minimize the impact of archeological research were selected. It is particularly important to remember that the study is essentially an inventory program, with efforts at site evaluation being postponed for future studies.

General Survey Techniques

Each area investigated as a part of this study was systematically examined for evidence of surface archeological remains. A field crew would walk over the survey zone at 15 to 20 meter spacing while looking for areas of surface exposure. Areas in which the surface was exposed were intensively examined. In areas in which surface visibility was excellent (e.g. plowed fields), the survey tract was systematically covered at 15-20m intervals.

Areas which were obviously disturbed by roads, waterlines, or other modern construction were given only cursory examination.

If the pedestrian surface surveyed revealed that historic or prehistoric archeological remains are present, efforts were made to delineate the size and configuration of the site. The emphasis of this activity continued to be surface examination, with shovel testing being kept to minimum. The purpose in reducing shovel testing at known sites is to reduce disturbance to the site caused by archeological investigations. Since this study was geared to identifying the presence of archeological sites and compiling a site inventory for development areas, it was decided that shovel testing should be limited to this purpose. More comprehensive evaluative testing for potential National Register eligibility would be conducted during another project.

If surface examination of survey zones failed to reveal evidence of archeological remains, the degree of surface vegetative cover in the survey zone was evaluated. If vegetative cover was minimal and surface exposure good (e.g. plowed field, eroding area) then it was determined that significant archeological remains are not present. If vegetative cover (grass, brush, trees) is sufficient to obscure archeological remains, systematic shovel testing of vegetated areas was initiated. Shovel testing was conducted through excavation of a series of transects with shovel test holes being spaced at 10-15 meter intervals. Each shovel test consisted of approximately 25 cm in diameter hole, excavated to 30 cm below surface or until rocky subsoil was encountered. Matrix from shovel tests was carefully examined by troweling to determine whether artifacts were present. All objects of potential human manufacture or alteration were collected and taken to the lab for study. If intensive shovel testing failed to reveal evidence of

archeological remains, the survey zone was considered to be lacking in archeological resources. The author recognizes that a potential bias against sites with very low artifact densities has been created by the survey techniques used in this study. However, the high density of archeological remains in the park makes it easier to find areas with sites than to find areas where sites are not present. Sufficiently intensive investigation of any area in the park is likely to yield an object of possible human manufacture (non-diagnostic shatter) or alteration (fire-cracked rock). Thus, the techniques used in this study provide a cost effective method of determining whether interpretable archeological resources are present, while reducing damage to recognizable sites.

Collection of surface artifacts was not covered in a systematic manner during the course of this study, so quantification of material collected from sites have not been included in this report. At the onset of the survey in 1979, the emphases of the project was a non-collection strategy. This is desireable in protected areas of the National Park System, because it perpetuates the in situ preservation of the site. During the course of the survey it became apparent to the research team that the heavy visitation rate was resulting in heavy collecting of the more obvious surface artifacts. As this became more apparent, the research team began making surface collections that emphasized temporally and functionally diagnostic artifacts, but usually included lithic debris and other non-diagnostic cultural remains. These collections are curated at the Midwest Archeological Center.

Survey Areas and Results

The survey of potential development areas was guided largely by input from the staff of Ozark National Scenic Riverways. Existing developments which

might require facilities or improvements that would include ground disturbance have been identified by Mr. Marcel Crudele, Landscape Architect (Figure 7). Each of the areas discribed here were treated as individual survey zones. Although methodology varied somewhat from area to area, the general methodology described in this section applied to all survey zones.

Although vegetative cover was the most constraining factor in field survey, other factors also inhibited the survey process. Since all survey areas are existing developments, facilities (e.g. parking lots, visitor support facilities), and visitor use also restricted the areas which were examined and methods which were used. For example, shovel testing in occupied campsites was considered inappropriate and shovel testing under gravel roads and parking lots was nearly impossible. Since each survey zone presented specific methodolgical problems, the following discussion will describe each of the areas surveyed and the results of the survey.

During the course of the survey, notes describing the progress and results of the survey were prepared. These were used to generate survey site forms which were submitted to the Archeological Survey of Missouri and assigned trinomial site numbers. Copies of these site forms are on file at the Midwest Archeological Center. Photographs, both black and white negatives and color slides, pertaining to the survey are also on file at the Midwest Archeological Center. Artifacts collected during the course of the survey have been processed and are curated at the Midwest Archeological Center. United States Geological Survey maps showing the areas surveyed and the sites located during the study are on file at the Midwest Archeological Center and the Ozark National Scenic Riverways headquarters.

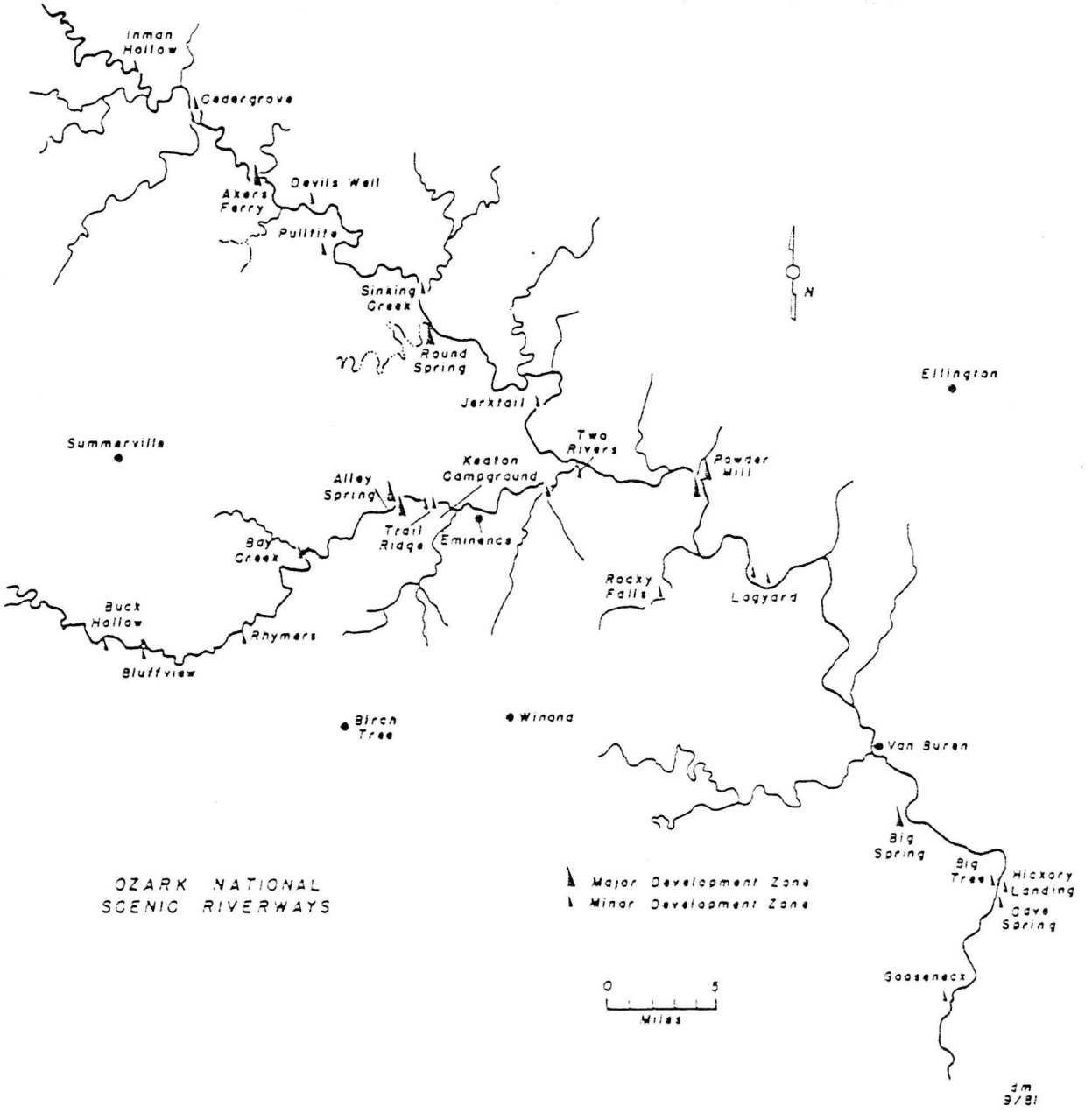

Figure 7: Potential Development Areas

Inman Hollow - A small picnic and day use area at the mouth of Inman Hollow. At the time the area was visited by the Midwest Archeological Center survey team, the area was covered by ripening winter wheat. Although the area has not been surveyed, the topographic location of the development is similar to other areas where known sites are present. In particular, we believe that the bench or terrace along the Current River is likely to contain archeological remains. There is less likelihood of archeological remains being present in the small floodplain area which appears to be the focus of visitor use.

Cedargrove - This area includes the floodplain, terraces and adjacent valley sides of the Current River from the mouth of Big Creek upstream approximately 1.5 kilometers. The only brush and tree cover of consequence is along the floodplain and hillsides, and examination of these areas was definitely hindered. Surface exposure of the terrace formations was better, but heavy grass cover does inhibit surface visibility. Shovel testing was concentrated in these terrace areas which are being considered by the park for future development. Surface survey and shovel testing revealed the presence of three archeological sites 23DE31, 23SH117, and 23SH118. Sites 23DE31 and 23SH117 appear to be large prehistoric sites with subsequent historic occupation, while 23SH118 is the former logging era town of Cedargrove.

Akers Ferry - This development includes a large area of terrace, floodplain, hillsides and ridges along the Current River and Gladden Creek. Existing development includes campgrounds, river access, concession store and canoe rental and a maintenance facility. Several archeological sites

were known to exist in this area prior to the initiation of this survey. The Akers Ferry site (23SH23) was recognized as a large habitation site, and possible prehistoric burial cairns were recorded on ridges overlooking this site (23SH21 and 23SH65). Although vegetation, and to a lesser degree visitor use, made survey conditions difficult, most of the area has been intensively examined. The only exception to this is the Akers Ferry Group Campground, which was receiving heavy visitation at the time it was visited by the survey team. A prehistoric archeological site is definitely present at this locality, but little else is known at this time. Another archeological site (23SH106) was recorded near the current campground amphitheater, and has received subsequent testing to evaluate its potential significance. The results of site testing will be presented in another report.

Devils Well - This minor development is associated with a large sinkhole cave. Limited survey of the area immediately adjacent to the cave opening and existing facilities failed to reveal evidence of archeological remains. Previous construction of floodwater retention structures in the adjacent drainage have greatly altered the topography in this area. It is unlikely that intact archeological remains are present.

Pulltite - Archeological survey of the Pulltite area has included the individual campground, group campground, Pulltite spring landing and the terrace upon which the main comfort station is located. Surface exposure in all these areas is limited to erosional areas along roads, paths and campsites, and a cultivated foodplot on the terrace behind the main comfort station. Archeological survey of the area revealed the presence of sites on either side of an unnamed spring branch within the group campground (23SH94; 23SH122). Both sites

appear to be prehistoric. Evaluative testing at 23SH94 has been completed and a report is being prepared. Another archeological site in the vicinity of the Ranger station and residence was reported to the survey team, but the area has not been intensively examined. The general paucity of archeological remains on the main terrace at Pulltite was somewhat surprising. Since the area was visited twice while in cultivation, it is certain that vegetative cover is not obscuring surface archeological remains.

Sinking Creek - This is a minor development area at the mouth of Sinking Creek. Heaviest visitor use occurs on the gravel bars along Sinking Creek and Current River. Heavy vegetation on the hillslope above the gravel bars made survey difficult, but archeological remains were observed in the limited areas where surface exposure is present. Site 23SH97 was recorded during the survey and seems to cover much of the development zone.

Round Spring - This is a major development oriented around a large spring which surfaces in a sinkhole. Development facilities include campgrounds, ranger and maintenance stations, ranger residences, parking lots, concessions stores, picnic shelter and river accesses. The area served as the Round Spring State Park before the authorization of the National Scenic Riverways. Vegetation on the hillsides surrounding the development is dense but heavy visitor use requires regular mowing of terrace areas within the development. The Round Spring site (23SH19) has been known for many years as a prehistoric cemetery and habitation site. The area was surveyed by the University of Missouri - Columbia in 1972 (Garrison et al 1976). The following sites were recorded and tested: 23SH80, 23SH71, 23SH72, 23SH73, 23SH82. Underwater exploration of Round Spring resulted in the discovery of submerged prehistoric

artifacts in the grotto area of the spring, and the area was assigned site number 23SH96 (Carrell, May and Garrison 1980). Evaluative testing in 1981 by the Midwest Archeological Center suggests that 23SH96 and 23SH70 are simply components of 23SH19. A report of this research is being prepared.

Jerktail - A minor development associated with a gravel bar on the Current River. The gravel bar appears to be the focus of visitation and surface exposure is sufficient to document the absence of archeological remains. The hillslope above the gravel bar is a formerly cultivated field. Prehistoric and historic artifacts are exposed in the road and other exposed areas. A family cemetery is present adjacent to the access road. The archeological site is designated 23SH121.

Two Rivers - This development includes terrace and floodplain deposits along the Current River at the mouth of the Jacks Fork. Terrace areas are used as a campground and concession facility, and are covered by regularly mowed grass. The lower landing and surrounding hillslopes are more heavily vegetated. Archeological survey of the terrace revealed the presence of a prehistoric site (23SH101) with an historic component. Heavy vegetation inhibited location of a second prehistoric site near the lower landing reported to the survey team by an amateur archeologist. Material collected from this yet to be recorded site is indicative of the Early Archaic period.

Rocky Falls - A scenic area along Rocky Creek which appears to be used mainly for picnic and swimming activities. The areas adjacent to the falls are steep and rocky with little soil mantle and no evidence of archeological remains. The small parking lot adjacent to the pool at the base of the

falls has some evidence of lithic debris. The area has been heavily disturbed and it is uncertain whether the materials relate to the area or were moved in as fill for low areas of the parking lot. No site designation has been assigned.

Powder Mill - This area of the park is also called Owls Bend. A campground and visitor center are present along the north side of the Current River adjacent to Powder Mill Creek. On the opposite side of the Current River, the National Park Service maintains interpretive and maintenance facilities and employee residences. On the north side of existing highway 106, several large food plots are cultivated irregularly. The entire area was surveyed by the University of Missouri in 1972 (Garrison et al 1976) and the following sites were recorded: 23SH74, 23SH75, 23SH77, 23SH78, 23SH79, 23SH80 and 23SH81. Additional survey in this area by the Midwest Archeological Center has resulted in the location and recording of 23SH105. Vegetative cover is heavy along stream banks and hillsides, but level areas which might be expected to contain archeological remains are reasonably accessible. No evidence of the historic powder mill reported to be present near the mouth of Powder Mill Creek was observed.

Logyard - This development consists of a campground and river access on a narrow dissected terrace. Vegetation in the campground is limited and surface exposure on this area of the terrace is good. A low density prehistoric site with evidence of an historic school is present along the edge of the terrace and designated 23SH98. In the boat landing area, exposure on the floodplain gravel bar is good and no evidence of archeological remains were observed. The floodplot on the terrace above the landing also provides good exposure, and a large prehistoric site has been recorded as 23SH100.

Big Spring - This large development extends from Chub Hollow north along the west side of Current River to the former State Park Landing Strip above the mouth of Sweezie Hollow. The development includes cabins, parking lots, concession facilities, roads, campgrounds, trails, etc. A large part of the development consists of floodplains which are regularly mowed for camping and picnicing activities. Heavy brush and forest cover is present on hillsides, terraces and in areas of the floodplain. The development was surveyed by the University of Missouri in 1972 (Garrison et al 1976) and resulted in the recording of the following sites: 23CT104, 23CT105, 23CT106, and 23CT107. Additional survey in the vicinity of the cabins above the Big Spring Lodge by the Midwest Archeological Center resulted in the location and recording of sites 23CT108 and 23CT109.

Big Tree - A development area used primarily for primitive camping. Heavy tree cover is present along the river bank with grass over most of the development zone. A foodplot is present on the terrace behind the development. The area was surveyed shortly after cultivation and evidence of archeological remains were very limited. No archeological site has been recorded at this locality, but the foodplot should be examined after rain has fallen making potential artifacts visible.

Cave Spring - A small camping area adjacent to a spring branch which flows from a small cave. The area is very rocky with limited soil cover. The steep hills surrounding the development are heavily vegetated and exposure in the development is limited to roads and trails. No evidence of archeological remains were identified by the survey team. An historic structure of unknown age and function is present beside the spring branch, but no evidence of artifactual materials were identified.

Hickory Landing - This area serves as a river access and primitive campground. Most of the development is situated on a stabilized sand and gravel bar in the floodplain of the Current River. Vegetation is heavy in places but there is sufficient exposure to determine that archeological remains are not present. Intensive survey of the pasture on the terrace behind the development also failed to reveal evidence of archeological remains.

Gooseneck - This area was formerly known as Haws Campground when the area was managed by the United States Forest Service. The Gooseneck campground consists of waterlines, a vault toilet, picnic/camping areas, an access road and river access on the floodplain and a terrace along the Current River. The Gooseneck site (23CT54) was known in 1960 when Chapman (1960) described the archeological potential of the Current and Eleven Point Rivers. The midden area of the site was tested by the University of Michigan in 1972 (Smith 1973, 1975). The Midwest Archeological Center has conducted additional evaluative testing in 1979 and 1980 (Lynott 1980).

Buck Hollow - A small development located on a bench or terrace on the Jacks Fork adjacent to the Highway 17 bridge. Heavy vegetation and gravel from road and parking lot development obscure the surface in most areas. Shovel testing and examination of erosional areas along the river bank revealed the presence of 23TE51. Survey coverage emphasized the western area of the development zone with only cursory examination of areas around private residences.

Bluffview - A primitive camping and day use area on bench and terrace along the Jacks Fork. Heavy pasture vegetation obscures most of the area but

prehistoric materials are exposed in several roads. Historic material, probably relating to a former Salvation Army camp is also present. The site has been designated 23SH116.

Rhymers - A primitive camping and day use area on a bench or terrace of the Jacks Fork. Extensive vegetation inhibits survey coverage, but prehistoric and historic artifactual remains are exposed in a road bed. The site is designated 23SH115.

Bay Creek - This minor development is utilized mainly for primitive camping, day use and river access. The gravel bar along the floodplain is thoroughly churned from regular floods and exhibits no evidence of intact archeological sites. A small terrace immediately above the floodplain and adjacent to Bay Creek appears to be a formerly cultivated field. Prehistoric artifacts are exposed in pathways across this geomorphologic feature, but the density of vegetation prohibits determination of site size. The site is designated 23SH120. On a ridge above this flat terrace or bench, historic and prehistoric artifacts are exposed in an unimproved road. The site is designated 23SH119, and the historic component may relate to the Dyer Cemetery which is located farther up the hill.

Alley Spring - This is a major development oriented around a large spring. The spring branch was modified in the 19th century to provide water power for a mill which is still present. Other structures pertaining to the 19th century town of Alley are no longer standing along the spring branch, but subsurface archeological manifestations are anticipated. The development

includes parking lots, river access, campgrounds, picnic areas, comfort stations, ranger stations, maintenance facilities, employee residences, concessions facilities and interpretive trails. The Alley Spring area was first surveyed by the University of Missouri (Born and Chapman 1972), and resulted in the recording of sites 23SH57, 23SH58, 23SH59, 23SH60, 23SH61, and 23SH62. Subsequent survey by the Midwest Archeological Center has resulted in the recording of two additional sites, 23SH93 and 23SH114. The location of several other potential archeological sites have been identified by park personnel and local amateaur archeologists, but survey coverage has not been expanded to these areas to verify this information.

Trail Ride Horse Camp - This development complex is situated at the edge of the Jacks Fork valley on a large terrace or bench. The development includes residences, barns, stables, corrals and roads relating to the former Cross-Country Trail Ride Concession. Large parts of the development area covered by tall-grass or pasture vegetation making archeological resource recognition difficult. Prehistoric lithic debris has been observed in the roads and trails and a site designated 23SH107 has been recorded.

Keaton Campground - This is a small primitive camping area on the south side of the Jacks Fork. Much of the area to the west of the campground is cultivated as part of the wildlife foodplot program, making surface visibility excellent. The Culpepper Cemetery site, 23SH14, has been recorded in this field. The site is very large and there is a strong possibility that it extends into the campground, but this has yet to be determined by surface observation of artifacts or shovel testing.

Shawnee Creek - This is a primitive camping and day use area which also includes a maintenance shop. Although much of the area was cultivated in the past, it is now largely covered by pasture or high weeds. Sites 23SH11 and 23SH37 was known to be present in the area prior to the initiation of this survey. Field survey by the Midwest Archeological Center resulted in the location and recording of site 23SH99. Several other potential site locations have been identified by Mr. Alan Banks, but the survey team has not been able to formally record these sites.

Discussion

The field survey conducted by the Midwest Archeological Center during 1979 through 1981 resulted in the location and recording of over 30 sites. The inventory of archeological sites presented as Appendix A of this report is a summary of data pertaining to sites reported during this project, as well as known sites reported by amateur archeologists, the University of Missouri and Southwest Missouri State University. The inventory is only a small fraction of the number of prehistoric and historic archeological sites which exist in the Ozark National Scenic Riverways. Precise estimates of the areas which have been surveyed thus far is not possible, but the development areas examined as part of this study represent a very small part of the total park area. Clearly, the density of archeological remains is the highest of any park in the Midwest Region and may be nearly as high as any park in the National Park system.

The archeological survey of development areas reported here provided the research team with an opportunity to develop perceptions about the location and types of sites which are present in the Ozark National Scenic Riverways.

The statements about site type and site location presented here are based upon unquantified observations from a limited sample of the park. Some of the generalizations which are presented are very likely to apply to unsurveyed areas of the park, while other generalizations will be contradicted by continuing research. More intensive study of known sites will greatly improve our ability to interpret the existing resource base. More intensive study of private artifact collections pertaining to the park will also contribute greatly to this objective.

The survey areas examined as part of this study are largely situated on floodplain deposits, terraces and erosional benches along the Current and Jacks Fork rivers. Survey coverage only rarely extended to secondary valleys, ridge top divides or upland settings. This bias certainly affects our perception of site locations and the processes which led prehistoric and historic occupants of the area to inhabit specific areas.

The majority of known sites in the park are situated on terraces or benches which are usually 2 to 4 meters above the modern floodplain. These situations may vary from narrow erosional benches that gently slope from a hillside toward the river (Figure 8) to obvious terrace formations (Figure 9). The narrow configuration of most valleys in this area of the eastern Ozarks generally prohibits the development of large broad terraces, particularly in the upper portions of the drainage. Prehistoric and historic sites are often located on these geomorphologic features, presumably because they are near water but above regular highwater levels. Virtually any flat area, 2-4 meters above the floodplain, appears to have a high probability of containing archeological remains. The fact that these are desirable places for modern campgrounds coincides inconveniently with prehistoric and historic settlement patterns.

Figure 8: 23SH94, located on an erosional bench.

Figure 9: 23SH19, testing archeological deposits in terrace near Round Spring.

Floodplain and river channel settings provide a strong contrast to the high density settlement pattern described for terraces and terrace-like benches. Floodplain settings are scoured regularly by floodwaters and archeological remains found in these settings have little resemblance to their original content. Gravel bar deposits provide an excellent example. Numerous prehistoric artifacts are found annually on gravel bars by people engaged in hiking, canoeing, swimming or camping. The artifacts occur in varying stages of rounding from being rolled across the gravels by the river currents. The artifacts probably originate from river edge archeological sites and become incorporated into the gravels, although it is highly likely that prehistoric and historic occupants of the valley visited gravel bar deposits. The constant shifting of these gravels makes interpretation of archeological remains difficult by mixing artifacts of different time periods. Although numerous artifacts are present in floodplain and river channel settings, these areas have a low probability of containing intact archeological deposits.

Limited survey of ridgetops, bluffs, and hills adjacent to major river channels has indicated that archeological sites are present in these settings. Thus far, survey and testing of sites in these situations has been too limited to determine whether the sites in these settings differ from sites on terraces or benches along the river in any appreciable manner. Sites on the low bluffs, ridges and hills have been subjected to considerable erosional processes since the lumber era in the eastern Ozarks, and it is likely that the distribution of sites in these settings has been altered to some degree.

Archeological survey in secondary valleys, uplands and ridgetop divides has been limited within Ozark National Scenic Riverways and no generalization about prehistoric and historic sites may be offered. It should be noted

that sites have been recorded in these situations in areas of the adjacent Mark Twain National Forest (C. Price 1976). Whether similar sites are present within the National Scenic Riverways remains to be determined.

During the last 3 years, archeological investigations have greatly expanded our understanding of the culture/history of the eastern Ozarks. This survey along with testing at several sites which will be the subject of additional reports have greatly modified our view of Ozark archeology. These studies have demonstrated that a wide temporal range of sites are present, with many temporal periods demonstrating surprising similarity to better known areas of southeast Missouri.

The earliest evidence of human occupation in the Ozark National Scenic Riverways consists of scattered fragments of fluted projectile points. Thus far, all such specimens have been recovered for surface finds. Chapman (1975:70-71) illustrates three Clovis Points from the Current-Eleven Point River drainages, one of which is probably from 23CT2 (Chapman 1960:32; Price and Price 1980). Mr. Alan Banks has collected fragmentary fluted points from 23SH97 and 23SH105. The nature of early human occupation of the valley is uncertain, but future study of relevant materials in private collections may shed light on this issue.

Archaic sites are particularly numerous in the Current and Jacks Fork River valleys. Dalton points and other styles which are characteristic of the Early Archaic period are relatively common. These point styles have been collected by amateur archeologists from the surface of several sites in the park, and Dalton point fragments have been recovered from test excavations at the Akers Ferry site (23SH23). Middle Archaic occupation of the Current River is also clearly documented by surface collections. Banks (1978:9) illustrates several Graham Cave Side-Notched and Jakie Stemmed Points.

The Late Archaic is particularly well documented in surface collections from the area, and test excavation at 23SH93, and 23SH94 have revealed some evidence of Late Archaic occupation. Although evidence for Archaic period material culture is plentiful within the park, meaningful statements about human adaptation are based largely upon extrapolation from other regions or general models from hunting and gathering peoples.

The chronology and distribution of Woodland components within the park is only partially understood at this time. Limestone tempered Meramec Springs ceramics are found at sites on the upper Current and Jacks Fork Rivers, and have been recovered from test excavations at 23SH19 and 23SH23. Sand tempered ceramics which are characteristic of the Woodland period in the Western Lowlands region occur in the areas of the park below Big Spring, with a few sand tempered sherds have been recovered from test excavations at the Gooseneck site. The Woodland occupation of the park area between Round Spring and Van Buren is less well known, but Williams (1968) and Garrison et al (1976) report clay-temered ceramics characteristic of this time period. Woodland period sites in the Ozark National Scenic Riverway appear to represent intensive exploitation of local resources and semi-sedentary occupations. Dark midden deposits are associated with Woodland period occupations at 23SH19 and 23SH23. The chronology of these Woodland sites is poorly understood, with the only known dates being derived from thermoluminescence dating of limestone tempered sherds from 23SH23 (Ross and Sutton 1981).

Recent archeological investigations have greatly improved our understanding of the age and nature of Mississippian stage occupation of the Ozark National Scenic Riverways. Previously, Mississippian sites were believed to be few in number, with the drainage lacking evidence of the early phases of development

(Garrison et al 1976:18). Recent site testing has demonstrated that Mississippian occupation of the park area began as early as A.D. 650 - A.D. 850, and evidence for Mississippian settlement is common and widespread in the valley. Intensive Mississippian occupation is documented at 23CT54, and a Mississippian cemetery is known from 23SH19. Evidence of short-term Mississippian habitation is known from 23SH23 and 23SH109, which may represent camps of foraging groups engaged in resource procurement and preparation.

Historic native American sites have not been documented within the Ozark National Scenic Riverways. The Colton (1979) sectional maps indicate the presence of Indian villages near Alley Spring in 1869. Morrow (1981) illustrates the location of Delaware Indian villages along the Jacks Fork in 1815-1822. Despite these historic records, no archeological evidence of this period in the eastern Ozarks has been discovered.

The early Euro-American occupation of Ozark National Scenic Riverways is known from historic archival research and archeological sites relating to this period are likely to be plentiful. Thus far, C. Price (1981) has identified the pre-Civil War political center of Old Eminence (23SH104) and the nearby Deatherage Store (23SH110). Archeological testing in the Round Spring area (Garrison et al 1976) has revealed evidence of an early 19th century pioneer farmstead (23SH70). Southwest Missouri State University is currently involved in a survey and testing program to locate and evaluate the Isaac Kelly plantation site (23SH111).

Archeological evidence for sites relating to the Civil War in the park is limited to 23SH104, which was probably burned during this time period. Late nineteenth century sites are more plentiful, although intensive study of this time period has been limited. Archeological components seemingly

representative of domestic sites dating to this period are known at 23SH14, 23SH103, 23SH121, and 23SH119. Archeological evidence pertaining to commercial sites in the park is probably present at the Red Mill and the former town of Alley at Alley Spring.

The early 20th century archeology of the Current River is poorly understood at this time. Large numbers of sites relating to the logging boom are anticipated but only major lumber camps and company towns are known at this time. The two major sawmill towns in the region, Granden and West Eminence, are outside the park boundaries. Smaller towns like Cedargrove (23SH118) were founded in the late 19th century and thrived during the lumber era (Snyder 1979). Smaller lumber camps are expected in the park, but have yet to be documented.

Although the archeological investigations reported here have provided considerable new information about the prehistoric and historic periods in the Ozark National Scenic Riverway, a great deal is yet to be learned. Reports describing evaluative testing are being prepared and plans for additional investigations have been initiated. The archeological resources in the park are numerous and diverse and represent a non-renewable resource which will greatly enhance our understanding of the past. Recommendation for management of these resources are presented in the following chapter.

V. Management Recommendations

The management of archeological resources in the Ozark National Scenic Riverways should be guided by the principles and directives presented in Federal historic preservation legislation and National Park Service policy. This system of management directs Federal agencies to inventory and evaluate archeological resources during the planning process so that the significance of archeological resources may be incorporated into management decisions. Since archeological sites are non-renewable resources, it is critical that agencies recognize where resources are located and determine whether they are potentially significant. This is accomplished through programmed archeological investigations. The procedural bridge between archeological research and National Park management decision-making is a complex series of compliance actions.

The principle characters of this compliance system are the Federal Agencies, State Historic Preservation Officers, and the Advisory Council on Historic Preservation. Agencies are expected to inventory and evaluate archeological resources under their jurisdiction and nominate significant sites to the National Register of Historic Places. When an agency plans an action that will adversely affect an archeological resource, they are expected to request a determination of eligibility for the National Register. If the site is determined to be significant, the agency is then required to develop alternatives to mitigate the potential adverse affect. Alternatives might include redesigning the project to avoid disturbance to the site, scientific data recovery in advance of adverse action, or initiation of adverse action as originally planned. The agency must then provide the State Historic Preservation Officer and the Advisory Council with an opportunity

to comment. National Park Service compliance processes are currently linked to a Programmatic Memorandum of Agreement with the Advisory Council which is designed to reduce the quantity of paperwork while maintaining the principles of preservation.

Significance

The cornerstone of the entire compliance process is the evaluation of significance and the determination of eligibility for the National Register. Current guidelines necessitate that an archeological site be determined eligible for the National Register before any form of mitigative action is initiated (35CFR Part 800). In many agencies, the National Register is being utilized as a planning implement that conflicts with the preservation orientation of the legislation in which it is authorized (Grady and Lipe 1976). This stems from disagreement over the conditions which represent preservation. Preservation to most is the maintenance of archeological resources in or near their archeological context. Others might argue that data recovery through scientific techniques is also a form of preservation. The latter attitude fails to recognize that data recovery techniques destroy the context of archeological sites, and site context is the basis for archeological interpretation. The National Park Service is one of the few Federal agencies which may manage significant archeological resources to insure intact preservation without grossly conflicting with other major mandates.

Assessment of significance relating to archeological resources is one of the more important topics in recent archeological literature. Scovill, Gordon and Anderson (1972) were the first to treat the issue in a systematic and organized manner, and offered four categories against which significance

might be evaluated. Subsequent writers have debated these categories and developed additional ones (e.g. Glassow 1977; King et al 1977; Moratto and Kelly 1977, 1978; Raab and Klinger 1977; Schiffer and Gumerman 1977). The unfortunate part of the current significance evaluation process, is that the potential significance of a resource is measured against contemporary criteria alone. This synchronic approach to resource management fails to recognize that research concerns, the quality of the resource base and many other factors which effect the evaluation of significance will change through time. Lynott (1980) has illustrated how significance evaluation of a rockshelter in Texas has changed over a thirty year period. The point of this discussion is that cultural resources must be managed with a dynamic perspective, particularly within the National Park Service.

Significance might be measured against a large variety of categories, but most studies consider only about six. These categories have been treated in some detail by Schiffer and Gumerman (1977:239-247) and the summary presented here is derived largely from their discussion.

Scientific significance is probably the most commonly used category pertaining to archeological resources. The value of a resource is measured against its potential to contribute to the solution of one or more research problems. Raab and Klinger (1977) argue that significance in archeology is best evaluated against an explicit, problem-oriented research design, preferably a regional research design. In this way, scientific significance is best viewed as the research potential of a resource.

Archeological sites may also be evaluated in terms of their historical significance. Sites may be considered of historical significance if they provide an example of an event, activity, or period of time that relates to history or prehistory. A civil war battlefield may be considered historically

significant if it relates to the outcome of the war. Likewise, a blacksmith shop dating to the mid-nineteenth century might be significant as a typical example of industrial activity at that time. Historical significance might also relate to an archeological site pertaining to an important historic personage.

Public significance refers to archeological sites which contribute to public education through interpretation of site remains or display and exhibit of material culture recovered from the site. Public significance also applies to sites which attract tourists and thereby enrich the local economy. Cahokia Mounds State Park in Illinois and Pecos Pueblo in New Mexico are well known examples of sites which are of public significance.

Legal significance is defined by the National Historic Preservation Act of 1966. The criteria for establishing legal significance are itemized in 36CFR60.6 and provides part of the means for operationalizing the National Register program. Some criteria for nominating archeological sites under this category of significance are so broad as to make it nearly impossible to exclude any archeological site. Criteria (d) under 36CFR60.6 includes all sites "That have yielded, or may be likely to yield, information important in prehistory or history." Very few known sites fail to meet these standards.

Monetary significance is a category which is only occasionally used. It relates to amount of funding necessary to complete field and laboratory investigations using the most contemporary theory, methods and techniques. This approach to significance evaluation is in conflict with the recognition that even the most thorough modern investigations fail to exploit all potential data present at a site. This concept of significance has been generally discouraged by the professional community, but it may receive considerably more attention if the draft version of 36CFR1215.16a is finalized.

Thoughtful consideration of these significance categories will reveal that they are not mutually exclusive. Sites may be considered under several significance categories. The overlap between categories and the broad applicability within categories makes the concept of significance flexible and creative. It is a useful tool for dynamic evaluation and management of archeological resources.

In regard to evaluation of archeological resources at Ozark National Scenic Riverways, very few have been completed to date. The subsurface nature of sites in the park necessitates that evaluation be accomplished within a research program that includes subsurface testing. The status of evaluative testing at sites in the park is presented in Table 1, along with recommendations about needs for additional study.

Impacts to Archeological Resources

Changes in archeological resource through physical or chemical alteration of sites are known as impacts. Impacts which alter a site in a way to reduce its significance are considered adverse. Adverse impacts may range from walking across an archeological site to hauling it away during a strip mining operation. The processes, events, activities, etc. which have an impact upon archeological resources are known as effects. Effects may be divided into two classes: direct and indirect. Direct effects refer to those processes or activities resulting from actions relating to the primary objective of a Federal project. Direct effects of campground construction might include land levelling for tent pad construction, excavation of water lines, comfort station construction, or road construction in the campground. Indirect effects of campground construction might include erosion from increased

pedestrian traffic, surface collection of arrowheads, or vehicles becoming stuck in site deposits during rainy weather.

Projection or forecasting of impacts relating to operation and development of Ozark National Scenic Riverways are offered here to provide management with information regarding threats to cultural resources in the park. The discussion does not represent an exhaustive list of all potential impacts, but focuses on those impacts which appear to be most severe.

Construction of existing development facilities appear to have had an impact on archeological resources in most major and minor development areas. The extent of the impact varies from area to area, and will not be fully understood until all sites in these areas have been tested and evaluated. Construction of parking lots, roads, picnic shelters, toilets, campgrounds, and other visitation facilities have had some effect on archeological sites in most areas. Many of the current development zones were campgrounds or parks before the National Scenic Riverways was authorized (Figures 10, 11). Although development facilities are already in place in many areas, nearby archeological sites should be tested and evaluated. Until this action is complete, additional construction in all existing developments should be reviewed by the Midwest Archeological Center to determine whether further survey or testing is needed in advance of construction.

Visitor activities in the Ozark National Scenic Riverways are variable and diverse, and the effects of these activities on archeological sites are equally diverse. Canoeing itself has little effect on the archeological resources in the riverway, but erosion in campgrounds and river access points used in canoeing is noteable. Impacts from camping vary widely and seem to be based upon slope, soil moisture and vegetative cover. Impacts at

Figure 10: 23CT54, Mississippian hamlet currently serving as a primitive campground.

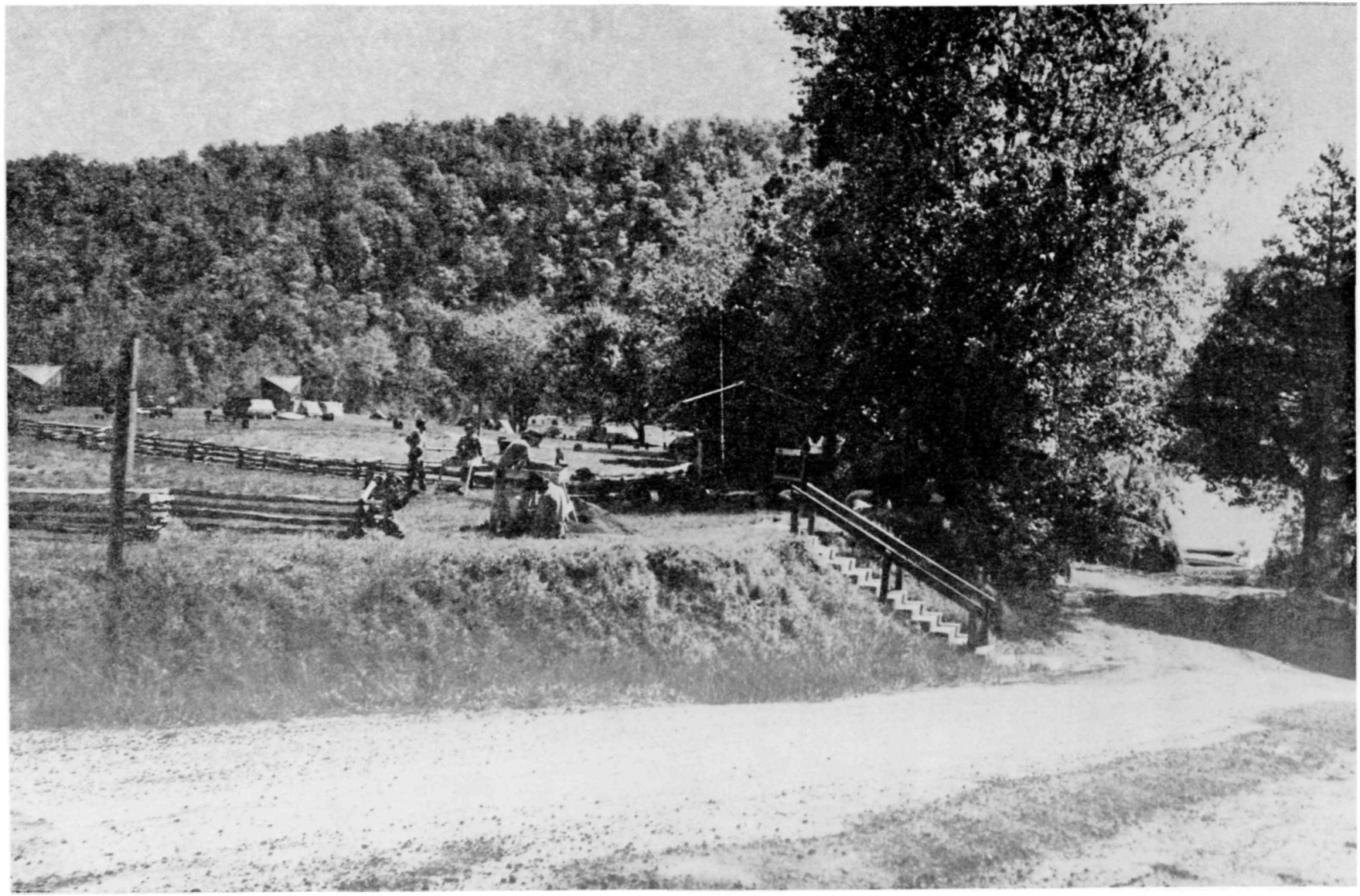

Figure 11: 23SH23, a stratified site containing evidence of Mississippian, Woodland and Archaic occupation now serving as a developed campground

large campgrounds like Akers Ferry where vehicle traffic is well regulated appear to be less than at minor campgrounds like Gooseneck, where large ruts are formed by trailers, trucks, and recreational vehicles during wet weather. Damage to sites from trampling resulting from pedestrian traffic has been noted, and is consistently linked to soil erosion. Artifact collecting in development areas appears to be having some impact on the quality of the resources, but it is difficult to determine the degree. Park employees and local citizens report collection of arrowheads from many development areas, but a quantification of the impact is not currently possible. Evidence of vandalism of archeological sites in development areas was not observed during this study, but informants have talked of relic hunters digging into sites prior to the authorization of the National Scenic Riverways. In this regard, it seems that some form of National Park Service presence (rangers, interpretive signs, etc.) are a considerable deterent to site vandals and may actually serve to protect resources from this impact.

During the course of this survey, one additional impact which is not related to the development areas was observed. Cultivation of foodplots for wildlife management have exposed archeological resources in several areas. These fields have been previously cultivated but continued cultivation is exposing previously undisturbed remains. Surface materials exposed by cultivation are being collected by employees and visitors. The extent of this impact throughout the park needs to be studied, because it has the potential to seriously effect the quality of archeological resources.

Discussion

The National Park Service is the only Federal land managing agency which has the mandate to preserve archeological sites for the benefit of future generations. Other agencies sponsor data collection research as mitigation of construction and development activities. Some archeologists believe that continued national development will result in the destruction of most archeological sites during the next two to three generations (McGimsey 1972). Only those sites which have been set aside and actively protected will still be preserved in a context that can be studied. Recognizing this threat to archeological resources on private lands, a group of concerned citizens have organized the Archaeological Conservancy. This organization is modeled after the Nature Conservancy and is designed to purchase significant sites and set them aside for long-term preservation. The Archaeological Conservancy has recently purchased several sites in Missouri, including Powers Fort, a Mississippian ceremonial center in Butler County.

Since it was established, the National Park Service has been viewed as a preservation agency. Citizens believe that resources under the jurisdiction of the National Park Service are protected and managed to insure their preservation. The National Park Service is viewed as stewards of our nation's most valuable cultural, natural and scenic resources. In this view, the units of the National Park System are considered preserves that protect archeological and cultural resources.

The public view of the National Park Service is in harmony with the preservation role outlined for it in NPS-28. Efforts to avoid damage or destruction to archeological sites in the parks must be a high priority to insure that these resources are available to future generations. Conflicts

with other important programs will arise, but managers must remember that archeological resources are non-renewable. Once archeological resources in a park are destroyed they cannot be restored. The burden of public trust as stewards of these resouces is heavy, but concerned management can result in effective preservation programs.

This study has shown that the archeological resources at Ozark National Scenic Riverways are numerous, diverse, and probably very significant. These resources represent a detailed record of past lifestyles in the eastern Ozarks, and contain information which has not been preserved by written history. The archeological remains at Ozark National Scenic Riverways are a valuable resource that deserves to be protected and preserved, so future generations may learn more about past life in the Ozarks.

Table 1: Status of Site Evaluations

Site #	Not Evaluated	Evaluated; believed significant	Evaluated; believed not significant	Comments
23SH4	X			
23SH5	X			
23SH6	X			
23SH7	X			
23SH8	X			
23SH10	X			Site is being exposed and eroded by cultivation of food plot.
23SH11	X			
23SH14	X			
23SH16	X			
23SH17	X			
23SH18	X			
23SH19		X		Testing by Midwest Archeological Center in May 1981 provides documentation of site significance; laboratory analysis and report preparation will be initiated during FY82.
23SH21	x			
23SH22	X			
23SH23		X		Testing by the Midwest Archeological Center during 1980 provides documentation of site significance; laboratory analysis and report preparation is underway.
23SH37	X			
23SH57	X			
12SH58	X			
23SH59	X			Sites 23SH57-62 are described by Born and Chapman (1972). Data presented in this report is insufficient to evaluate the sites in regard to contemporary National Register criteria.
23SH60	X			
23SH61	X			
23SH62	X			
23SH65	X			
23SH70		X		This is a component of 23SH19.

Table: Status of Site Evaluations

Site #	Not Evaluated	Evaluated; believed significant	Evaluated; believed not significant	
23SH71	X			Sites 23SH71, 23SH72 and 23SH73 are reported by Garrison et al 1976. The data incorporated in the report is insufficient to document the evaluations offered by the authors. Additional evaluative investigations will probably be required.
23SH72	X			
23SH73		X		
23SH74		X		The site was tested by the University of Missouri, but results of the investigation were not reported.
23SH75	X			
23SH76	X			
23SH77		X		Sites 23SH77, 23SH78, 23SH80, 23SH81 are reported by Garrison et al 1976. Data in the report is insufficient to document evaluations by the authors and additional investigations are recommended.
23SH78	X			
23SH79	X			
23SH80	X			
23SH81		X		
23SH82	X			
23SH83	X			
23SH93			X	Sites 23SH93 and 23SH94 were tested by the Midwest Archeological Center in 1979. A report is in preparation.
23SH94		X		
23SH96	X			This site is a component of 23SH19, but the context of the cultural remains is in question.
23SH97	X			
23SH98	X			
23SH99	X			
23SH100	X			
23SH101	X			
23SH102	X			
23SH103	X			
23SH104	X			Preliminary study of 23SH104 indicates it is significant, but additional study to document this evaluation is needed.

Site #	Not Evaluated	Evaluated; believed significant	Evaluated; believed not significant	Table: Status of Site Evaluations Comments
23SH105	X			
23SH106			X	Testing by the Midwest Archeological Center in 1980 indicates the site is shallow and disturbed. A report is in preparation.
23SH107	X			
23SH108		X		
23SH109		X		Testing by the Midwest Archeological Center in 1981 indicates the site is significant. A report is in preparation.
23SH110	X			
23SH113	X			
23SH114	X			
23Sh115	X			
23SH116	X			
23SH117	X			
23SH118	X			
23SH119	X			
23SH120	X			
23SH121	X			
23SH122	X			
23DE31	X			
23TE51	X			
23CT1	X			
23CT2	X			
23CT3	X			
23CT7	X			
23CT8	X			
23CT36	X			
23Ct38	X			
23CT54		X		Testing by the Midwest Archeological Center and the University of Michigan indicate the site is very significant. A report is in preparation.

Site #	Not Evaluated	Evaluated; believed significant	Evaluated; believed not significant	Table: Status of Site Evaluations
23CT65	X			
23CT74	X			
23CT95	X			
23CT104		X		Sites 23CT104, 23CT105, 23CT106 and 23CT107
23CT105		X		are reported by Garrison et al 1976. Data
23CT106		X		is insufficient to document these evaluations
23CT107			X	in regard to contemporary National Register criteria. Additional testing is recommended.
23CT108	X			
23CT109	X			
23CT110	X			
23CT111	X			Site is being evaluated by Southwest Missouri State University. A report is in preparation.

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VII Appendix A: Inventory of Archeological Sites

The number of known and recorded archeological sites in the Ozark National Scenic Riverways has increased greatly during the course of this survey. At this time 84 archeological sites are known to exist within the park. The sites represent both the prehistoric and historic periods. The sites have been located through systematic survey of specific park development areas, limited survey of cultivated fields in wildlife food plots areas, records and archival search, and information provided by amateur archeologists and private artifact collectors.

The contributions of amateur archeologists to this inventory cannot be overemphasized. Many of the known sites in the Ozark National Scenic Riverways were located and recorded by interested amateurs. Mr. Leo Anderson of Van Buren and Mr. Alan Banks of Eminence are particularly noteworthy.

Although Mr. Anderson did most of his archeological research in other areas of Missouri, he has made collections and recorded sites in the Current River valley. The notes and artifacts from these studies have been inventoried by Southwest Missouri State University (Price and Price 1980). Mr. Anderson's research provides considerable background relating to sites in the Carter County area of Ozark National Scenic Riverways.

The archeology of Shannon County has benefited greatly from the enthusiasm of Mr. Alan Banks. Mr. Banks has recorded and studied sites on the upper Current and Jacks Fork Rivers and made his collections and data freely available to the National Park Service. Mr. Banks is the author of Indians of the Upper Current River, in which he has summarized information pertaining to his own and several other private collections in Shannon County.

The contributions of amateur archeologists like Anderson and Banks will greatly enhance our knowledge of archeology in the Current River valley. Although considerable distrust has been the rule between professional and amateur archeologists, we found amateurs and interested citizens anxious to contribute in any way possible. Recognizing the value of cooperation between professional and amateur archeologists, the United States Congress passed the Archeological Resources Protection Act of 1979 which recognizes that cooperation of all interested citizens in the public interest. Future archeological research at Ozark National Scenic Riverways should emphasize interaction with interested amateur archeologists and the dissemination of information for public benefit.

The archeological sites recorded here have been identified through field investigation, contact with amateur archeologists, and archival research. Archives consulted in the study include the Archeological Survey of Missouri, Southwest Missouri State University and the manuscript files at the Midwest Archeological Center. Additional sites pertaining to Ozark National Scenic Riverways may be recorded in the Archeological Survey of Missouri files, but the absence of maps showing individual site locations made this impossible to verify. It is our understanding that U.S.G.S. maps showing site locations exist, but these were not available to this writer when he studied relevent county site files.

The following list of archeological sites in the Ozark National Scenic Riverways is complete as of July 7, 1981. The list represents only a small fraction of the potential archeological sites in the park. Future investigations will result in the location and recording of many additional sites.

INVENTORY OF RECORDED SITES

23SH4 A prehistoric site of undetermined size and depth. Mr. A.A. Seamon reports that arrow points, "tommyhawks" and a bead have been collected. The site has been cultivated.

23SH5 A cave with no definite evidence of human use, reported by Mr. A.A. Seamon.

23SH6 A prehistoric site of undetermined size and depth. Arrowheads and grinding stones are reported to have been collected from cultivated fields by A.A. Seamon.

23SH7 A prehistoric site of undetermined size and depth on the second terrace of the Jacks Fork River in a previously cultivated field.

23SH8 A prehistoric site of undetermined size and depth. Considerable lithic debris, arrow points, and stone axes have been reported from a cultivated field on a terrace of Jacks Fork River.

23SH10 A prehistoric site of undetermined size and depth. Lithic debris and projectile points are reported from a private collection, including large and small projectile points, bifaces, gouges, drills, manos, lithic debris and a single clay tempered cord-marked potsherd (Williams 1968). Surface examination by the Midwest Archeological Center indicates it may represent a multi-component Archaic, Woodland and Mississippian occupation. The site is probably the same locality assigned 23SH81.

23SH11 A prehistoric site of undetermined size and depth on a terrace adjacent to the Jacks Fork River and Shawnee Creek. When the field was cultivated, arrow points, but no ceramics were reported by A.A. Seamon. Mr. Alan Banks has a collection from the site which includes arrow points and a variety of side-notched and stemmed dart points. No ceramics have been recovered.

23SH14 Culpepper cemetery site. A large multi-component site on the second terrace of the Jacks Fork. An extensive scatter of Archaic and Woodland debris is present. Mr. Alan Banks reports that several small side-notched points which appear to be indicative of the Middle Archaic period have been collected at this site. Nineteenth Century domestic artifacts are concentrated near the center of the prehistoric scatter.

23SH16 The Branson Cave site. The cave is located on top of a high bluff. A.A. Seamon reports lithic debris and ceramics in soil at the mouth of the cave. Aley (1981) believes the area has been extensively disturbed.

23SH17 A prehistoric site of undetermined size and depth. A.A. Seamon reports that arrow points, chipping debris, "tommy hawks" and a bead have been collected at this site.

23SH18 A prehistoric site of undetermined size and depth, reported by A.A. Seamon.

23SH19 Round Spring site. A prehistoric site surrounding the sinkhole spring and adjacent hillsides and terraces along the Current River. Several burials have been exposed by erosion in the area adjacent to the spring. Mr. Leo Anderson describes a supine interment with an elbow pipe that was excavated by Mr. Manuel Banks - State Park Superintendent in 1948. In 1958, two badly disturbed burials associated with a shell-tempered ceramic vessel were excavated and a cache of bifaces were exposed by construction activities (Haslag 1959). Another individual buried in a fully extended prone position was reported by Bray (1964). Considerable midden debris was associated with this adult including 4 projectile points,

an end scraper, two limestone beads, a bone awl, two manos, two cordmarked and one plain limestone tempered sherd, a biface and considerable lithic debris. In 1966, parts of two other burials were excavated after they were exposed by erosion. Testing in 1981 indicates use of the site as a habitation area by Archaic, Woodland and Mississippian people, with a Mississippian cemetery being located near the spring. Evidence for an early historic habitation site is also presented, and has been assigned a separate site number of 23SH70 (Garrison, et al 1976).

23SH21 Rock Cairns on a high ridge overlooking Gladden Creek. The cairns are 20-25 feet in diameter and 30-70 feet apart along an east-west line along ridge top. Extensive vandalism has disturbed the central area of each cairn but peripheral areas appear to be intact. Early reports describe 6-7 cairns, but recent investigations only located five (Nickel 1975).

23SH22 A prehistoric site of undetermined size and depth. Artifacts of unknown type were reported by workmen digging graves in the modern cemetery.

23SH23 A prehistoric site covering the upper terrace in the Akers Ferry campground. Monitoring during construction activities resulted in recovery of a shell tempered sherd, five bifaces, a retouched flake, two large and one small projectile points (Nickel 1975). Midden deposits are exposed along the eroding banks near the Ferry. Testing in 1980 indicates the site is multi-component, being occupied during the Archaic, Woodland, and Mississippian periods, and extending to at least 1.5 meters in depth.

23SH37 The Big Shawnee site. A prehistoric site of undetermined size and depth in a formerly cultivated field. A private collection from the site indicates the main occupation occurred during the Archaic period.

23SH57 A lithic scatter of unknown size reported by Born and Chapman (1972:21). A scraper, 4 retouched flakes, a hammerstone, 2 large corner-notched projectile points, 2 projectile point fragments, expanding stem dart point, 2 drill tips, biface/gouge, side-notched arrow point, and a Rice Lobed projectile point reported. The site seems to contain Archaic and Woodland occupations.

23SH58 A lithic scatter covering a 350 m. x 150 m. area. Limited test excavations reported by Born and Chapman (1972) resulted in recovery of one straight stemmed art point, a biface and a shell and sand tempered sherd. The site appears to be mainly a surface scatter with artifacts extending 6-9 inches below surface.

23SH59 A lithic scatter reported by Born and Chapman (1972:20) on the second terrace of the Jacks Fork. It covers a 150 ft. x 100 ft. area. No subsurface testing has been conducted.

23SH60 A lithic scatter on a north facing hillslope above a terrace of Jacks Fork reported by Born and Chapman (1972). A contracting stemmed dart point was collected from the surface of the site. The size of the site is unknown.

23SH61 A lithic scatter on a low terrace west of the Alley Spring Branch reported by Born and Chapman (1972:21). Test excavation indicates that cultural material extends to at least 75 cm. below surface. An expanding stemmed arrow point from the surface of the site is reported. The site covers a 200 ft. x 150 ft. area.

23SH62 A prehistoric site exposed by tree planting activities reported by Born and Chapman (1972). Cultural material concentrated between 15 and 75 cm. below surface. The site is located on a terrace overlooking the Alley Spring Branch. The extent of the site is undetermined.

23SH65 The remains of one or two rock cairns on the southeast side of a large hill. The site has been extensively disturbed by an individual claiming to be an archeologist. The site consists of one large cairn (about 30 feet in diameter) or two small cairns with no associated cultural material (Nickel 1975).

23SH70 A prehistoric site in the vicinity of the former concession stand at Round Spring. It covers approximately 1500-1800 square meters. Limited testing indicates a maximum depth of 35 cm. Prehistoric artifacts include Woodland projectile points, ceramics, retouched flakes, ground stone, and lithic debris. Interpretted as seasonally reoccupied procession/extractive occupation (Garrison et al 1976). Historic occupation of the site is indicated by trash pit with early 19th century ceramics, square nails, dark green bottle glass, folded lead sheet, and gun flints. The historic components seems to represent an early 19th century homestead. Testing in 1981 indicates this is a component which cannot be spatially distinguished from 23SH19.

23SH71 A prehistoric site of undetermined extent. Limited test excavation suggests the depth of the cultural deposit is 0.9 feet (Garrison et al 1976). The site appears to be extensively disturbed by construction of a grocery store and river access road.

23SH72 A prehistoric and historic site of undetermined size and depth. It has been extensively disturbed by historic construction. The limited artifact assemblage indicate Woodland and late 19th early 20th century use (Garrison et al 1976).

23SH73 A prehistoric site of undetermined size and depth. Limited testing indicates a Woodland occupation (Garrison et al 1976). The site may cover the entire terrace adjacent to the spring branch upon which the modern parking lot is constructed.

23SH74 A prehistoric site of undetermined extent. The site has been tested by the University of Missouri, but has not been described. Information from a preliminary report indicates cultural deposits extend to at least 50 cm. below surface. The site is situated on the same terrace as the Powder Mill Visitor Center. A small artifact collection from the area includes lithic debris, bifaces and several large projectile points with straight or slightly expanding stems. Graham (1972) reports that a Dalton point has been recovered from the site, indicating an Early Archaic occupation.

23SH75 A prehistoric site of undetermined size and depth. The site is located adjacent to Powder Mill Cave and may be related to human occupation of the cave. Surface collection by the University of Missouri in the open part of the site resulted in the recovery of a corner-notched projectile point (Garrison et al 1976). A surface collection made inside the cave by an amateur archeologist resulted in recovery of cordmarked, limestone tempered ceramics and a small expanding stem arrow point. The site appears to be a Woodland occupation.

23SH76 A prehistoric site of undetermined size and depth. The size has been disturbed by construction of Highway 106. A surface collection made by the University of Missouri (Garrison et al 1976) contains a corner-notched quartzite projectile point, and six fragmentary bifaces. The available data indicates a Woodland component at the site.

23SH77 A large prehistoric site of undetermined size and depth. Limited testing by the University of Missouri suggests the site is confined to the plowzone (Garrison et al 1976). Cultural material from surface collections and subsurface testing include projectile points, bifaces, retouch flakes and lithic debris. There is definite evidence of Woodland period occupation, and occupation during other periods appears likely.

23SH78 A prehistoric site of undetermined size and depth, but probably limited to knoll upon which the Powder Mill sign shop is located. Garrison et al (1976) report that testing revealed a shallow cultural deposit, but the lack of supporting data makes the interpretation questionable. A small surface collection of lithic debris is reported. No estimate of the temporal nature of the occupation can be offered.

23SH79 A prehistoric site of undetermined size and depth. A surface collection from the site includes two biface fragments and lithic debris.

23SH80 A prehistoric site of undetermined size and depth.

23SH81 A large prehistoric site of undetermined size and depth. It is unclear how this site relates to 23SH10 (Williams 1968). Investigations by the University of Missouri included excavation of four test pits and extensive surface collections (Garrison et al 1976).

Cultural material from the site includes large and small projectile points, drills, bifaces, retouched flakes, ceramics, and lithic debris. The site seems to be a multi-component, with occupations having occurred in the Middle-Late Archaic through Woodland periods.

23SH82 A prehistoric site of undetermined size and depth.

23SH83 An historic and prehistoric site associated with the Red Mill and 19th century town of Alley Spring. Submerged cultural remains from the site are described by Carrell, May and Garrison (1980). The extent and condition of the site have yet to be determined.

23SH93 A prehistoric site with an historic component. The site has been extensively disturbed by construction of a sewage treatment station, but appears to have covered an area about 200 m. in diameter. Testing by the Midwest Archeological Center indicates that cultural deposits extend to a depth of 40 cm. but are extremely churned. Relatively few tools were recovered from surface collection and testing; these suggest a Late Archaic component. Surface collections made by amateur archeologists suggest Dalton, Archaic and perhaps Mississippian occupations were represented. The large quantity of chipped stone depris indicates the site may have served as a stone tool manufacturing station.

23SH94 The Pulltite site. The site covers an area of approximately 80 x 50 m. on a sloping bench along the Current River, adjacent to a small spring branch. Testing by the Midwest Archeological Center indicates the cultural deposit is shallow (25 cm.). The site appears to have been intermittently occupied, mainly during the Late Archaic period.

23SH96 The Round Spring Grotto site. A prehistoric site of undetermined size in the grotto through which Round Spring drains. The site was discovered during underwater exploration of the spring (Carrell, May and Garrison 1980). Artifacts from the site include cores, an adze, lithic debris, bifaces, a corner-notched projectile point and limestone tempered cordmarked ceramics indicative of the Woodland stage. The site is probably related to occupation of 23SH19, and 23SH70.

23SH97 The Sinking Creek site. A prehistoric site situated on a hillslope, terrace and gravel bar at the confluence of Sinking Creek and Current River. Lithic debris and bifaces were observed in exposed areas of the site. A private collection from the site includes dart points, a sherd and a Clovis point. The site seems to have been occupied over a great length of time.

23SH98 The Log Yard Campground site. A prehistoric and historic site of undetermined size and depth. Lithic debris and historic ceramics are visible in eroding areas. The temporal and functional nature of the site is unknown.

23SH99 The Little Shawnee site. A prehistoric site of undetermined size and depth on a terrace adjacent to Jacks Fork. The site extends at least 300 m. along the terrace. Lithic debris is visible in limited exposure along the terrace edge.

23SH100 Log Yard Access site. A prehistoric site of undetermined size and depth. Cultural material collected from a five by 300 meter transect includes projectile points, bifaces, ground stone, and lithic debris. A metate was observed. The site appears to be an extensive Archaic occupation. Historic period material is present in small quantities.

23SH101 The Two Rivers site. A prehistoric site with an historic component. The site covers at least 200 m. x 50 m. on a terrace at the junction of Jacks Fork and Current River. Dart points, bifaces and lithic debris have been observed. The site appears to have been occupied during the Archaic period.

23SH102 An historic road following the first terrace on the east side of Current River for 1.25 miles from Capps Hollow to Limekiln Hollow. The road bed is a trough-shaped trench of variable depth (C. Price 1981).

23SH103 The Capps Hollow site. A prehistoric lithic scatter and historic farmstead on a flat part of a ridge slope above the Current River floodplain. The prehistoric material at the site consists of lithic debris, cores, bifaces and large and small projectile points indicative of Archaic and/or Woodland occupation. The historic component is characterized by glass, ceramics and nails indicative of nineteenth century habitation (C. Price 1981).

23SH104 The Old Eminence site. The probable site of the original county seat of Shannon County. Artifactual material is indicative of a pre-Civil War town including at least two buildings (C. Price 1981). One structure appears to be a courthouse-jail, while the other is a trading post and residence. Both structures show evidence of burning. A prehistoric site is present beneath the historic component.

23SH105 The Wet Dog site. A prehistoric lithic scatter of undetermined size on a high terrace or hilltop overlooking Owls Bend. Surface materials indicate possible Woodland and Archaic occupation. Artifacts in a private collection include the mid-section of a fluted point and a dart point base with possible basal grinding.

23SH106 The Akers Crapper site. A prehistoric lithic scatter on a narrow bench or terrace. Limited testing suggests the site is shallow with a high density of lithic debris. No temporally diagnostic material have been collected, and the functional nature of the site is poorly understood.

23SH107 The Trail Ride Camp site. A prehistoric lithic scatter of undetermined size on the second terrace of the Jacks Fork. No temporally diagnostic artifacts were noted.

23SH108 The Gully site. A prehistoric lithic scatter along the second terrace on the north side of the Current River. The site was discovered by shovel testing. No temporally diagnostic material was recovered. The site covers at least 6000 sq. m.

23SH109 The Limekin Hollow Shelter. A cave/rockshelter in a limestone bluff above the Current River floodplain. Prehistoric occupational debris is present at the mouth of the shelter, with limited testing indicating artifacts extending to at least 90 cm. below surface. The extent of the site occupation within the cave is undetermined. Ceramics in a local collection from the site are limestone tempered with cordmarked surfaces, indicating a Woodland occupation.

23SH110 Deathrage/Randolph Farm site. A multi-component site of undetermined size on the west side of the Current River. The site is reported to be the location of the Deathrage store (ca. 1850), and possibly an early blacksmith shop also. Current structures at the site include the Randolph house (built ca. 1905) and a blacksmith shop which was in use until 1944. Other historic features include an abandoned roadbed, cemetery, and a large oak tree which is reported to be associated with a Civil War era fur press. Prehistoric materials are present in exposed areas at several places on the site (C. Price 1981).

23SH113 Shut-Ins site. A prehistoric lithic scatter exposed in a sandy road bed near Rocky Creek. The size of the site is undetermined. A thin scatter of lithic debris is visible in exposed areas.

23SH114 The site is situated on the east side of the Alley Spring Branch. The base of a single corner notched chert projectile point was found adjacent to the interpretive trail. The point style is characteristic of the Middle Woodland time horizon. No other cultural remains were identified.

23SH115 The Rhymers site. A scatter of prehistoric lithic debris and historic artifacts exposed in a road bed. The site is situated on a terrace of the Jacks Fork River. Vegetation prohibits determination of site size.

23SH116 Many Forks site. A scatter of prehistoric lithic debris and bifaces exposed in a road bed. Pasture vegetation adjacent to the road did not permit visual estimation of the size of the site. The site is situated on a hill overlooking the Jacks Fork.

23SH117 A prehistoric lithic scatter situated on a sandy terrace along the Current River near the abandoned town of Cedargrove. The size of the site is estimated at 300 x 175 m. based upon the distribution of artifacts in shovel test holes and exposed surface areas.

23SH118 Cedargrove site. The site includes the ruins and associated artifacts from the town of Cedargrove. At least eleven structures are present, including a school. The town was occupied mainly during the latter period of intensive lumbering in the region.

23SH119 A scatter of prehistoric and historic artifacts on a ridge above Bay Creek. The extent of the site is undetermined. The presence

of large stemmed dart points may indicate a Late Archaic occupation. Historic artifacts observed at the site include ceramics and bottle glass, probably dating to the late nineteenth century.

23SH120 A lithic scatter on a narrow terrace or bench at the mouth of Bay Creek. Artifacts observed at the site include a small unstemmed arrow point preform and lithic debris. The size of the site is undetermined.

23SH121 A scatter of prehistoric and historic artifacts on a terrace and hillslope above Jerktail Landing. Prehistoric material observed at the site includes lithic debris and bifaces in road cuts and other exposed areas. A private collector reports that a Dalton point has been collected from the site. Historic materials at the site is limited to ceramics and seems to indicate domestic refuse. The presence of the Bunch Cemetery also suggests that an historic residence was present.

23SH122 A prehistoric lithic scatter exposed in a campground and picnic area. The site is situated on a bench adjacent to an unnamed spring-branch and less than 50 meters from the Current River. The size of the site is undetermined. Cultural remains observed at the site include lithic debris and a large corner-notched projectile point characteristic of the Middle Woodland period.

23TE51 The Buck Hollow site. A prehistoric site of undetermined size and depth. Cultural material exposed in a gully in the second terrace adjacent to the Jacks Fork. Gravel for a parking area covers the site.

23DE31 A prehistoric lithic scatter situated on a bench or terrace along the Current River. Surface exposure and shovel testing indicates an area of about 200 x 100 meters. Temporally diagnostic artifacts have not been observed at the site.

23CT1 The Kelly Farm site. A prehistoric site of undetermined size and depth. The site was reported and collected by Mr. Leo Anderson, Van Buren, Missouri (Price and Price 1980). Cultural remains collected from the surface of the site include projectile points, halted scrapers, drills, bifaces, 3/4 grooved axes, a Mill Creek chert hoe and a variety of other prehistoric artifacts. A small collection of nineteenth century Historic American artifacts from the area by Isaac Kelly. The site appears to have been occupied during the Archaic, Woodland, Mississippian periods, as well as the 19th century.

23CT2 The Partney Farm site. A prehistoric site of undetermined size and depth. The site was reported and collected by Mr. Leo Anderson, Van Buren, Missouri (Price and Price 1980). Surface collections from the site include points, hafted scrapers, bifaces, drills, and a single shell-tempered sherd. These indicate Archaic, Woodland, and Mississippian occupation of the site. A fluted point indicative of the Paleo-Indian period is reported from this site by Chapman (1960:32).

23CT3 The Campbell Farm site. A prehistoric site of undetermined size and depth. The site was reported and collected by Mr. Leo Anderson, Van Buren, Missouri (Price and Price 1980). Surface material from the site includes projectile points, bifaces, hafted scrapers, and a discoidal, suggesting occupation during the Archaic, Woodland and Mississippian periods.

23CT7 A prehistoric site of undetermined size and depth. The site reported by Mr. James Lowe is located in an old railroad grade. Projectile

points and bifaces indicative of an Archaic and/or Woodland period occupation have been collected by Mr. Leo Anderson (Price and Price 1980).

23CT8 A prehistoric site of undetermined size and depth. The site reported by Mr. James Lowe.

23CT36 The Granite Quarry Cave site. A prehistoric cave or rockshelter occupation situated near the top of bluffs overlooking Current River. The site was reported and collected by Mr. James Lowe (1940). Artifacts reported include lithics and reddish colored shell tempered ceramics. The site may represent a Mississippian occupation.

23CT38 A prehistoric site of undetermined size and depth. Mr. James Lowe reports an arrow point was recovered on the terrace near the lodge.

23CT54 The Gooseneck site. A Mississippian site located in Hawes Campground with a definite midden on the east side of the terrace. Ablock of the midden was excavated by the University of Michigan in 1971 (Smith 1971, 1974, 1975). Smith interprets the site as a post-Powers Phase Mississippian camp, but recent testing by the Midwest Archeological Center indicates it is representative of the Developmental Mississippian, Naylor Phase (Lynott 1980). Ongoing investigations by MWAC are designed to more fully investigate the functional and temporal nature of the site.

23CT65 A prehistoric site of undetermined size and depth reported by Mr. James Lowe. The site was in a cultivated field and the landowner collected a considerable number of artifacts. The nature and present location of these artifact collections is unknown.

23CT74 Reported to be the location of an historic Indian trail (Chapman 1960).

23CT95 A prehistoric site of undetermined size and depth.

23CT104 The Chub Hollow site. The site is located on terraces on both sides of the creek where it enters the Current River. The site covers approximately one acre, and was tested by the University of Missouri (Garrison et al 1976). It appears to have been occupied in the Late Archaic through Historic periods. A considerable quantity of lithic debris, but no ceramics were recovered. Maximum depth of cultural deposit is 70 cm. - 100 cm. Existing records do not document which area of the site was tested.

23CT105 A prehistoric site on the second terrace of the Current River. Testing by the University of Missouri (Garrison et al 1976) revealed Woodland and Historic use, with cultural material extending to at least 60 cm. The site has been interpretted as a prehistoric tool manufacturing station. Records do not indicate which areas of the site were tested, nor how large the site is.

23CT106 A prehistoric site of undetermined size. Testing by the University of Missouri (Garrison et al 1976) revealed cultural deposits extended to over one meter below surface. The site has been interpretted as a seasonally occupied Middle Archiac maintenance-extractive site with an historic component. Records are inadequate to determine what areas of the site have been tested.

23CT107 A prehistoric site of undetermined size in the vicinity of the now abandoned airfield. Testing by the University of Missouri (Garrison et al 1976) revealed cultural deposits extend to only 30 cm. below surface. Artifact density is low. No map of areas tested is available.

23CT108 A small lithic scatter (25 sq. m.) on a bluff overlooking Current River and Chub Hollow. The site appears to have been greatly disturbed by construction of a cabin. Lithic debris are the only cultural materials observed.

23CT109 A small lithic scatter on wooded hillside overlooking Spring Valley. The site covers less than 25 sq. m., and seems to have been disturbed by cabin construction. The small quantity of lithic debris at the site exhibits evidence of heat treatment.

23CT110 Kelley Cemetery. Family cemetery with earliest marked grave dated 1863. Earlier burials are reported.

23CT111 Issac Kelley site. Farm or plantation which includes 137 + acres patented to Isaac Kelley in 1823. Historic records suggest site was occupied from about 1810 into the 20th century. Investigations by Southwest Missouri State University are currently underway.

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