

**ARCHEOLOGICAL RECONNAISSANCE OF THE CASEY-CLARK TRACT
AND SURVEY OF PROPOSED TRAIL SEGMENTS
BUFFALO NATIONAL RIVER,
NEWTON COUNTY, ARKANSAS**

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SOUTHWEST REGIONAL OFFICE
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MANAGEMENT SUMMARY

From April 24-27 1986, an archeological reconnaissance and survey was conducted in portions of Boxley Valley in the Buffalo National River. The purpose of these investigations was to locate archeological sites contained in National Park Service property slated for resell or affected by proposed pedestrian trails as specified in the Boxley Valley Land Use Plan/Cultural Landscape Report (NPS 1985).

One previously recorded site (3NW118) will be affected by trail construction. The site was visited during the field survey to collect additional information. It was found that 3NW118 contains 5 distinct areas that may, in fact, be separate sites. At least 2 of these areas have cultural deposits extending below the plow-zone and may be eligible for nomination to the National Register of Historic Places. The Arkansas Archaeological Survey has chosen to retain the extant designation (3NW118) until further testing is conducted to determine the relationship between site areas. To designate different site areas, the suffixes A-E will be used herein.

Four previously unrecorded prehistoric sites were documented during the investigation. Three of these were identified along proposed trail corridors. Sites 3NW612 and 3NW613 are bluff shelter/caves and are considered eligible for nomination to the National Register of Historic Places. An additional site, situated in the Buffalo River floodplain has a cultural deposit extending below the plow-zone and may be eligible for nomination. Reconnaissance of the 3+ acre Casey-Clark tract revealed a single prehistoric site (3NW611). Additional testing must be conducted at 3NW118, 3NW611, and 3NW614 to determine if these sites meet National Register standards. Recommendations for mitigating adverse impact to these sites are made in the concluding section of this report.

ACKNOWLEDGEMENT

The writer is indebted to the staff of Buffalo National River. Assistant Superintendent Jim Liles coordinated the project and provided the necessary maps and literature. Pat Toops examined site locational maps at park headquarters in Harrison to determine proximity of known archeological sites to proposed trail corridors. Ranger Jim Godwin provided transportation to and from the survey areas. Mr. Godwin and park volunteer Jim Smith actively participated in the 4 day project. Jim Bradford, National Park Service Archeologist, reviewed the manuscript and offered numerous helpful suggestions.

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INTRODUCTION

A 4 day archeological reconnaissance and survey was conducted in selected areas of Boxley Valley, Buffalo National River, to identify archeological sites located within National Park Service property slated for resell or affected by proposed pedestrian trails. Five prehistoric archeological sites were identified as a result of this investigation. Reconnaissance of the 3+ acre Casey-Clark tract identified a single prehistoric site (3NW611). The Casey-Clark house, with attendant outbuildings, are known historic structures and were not a subject of investigation during this survey. Further testing is recommended to determine if Site 3NW611 is eligible for nomination to the National Register of Historic Places.

Four prehistoric sites were identified along proposed trail corridors. At least 2 of these sites have cultural materials extending below the plow-zone and may be eligible for nomination to the National Register of Historic Places. Two areas within site 3NW118, situated on the bluff crest, are shallow cultural deposits exhibiting some functional differentiation. Site 3NW118 (A) is a probable habitation/nut processing site while nearby site 3NW118 (E) may be a station where bifaces were preformed. Two bluff shelter/caves were identified under a sandstone outcrop in the bluff overlooking Running Creek. The first site (3NW612) is a disturbed shelter with a Mississippi component. A second shelter (3NW613), apparently undisturbed, exhibits Woodland and Caddoan components. Both shelter/caves are considered eligible for nomination to the National Register of Historic Places. Additional testing must be conducted at the remaining sites, however, before an assessment of significance may be made.

ENVIRONMENTAL BACKGROUND

Location

The project area is located in Boxley Valley along the headwaters of the Buffalo River, Newton County, Arkansas (Fig. 1). In 1972, the Buffalo River was incorporated as a unit of the National Park Service. The Buffalo National River runs 132 linear miles and contains over 90,000 acres in the heart of the Arkansas Ozarks (NPS 1985:6).

Geology/Physiography

Boxley Valley is located in the Boston Mountains subdivision of the Ozark Mountains division (Crow 1974:15). The Boston Mountains, actually a single plateau uplifted as a unit, are

higher and thus more dissected than the adjoining Springfield Plateau to the north. The Boston and Springfield Plateaus are separated by a steep escarpment known as the Boston Mountain Front. To the south, the back slope of the Boston Mountain Front descends gradually into the Arkansas Valley Trough.

The proximity of Boxley Valley to the Boston Mountain Front accounts for the ruggedness of the area. Local relief in places exceeds 1400 feet. About 80 percent the valley is rugged to sloping upland. A mere 1500 acres occur in the Buffalo River floodplain proper (NPS 1985:16). The Buffalo River floodplain in Boxley Valley extends 7 miles in length with an average width of 1500 feet, large by Ozark standards (NPS 1985:6). Much of the valley floor occurs within the 100 year floodplain, with the exception of higher stream terraces and narrow benches bordering the base of neighboring bluffs (NPS 1985:19).

Geologically, the Ozark Mountains are plateaus uplifted as a unit during the Paleozoic Era. Subsequent erosion and differential weathering of underlying formations account in part for the rugged topography of the area. Lithology of Boxley Valley is composed of alternating bands of limestone, dolomite, sandstone and shale. The Everton and Saint Peter formations are found on the lower valley floor with the Boone formation in the upper valley; undifferentiated Upper Mississippi rocks; Cane Hill formation; and Boyd shale and the Atoka formation on the mountain summits (NPS 1985:17). The erosion of underlying less resistant strata in the Everton formation accounts for the dry bluff shelters that abound in the Ozarks (Jones and Abernathy 1979:3). Local lithic resources important during area prehistory include sandstone from the Atoka formation, a white chert from the Boone formation (Jones and Abernathy 1979:3; Raab et al. 1982:17) and a black vitreous flint from the Pitkin formation (House 1977). The Pitkin formation has not been mapped in Boxley Valley, but does overly the Atoka formation in other parts of Newton County (Easton 1942).

Soils

Soils of the Ozarks may be broadly classified as Ultisols, soils having subsurface horizons of clay accumulation and a low base supply (Buol, Hole and McCracken 1973:213). Soils in mountainous areas tend to vary greatly within short distances with vertical zonation being common. Seventy-three different soil types have been mapped in Boxley Valley (NPS nd:1). Higher elevation soils tend to be acidic, thin cherty loams and clays while medium textured sandy and silty loams predominate in the valley bottom (NPS 1985:19).

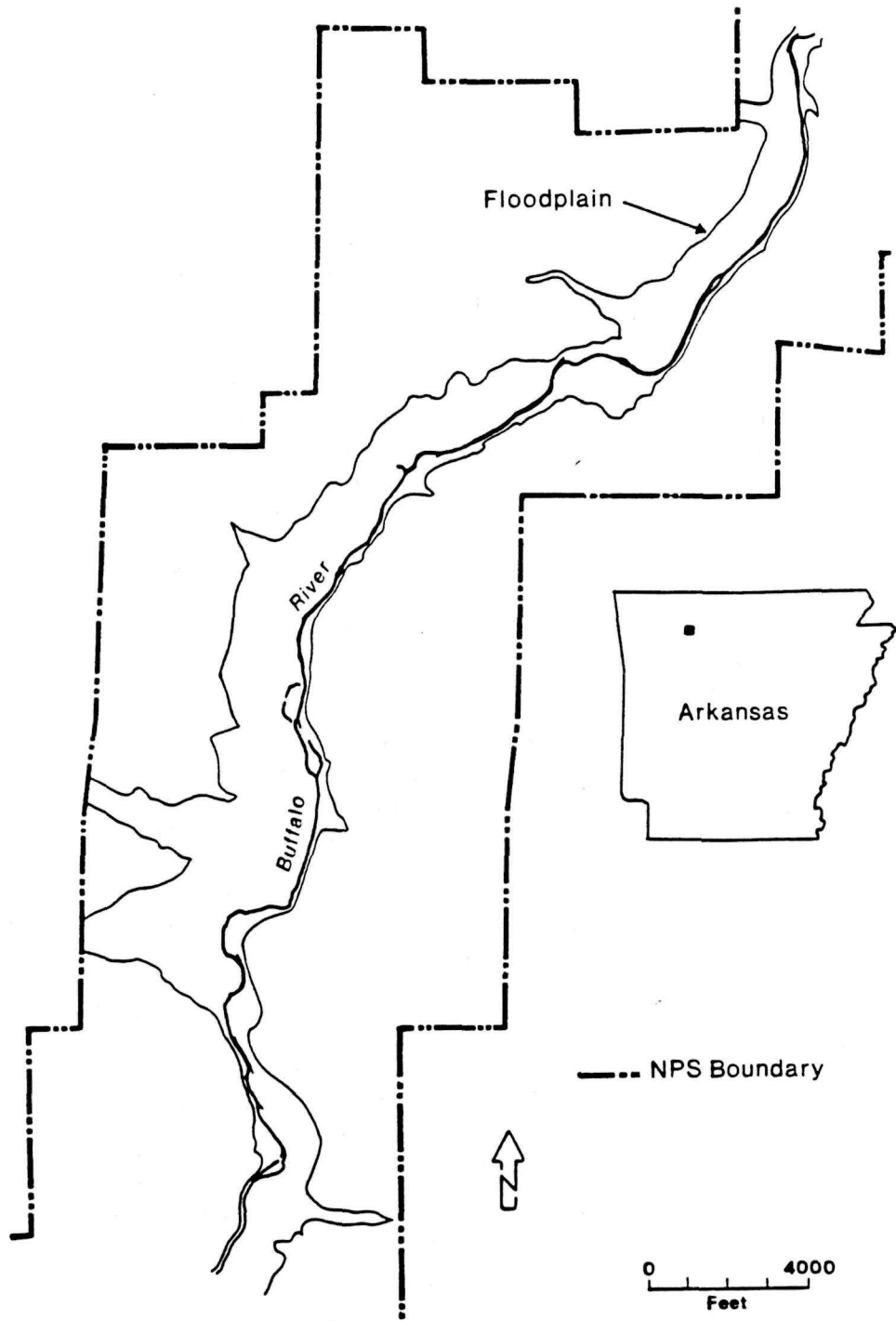


Figure 1. The location of Boxley Valley.

Climate

According to the Koppen-Geiger system of climate classification, Boxley Valley and northwest Arkansas are characterized by a mild humid (mesothermal) climate (Cfa). The mesothermal climate has at least 1 month with an average temperature under 64.4 degrees F. At least 1 month surpasses 71.6 degrees F. Precipitation is sufficient during all months with no clearly defined dry season (Strahler and Strahler 1978:144). At least 4 distinct seasons, however, are evident in northwest Arkansas: a hot summer, mild winter, and a clearly defined spring and fall.

Vegetation

Floristically, the study area may be included in the Oak-Hickory region of the Eastern Deciduous Forest (Braun 1950). The typical climax community of the area is a Red Oak-White Oak-Hickory association with Shortleaf pine and Post Oak present on the driest sites. A mixed hardwood community predominates in floodplain settings: Red Maple-Birch-American Elm-Sycamore-Cottonwood. Smaller, areally restricted forest types include the Beech-Sugar Maple cove forest, a relict community occupying the best soils in cool, moist, north facing ravines in the uplands. White Oak, Northern Red Oak and Umbrella Magnolia are sub-dominants. Cedar glades may be found on xeric upland sites (bluffs and rocky hills). The dominant species of this community is Red Cedar often associated with Shortleaf Pine (Crow 1974:24).

CULTURAL BACKGROUND AND PREVIOUS INVESTIGATIONS

The prehistory of the Buffalo National River has been summarized by Wolfman (1979). More extensive overviews of the Boston Mountains region may be found in Raab et al. (1982) and Sabo et al. (1982). For an in-depth understanding, the reader is referred to these sources. For the purposes of this study, the prehistoric cultural chronology has, with minor changes, been extracted from Sabo et al. (1982:49) and represented in Table 1. Historically, both the Osages (ca. 1763-1804) and Cherokees (1794-1828) occupied the region. Euro-American settlers began to expand into the interior of Arkansas after 1820 (Sabo et al. 1982:85). The earliest settlers in Boxley Valley arrived around 1830 (Lackey 1950:17).

The prehistory of the entire Ozark region of Arkansas is poorly understood. As recently as 1982, the area was characterized as a virtual "Terra Incognita" (Raab et al. 1982:4). Early excavations in the Ozarks were restricted to dry bluff shelter sites because of their remarkable

preservation. A biased understanding of area prehistory resulted. It was not until the inception of cultural resource legislation in the 1960's that data from other kinds of archeological sites were collected (Raab et al. 1982:4-5).

Early settlers in Boxley Valley were well aware of the existance of prehistoric remains. Artifacts were often unearthed during nitrate mining operations in local caves. Perhaps the first recorded description of prehistoric remains was published in Arkansas' first geological survey report. Commenting on nitrate mining in Cave Creek Cave, State Geologist David Dale Owen observed that the cavern was once "the habitation of aborigines." Elaborating further, Owen described an infant burial "enveloped in rags, and lying in a willow basket" and noted the discovery of a "polished ivory breast dirk, with three holes in it, . . . a long piece of rope . . . [and] . . . a broken sea shell (Pyrula)" (Owen 1858:85).

Scientific curiosity with Ozark bluff shelters began in the early years of the 20th century. In 1931, an excavation was conducted at Cobb Cave, located in a side valley of Boxley Valley. Perishable remains recovered from the site were the topic of several studies over the next 4 decades (Dellinger 1936; Dellinger and Dickson 1942; Cleland 1960, 1965; Sholtz 1968, 1975). In 1972, the Buffalo National River was incorporated as a unit of the National Park System. An archeological assessment of the river was conducted in the same year, and with the aid of local informants, 254 sites were documented (Wolfman 1979). Eleven of these sites are located in Boxley Valley. In the following years, 2 additional sites were discovered (Bradford 1979; Limp 1986).

Although 13 archeological sites have been recorded in Boxley Valley, it is obvious that far more exist. In speaking generally of the Buffalo River, Wolfman (1979:34) comments that: "there probably is not a second terrace field along the river . . . where some chipping debris could not be collected after plowing." As a result, a very high site density in Boxley Valley may be expected. The reason that more sites have not been found is because a comprehensive survey has not been undertaken and the heavy ground cover in the area is a formidable obstacle to site recognition (Limp 1986:18; Raab et al. 1982:18-19; Wolfman 1979:43-44). Furthermore, it is probable that alluviation in the Buffalo River floodplain has buried many sites (Wolfman 1979:34). Any archeological investigation in the Buffalo River area must consider these problems.

TABLE 1
CULTURAL CHRONOLOGY OF THE OZARKS

Cultural Period	Phase	Date Range
Paleo-Indian	Paleo-Indian	12000-10500 B.P.
Transitional	Dalton	10500-9500 B.P.
Archaic	Early Archaic	9500-8000 B.P.
	Middle Archaic	8000-5000 B.P.
	Late Archaic	5000-2500 B.P.
Woodland	Early Woodland	2500-1800 B.P.
	Middle Woodland	1800-1350 B.P.
	Late Woodland	1350-1100 B.P.
Mississippi	Caddo	1100-450 B.P.
	Neosho	450-300 B.P.
Proto-Historic	Proto-Historic	300-ca. 223 B.P.

METHODS AND PROCEDURES

Field Investigation

For procedures of field survey and testing, A State Plan For The Conservation of Archeological Resources (Davis 1982a) was consulted. In areas of dense ground cover, the plan recommends that shovel tests be conducted every 20-30 m apart. Recommended test dimensions are 30x30 cm square and approximately 30-50 cm deep. A prior trail survey in the Buffalo National River (Jones and Abernathy 1979) employed a similar strategy, placing shovel tests every 15 m apart. When sites were encountered, the surveyors employed a combination of shovel tests with natural surface exposures (i.e. rodent burrows and erosional cuts) to determine site extent. This approach is time efficient and minimizes disturbance to cultural deposits.

For the purposes of this survey, it was arbitrarily determined that tests would be spaced every 20 m apart. In areas of suitable visibility (i.e. where the proposed trail alignment corresponds to former logging traces), it was unnecessary to excavate shovel tests. Erosion in areas such as these often increased visibility to nearly 100 percent. Once a site was discovered, the survey was interrupted and relevant information recorded.

Whenever possible, site dimensions were determined from artifacts visible on the surface. When vegetation was dense, this approach was supplemented by shovel testing. At the very least, 1 shovel test was excavated to determine depth of the cultural deposit and soil development. Backfill from tests was troweled through and all artifacts collected. Observations concerning the nearest source of water, landform and soil type were made; photographs were taken and a sketch map drawn. When these data had been collected, approximately 10 minutes were devoted to general surface collection of the site. All artifacts were gathered and deposited in a paper bag to which was assigned a temporary site number. Permanent site numbers were provided by the Arkansas Archeological Survey.

Artifact Description

Sandstone and Boone chert, derived from local formations, were abundant at every site. Potentially, the occurrence of sandstone and Boone chert could be attributed to a cultural origin. The ubiquity of both materials throughout Boxley Valley, however, makes the identification of all but the most altered specimens exceedingly difficult. To further compound the problem, evidence of thermal alteration or

burning may not be used as the sole indicator of prehistoric modification. Burned sandstone and chert are quite common in "off-site" contexts and probably originated from the practice of burning brush and stumps in this once heavily logged region. Unless found in a context suggesting cultural origin or definitely displaying intentional alteration, sandstone and Boone chert--thermally altered or otherwise--were ignored. Site definition then, depended on the recognition of ceramics, ground or pecked stone, and culturally modified chert (formal tools and characteristic lithic debris resulting from the manufacture of such tools). Lithic debris was by far the most common indicator of sites during this investigation. The analysis of lithic debris recovered during the survey (Appendix 2) is organized after the following categories (Coleman et al. 1984):

(1) Primary decortication.

Primary decortication flakes represent the first flake removals on a nodule or core with the main purpose being the removal of unsuitable outer cortex and the creation of a striking platform. Primary decortication flakes are characteristically thick with a pronounced bulb of percussion resulting from direct hard hammer percussion. The striking platform may or may not be covered with cortex while the dorsal surface is completely covered.

(2) Secondary decortication.

Secondary decortication flakes result from continued preparation and shaping of the core. Flakes are thick with pronounced bulbs of percussion. Platforms are usually free of cortex and the dorsal surface exhibits at least 1 scar from a previous flake removal. Thus, the dorsal surface is only partially covered with cortex.

(3) Interior flakes.

Interior flakes are created by further hard hammer reduction of the core and are intended to serve as specialized flake tools or with further alteration, as bifacial implements. These flakes are relatively large with well pronounced bulbs of percussion and normally lacking cortex.

(4) Thinning flakes.

Thinning flakes are usually produced by soft hammer percussion techniques during the final shaping and thinning phase of biface reduction. These flakes exhibit previous flake scar removals on the dorsal surface, a prepared

platform with intentional grinding, lipping on the platform edge, and a diffuse bulb of percussion.

(5) Tertiary flakes.

This category includes small, thin flakes with well prepared platforms removed by a hand held pressure tool in the final phase of biface reduction. Pressure flakes may result from either intentional thinning in some industries, sharpening of lateral biface edges or notching. It is virtually impossible on the basis of macroscopic analysis, to distinguish between unintentional, low intensity percussion flakes (inadvertently produced throughout the reduction sequence), and pressure flakes with crushed platforms. Both varieties will be included in the tertiary flake category.

(6) Shatter.

This category includes thick, angular fragments of chert without thin edges or bulbs of percussion. Shatter is the result of hard hammer percussion blows that terminated along old fracture planes in the raw material. Shatter may also be produced from intense but uneven heat.

Additionally, the presence or absence of thermal alteration as defined by Streuver (1973:63) will be noted. Chert is considered thermally altered if it displays a pink-to-reddish coloration, lustrous texture, gray or smoked appearance on remnant cortex surfaces, or evidence of burning indicated by crazing lines, hackling, pot-lid fractures and colors ranging from deep red-to-dark blue or gray-to-black.

DISCUSSION AND RESULTS

Prior to initiating fieldwork, site locational maps at the National Park Service headquarters in Harrison were examined to determine if known sites would be affected by proposed trail placement. A single previously recorded site (3NW118) was identified. Recorded in 1968, 3NW118 is a nebulously defined prehistoric site situated somewhere in the Buffalo River floodplain in the vicinity of the proposed trail corridor. Artifacts formerly recovered from the site (1 Bulverde point) suggest an Archaic occupation.

Field investigations were conducted in the Boxley Valley area over a 4 day period (March 24-27) to identify archeological sites affected by resell of National Park Service property and proposed trail construction. A reconnaissance of the 3+ acre Casey-Clark tract and survey of 5 linear miles along the proposed trail route (Fig. 2)

revealed the locations of 4 previously unrecorded prehistoric sites.

Reconnaissance of the Casey-Clark Tract

The 3+ acre Casey-Clark tract is located in a secondary valley adjacent to Boxley Valley. The triangular shaped tract is situated entirely in the floodplain (1120 feet AMSL) with Beech Creek and its bluffline demarcating the property along the southern and northwestern boundaries, respectively (Fig. 3). The tract is divided by fenced inclosures into a yard and pasture areas. The yard contains the Casey-Clark house with attendant outbuildings. These known historic structures and the yard area were not a subject of this investigation and, with the exception of test 36, activities were restricted to the adjacent and larger pasture area.

The pasture is relatively low and apparently subject to inundation. The only topographical relief evident is a natural levee paralleling Beech Creek along the southern pasture edge. The levee, about 1 m higher than the surrounding floodplain, averages approximately 40 m in width.

Investigation began with a surface survey of the pasture. Visibility approached 25 percent because of the early season and the presence of abundant cattle trails and yarding areas. A single prehistoric site was identified during the surface survey. Flakes were spread over a restricted area on the highest part of the levee adjacent to Beech Creek. A detailed description of site 3NW611 is contained in Appendix 1. Further evidence of prehistoric occupation elsewhere in the tract was not observed. To determine if subsurface evidence of occupation was present, however, extensive shovel testing was conducted.

Thirty-six shovel tests were excavated on the Casey-Clark tract, concentrating mainly on the elevated levee. Tests were spaced 20 m apart, across the levee, with 4 tests being conducted in the floodplain behind the levee. Other prehistoric sites were not identified. Three flakes found in shovel tests elsewhere on the levee (tests 4, 9, and 34) appear to be isolated artifacts and not an extension of site 3NW611. Cultural evidence was not found anywhere in the floodplain behind the levee. An additional test (#36) was excavated in the vicinity of the Casey-Clark springhouse and spring pond. Cultural evidence was not observed.

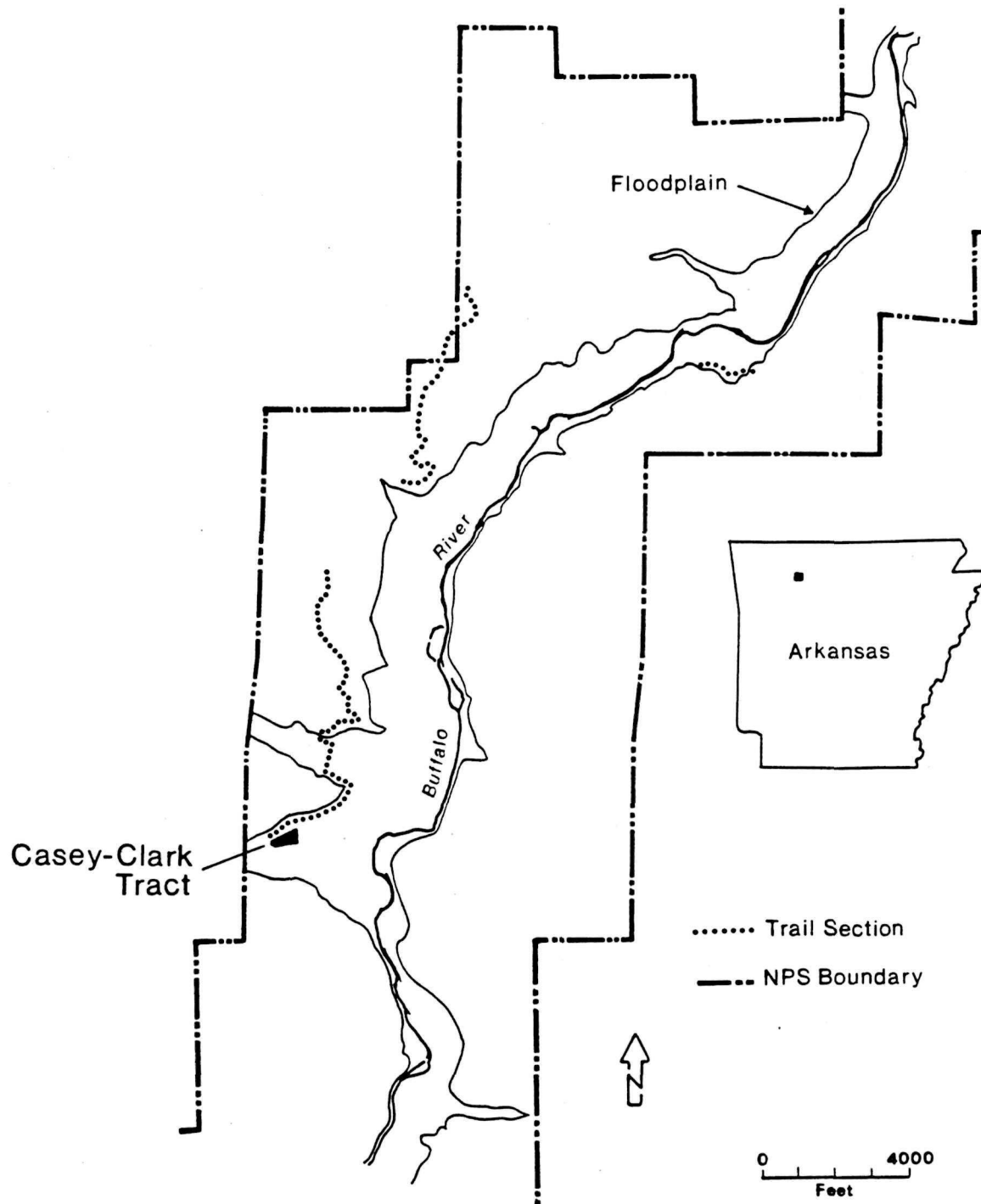


Figure 2. The location of areas investigated.

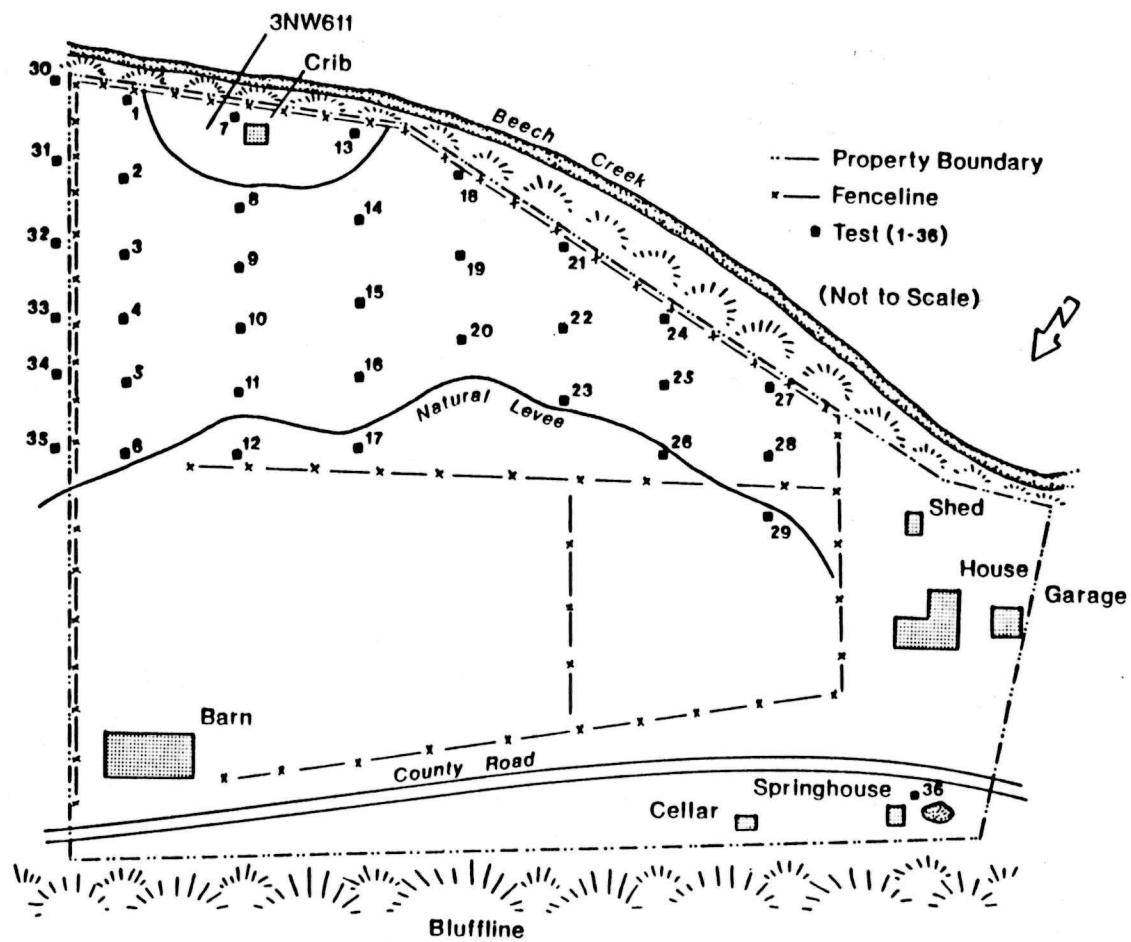


Figure 3. The Casey-Clark tract.

Trail Survey

Approximately 5 miles of proposed Boxley Valley trails were investigated (Fig. 2). On the west side of the Buffalo River, 0.98 miles of trail parallels the bluff-base, following an existing gravel county road. While archeological sites may exist beneath the road surface, use of this preexisting route as a trail corridor poses no threat to archeological remains. The remaining 3.09 miles of trail are located in rugged upland areas, often with slopes exceeding 35 percent. In areas where the trail follows former logging traces, visibility was often excellent. In dense vegetation, however, shovel testing was used. Cultural remains were not encountered.

A section of trail, 0.57 miles in length was surveyed on the east side of the Buffalo River (Fig. 2). As described by landscape architect Leon Clifford, the proposed trail corridor proceeds from:

. . . the Villines Cabin and turns northeasterly, crossing the Dry Creek drainage and the "County" Road. It utilizes approximately 300 feet of old access road . . . , passes below a waterfalls [sic] and ascends the ridge between Dry Creek and Running Creek . . . The trail winds its way up the ridge to the rock ledge, crosses . . . the ridge . . . and then turns southeasterly as it descends the ridge to its Running Creek crossing (Clifford 1986).

The proposed trail corridor, as outlined above, could potentially impact 4 archeological sites including 2 highly visible bluff shelters (Fig. 4). As a result, 2 proposed alternative trail corridors that bypass these sensitive areas were investigated (Fig. 4).

The first alternate trail corridor utilizes a gravel county road, entering the sensitive area from the south and bypassing the Villines Cabin and the surrounding floodplain. The trail turns southeast on an unimproved access road for a distance of approximately 100 feet. At this point, the trail leaves the access road and meanders in an easterly direction to the bluff edge. The trail then follows a winding course down the bluff to the floodplain. Here the trail joins the corridor as originally proposed, utilizes the Running Creek ford and continues 500 feet northeast, exiting NPS tract #18-113. This alternative brings the trail in close proximity to both bluff shelter/caves and crosses a potentially extensive prehistoric midden at the bluff base (Fig. 4)

The second alternate trail initially uses the original corridor. Beginning at the Villines Cabin, the trail continues northeast, crossing the Dry Creek drainage and the county road. The trail utilizes the old access road but instead of ascending the bluff to follow the rock outcrop as originally proposed, the alternate continues along the access road, skirting the bluff base. The alternate trail joins the original corridor at the Running Creek ford and proceeds northeast for 500 feet, exiting NPS tract #18-113. Potentially, 3 sites may be impacted by this alternate route (Fig. 4).

Unfortunately, the proposed trail corridor, as well as both alternate routes, will impact archeological sites to some extent. Trail alternates and their probable impacts have been summarized in Appendix 3. The relative merits of all three proposed corridors, from a cultural resource management standpoint, are considered below.

An assessment of trail impact must consider 3 criteria: site significance, the total number of sites to be impacted, and the extent to which sites will be impacted. Perhaps the single most important criterion is site significance. As defined in the Arkansas State Plan for the Conservation of Archeological Resources (Davis 1982a:B12), site significance is dependent upon integrity, rarity, uniqueness, and the potential to provide information about past human behavior, among other qualities. Two sites documented during this investigation (3NW612, and 3NW613) are considered eligible for nomination to the National Register of Historic Places. Both sites are bluff shelter/caves with an extensive midden deposit below the shelter mouths. Two additional sites (3NW118 (C) and 3NW614), both floodplain sites with cultural deposits extending below the plow-zone, are probably of National Register quality. Special care must be taken in choosing the trail alternate with the least impact to these 4 sites.

The original trail corridor directly impacts both shelters and, as detailed in Appendix 3, would result in their being disturbed or destroyed. Likewise, trail alternate 1 passes near the bluff shelters and, in descending the bluff, would likely impact the midden deposit at the bluff base. Erosion of this valuable cultural deposit would result and the close proximity of the trail to both shelters would probably invite severe secondary impact. Clearly, neither the originally proposed corridor or trail alternate 1 are viable. The best de facto option is trail alternate 2. While alternate 2 will affect 3 archeological sites, probable impact will be relatively minimal (Appendix 3).

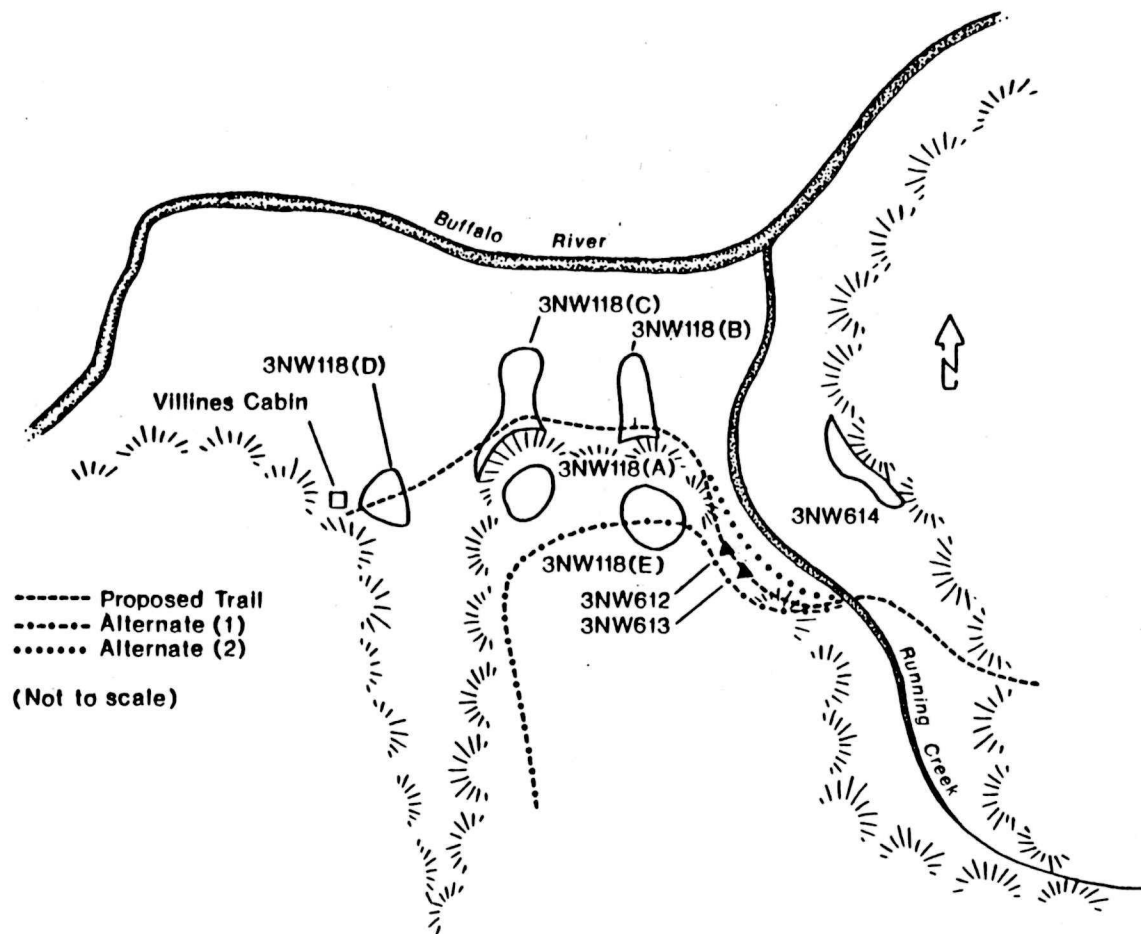


Figure 4. Archeological sites and trail locations.

CONCLUSION AND RECOMMENDATIONS

The 4 day investigation described herein has resulted in the documentation of 5 archeological sites. A single prehistoric site was discovered during reconnaissance of the Casey-Clark tract. The site appears to be a shallow lithic scatter of unknown cultural affiliation. Phase II testing as specified in the "State Plan" (Davis 1982b:69) will be conducted at the Casey-Clark site prior to public resell of the tract.

Most of the trail segments surveyed during this project are in the dissected upland area west of the Buffalo River. Cultural remains were not encountered. Four archeological sites, however, were documented along the proposed trail corridor on the east side of Buffalo River. Two additional trail alternates, bypassing much of this sensitive area, were also investigated. It is recommended that trail alternate 2, as described herein, be utilized.

Trail alternate 2 is least damaging to archeological resources. It avoids the most significant sites and uses a preexisting access road over much of its course. It should be noted, however, that the stone outcrop containing both shelter/caves is visible at various points along trail alternate 2 and secondary impact could result. These small shelter/caves could be destroyed by pot-hunters in the span of one afternoon. For these reasons, the following options to mitigate adverse impact to cultural resources are offered:

- 1) Relocate the trail and completely bypass the sensitive area.
- 2) Resell the property with lease stipulations to safeguard archeological resources.
- 3) Fence in the shelter/caves and or post warning signs.
- 4) Sponser an excavation at the shelter/caves to retrieve valuable scientific data before the sites are despoiled by pot-hunters.

If it is not feasible to relocate the trail, trail alternative 2 should be followed. In any event it would be desirable to conduct an excavation at sites 3NW612 and 3NW613 before irreperable damage is inflicted by pot-hunters. Site 3NW112 has already been partially destroyed. As far as the writer is aware, pristine bluff shelters such as 3NW113 are unknown and therefore the site is significant. If an excavation is not sponsored, the property should

eventually be resold to the public with a lease stipulation protecting the sites. It is not recommended that the sites be fenced or posted. This action will only draw attention to the shelters and hasten their destruction.

Many of the problems encountered in trail placement could be avoided if, in the future, park service personnel will locate as much of the proposed trail route as possible on former logging and mining traces. From a cultural resource management standpoint, this would reduce the risk to archeological sites. Other benefits would result including:

- 1) Less ecological damage will occur.
- 2) Former traces are cultural features and have great interpretive value.
- 3) Many traces provide direct access to landscape features which the park could interpret. When traces do not provide access to desired landscape features and scenic vistas, short spur trails could be constructed.
- 4) By using logging/mining traces, the Park Service would disrupt secondary forest regrowth, and in a sense, preserve a number of these historic landscape features.
- 5) Most traces are already located in areas with grades suitable for equestrian use.
- 6) Overall, the use of preexisting traces will be cost efficient. Cultural resource surveys will be less intensive. Costly testing and excavation will be minimized.

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APPENDIX 1
SITE DESCRIPTIONS

3NW118 (A)

Topographic situation: Bluff crest
Elevation: 1090 feet AMSL
Distance to water: 1 meter
Site area: 961 square meters
Vegetation: Grass
Soil: Sandy Loam

Site 3NW118 (A) is situated on the bluff crest overlooking the Buffalo River/Running Creek floodplain. The site appears to be deflated as sandstone outcrops occur in many locations and flakes were observed lying exposed on the stone. A single shovel test conducted near the center of the site revealed a thin mantle of soil 6 cm in depth. A total of 15 flakes and a fragment of a probable Gary dart point were recovered. Two fragmentary metates were photographed but not collected.

Assessment and recommendations: Judging from the probable Gary dart point, a Middle to Late Woodland component (ca. 2000 B.C. - A.D. 1000) may be present at Site 3NW118 (A). Functionally, the projectile point may indicate hunting/butchering activities. The metates reflect processing of nuts or grain. Both metates were located on the west edge of the artifact concentration and could indicate a separation of activity areas. A nearly complete lithic reduction sequence is reflected, indicating the manufacture of bifacial tools. Further investigation is required to determine if Site 3NW118 (A) is eligible for nomination to the National Register of Historic Places.

3NW118 (B)

Topographic situation: Bluff base projection
Elevation: 1050 feet AMSL
Distance to water: 10 meters

Site area: 1937 square meters

Vegetation: Grass

Soil: Sandy loam

Description: Site 3NW118 (B) is located on a narrow finger of land that protrudes from the bluff base into the Buffalo River/Running Creek floodplain. Flakes were observed on the highest portion of this feature over its entire length. Testing indicates that depth of the cultural deposit is 25 cm below ground surface. It is possible, however, that colluviation at the base of the bluff may have resulted in much deeper deposits. A shovel test at this location was terminated at 20 cm below the surface because of a heavy concentration of natural chert. Artifacts recovered include: 45 flakes, 1 preform tip and an end scraper.

Assessment and recommendations: Cultural/temporal diagnostics were not found at Site 3NW118 (B). Functionally, the end scraper suggests that hide processing or some other activity was conducted. A nearly complete lithic reduction sequence and a broken preform indicates that bifacial tool production occurred. Further testing is required before a determination of eligibility for nomination to the National Register of Historic Places may be made.

3NW118 (C)

Topographic situation: Bluff base projection

Elevation: 1050 feet AMSL

Distance to water: 15 meters

Site area: 3901 square meters

Vegetation: Grass

Soil: Sandy loam

Description: Site 3NW118 (C) is located on a narrow finger of land that protrudes from the bluff base into the Buffalo River/Running Creek floodplain. An extension of the site follows an elevated feature at the bluff base (the "toe" of the bluff) to the southwest for a distance of 55 m. Although originally believed to represent 2 distinct areas, shovel testing indicates a continuous artifact scatter. Shovel tests further reveal a cultural deposit 60 cm in

depth. Flakes are abundant throughout the deposit but occur most heavily between 20-50 cm below the surface. At 60 cm below the surface, a sterile, clayey soil is encountered. Because of colluviation near the bluff, however, cultural deposits could underlay sterile bands of soil. On the southwest end of the site, distinctive zonation is evident: zone 1, 0-23 cm and zone 2, 23-28 cm below surface. Zone 1 is a light brown sandy loam and zone 2 is a dark brown sandy loam containing abundant charcoal. The test was terminated at 38 cm below surface without encountering sterile soil. Artifacts recovered from Site 3NW118 (C) include: 4 cores, 120 flakes, 1 preform tip, and 1 bifacial chopper.

Assessment and recommendations: Cultural/temporal diagnostics were not found at Site 3NW118 (C). Functionally, the chopping tool could indicate a number of tasks. A complete lithic reduction sequence and a broken preform indicate that this site was the locus of bifacial tool production. As a relatively deep site, Site 3NW118 (C) may be considered important to understanding regional prehistory. However, further testing should be conducted to determine cultural affiliation and site function. At that time eligibility for nomination to the National Register of Historic Places may be determined.

3NW118 (D)

Topographic situation: Floodplain rise
 Elevation: 1050 feet AMSL
 Distance to water: 10 meters
 Site area: 1029 square meters
 Vegetation: Grass
 Soil: Sandy Loam

Description: Site 3NW118 (D) was discovered on a low rise in the Buffalo River/Dry Creek floodplain. Surface artifacts indicate a sparse lithic scatter coterminous with the floodplain rise. A single shovel test in the center of the site reveals that cultural materials are contained in the upper 20 cm of soil. Artifacts collected from Site 3NW118 (D) include: 1 core, 4 flakes, and 1 side scraper. A large, complete metate was observed on the west end of the site. The metate was photographed but not collected.

Assessment and recommendations: Cultural/temporal diagnostics were not collected. At least three functions, however, including nut/grain processing, possible hide preparation and biface production, are indicated. Cultural materials are sparse and shallow, suggesting that Site 3NW118 (D) reflects a single short term occupation, or perhaps infrequent successive occupations. Further testing is required to determine if Site 3NW118 (D) is eligible for nomination to the National Register of Historic Places.

3NW118 (E)

Topographic situation: Bluff crest

Elevation: 1090 feet AMSL

Distance to water: 25 meters

Site area: 3088 square meters

Vegetation: Forest

Soil: Sandy loam

Description: This site is located on the bluff crest overlooking the Buffalo River/Running Creek floodplain. Flakes visible on the surface indicate a lithic scatter of light density distributed uniformly over 3088 square m. Because Site 3NW118 (E) is under forest vegetation, visibility is very poor. Shovel tests placed along a transect across the site, however, confirmed the site parameters as initially defined by surface artifacts. Shovel tests further indicated that cultural remains are restricted to the upper 10 cm of soil. At 10 cm below the surface, a heavy concentration of natural chert is encountered. Artifacts recovered from Site 3NW118 (E) include: 7 interior flakes, 11 shatter fragments, 1 biface tip, and a pitted mano displaying extensive battering along the edge.

Assessment and recommendations: Culturally/temporally diagnostic artifacts were not recovered from Site 3NW118 (E). Functionally, however, the broken preform, interior flakes and the battered pitted mano suggest a very specialized site function. Using locally abundant Boone chert, bifaces were preformed at Site 3NW118 (E) and then transported elsewhere for further reduction. Additional testing should be conducted to determine if Site 3NW118 (E) is eligible for nomination to the National Register of Historic Places.

3NW611

Topographic situation: Natural levee
 Elevation: 1120 feet AMSL
 Distance to Water: 1 meter
 Site Area: 342 square meters
 Vegetation: Grass
 Soil: Sandy loam

Description: Site 3NW611 was discovered on a natural levee adjacent to Beech Creek. Apparently, Beech Creek has eroded Site 3NW611 since flakes were visible at the base of the stream bank. However, artifacts were not observed in situ in the cut bank. Flakes visible on the surface indicated a lithic scatter of light to moderate density restricted to the highest point on the levee. Shovel testing suggests that cultural materials are contained within the upper 0-30 cm of soil. Since the natural soil deposit at this location is approximately 1 m deep, it is possible that buried cultural remains may exist.

Assessment and recommendations: Culturally and functionally diagnostic artifacts were not recovered from Site 3NW611. Since the 21 flakes found on the site suggest a nearly complete lithic reduction sequence, however, it may be safely stated that site 3NW611 was the locus of bifacial tool manufacture. A single, small residual core suggests that specialized production of flakes also occurred. Further testing at this site is required to determine eligibility for nomination to the National Register of Historic Places.

3NW612

Topographic Situation: Bluff shelter/cave
 Elevation: 1070 feet AMSL
 Distance to water: 10 meters
 Site area: 40 square meters

Vegetation: none

Soil: Loam

Description: Site 3NW612 is a bluff shelter/cave about 20 m above Running Creek. A sandstone overhang widens over Site 3NW612 to 1 m. The shelter opens into a 2 room cave. The antechamber is 3.35 m wide and 3.5 m long, tapering gradually to a narrow crawl-space to enter the innerchamber. The maximum height of the ceiling of the antechamber from the undisturbed floor is 2.22 m. The innerchamber is 4.6 m wide and 6.0 m in length. The ceiling, measured from the floor, is 1.4 m high.

The antechamber of Site 3NW612 has been extensively disturbed by pot-hunters: nearly 1 m of soil has been excavated and dumped at the cave opening. The innerchamber is undisturbed, as is a midden on the slope below the shelter. This potentially extensive midden area is identified by merely scratching below the leaf mold and may be recognized by its very dark soil coloration and flake content.

A sample of artifacts from the bluff shelter was obtained from the pot-hunter's backdirt pile including 2 cores, 49 flakes, 6 blades, 1 unifacial flake knife, 1 hafted scraper, and a single shell tempered pot sherd. A mano, one of several discarded by the pot-hunters, was collected. Charcoal and bone were also observed.

Assessment and Recommendations: Although the sample of artifacts recovered from Site 3NW612 is obviously biased, several conclusions may be drawn. First, the shelter has been intensively occupied as evidenced by a 1 m cultural deposit in the cave, the extensive midden below the shelter and the quantity of artifacts found in the backdirt. While several successive occupations may be represented, the blades and the single shell tempered sherd suggests a Mississippi component (A.D. 900-ca. 1600). A full range of activities is represented by a nearly complete lithic reduction sequence (bifacial tool manufacture), animal bone, a knife and a scraper (butchering, processing, and consumption), potsherd (food storage/preparation), and a mano (nut/grain processing). Site 3NW612 reflects a permanent or semipermanent habitation site. Because the innerchamber and midden below the shelter are intact, Site 3NW612 is considered eligible for nomination to the National Register of Historic Places.

3NW613

Topographic situation: Bluff shelter/cave

Elevation: 1070 feet AMSL

Distance to water: 10 meters

Site area: 26 square meters

Vegetation: None

Soil: Loam

Description: Site 3NW613 is a bluff shelter/cave overlooking Running Creek. A sandstone overhang, normally with a 20-60 cm drip line widens at Site 3NW613 to 1 m. Site 3NW613 is 42 m southeast of Site 3NW612, a bluff shelter/cave under the same overhang.

The shelter at Site 3NW613 opens into a 2 room cave. The antechamber is 3.6 m wide and 3.8 m long, tapering sharply to a narrow crawl space to enter the innerchamber. The maximum elevation of the ceiling of the antechamber from the earthen floor of the cave is 1.3 m. The innerchamber is 3.0 m wide and 6.0 m in length. The ceiling, measured from the cave floor, is 1.2 m high. Since the cave/shelter appears to have been undisturbed by pot-hunters, no attempt was made to determine depth of the cultural deposit. If similar to Site 3NW612, soil could be as deep as 1 m. Several artifacts visible on the shelter/cave floor were collected including: 10 flakes, 1 blade, 1 Marshall point base made of Pitkin chert, 4 flakes exhibiting edge rounding and polish, a single grog tempered sherd with grit and bone inclusions, charcoal, and calcined bone. A potentially large midden deposit occurs below the shelter mouth where the ground slopes gradually to Running Creek. The midden may be recognized by its dark soil coloration and the presence of flakes. Although the extent and depth of this deposit was not verified in the field, it is probably a continuation of the midden located under the shelter at Site 3NW612, 42 m to the northwest.

Assessment and recommendations: The Marshall projectile point base (ca. 3000 B.C. - A.D. 1000) and the grog/bone/grit tempered potsherd indicate a Woodland to Early Caddoan occupation. While the small sample of artifacts gathered from the surface probably does not accurately reflect site contents, it appears from the flakes recovered that bifacial tool production occurred here, as did butchering/processing of carcasses (projectile point

base/bone/utilized flakes) and food storage and preparation (potsherd). As far as the writer is aware, Site 3NW613 may represent the only undisturbed bluff shelter in the area and, therefore, holds much research potential. Site 3NW613 is considered eligible for nomination to the National Register of Historic Places.

3NW614

Topographic situation: Bluff base projection

Elevation: 1050 feet AMSL

Distance to water: 15 meters

Site area: 1986 square meters

Vegetation: Grass

Soil: Sandy loam/clayey sand

Description: Site 3NW614 is situated on the "toe" of the bluff where it widens from 5 to 25 m. This topographic feature is elevated approximately 4 feet above the floodplain of Running Creek/Buffalo River. The site had recently been cleared of brush and, in spite of visibility approaching 50 percent, only a sparse concentration of artifacts coterminous with the toe of the bluff was observed. Two shovel tests were excavated at the site to reveal stratigraphic detail. Test 1, excavated on the south end of the site, indicated that soil was a sandy loam with artifacts occurring in the upper 20 cm. Test 2, excavated on the north end of the site, revealed a clayey sand with two soil zones apparent. The upper 25 cm was a light brown clayey sand (zone 1). At 25 cm below surface, a very dark brown clay was encountered. The test was terminated at 35 cm below surface without having reached sterile soil. Cultural materials were found in both soil zones. Artifacts recovered from Site 3NW614 include: 16 flakes and 1 unifacial preform.

Assessment and recommendations: Cultural/temporal diagnostics were not found at Site 3NW614. Functionally, it may be said that this site was the locus of bifacial tool manufacture. Site 3NW614 has undisturbed cultural deposits deeper than 35 cm and may be eligible for nomination to the National Register of Historic Places. Before an assessment of eligibility may be made, however, further testing must be conducted.

APPENDIX 2

ARTIFACT DISTRIBUTION BY SITE

ARTIFACTS	SITES																		
	3NW611		3NW118 (A)		3NW612		3NW613		3NW118 (B)		3NW118 (C)		3NW118 (D)		3NW118 (E)		3NW614		
	#	Gm	#	Gm	#	Gm	#	Gm	#	Gm	#	Gm	#	Gm	#	Gm	#	Gm	
Core	-	1	13.2	2	197.0	2	205.7					4	135.8	1	8.3				
Primary Decortication	+											1	4.4						
	-	3	17.5																
Secondary Decortication	+	1	4.7	1	9.0			1	3.1										
	-			2	13.0	1	1.0					1	11.6					1	9.1
Interior	+	2	2.1	1	1.5	11	82.0	2	6.0	3	10.7	4	9.1					1	2.1
	-	7	78.0	4	28.8	14	170.0	3	23.2	15	85.9	21	86.5	1	0.5	7	121.7	4	12.1
Thinning	+	1	2.0	2	2.3	9	9.7			5	2.0	24	16.7	1	0.4			4	1.0
	-	5	4.9	3	4.8	5	8.9	2	9.6	8	3.2	34	19.3	1	1.2				
Tertiary	+									1	1.0	7	0.6						
	-									1	1.0	13	0.8					1	0.1
Shatter	+					5	149.0	1	10.0	6	11.2	9	11.2	1	0.3	4	49.5	5	41.1
	-	1	0.4			4	79.8	1	12.1	4	9.9	6	94.2			7	102.6		
Preform	+									1	3.2	1	8.1						
	-															1	15.4	1	53.5
Blades	+					3	14.7	1	4.8										
	-					3	8.7												
Bifacial Tools																			
Gary Point Fragment	-			1	6.4														
Marshall Point Base	-							1	11.6										
Chopper	-											1	339.6						
Unifacial Tools																			
Knife	+					1	15.0												
Hafted Scraper	-					1	26.7												
End Scraper	-									1	9.0								
Side Scraper	-													1	7.3				
Flakes with Edge Polish	-							4	53.4										
Ground/Pecked Stone																			
Mano						1	-												
Pitted Mano																1	457.2		
Metate (not collected)				2	-									1	-				
Ceramics																			
Shell Tempered						1	12.0												
Grog Tempered								1	2.1										
TOTAL		21	122.8	18	262.8	61	783.2	17	135.9	45	137.1	126	737.9	7	18.0	20	746.4	17	119.0

APPENDIX 3
TRAIL ALTERNATIVES
AND PROBABLE IMPACT TO ARCHEOLOGICAL RESOURCES

Proposed Trail Corridor-----

3NW118 (B)

Significance: Undetermined.

Impact: The proposed trail crosses one end of this site on a preexisting access road. As a result, disturbance from trail construction will not adversely affect cultural remains. Since the site is under heavy grass cover and not easily detected, vandalism should not be a problem.

3NW118 (C)

Significance: Potentially eligible for nomination to the National Register of Historic Places.

Impact: The proposed trail crosses one end of this site on a preexisting access road. As a result, disturbance from trail construction will not adversely affect cultural remains. Since the site is under heavy grass cover and not easily detected, vandalism should not be a problem.

3NW118 (D)

Significance: Undetermined

Impact: The proposed trail crosses this site. Since an access road does not presently exist, disturbances to cultural remains will result from trail construction. The site is under heavy grass cover, however, and not easily detected. Under normal circumstances, vandalism should not be a problem.

3NW612

Significance: Eligible for nomination to the National Register of Historic Places.

Impact: The proposed trail brings the visitor into direct contact with this bluff shelter/cave.

Trail construction will damage shelter deposits. Long term use will result in erosion and further destruction. Trail proximity will encourage pot-hunting and vandalism to this highly visible resource.

3NW613

Significance: Eligible for nomination to the National Register of Historic Places.

Impact: The proposed trail brings the visitor into direct contact with this bluff shelter/cave. Trail construction will damage shelter deposits. Long term use will result in erosion and further destruction. Trail proximity will encourage pot-hunting and vandalism to this highly visible resource.

Trail Alternate (1)

3NW118 (E)

Significance: Undetermined.

Impact: Trail construction would disturb cultural remains at this site. Since 3NW118 (E) is on relatively level ground, erosion from continued trail use should not be a significant problem. The site is situated in forest and not easily detected by would-be collectors. Vandalism should not be a problem.

3NW612

Significance: Eligible for nomination to the National Register of Historic Places.

Impact: Although the proposed trail alternative does not come into direct contact with this shelter/cave, trail proximity to this resource would invite vandalism. Trail construction down the bluff face would impact the prehistoric midden in this vicinity in one or more areas. Furthermore, long term use would create erosion and additional damage to this sensitive resource.

3NW613

Significance: Eligible for nomination to the National Register of Historic Places.

Impact: Although the proposed trail alternative does not come into direct contact with this shelter/cave, trail proximity to this resource would invite vandalism. As noted above, trail construction would directly impact the prehistoric midden at the bluff base. Extended use of the trail would invite erosion and additional damage.

Trail Alternate (2)

3NW118 (B)

Significance: Undetermined

Impact: The proposed trail crosses one end of this site on a preexisting access road. As a result, disturbance from trail construction will not affect cultural remains. Since the site is under heavy grass cover and not easily detected, vandalism should not be a problem.

3NW118 (C)

Significance: Potentially eligible for nomination to the National Register of Historic Places.

Impact: The proposed trail crosses one end of this site on a preexisting access road. As a result, disturbance from trail construction will not affect cultural remains. Since the site is under heavy grass cover and not easily detected, vandalism should not be a problem.

3NW118 (D)

Significance: Undetermined.

Impact: The proposed trail crosses this site. Disturbances to cultural remains will result from trail construction. The site is under heavy grass cover and not easily detected. Vandalism should not be a problem.

