This document has been checked for information on Native American burials. No images considered to be culturally insensitive, including images and drawings of burials, Ancestors, funerary objects, and other NAGPRA material were found.

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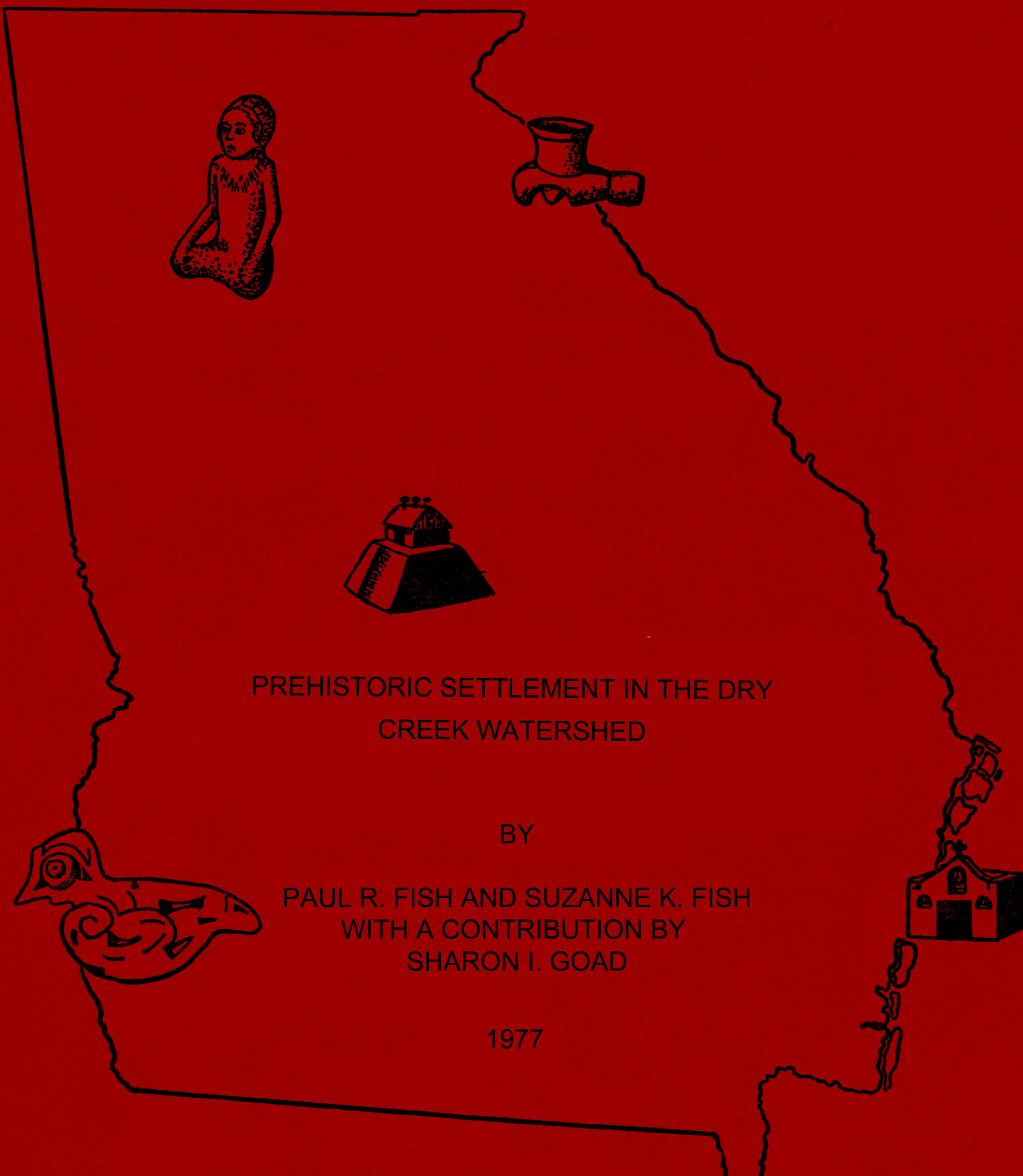
REPORT NO. 14



PREHISTORIC SETTLEMENT IN THE DRY CREEK WATERSHED

BY

PAUL R. FISH AND SUZANNE K. FISH
WITH A CONTRIBUTION BY
SHARON I. GOAD

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Prehistoric Settlement in the Dry Creek Watershed: Results of An Archaeological Survey for the U.S.D.A. Soil Conservation Service in Decatur, Seminole, Miller and Early Counties, Georgia

By

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With a Contribution by
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Athens
1977

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INTRODUCTION

This report summarizes the results of an archaeological survey of proposed Soil Conservation Service drainage channels in the Dry Creek Watershed, Decatur, Seminole, Miller and Early Counties, Georgia. Approximately 200,000 linear feet of drainage channels with rights-of-way of 150 to 300 feet are proposed by the Soil Conservation Service. The watershed is nearly 32,200 acres of which approximately 20 percent will be benefitted by the proposed channel improvements.

The field survey was conducted by University of Georgia archaeologists Paul R. Fish and Gregory Paulk. Fieldwork was started in early December, 1976 and was completed in late January, 1977. The field survey required 45 man/days to complete and an additional 60 man/days were allotted to laboratory analysis and report preparation. Sharon I. Goad, a Ph.D. candidate in the Department of Anthropology, University of Georgia, supervised test excavations at 9Mi3 and 9Mi4 and the results of these studies are incorporated as a part of this final report. Dr. Paul R. Fish acted as the principal investigator for the project.

The primary purpose of this report is to provide planning information to the Soil Conservation Service for use in the Dry Creek Watershed Protection and Flood Prevention Project. As with two previous Soil Conservation Service surveys (Fish 1976; Fish and Mitchell 1976), the archaeological objectives of the survey projects revolve around the establishment of a baseline for a poorly explored district. This baseline is intended to provide a background of data for the Dry Creek Watershed which will aid in the evaluation of archaeological remains by future investigators and facilitate the construction of research designs for further work in the region. This goal is closely related to our primary obligation to the Soil Conservation Service--to identify and evaluate the significance of archaeological remains which could be adversely affected by the proposed channelization project. Significance is a relative assessment which must weigh the kinds of remains present against a background of previous investigation, public interests, and potential contributions to problems which are being studied in Georgia archaeology.

ENVIRONMENTAL SETTING

The 32,180 acre Dry Creek Watershed lies within the Flint River basin in the southwest corner of Georgia. Over 90 percent of the Watershed is within Miller and Seminole Counties; the remaining acreage is in Early and Decatur Counties.

Dry Creek, an intermittent stream, arises in the southeast part of Early County and flows southeasterly for about 20 miles through Miller and Seminole Counties and a short distance into Decatur County. In the upper portion of the Watershed the floodplain and channel are not well-defined; most of the channel in this portion has been modified by landowners. In the lower portion, the channel and floodplain are better defined and usually have some standing water throughout the year. Even in the lower portion, flow is not continuous throughout the year. Dry Creek empties into Spring Creek approximately 10 miles above the headwaters of Lake Seminole.

The Watershed is located in the Dougherty Plain, one of the four subdivisions of the Coastal Plain Physiographic Province. It is underlain by the Ocala Limestone Formation. Soils are the coarse grained sandy soils typical of the Coastal Plains. Topography is level to very gently sloping with relief being more pronounced in the downstream portion. The land has numerous intermittent sinks or depressions. Elevations range from approximately 210 feet to 100 feet above sea level.

Dry Creek Watershed has a humid, subtropical climate with long, hot summers and short, mild winters. Rainfall averages about 52 inches per year; snow is rare. The Watershed is used very extensively for agriculture. Three basic types of natural plant communities occur: 1) a mixed oak community which occurs along the creek; 2) ponds with cypress and tupelo gum in the wettest areas, and oaks and red maple on drier ground surrounding the cypress; 3) remnants of an upland Southern Mixed Hardwood Forest. All of the forests have been logged--most fairly recently.

THE ARCHAEOLOGICAL BACKGROUND TO THE SURVEY PROJECT

The larger region which includes the Dry Creek watershed cannot be characterized as archaeologically unknown by the standards of Georgia archaeology. Within a radius of about 60 miles, three large projects have been carried out in connection with modifications of the Flint and Chattahoochee Rivers. Although the availability of reports varies by project, this amount of attention is considerable. The findings of the present survey cannot be directly compared with any of the previous results, however, and offer a picture of archaeological occupations in some ways at odds with earlier conclusions. While it was on a relatively minor scale, the Dry Creek survey adds a completely new dimension to regional archaeology for several reasons.

The Dry Creek survey focused on a minor rather than a major drainage system. River valleys and primary tributaries have been explored in the past to the neglect of interfluvial areas. Prehistoric patterns of utilization outside the river floodplains are virtually unstudied. The area surveyed was of a magnitude to allow much less diffuse coverage than in previous projects. Finally, the Dry Creek survey employed methods of coverage and data recovery employed at present in American archaeology. The earlier surveys carried out in the 1950's or before represent much less systematic and intensive methodologies than those currently in use.

The Dry Creek survey offers a new perspective on data relating to the range of site sizes and to the representation of various components for the Flint-Chattahoochee district in Southwest Georgia. The nearest comparable body of survey information comes from the Big Slough Watershed about 50 miles to the east (Fish and Mitchell 1976). Comparisons with the results of this survey will be discussed later. Surveys conducted in conjunction with the three major reservoir projects recorded none of the small sites which comprise the majority of Dry Creek remains, and revealed a sparse record of prehistoric occupations predating the use of pottery. Archaeological projects for the Jim Woodruff Dam (Boyd 1958; Bullen 1950, 1958; Kelly 1950), Columbia Dam and Locks (Huscher 1959), and Walter F. George Basin (DeJarnette 1975) mainly investigated the presence of larger and more prominent ceramic period sites on or near the floodplains of the Flint and Chattahoochee. Other efforts in the region have been directed toward the investigation of particular sites such as Kolomoki (Sears 1956), Mandeville (Kellar et al. 1962), or have been surveys of a non-intensive nature (e.g. Steinem 1976) or very limited scope (reported in McCluskey 1976).

SURVEY METHODS

The first step in preparation for the survey was to consult with the Georgia State Archaeological Survey files which are housed in the Laboratory of Archaeology at the University of Georgia. Examination of these records revealed that substantial numbers of sites had been recorded for all four counties included in the survey study area. All of the previously recorded sites, however, are located outside the survey area and most often represent large, ceramic bearing settlements situated in the major river basins.

Since the Dry Creek Watershed was totally unexplored for archaeological remains prior to the present survey, the next effort was directed towards gaining the necessary background to conduct the field investigations. Initial preparation consisted of acquiring pertinent topographic maps, project maps, soils maps, aerial photographs and design specifications for the proposed Soil Conservation Service drainage channels. Confluences of major drainages, ponds and depressions, well-drained soils, and areas of differential elevation were identified since it was expected that these factors might reflect the location of resources which sould influence aboriginal occupation and utilization of the watershed.

Initial field orientation to the watershed was provided by Soil Conservation Service personnel in Donaldsonville. All channels and roads were identified and survey permits for many areas bordering the proposed channels were provided. In addition, attempts were made to contact local amateur archaeologists in order to obtain some insight into the kinds and spatial distributions of archaeological remains which might be encountered during survey. This aspect of investigation met with limited success. None of the collectors interviewed during the course of the study maintained records for the location of their finds and most of their collecting efforts had been directed toward large sites located outside the watershed. Furthermore, absentee land ownership is common throughout the watershed and this fact precluded any systematic attempt to interview local farmers. Discussions with local individuals did lead to the identification of several sites and to the better understanding of a number of others located by the survey, however.

At the time of the survey, none of the channels designated as part of the Dry Creek project had been cleared by the Soil Conservation Service, but many of the channels have been dredged by local county and individual efforts during the last 20 years. Although the proposed channels almost invariably follow natural drainages, large segments cross plowed fields with only a thin tree line obscuring surface visibility. These areas account for nearly 40 percent of all proposed channels and were evaluated by means of surface inspection. Recent timber clearing, newly planted pasture, eroded banks along drainages, and roads and transmission lines permitted evaluation by means of surface inspection for other large segments of proposed channel construction.

The remaining areas of proposed channelization were located in broad, flat areas dotted with depressions containing expanses of standing water. These localities were usually covered by dense vegetation and ground surface visibility was at or near zero. Survey in these areas was accomplished by means of posthole or shovel tests in the most promising localities. A total of 42 subsurface tests were conducted within the channel rights-of-way and none of these produced any evidence of cultural remains.

In all, over 75 percent of the proposed channel rights-of-way were covered on foot. When permission could be secured from landowners, survey was also conducted in open fields located in the channel benefit areas. Actual survey areas are shown in Figure 1.

When a site was encountered, a systematic collection of all surface artifacts was made. Estimates of site size, artifact density, relationship to topographic and other environmental features and potential for future research were all described as part of the site record. Location of the site was plotted on aerial photographs and on project maps. For the purposes of this survey, any occurrence of artifactual material was designated a site.

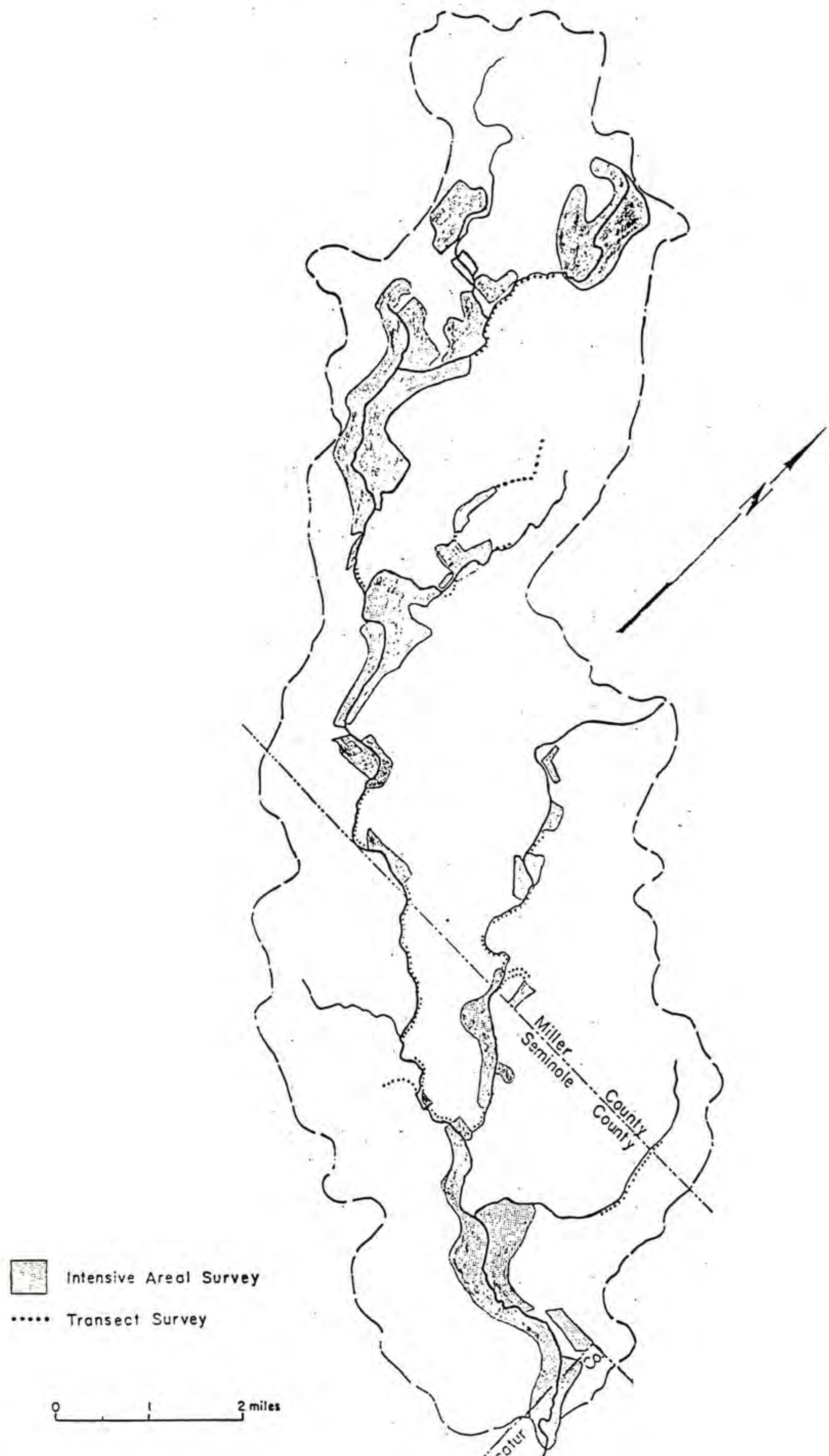

Figure 1. Survey Areas

ARCHAEOLOGICAL RESULTS OF THE PROJECT

Introduction

A total of 119 prehistoric archaeological sites were identified during this investigation and all of these occurred within areas benefitted by the proposed Soil Conservation Service drainage channels. Only four of these sites (9Mi3, 9Mi4, 9Mi54, and 9Mi57) could be directly affected by proposed construction activities. Discussion of these particular localities is undertaken in the following sections of this report. Detailed descriptive data on each of the 119 sites are provided in tabular form in Appendix I. Figure 2 is a map indicating the location of all sites identified during survey.

All artifacts found during the survey were processed and analyzed by the authors of this report. Subsequent to analysis, the artifacts were entered into the catalog of the Laboratory of Archaeology, University of Georgia, and integrated into site survey collections. Likewise, all field notes, photographs, and State Site Survey forms have been deposited with the Laboratory in order to provide a permanent record of the study.

Projectile points were the dominant stylistically diagnostic artifact recovered during survey and these were classified according to approximate temporal position using criteria provided in Cambron and Hulse (1969), Bullen (1975b), and Coe (1964). Traditional types defined by Willey (1949) and DeJarnette (1975) were used to characterize the smaller ceramic assemblage recovered from Dry Creek sites.

Debitage was divided into three broad, descriptive categories: flakes of bifacial retouch, flakes of normal percussion, and formless debris. Formless debris was used as a catchall category and included all unidentified broken flakes as well as shatter. Other characteristics observed in the analysis of debitage included amount of cortex and the frequency of occurrence of exotic stone types. A table representing the results of this analysis is presented in Appendix II. Intentional retouch, pecking or grinding were required criteria before a specimen could be considered for placement into a tool category. A specimen meeting these criteria was then placed into one of 21 descriptive types. These types are chopper, plane, thin biface, thick biface, projectile point, drill, graver, four categories of bifacial sidescraper, four categories of unifacial sidescraper, four categories of endscraper, cores, hammerstones, and other. The "other" category involved types infrequently found in collections and included notches, adzes, double bitted axes, mortars, handstones and nutting stones. The results of this classification is provided in Appendix II.

Definition of Site Types

One of the assumptions underlying analysis has been that the range in functional types present in the artifact assemblages would reflect variation in the types and numbers of aboriginal activities undertaken at the locality. In a previous study (Fish 1976:13-15), it was found that proportions of artifacts collected from the surface of small sites varied widely upon recollection at the same locality. The numbers of types represented in

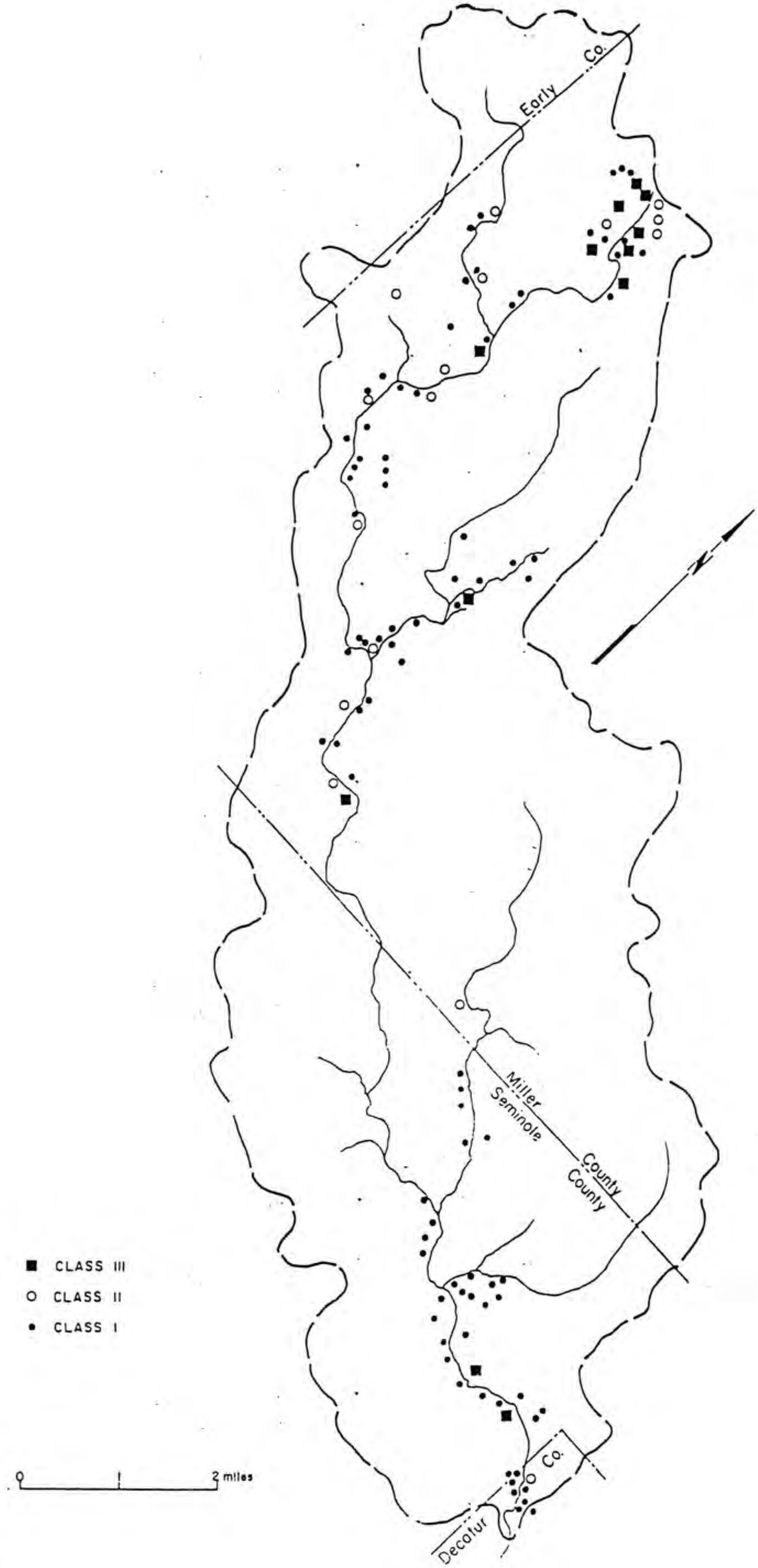

Figure 2. Location of sites identified during survey.

different collections from the same site, however, remained relatively constant. Therefore, it was decided that the most reliable index for comparison should be based on the diversity of types present rather than on differing frequencies of particular artifact categories from site to site.

For this purpose, a simple index of diversity was calculated. This measure of diversity deals with observed artifact categories within entire assemblages. The categories used in this study include ceramics and debitage in addition to the 21 types of retouched, ground, and pecked stone tools. In cases where artifacts on a presence and absence basis are widely distributed among categories, the result is a high index of diversity and involves an assumption of a wide range of activities. When the bulk of the artifacts occurs in a few categories, the index is low and the assumption is a restricted number of activities.

Three classes of sites have been defined by inspection, using apparent natural breaks in the distribution. For purposes of this analysis, it has been assumed that the diversity of artifacts is a reasonable reflection of the site as a whole. For example, it appears that Class I sites correspond to special activity sites, Class II to short term campsites, and Class III to permanent to semi-permanent habitation sites and basecamps. Figure 3 shows the number of sites exhibiting given values for the diversity index. Indices of diversity for specific sites can be found in Appendix III.

Settlement Patterns

In the course of the Dry Creek survey, 119 sites were identified. The greatest number, 71, contained no chronologically diagnostic artifacts and were assigned to an unknown component category. Thirty-three sites produced Archaic style projectile points; 12 sites were judged to have ceramic period occupations on the basis of pottery or appropriate projectile point styles. Only two sites were known to have both ceramic and Archaic components. Another site yielded evidence of the Paleo-Indian stage, rarely encountered in Georgia. Figure 4 shows the distribution of components within the watershed.

Paleo-Indian

The Paleo-Indian stage encompasses the time period from 9,500 to 8,000 B.C. The single Paleo-Indian site occurred at the edge of an unnamed tributary of Dry Creek in an area to be affected by the proposed channelization. While no diagnostic projectile points were recovered during the survey visit, a Clovis point and several Dalton points were observed in a collection made by the owner of the land. Other tools in his collection also fit typical Paleo-Indian styles.

Occupations of this age are known elsewhere in the region only from a few instances of projectile points which are not clearly associated with a site context. R. Bullen (1975a) reports three fluted points originating near the Dry Creek Watershed in the vicinity of Blakely in Early County, Georgia. These points were in the collection of an amateur. Fluted points are known to have been collected about 10 miles west of the Chattahoochee River near Seale, Alabama (DeJarnette 1975:25), and another fluted point was found a number of years previously near Columbus, Georgia (Patterson 1950).

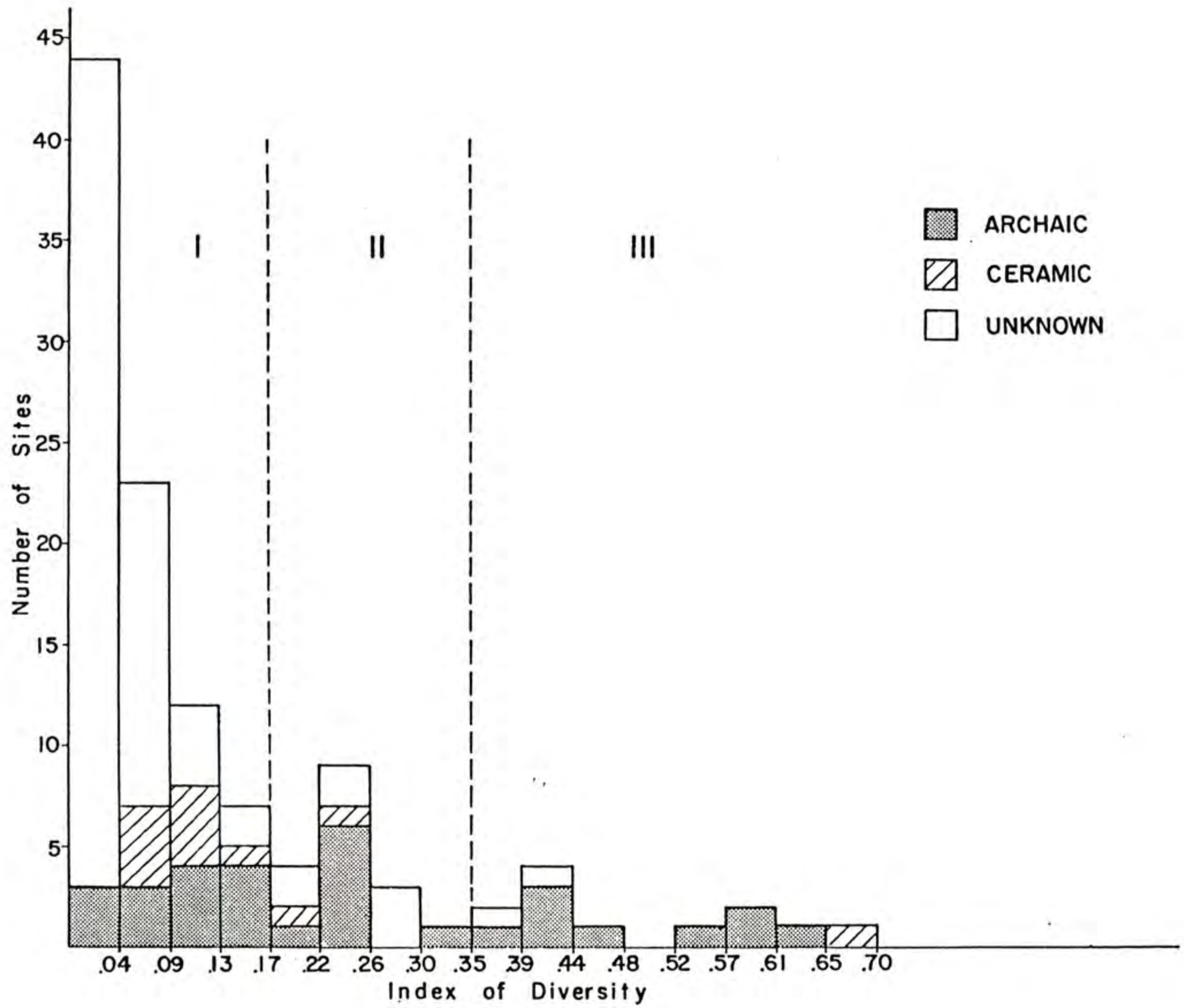

Figure 3. Graph of number of sites exhibiting given values for the diversity index,

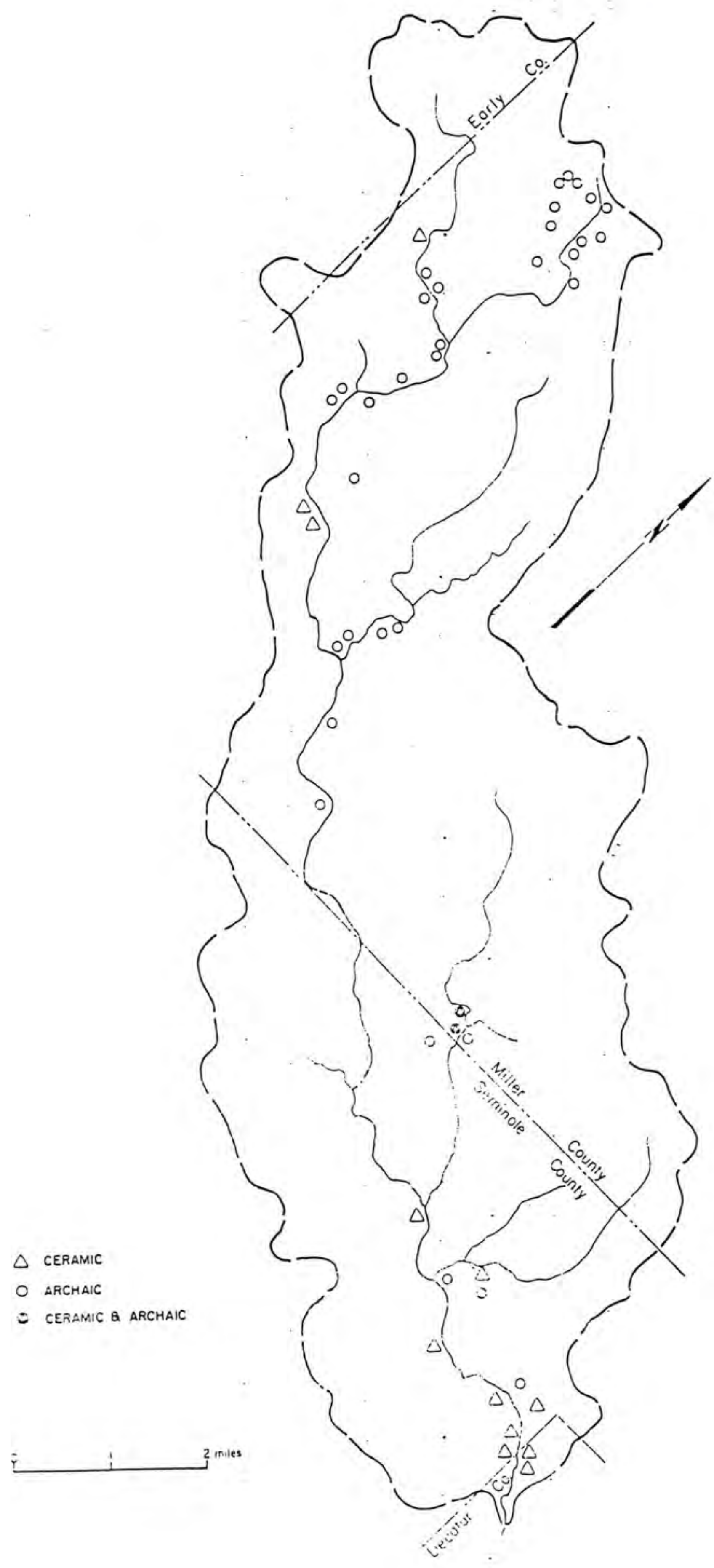

Figure 4. Distribution of components within the watershed.

Archaic

The majority of sites which contained identifiable components were occupied during the Archaic. This archaeological time unit or stage covers a very long span, from about 8000 to 2000 B.C. Late Archaic projectile points are the most numerous within this period. With ceramic phases existing for a much shorter range, the predominance of Archaic sites might be considered expectable. Several other factors enter into interpretation, however. Ceramic period populations are usually assumed to have been denser. Since ceramic sites can be identified by some projectile point styles as well as by the presence of pottery, the chances of ceramic component assignment are greater. Thus it seems reasonable that the Archaic use of the watershed was greater than in later periods. Such an interpretation is at odds with the findings of previous investigations centering on the major river valleys.

Only a few sites with Archaic occupations were recognized during the Jim Woodruff, Columbia Dam and Lock, and the Walter F. George surveys. Preceramic groups might have been considered very rare in the region if it were not for the current examination of the Dry Creek Watershed. It is possible that the Archaic presence was indeed concentrated on minor tributaries and neglected the Flint and Chattahoochee valleys. Such an assumption seems strange, however, in the light of the specialized floral and faunal resources associated with the river floodplains. Factors influencing the relatively more prominent representation of Archaic sites in the Dry Creek survey are probably twofold. Archaic sites tend to be smaller and less easily discovered under conditions of heavy ground cover and unsystematic search during the previous surveys. In addition, alluviation in the later prehistoric and historic periods may play a part in the difficulty of locating Archaic sites on the river floodplains. Bullen (1958) found an Archaic component 13 to 15 feet below the present ground surface in a natural levee of the Chattahoochee.

Archaic sites in the watershed tend to occur on the upper reaches of the drainage system in contrast to the ceramic sites which are clustered mostly in the lower third and particularly near the confluence with Spring Creek. All of the Class III and most of the Class II Archaic sites are to be found in the upstream portion of the drainage, with a definite preference shown for locations on the edge of ponds or depressions. Such situations would offer the attraction of permanent water, and a concentration of plant and animal resources specific to the pond habitat.

Some direct clues are available to resources exploited in the region by Archaic inhabitants. At Bullen's (1958) Late Archaic site on the Chattahoochee, there were remains of nuts as well as deer, turtle, opossum, lynx, muskrat, beaver, snails, and mussels. Hickory nut shells and a locust seed were possibly associated with Late Archaic levels at the McLendon Site on the second terrace of the Chattahoochee on the Alabama side (DeJarnette 1975:137).

Archaic economies in the Dry Creek Watershed appear to have been balanced between hunting and gathering, with the presence of ground stone and appreciable numbers of hammerstones providing evidence of processing activities. The single Archaic site excavated during the Jim Woodruff project, at the edge of Lane Springs, yielded numerous "manos" or hand stones and one mortar (Kelly 1950). This site at a pond on upper Spring Creek near Brinson, Georgia, may be typical of Archaic sites encountered in the Dry Creek survey. Archaic sites appear to fit a pattern of probable seasonal occupation in which resources were both acquired and processed.

Archaic sites are rather evenly distributed among the three site classes (Table 1). Undoubtedly many small sites of unassignable affiliation are also Archaic; nevertheless, the Archaic pattern contrasts sharply with that of ceramic periods in having greater proportions of Class II and III sites. In addition, Table 1 shows that the percentages of different artifact types do not vary widely between these two Archaic site classes. For this period, the distinction between Class II and III sites does not seem attributable to differences in kind of occupation but rather to differences in group size or length of stay.

Ceramic

Ceramic period sites are less numerous in the watershed and are concentrated in the lower end of the drainage system. The numbers of sherds per site is low, and in many cases no placement by phase could be made. At two sites, Santa Rosa Negative Painted and Santa Rosa Simple Stamped pottery revealed a Woodland occupation. Three Late Mississippian period sites were identified by Wakulla Check Stamped sherds. The remaining seven ceramic sites are of unknown affiliation.

The single ceramic-bearing Class III site had a high index of diversity, signifying a wide range of activities, but it is unclear that the size and diversity of the assemblage are solely the product of the ceramic occupation. The identifiable pottery at this site was a Late Mississippian type, but a Late Archaic Savannah River projectile point implies an earlier component. Only 15 sherds were recovered in the surface collection. The ratio of sherds to lithics is only 1 to 1.6 (Table 2), lower than at ceramic Class I and II sites. At more substantial and permanent sites, more ceramics might be expected in an assemblage. Thus it seems quite likely that much of the diversity of artifacts at this site is a product of the Late Archaic component.

Few tools were recovered at ceramic sites; a number of sites are marked by little more than a few sherds and pieces of debitage. Projectile points do constitute an important part of the assemblages, however. Ceramic sites are generally very ephemeral in nature, with evidence of no substantial occupation or wide range of activities. The presence of these later prehistoric groups in the watershed appears to be very sporadic and transitory, perhaps in the course of hunting forays. Such a reconstruction fits the situation found by early Europeans in which farming efforts were concentrated along the larger floodplains and the pine forests were little used.

Comparisons of Archaic and Ceramic Patterns

The Archaic period in the Dry Creek Watershed witnessed the heaviest prehistoric use of the area. Class II and III sites are interpreted as the remains of seasonal camps of small groups engaged in a yearly round of exploitation. Ponds are favored for convenient water supplies and access to specialized resources. It is hypothesized that the people who camped along Dry Creek also hunted and gathered along the river floodplains, although their

TABLE 1. ARTIFACT RATIOS AND FREQUENCIES FOR ARCHAIC SITES.

ARTIFACT FREQUENCIES

	Class I		Class II		Class III	
	#	%	#	%	#	%
Tools						
Chopper	1	3.1	3	3.8	8	5.1
Plane	-	-	3	3.8	7	4.4
Biface	-	-	6	7.6	7	4.4
Projectile Point	20	62.5	24	30.4	29	18.4
Graver/Drill	-	-	2	2.5	5	3.2
Bifacial Sidescraper	1	3.1	3	3.8	7	4.4
Unifacial Sidescraper	4	12.5	23	29.1	47	29.8
Endscraper	1	3.1	4	5.1	11	7.0
Core	1	3.1	5	6.3	6	3.8
Hammerstone	1	3.1	5	6.3	20	12.7
Other Flaked Stone	3	9.4	1	1.3	8	5.1
Groundstone	-	-	-	-	3	1.9
Debitage						
Bifacial Retouch	13	9.2	46	10.5	78	7.8
Normal Percussion	51	35.9	90	20.5	245	24.5
Broken Flakes	72	50.7	273	62.0	597	59.7
Formless Debris	6	4.2	31	7.0	80	8.0

TABLE 1. ARTIFACT RATIOS AND FREQUENCIES FOR ARCHAIC SITES - continued

ARTIFACT RATIOS

	Class I	Class II	Class III
Projectile Points/All Tools	1/1.6	1/3.3	1/5.4
Scrapers/All Tools	1/5.3	1/2.6	1/2.4
Core Tools/All Tools	1/32.0	1/13.2	1/10.5
Groundstone/All Tools	-	-	1/52.7
All Tools/Debitage	1/4.4	1/5.6	1/6.3
Cortical Debitage/All Debitage	1/5.5	1/6.3	1/6.7
Bifacial Retouch/All Debitage	1/10.9	1/9.6	1/12.8
Cores/Debitage	1/142.0	1/88.0	1/166.7

TABLE 2. ARTIFACT RATIOS AND FREQUENCIES FOR CERAMIC PERIOD SITES

ARTIFACT FREQUENCIES

	Class I		Class II		Class III	
	#	%	#	%	#	%
Tools						
Chopper	-	-	-	-	1	4.0
Plane	-	-	-	-	1	4.0
Biface	2	28.6	1	14.3	2	8.0
Projectile Point	1	14.3	1	14.3	7	28.0
Graver/Drill	-	-	-	-	1	4.0
Bifacial Sidescraper	1	14.3	-	-	-	-
Unifacial Sidescraper	1	14.3	1	14.3	8	32.0
Endscraper	-	-	1	14.3	3	12.0
Core	-	-	-	-	-	-
Hammerstone	2	28.6	1	14.3	1	4.0
Other Flaked Stone	-	-	1	14.3	1	4.0
Groundstone	-	-	1	14.3	-	-
Debitage						
Bifacial Retouch	14	27.5	8	21.1	37	13.9
Normal Percussion	13	25.5	7	18.4	76	28.5
Broken Flakes	23	45.0	22	57.9	149	55.8
Formless Debris	1	2.0	1	2.6	5	1.9

TABLE 2. ARTIFACT RATIOS AND FREQUENCIES FOR CERAMIC PERIOD SITES - continued

ARTIFACT RATIOS

	Class I	Class II	Class III
Projectile Points/All Tools	1/7.0	1/7.0	1/3.6
Scrapers/All Tools	1/3.5	1/3.5	1/2.3
Core Tools/All Tools	-	-	1/12.5
Groundstone/All Tools	-	1/7.0	-
All Tools/Debitage	1/7.3	1/5.4	1/10.7
Cortical Debitage/All Debitage	1/7.3	1/3.2	1/4.1
Bifacial Retouch/All Debitage	1/3.6	1/4.8	1/7.2
Cores/All Debitage	-	-	-
All Tools/Ceramics	1/2.4	1/1.8	1.6/1.0

remains have only infrequently been located there. The concentration of Archaic sites in the upper reaches of the drainage may have been in response to localized resources in the past or to other unidentified factors. Class I sites are probably the scene of single extractive episodes. Undoubtedly, many of the numerous small sites in the unknown category are evidence of the same sorts of events.

Ceramic sites in the watershed are smaller and more specialized, probably associated with hunting or other extractive tasks. There would be little to attract agricultural people in the pine forests that covered most of the inter-drainage areas. The preponderance of late sites along the lower end of the drainage may well reflect proximity to permanent villages along Spring Creek where floodplain farming was practiced. Ceramic sites fail to indicate long-term camping or habitation by the very sparsity of ceramics in the assemblages.

Pine forests do not offer many resources to hunting and gathering peoples. Southeastern pine species do not produce edible nuts, and the shade and litter of a mature pine forest prevent the growth of favored game forage. Archaic people did not have the same alternatives to wild food sources as later fully agricultural groups, yet they were the most numerous inhabitants of the watershed. This same phenomenon was encountered miles to the east in the Big Slough Watershed (Fish and Mitchell 1976), where sites of the Late Archaic abounded and those of ceramic periods were virtually absent.

The timing of postglacial environmental change offers one possible rationale for the utilization by Archaic groups of areas which were almost ignored by later prehistoric people. During the Archaic, the Dry Creek Watershed and other similar expanses of southwest Georgia may not have been covered by the homogeneous stands of pine seen by the earliest Europeans. A clue to a vegetational shift of great importance to societies relying in whole or in part on gathered plant resources and game is offered by W. A. Watts (1971). His palynological analysis of lake sediments from southern Georgia and northern Florida suggests a predominantly sclerophyllous oak forest, scrub or savanna, probably with patches of bluestem prairie, between 8,000 and 5,000 years ago. According to his interpretations, about 5,000 years ago, pine forests came to predominate on upland localities. An environment of small prairies and oak savannas would have offered a much more productive milieu of both faunal and floral resources to attract aboriginal hunters and gatherers. The proposed date for the establishment of pine forests on the uplands also marks the end of an abundant record of prehistoric utilization of the Dry Creek Watershed.

IMPACTS OF THE PROPOSED PROJECT ON ARCHAEOLOGICAL REMAINS

Portions of four sites (9Mi3, 9Mi4, 9Mi54, and 9Mi57) are located within proposed channel rights-of-way. Locations of these sites with respect to the proposed channels can be found in Figure 5. The Office of the State Archaeologist and the National Historic Preservation Officer have been contacted and no archaeological site, located in proposed construction rights-of-way or in related benefit areas, is on or currently proposed for nomination to the National Register of Historic Places.

An intensive subsurface testing program was undertaken at two sites located within the 150 ft. rights-of-way defined by the Soil Conservation Service. A detailed description of these tests is presented in Appendix IV. One of the tested sites (9Mi4) has produced artifactual remains dating to the Paleo-Indian time period. Such remains include Clovis and Dalton style projectile points. The other (9Mi3) has remains dating to the Woodland and Archaic periods. The subsurface tests at both sites show that artifacts occur in contexts disturbed by plowing, recent land clearing and previous channel work. The likelihood of preserved subsurface cultural features such as firepits, house floors or storage pits seems remote on the basis of information gathered during the tests.

The multiple component site, 9Mi3, probably does not qualify for nomination to the National Register of Historic Places. Beyond records resulting from this survey, it is difficult to conceive of data pertaining to specific archaeological problems which could be collected by additional investigations at this site. On the other hand, 9Mi4 does qualify for nomination to the National Register of Historic Places at a local level of significance. It is a single component site representing the most poorly known time period in Georgia's culture history sequence. Even though recovered from a disturbed context, a representative artifact assemblage from the locality could provide the basis for site specific functional interpretations and would provide some understanding of the range in a Paleo-Indian tool inventory from southwest Georgia.

Although 9Mi3 is partially, and 9Mi4 is wholly, within the 150 ft. right-of-way defined by the Soil Conservation Service, avoidance at this juncture seems to be the most realistic recommendation for mitigation. If construction related disturbance is restricted to 20 ft. of either side of the present drainage, no direct damage to either site should result. Also, the owner of 9Mi4 recognizes the site's potential importance and is anxious to see the locality preserved or scientifically studied. In view of these facts, our recommendation is one of avoidance.

9Mi54 and 9Mi57 are two small Class I sites located at the edge of proposed channel construction. The localities were exposed by recent clearing operations which appear to have destroyed artifact contextual relationships. Several posthole tests in the vicinity of the sites failed to reveal evidence of undisturbed midden or additional artifactual material. It is our position that investigations beyond those conducted during the survey would not be productive and that the sites do not merit nomination to the National Register of Historic Places.

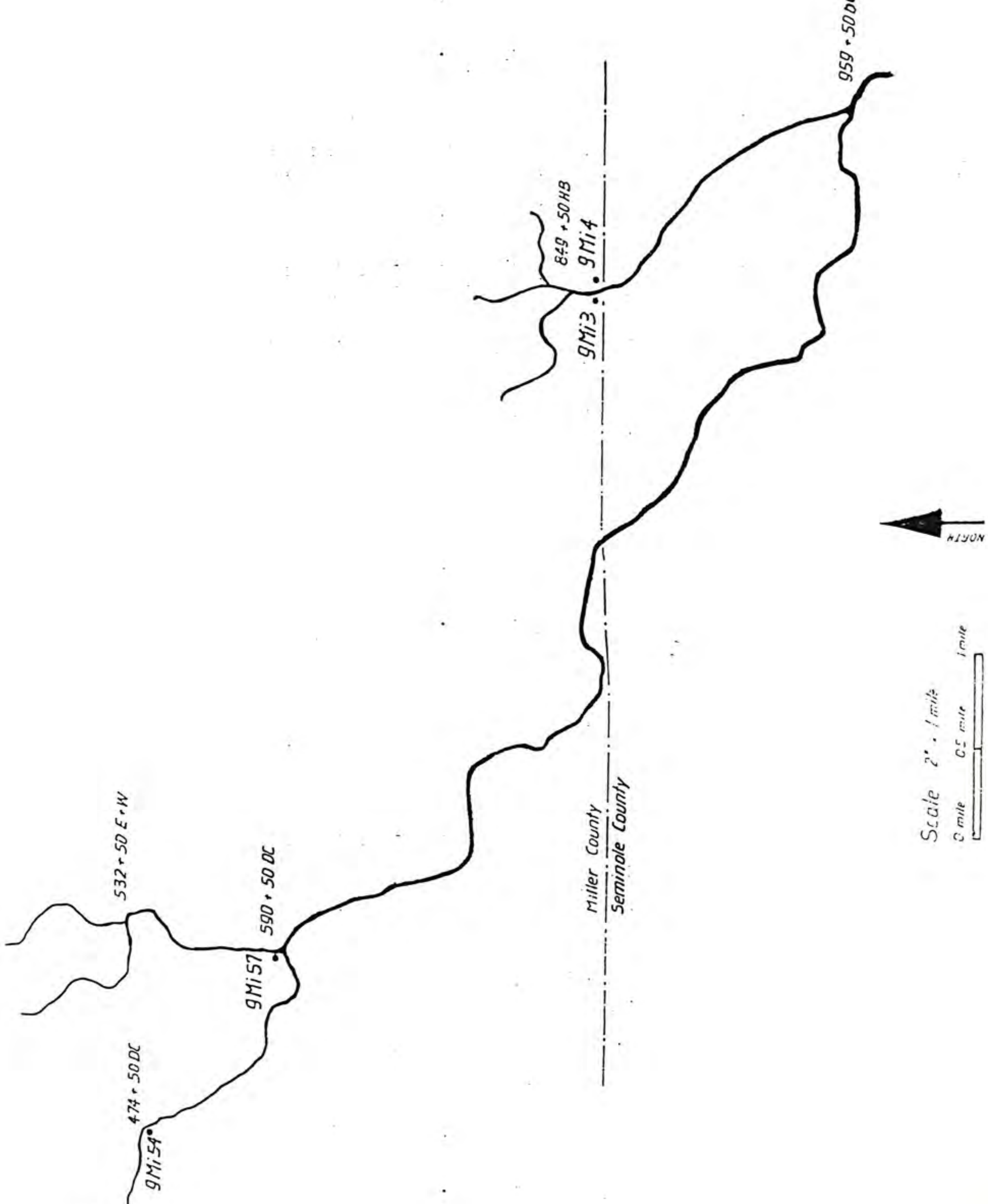

Figure 5. Locations of 9Mi3, 9Mi4, 9Mi54, and 9Mi57 with respect to proposed channels

Secondary impacts will undoubtedly be more extensive than direct ones, but they are difficult to precisely identify and the responsibility of the Soil Conservation Service in reference to this type of impact awaits definition. However, the purpose of the proposed project is to increase land productivity and it is reasonable to assume that more intensive land use will result in or quicken the destruction of at least some archaeological sites. Deeper plowing and construction of privately sponsored feeder channels appear to be the most likely secondary results which could have adverse consequences in terms of archaeological remains. One specific area of concern is represented by the close proximity of many ponds and wetland depressions to the proposed channels. Sites were consistently identified near the perimeters of all ponds visited during our survey and these features represent highly sensitive archaeological areas.

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APPENDIX I

SITE DESCRIPTIONS

Site	Universal Transverse Mercator Northing	Easting	Topographic Feature	Elevation (ft)	Soil Type	Distance to Nearest Drainage (m)	Site Size N/S (m)	E/W (m)	Components
9Dr73	3435200	714700	Terrace	100	Wagram loamy sand, 0 to 5% slope	50	45	40	Ceramic
9Dr75	3434950	714800	Terrace	100	Wagram loamy sand, 0 to 5% slope	50	35	35	Middle Woodland
9Dr76	3434500	716100	Knoll	100	Meggett soils	100	15	15	Unknown
9Dr77	3434550	715550	Knoll	100	Meggett soils	150	10	10	Unknown
9Dr78	3435050	714700	Knoll	100	Wagram loamy sand, 0 to 5% slope	20	10	5	Unknown
9Dr79	3435060	714600	Plain	100	Tifton sandy loam, 2 to 5% slope	100	1	1	Unknown
9Dr80	3435180	714650	Stream Terrace	?	Wagram loamy sand, 0 to 5% slope	20	5	1	Ceramic
9Dr81	3434500	716000	Stream Edge	100	Meggett soils	80	15	15	Unknown
9Se37	3435350	714550	Knoll	100	Wagram loamy sand, 0 to 5% slope	50	1	5	Ceramic
9Se39	3435900	714100	Plain	120	Tifton sandy loam, 2 to 5% slope	200	25	20	Woodland
9Se40	3436100	713500	Knoll	120	Tifton sandy loam, 2 to 5% slope	300	20	15	Late Archaic
9Se41	3436100	714000	Knoll	130	Tifton sandy loam, 2 to 5% slope	300	1	1	Unknown
9Se42	3436100	712200	Knoll	140	Esto loamy sand, 2 to 5% slope	200	35	30	Unknown
9Se43	3435600	712800	Ridge	110	Wagram loamy sand, 0 to 5% slope	100	100	75	Unknown
9Se44	3435600	713400	Knoll	110	Esto loamy sand, 2 to 5% slope	100	25	1	Unknown
9Se45	3435400	713100	Knoll	110	Esto loamy sand, 2 to 5% slope	200	20	20	Unknown
9Se46	3435600	713500	Plain	120	Esto loamy sand, 2 to 5% slope	100	150	75	Woodland
9Se47	3435400	712800	Plain	?	Norfolk loamy sand, 0 to 2% slope	100	1	5	Unknown
9Se48	3435600	712200	Knoll	120	Norfolk loamy sand, 2 to 5% slope	200	20	15	Unknown
9Se49	3436400	711900	Plain	130	Norfolk loamy sand, 2 to 5% slope	200	1	35	Unknown
9Se50	3436500	711800	Plain	130	Norfolk loamy sand, 2 to 5% slope	200	1	1	Unknown
9Se51	3436500	711600	Plain	120	Wagram loamy sand, 0 to 5% slope	100	20	20	Late Archaic
9Se52	3436800	711600	Plain	120	Wagram loamy sand, 0 to 5% slope	100	1	1	Unknown
9Se53	3437200	712100	Plain	120	Grady soils	100	35	40	Middle Woodland
9Se54	3437100	712100	Knoll	120	Grady soils	200	25	25	Late Archaic
9Se55	3437200	712200	Plain	120	Grady soils	100	1	1	Unknown
9Se56	3436800	712300	Plain	130	Grady soils	400	1	5	Unknown
9Se57	3436100	711700	Knoll	130	Norfolk loamy sand, 2 to 5% slope	200	20	30	Unknown
9Se58	3435700	711200	Knoll	120	Norfolk loamy sand, 2 to 5% slope	200	35	35	Late Woodland
9Se59	3435900	711700	Knoll	140	Wagram loamy sand, 0 to 5% slope	400	70	1	Unknown
9Se60	3436800	710700	Plain	130	Wagram loamy sand, 0 to 5% slope	100	30	20	Early Woodland
9Se61	3436500	710900	Plain	120	Wagram loamy sand, 0 to 5% slope	100	20	1	Unknown
9Se62	3436600	710800	Knoll	120	Wagram loamy sand, 0 to 5% slope	100	1	1	Unknown
9Se63	3437100	710300	Knoll	130	Wagram loamy sand, 0 to 5% slope	100	1	1	Unknown
9Se64	3438800	709200	Plain	130	Grady soils	200	1	1	Unknown
9Se65	3438900	709100	Plain	130	Grady soils	100	10	1	Unknown
9Se66	3438700	709400	Plain	130	Grady soils	400	15	1	Unknown
9Se67	3438600	709600	Plain	130	Wagram loamy sand, 0 to 5% slope	200	1	1	Unknown

APPENDIX I

SITE DESCRIPTIONS

Site	Universal Transverse Mercator Northing	Universal Transverse Mercator Easting	Topographic Feature	Elevation (ft)	Soil Type	Distance to Nearest Drainage (m)	Site Size N/S (m)	Site Size E/W (m)	Components
9Se68	3438100	710400	Knoll	130	Wagram loamy sand, 0 to 5% slope	200	20	25	Unknown
9Se69	3439100	708800	Pond Edge	140	Goldsboro sandy loam, 0 to 2% slope	300	?	?	Late Archaic
9Mi2	3439400	709000	Drainage Edge	130	Grady soils	> 25	65	40	Middle/Late Archaic & Ceramic
9Mi3	3439400	709000	Stream Edge	130	Grady soils	> 25	30	35	Paleo-Indian
9Mi4	3439800	707800	Knoll	130	Grady soils	400	45	35	Middle & Late Archaic & Woodland
9Mi5	3446900	700500	Pond Edge	180	Grady soils	100	20	15	Late Archaic
9Mi6	3446900	700400	Pond Edge	180	Grady soils	200	35	40	Unknown
9Mi7	3446900	700400	Pond Edge	180	Grady soils	200	80	125	Middle/Late Archaic
9Mi8	3450400	699900	Knoll	200	Goldsboro sandy loam, 0 to 2% slope	300	30	20	Late Archaic
9Mi9	3450300	699900	Pond Edge	200	Goldsboro sandy loam, 0 to 2% slope	400	35	25	Late Archaic
9Mi10	3450500	700000	Drained Pond	190	Tifton sandy loam, 2 to 5% slope	200	1	2	Middle Archaic
9Mi11	3450600	700200	Pond Edge	190	Tifton sandy loam, 2 to 5% slope	200	65	60	Unknown
9Mi12	3450500	700500	Drainage Edge	190	Goldsboro sandy loam, 0 to 2% slope	100	75	25	Late Archaic
9Mi13	3450500	700700	Drainage Edge	190	Goldsboro sandy loam, 0 to 2% slope	100	45	40	Late Archaic
9Mi14	3450300	700900	Pond Edge	190	Goldsboro sandy loam, 0 to 2% slope	200	175	90	Unknown
9Mi15	3450000	701000	Pond Edge	190	Goldsboro sandy loam, 0 to 2% slope	400	45	25	Middle Archaic
9Mi16	3449400	700800	Pond Edge	190	Goldsboro sandy loam, 0 to 2% slope	100	20	20	Unknown
9Mi17	3449600	700800	Pond Edge	200	Goldsboro sandy loam, 0 to 2% slope	100	15	30	Late Archaic
9Mi18	3449600	700800	Pond Edge	200	Goldsboro sandy loam, 0 to 2% slope	100	20	40	Middle Archaic
9Mi19	3449800	700800	Pond Edge	200	Goldsboro sandy loam, 0 to 2% slope	100	20	20	Unknown
9Mi20	3449900	700800	Pond Edge	190	Goldsboro sandy loam, 0 to 2% slope	100	45	40	Middle Archaic
9Mi21	3449600	701000	Pond Edge	190	Goldsboro sandy loam, 0 to 2% slope	300	1	1	Unknown
9Mi22	3448900	701200	Knoll	190	Goldsboro sandy loam, 0 to 2% slope	100	20	20	Unknown
9Mi23	3449200	701300	Pond Edge	190	Goldsboro sandy loam, 0 to 2% slope	100	40	65	Late Archaic
9Mi24	3449300	700200	Knoll	200-210	Goldsboro sandy loam, 0 to 2% slope	500	45	50	Middle Archaic
9Mi25	3449400	700000	Knoll	200	Grady soils	400	15	10	Unknown
9Mi26	3449800	699900	Pond Edge	200	Grady soils	600	20	15	Late Archaic
9Mi27	3450000	699900	Pond Edge	190	Tifton sandy loam, 0 to 2% slope	700	55	25	Late Archaic
9Mi28	3447400	699400	Knoll	200	Tifton sandy loam, 0 to 2% slope	100	30	20	Late Archaic
9Mi29	3447600	700300	Drainage Edge	190	Tifton sandy loam, 0 to 2% slope	100	90	20	Unknown
9Mi30	3447800	700400	Plain	190	Tifton sandy loam, 0 to 2% slope	100	50	50	Unknown
9Mi31	3447600	699300	Plain	200	Grady soils	100	25	25	Late Archaic
9Mi32	3447600	699400	Pond Edge	200	Goldsboro sandy loam, 0 to 2% slope	100	30	15	Late Archaic
9Mi33	3448400	699000	Knoll	200	Goldsboro sandy loam, 0 to 2% slope	100	60	65	Unknown
9Mi34	3448200	698900	Plain	200	Goldsboro sandy loam, 0 to 2% slope	100	40	20	Unknown

APPENDIX I

SITE DESCRIPTIONS

Site	Universal Transverse Mercator Northing	Easting	Topographic Feature	Elevation (ft)	Soil Type	Distance to Nearest Drainage (m)	Site Size N/S (m)	E/W (m)	Components
9Mi35	3448100	698900	?	200	Goldsboro sandy loam, 0 to 2% slope	100	15	10	Ceramic
9Mi36	3446600	699000	Pond Edge	190	Norfolk loamy sand, 0 to 2% slope	100	40	35	Unknown
9Mi37	3446700	700100	Pond Edge	190	Tifton sandy loam, 2 to 5% slope	100	30	30	Unknown
9Mi38	3446000	700300	Stream Terrace	180	Goldsboro sandy loam, 0 to 2% slope	100	40	20	Late Archaic
9Mi39	3445100	699900	Pond Edge	170	Tifton sandy loam, 0 to 2% slope	100	40	40	Middle Archaic
9Mi40	3455800	699800	Pond Edge	180	Grady soils	200	25	30	Unknown
9Mi41	3444900	699800	Pond Edge	180	Tifton sandy loam, 0 to 2% slope	100	40	40	Late Archaic
9Mi42	3445600	700000	Drainage Edge	180	Irvington sandy loam	100	30	15	Unknown
9Mi43	3445500	700100	Drainage Edge	180	Goldsboro sandy loam, 0 to 2% slope	100	30	15	Unknown
9Mi44	3446700	700300	Drainage Edge	180	Goldsboro sandy loam, 0 to 2% slope	100	75	35	Late Archaic
9Mi45	3444500	700000	Drainage Edge	170	Irvington sandy loam	100	1	1	Unknown
9Mi46	3444700	700100	Bottom of Drained Pond	180	Irvington sandy loam	200	1	1	Unknown
9Mi47	3444200	700400	Plain	170	Goldsboro sandy loam, 0 to 2% slope	100	1	1	Unknown
9Mi48	3443200	700500	Knoll	160	Norfolk loamy sand, 0 to 2% slope	100	1	1	Unknown
9Mi49	3444100	700500	Plain	170	Norfolk loamy sand, 0 to 2% slope	200	1	1	Unknown
9Mi50	3444200	701100	?	170	Irvington sandy loam	200	25	25	Unknown
9Mi51	3444300	701100	Plain	170	Irvington sandy loam	100	1	1	Middle Archaic
9Mi52	3444500	700800	Pond Edge	170	Tifton sandy loam, 0 to 2% slope	100	1	1	Unknown
9Mi53	3443400	701300	?	160	Goldsboro sandy loam, 0 to 2% slope	100	20	30	Woodland
9Mi54	3443500	701300	Pond-Drainage Edge	170	Goldsboro sandy loam, 0 to 2% slope	25	10	10	Ceramic
9Mi55	3442500	702300	Pond Edge	150	Goldsboro sandy loam, 0 to 2% slope	25	?	?	Unknown
9Mi56	3442200	702600	Plain	150	Goldsboro sandy loam, 0 to 2% slope	100	30	45	Unknown
9Mi57	3442300	702700	Drainage Edge	150	Grady soils	100	1	1	Late Archaic
9Mi58	3442200	703900	Knoll	150	Grady soils	100	30	45	Late Archaic
9Mi59	3442400	702900	Pond Edge	150	Grady soils	100	20	30	Unknown
9Mi60	3442800	703900	Pond Bottom	150	Grady soils	100	1	5	Unknown
9Mi61	3443200	703000	Plain	150	Esto loamy sand, 2 to 5% slope	100	1	10	Unknown
9Mi62	3442400	703100	Plain	150	Tifton sandy loam, 0 to 2% slope	100	1	1	Unknown
9Mi63	3442600	703400	Pond Edge	150	Tifton sandy loam, 0 to 2% slope	200	1	1	Unknown
9Mi64	3442100	702600	Pond Edge	150	Goldsboro sandy loam, 0 to 2% slope	100	1	1	Unknown
9Mi65	3444000	702900	Plain	160	Norfolk loamy sand, 0 to 2% slope	200	1	1	Unknown
9Mi66	3444300	703300	Plain	170	Tifton sandy loam, 0 to 2% slope	100	10	1	Unknown
9Mi67	3444900	703600	Plain	180	Tifton sandy loam, 2 to 5% slope	100	1	5	Unknown
9Mi68	3445300	703600	Drainage Edge	180	Tifton sandy loam, 0 to 2% slope	100	1	1	Unknown
9Mi69	3445000	703800	Plain	180	Tifton sandy loam, 0 t0 2% slope	100	1	1	Unknown
9Mi70	3444000	703300	Pond Edge	160	Tifton sandy loam, 2 to 5% slope	100	20	40	Late Archaic

APPENDIX I

SITE DESCRIPTIONS

Site	Universal Transverse Mercator Northing	Universal Transverse Mercator Easting	Topographic Feature	Elevation (ft)	Soil Type	Distance to Nearest Drainage (m)	Site Size N/S (m)	Site Size E/W (m)	Components
9Mi71	3444500	702400	Plain	170	Goldsboro sandy loam, 0 to 2% slope	100	1	1	Unknown
9Mi72	3441500	703500	Plain	150	Goldsboro sandy loam, 0 to 2% slope	100	70	30	Late Archaic
9Mi73	3441300	703500	Knoll	150	Goldsboro sandy loam, 0 to 2% slope	100	1	1	Unknown
9Mi74	3440800	703600	Plain	150	Goldsboro sandy loam, 0 to 2% slope	100	1	5	Unknown
9Mi75	3440700	703900	Plain	150	Goldsboro sandy loam, 0 to 2% slope	100	25	20	Unknown
9Mi76	3441100	703400	Knoll	150	Goldsboro sandy loam, 0 to 2% slope	100	45	45	Unknown
9Mi77	3440500	704000	Plain	150	Goldsboro sandy loam, 0 to 2% slope	100	25	25	Unknown
9Mi78	3440500	704300	Knoll	140	Goldsboro sandy loam, 0 to 2% slope	100	35	35	Late Archaic
9Mi79	3440700	703400	Plain	150	Goldsboro sandy loam, 0 to 2% slope	100	10	10	Unknown
9Mi80	3444700	703200	Plain	160	Tifton sandy loam, 2 to 5% slope	100	1	1	Middle Archaic
9Mi82	3449500	700200	Knoll	200	Goldsboro sandy loam, 0 to 2% slope	400	10	10	Unknown

APPENDIX II

Tool Frequencies for Surface Collections from the Dry Creek Watershed

Site	Chopper	Plane	Thin Biface	Thick Biface	Projectile Point	Drill	Graver	Bifacial Sidescraper: Steep, Straight	Bifacial Sidescraper: Steep, Sinuous	Bifacial Sidescraper: Narrow, Straight	Bifacial Sidescraper: Narrow, Sinuous	Unifacial Sidescraper: Steep, Straight	Unifacial Sidescraper: Steep, Sinuous	Unifacial Sidescraper: Narrow, Straight	Unifacial Sidescraper: Narrow, Sinuous	Endscraper: Steep, Straight	Endscraper: Steep, Sinuous	Endscraper: Narrow, Straight	Endscraper: Narrow, Sinuous	Hammerstone	Notch	Adze	Axe	Anvil	Ground Slab	Mortar	Cores	Debitage	Ceramics	Index of Diversity
9Dr73				1														1		1	1							25	1	.26
9Dr75																					2							4	2	.13
9Dr76													1															10		.09
9Dr77																												5		.04
9Dr78					1		1																					3		.13
9Dr79		1																												.04
9Dr80																				1									2	.09
9Dr81			1																									2		.09
9Se37																				1									1	.09
9Se39					1																							3	2	.13
9Se40					1																							5		.09
9Se41	1																													.04
9Se42			1																								1	2		.13
9Se43			1		3		1					1	1	1	1												1	131		.39
9Se44																												2		.04
9Se45																												14		.04
9Se46	1	1		2	7							1	4	1	2	1	1	1		1	1							263	15	.70
9Se47																												2		.04
9Se48			1	1																								5		.13
9Se49														1														1		.09
9Se50																												1		.04
9Se51					1								1								1							4		.17
9Se52																												1		.04

APPENDIX II

Tool Frequencies for Surface Collections from the Dry Creek Watershed

Site	Chopper	Plane	Thin Biface	Thick Biface	Projectile Point	Drill	Graver	Bifacial Sidescraper: Steep, Straight	Bifacial Sidescraper: Steep, Sinuous	Bifacial Sidescraper: Narrow, Straight	Bifacial Sidescraper: Narrow, Sinuous	Unifacial Sidescraper: Steep, Straight	Unifacial Sidescraper: Steep, Sinuous	Unifacial Sidescraper: Narrow, Straight	Unifacial Sidescraper: Narrow, Sinuous	Endscraper: Steep, Straight	Endscraper: Steep, Sinuous	Endscraper: Narrow, Straight	Endscraper: Narrow, Sinuous	Hammerstone	Notch	Adze	Axe	Anvil	Ground Slab	Mortar	Cores	Debitage	Ceramics	Index of Diversity
9Se53			1																									28	2	.13
9Se54					3																							13		.09
9Se55																												1		.04
9Se56																												2		.04
9Se57																												13		.04
9Se58																												7	2	.09
9Se59																												2		.04
9Se60					2										1													2	1	.17
9Se61																												2		.04
9Se62												1																		.04
9Se63																												1		.04
9Se64																												1		.04
9Se65															1													1		.09
9Se66																												2		.04
9Se67																												1		.04
9Se68																												5		.04
9Se69																														N/A
9Mi2		1	1										1	1					1									28	1	.30
9Mi3	1																											16		N/A
9Mi4		1														2												9		N/A
9Mi5					1											1												3		.13
9Mi6	2	2	2	1	14		1		1	1	1		2	6	1	1				4	1					1		100		.74
9Mi8					2																1						1	24		.17
9Mi9					1						1																	35		.13
9Mi10					1																							1		.09

APPENDIX II

Tool Frequencies for Surface Collections from the Dry Creek Watershed

Site	Chopper	Plane	Thin Biface	Thick Biface	Projectile Point	Drill	Graver	Bifacial Sidescraper: Steep, Straight	Bifacial Sidescraper: Steep, Sinuous	Bifacial Sidescraper: Narrow, Straight	Bifacial Sidescraper: Narrow, Sinuous	Unifacial Sidescraper: Steep, Straight	Unifacial Sidescraper: Steep, Sinuous	Unifacial Sidescraper: Narrow, Straight	Unifacial Sidescraper: Narrow, Sinuous	Endscraper: Steep, Straight	Endscraper: Steep, Sinuous	Endscraper: Narrow, Straight	Endscraper: Narrow, Sinuous	Hammerstone	Notch	Adze	Axe	Anvil	Ground Slab	Mortar	Cores	Debitage	Ceramics	Index of Diversity
9Mi11		1	1			1							1	3	1	1				1							1	136		.44
9Mi12	2	1		1	5	1					1		4	1	2		2			3	1	1						101		.61
9Mi13					3	1								4		1				1								103		.26
9Mi14		1	1		1								2															24		.22
9Mi15					4				1				1				1			2								33		.26
9Mi16	1																											9		.09
9Mi17		1	3		3								3	2	1	1											1	83		.39
9Mi19														1														21		.09
9Mi20		1	1		2								4	1	4					3	1						3	191		.44
9Mi21										1																				.04
9Mi22																											1	10		.09
9Mi23	1	1			1		1				1	5				1			1	4								78		.44
9Mi24		1			4			1		1		1	2	2	1	1	2		1	1					1		3	96		.65
9Mi25													2															5		.09
9Mi26	1		1		1				1				4															51		.26
9Mi27	2		1		3								1	3		1			2	1								67		.39
9Mi28					2								1															32		.13
9Mi29																											1	7		.09
9Mi30					1																							3		.09
9Mi31					2								1															19		.13
9Mi32					1								1		1	1											2	6		.26
9Mi33	1				2								1	1						2	1							14		.30
9Mi34								1																				3		.09
9Mi35			1																									5	3	.13
9Mi36	1				1				1				1		1													9		.26
9Mi37	1		1		1				1																			5		.17

APPENDIX II

Tool Frequencies for Surface Collections from the Dry Creek Watershed

Site	Chopper	Plane	Thin Biface	Thick Biface	Projectile Point	Drill	Graver	Bifacial Sidescraper: Steep, Straight	Bifacial Sidescraper: Steep, Sinuous	Bifacial Sidescraper: Narrow, Straight	Bifacial Sidescraper Narrow, Sinuous	Unifacial Sidescraper: Steep, Straight	Unifacial Sidescraper: Steep, Sinuous	Unifacial Sidescraper: Narrow, Straight	Unifacial Sidescraper: Narrow, Sinuous	Endscraper: Steep, Straight	Endscraper: Steep, Sinuous	Endscraper: Narrow, Straight	Endscraper: Narrow Sinuous	Hammerstone	Notch	Adze	Axe	Anvil	Ground Slab	Mortar	Cores	Debitage	Ceramics	Index of Diversity
9Mi38		1			1								3		2													44		.26
9Mi39		1	1		1																						1	11		.22
9Mi40									1					1						1								5		.17
9Mi41	1				2															1								2		.17
9Mi42																1												2		.09
9Mi43	1				1																							6		.13
9Mi44			1		1	1				1																	1	37		.26
9Mi45	1																													.04
9Mi46					1																									.04
9Mi47													1																	.04
9Mi48	1																													.04
9Mi49																												1		.04
9Mi50			1																									12		.09
9Mi51					1																									.04
9Mi52																										1				.04
9Mi53					1									1											1			13		.22
9Mi54																												2	3	.09
9Mi55																												3		N/A
9Mi56													1															12		.09
9Mi57					1																									.04
9Mi58	2				9								2	1	1			1		2								72		.35
9Mi59																												4		.04
9Mi60																												2		.04
9Mi61													1							1										.09
9Mi62			1																											.04
9Mi63																												1		.04

APPENDIX II

Tool Frequencies for Surface Collections from the Dry Creek Watershed

Site	Chopper	Plane	Thin Biface	Thick Biface	Projectile Point	Drill	Graver	Bifacial Sidescraper: Steep, Straight	Bifacial Sidescraper: Steep, Sinuous	Bifacial Sidescraper: Narrow, Straight	Bifacial Sidescraper: Narrow, Sinuous	Unifacial Sidescraper: Steep, Straight	Unifacial Sidescraper: Steep, Sinuous	Unifacial Sidescraper: Narrow, Straight	Unifacial Sidescraper: Narrow, Sinuous	Endscraper: Steep, Straight	Endscraper: Steep, Sinuous	Endscraper: Narrow, Straight	Endscraper: Narrow, Sinuous	Hammerstone	Notch	Adze	Axe	Anvil	Ground Slab	Mortar	Cores	Debitage	Ceramics	Index of Diversity
9Mi64	1																													.04
9Mi65																											1			.04
9Mi66																												2		.04
9Mi67																				1								1		.09
9Mi68																												1		.04
9Mi69																				1										.04
9Mi70			1		1	2							1	1	1	2				2	1			1				39		.48
9Mi71																												1		.04
9Mi72					1									1									1					4		.17
9Mi73					1																									.04
9Mi74																												3		.04
9Mi75																												9		.04
9Mi76	1				1				2											2								27		.22
9Mi77		1			1									1	1					1								18		.26
9Mi78	1	1			2		1					1	1	4	4		1		1	1								43		.57
9Mi79																												3		.04
9Mi80					1																									.04
9Mi82																												9		.04

APPENDIX III

Debitage Frequencies for Surface Collections from the Dry Creek Watershed

Site	Flakes of Bifacial Retouch			Normal Percussion Flakes			Broken Flakes			Formless Debris		
	Cortical	Partial Cortical	Noncortical	Cortical	Partial Cortical	Noncortical	Cortical	Partial Cortical	Noncortical	Cortical	Partical Cortical	Noncortical
9Dr73		1	3			1	1	4	15			
9Dr75			1			1			2			
9Dr76						1		1	8			
9Dr77			1						4			
9Dr78					1	2						
9Dr81						1	1					
9Se39			1		1			1				
9Se40			2			1			2			
9Se42								1	1			
9Se43			21		3	37	1	8	51		2	8
9Se44						1			1			
9Se45						1		2	11			
9Se46		2	35	4	20	52	12	23	114		4	1
9Se47			1						1			
9Se48			2			1				1		1
9Se49								1				
9Se50						1						
9Se51						1			3			
9Se52			1									
9Se53			6			6	1		15			
9Se54			1		2	7			2			1
9Se55									1			
9Se56									1			1
9Se57		1	3			4	1	1	3			
9Se58			1	1					4		1	
9Se59						2						
9Se60			1		1							
9Se61						1		1				
9Se63									1			
9Se64									1			
9Se65						1						
9Se66									2			
9Se67									1			
9Se68			1			1			2			1
9Mi2			3			5			13		3	4

APPENDIX III

Debitage Frequencies for Surface Collections from the Dry Creek Watershed

Site	Flakes of Bifacial Retouch			Normal Percussion Flakes			Broken Flakes			Formless Debris		
	Cortical	Partial Cortical	Noncortical	Cortical	Partial Cortical	Noncortical	Cortical	Partial Cortical	Noncortical	Cortical	Partial Cortical	Noncortical
9Mi3								3	11		1	1
9Mi4		1	3		2	3						
9Mi5			1		2							
9Mi6		1	47		12	103	2	12	257	1	3	28
9Mi8					2	5		2	13		1	1
9Mi9			5		2	8		1	19			
9Mi10						1						
9Mi11		2	22		2	32		5	67	2	4	
9Mi12		2	8		6	21	2	6	51		5	
9Mi13			12	1	2	23		5	54	2	3	1
9Mi14			1			7			15			1
9Mi15		1	5	1		4		2	18			2
9Mi16						1		1	7			
9Mi17			51	1	7	10	1	5	47	2	3	2
9Mi19			1		1	2		4	13			
9Mi20			4	3	11	38	1	21	104	2	6	1
9Mi22			2	1				1	5	1		
9Mi23			6	1	4	5	2	8	48	1	3	
9Mi24			13		3	24		5	47		3	
9Mi25					1	1		1	1			1
9Mi26		1	6		2	7		2	31	1		1
9Mi27			6		1	14	1	3	51			1
9Mi28			3		5	9	1	2	10		1	1
9Mi29			3			1			2		1	
9Mi30				1		1			1			
9Mi31			1		1	3		1	13			
9Mi32			1						3		1	1
9Mi33			3		2	5			3			1
9Mi34									2		1	
9Mi35			2			3						
9Mi36					3	6						
9Mi37					1	1			3			
9Mi38			3		2	9		3	22	1	3	1
9Mi39			1			4			6			
9Mi40			1						3		1	

APPENDIX III

Debitage Frequencies for Surface Collections from the Dry Creek Watershed

Site	Flakes of Bifacial Retouch			Normal Percussion Flakes			Broken Flakes			Formless Debris		
	Cortical	Partial Cortical	Noncortical	Cortical	Partial Cortical	Noncortical	Cortical	Partial Cortical	Noncortical	Cortical	Partial Cortical	Noncortical
9Mi41						1				1		
9Mi42									2			
9Mi43						2		2	2			
9Mi44			1		1	6		2	23		3	1
9Mi49					1							
9Mi50			3		1	2			4	1		1
9Mi53		1	3		4	2			2		1	
9Mi54		1	1									
9Mi55						1			2			
9Mi56			1		1	2		2	6			
9Mi58			10		2	8	3	6	40	1		2
9Mi59						1			3			
9Mi60			1			1						
9Mi63			1									
9Mi66						1			1			
9Mi67						1						
9Mi68									1			
9Mi70						9		9	17		1	3
9Mi71						1						
9Mi72						1		1	2			
9Mi74						1		1	1			
9Mi75					3			2	4			
9Mi76			3		2	9		7	4		1	3
9Mi77			2		3	4		1	5			3
9Mi78			3	1	2	7		3	5	1	10	11
9Mi79			1		1				1			
9Mi82			1			2		1	5			

APPENDIX IV

SUBSURFACE TEST EXCAVATIONS AT SITES 9Mi3 AND 9Mi4

Sharon I. Goad

Subsurface explorations at two sites located during the initial survey were deemed necessary for an evaluation of their significance. These sites are 9Mi3 and 9Mi4. The sites are located on opposite sides of the drainage in the vicinity of Right-of-Way Station 860+64 HB. A portion of 9Mi3 extends into the 150 ft. right-of-way on the west side of the drainage. In fact, one site boundary is within 30 ft. of the present channel. Extremely wet conditions precluded intensive examination of these sites at the time of the initial survey.

Both sites were identified through the aid of the landowner and preliminary evaluations of site potential were based on collections made by him. 9Mi3 is a multiple component site representing both the Woodland and Archaic time periods. Large quantities of ceramics and flaked stone have been recovered from the portion of the site situated on a low knoll overlooking the present drainage and at the edge of the right-of-way. Scattered artifact occurrences have been found within 40 ft. of the present drainage. 9Mi4 contains artifacts dating to the Paleo-Indian time period. These include two Clovis style projectile points and several Dalton points. A variety of other tool types have been found including endscrapers, sidescrapers, choppers and prismatic blades.

Site 9Mi4

9Mi4 is located in a field east of the drainage ditch approximately 5 meters from a dirt road. The surface of the site had been disced and the northern protion of the site was under cultivation. Recent rains and poor surface drainage conditions hampered excavations. The surface of the site was muddy with areas of standing water.

A surface survey was conducted prior to excavation. Artifacts were scattered over a 60 meter area. A concentration of artifacts was found over a 45 meter area in the southwestern portion of the site (indicated by dashed line in Figure 1). This area of concentration extended from a small knoll approximately 2.5 meters in diameter outward to the south and west. Smaller artifact concentrations were found in the cultivated field and near Trench 5.

A one meter wide trench (Trench I) 12 meters in length was excavated. This trench cut through the knoll and extended to within 25 meters of the drainage ditch. Surface conditions and the high water table at the southern end of the trench prevented extension of this trench to the ditch. The surface soil, consisting of 22 cm of dark gray sand and mud, was removed from the trench. No artifacts were found in this sand. This dark gray sand was underlain by a light gray layer of sand with iron inclusions. This sand was hard packed and could be easily distinguished from the surface soils. This sand layer extended from 22 to 45 cm. The water table was encountered at 45 cm, halting excavations.

The layer of light gray sand was shovel shaved to expose any artifacts and subsurface features. At 30 cm below surface a small concentration of

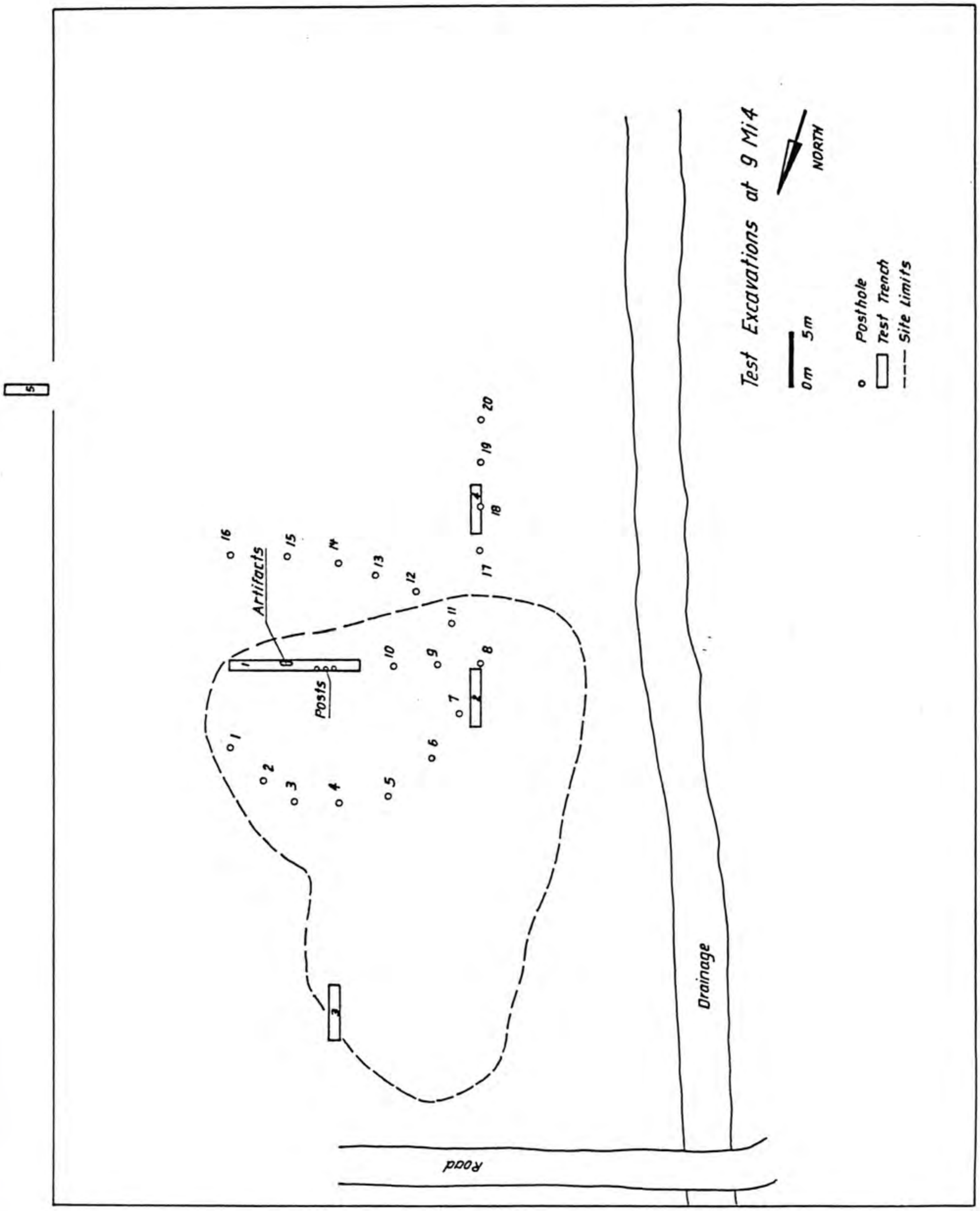
Test Excavations at 9 Mi4
NORTH
0m 5m
Posthole
Test Trench
Site Limits
Artifacts
Posts
Drainage
Road

Figure 1

artifacts was encountered. These artifacts, consisting of chert cores and debitage were not associated with any subsurface feature. At the same level, approximately 1 meter from these artifacts, were the remains of 4 posts. These posts were part of a fence that was on the site during its use as a hog lot several years ago.

A second trench (Trench II - 1 x 5 meters) was excavated perpendicular to Trench I in an area where several artifacts had been found during surface reconnaissance. This was also the general area where the Paleo-Indian point was found by the land owner. Posthole tests indicated that the water table in the area of this trench was from 50 to 70 cm below surface. The top 20 cm, consisting of dark gray sand, was removed and the white and light gray sand layers underlying this surface soil were shovel shaved. No artifacts or subsurface features were found.

Trench III (1 x 5 meters), located northwest of Trench I and perpendicular to it, was excavated. A surface concentration of artifacts had been found in this area. The dark gray sand (0-21 cm) was stripped off and the light gray sand underlying it was removed to a depth of 50 cm. At this point the water table was encountered, halting excavations. No artifacts or features were found.

A fourth trench (Trench IV - 1 x 4.5 meters), located to the southeast of Trench I, was excavated on a small rise about 15 m northeast of the drainage ditch. Posthole profiles (P.H. 17-20) indicated that the composition of this area differed from that of the remainder of the site, in that the soil underlying the surface sand was of a clay composition. After removal of the surface soils (0-20 cm) a layer of gray clay approximately 20 cm in depth was shovel shaved. A chert core was found in the northwest corner of the trench at 22 cm below surface. The trench was enlarged in this area but no additional artifacts or features were found.

A small concentration of chert debitage was found approximately 20 m northeast of the site, and 55 m north of the drainage. Trench V (1 x 4 meters) was excavated in this area (with the landowner's permission). Surface soils in this area extended from 0-12 cm, and were underlain by a layer of white sand 20 cm in depth. A third layer composed of light gray sand with iron inclusions extended from 30 to 55 cm below surface at which point sterile gray clay was found. No artifacts or features were found in Trench V.

Twenty postholes, approximately 3 meters apart, were dug throughout the site. These postholes were located near the knoll and along a slight rise on the southeast of the site. No posthole tests were made in area A (see map) because of the mud and standing water. Details of posthole tests are given in Table 1.

Site 9Mi3

This site is on a small knoll southwest of the drainage ditch. The site was under cultivation at the time of this survey. An area of approximately 100 square meters was surface collected and 5 posthole tests were made. Further testing was prohibited due to cultivation. Artifacts were scattered

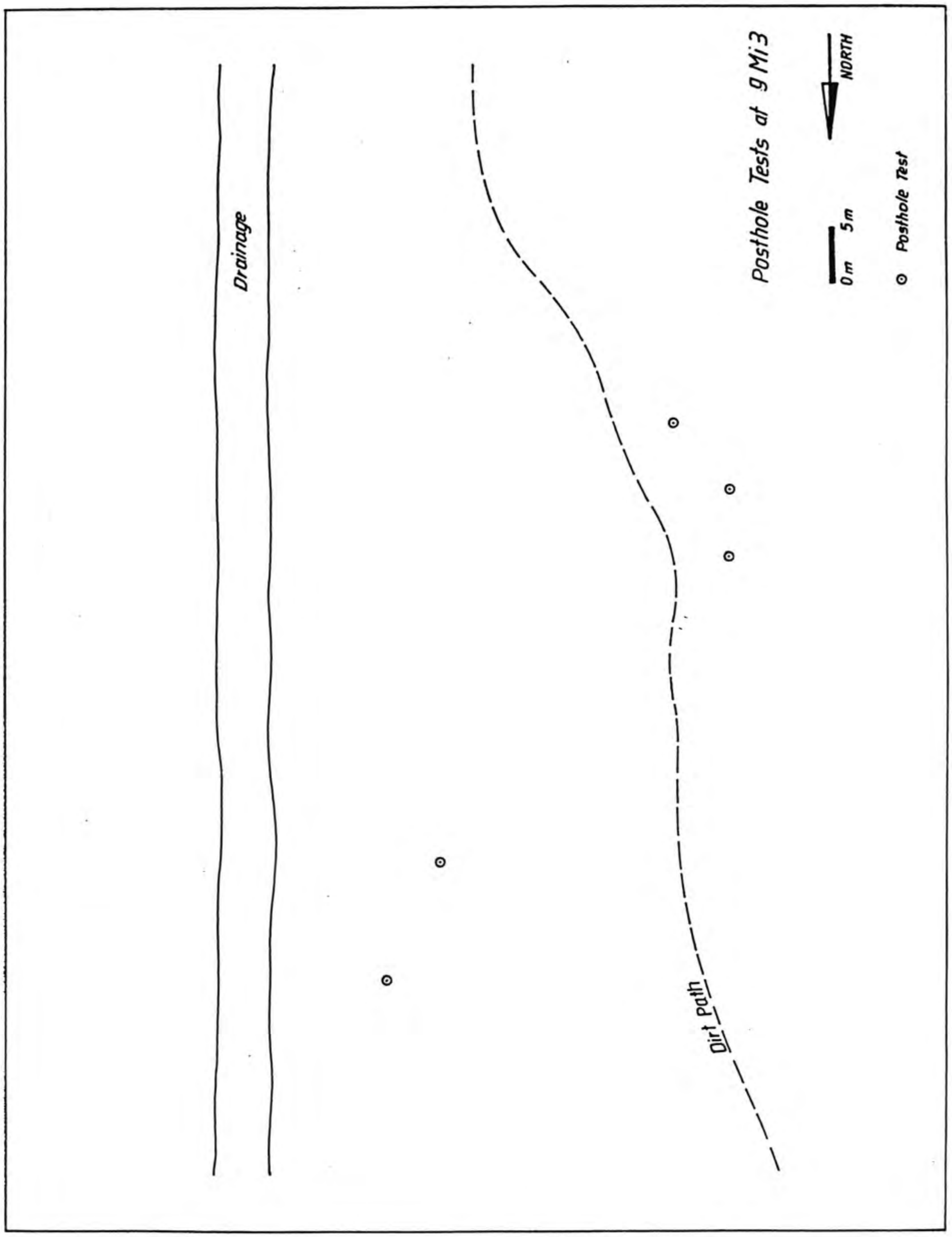
Posthole Tests at 9 Mi 3
NORTH
0m 5m
Posthole Test
Drainage
Dirt Path

Figure 2

over this area. No artifacts or features were found in the subsurface tests. Details for posthole tests are in Table 1.

TABLE 1. DESCRIPTIONS OF POSTHOLE TESTS
CONDUCTED AT 9Mi3 AND 9Mi4

Posthole Tests at 9Mi4

Test 1.	0 - 30 cm	dark gray sand
	30 - 55 cm	light gray sand with iron inclusions (increasing to 55).
	45 - 50 cm	water table encountered
	55 - 70 cm	white sand with iron inclusions
	75 cm	gray clay - sterile soil
	80 cm	gray clay with iron
Test 2.	0 - 20 cm	dark gray sand
	20 - 30 cm	light gray sand with iron inclusions
	30 - 45 cm	light gray sand with few iron inclusions
	30 cm	water table encountered
	45 - 65 cm	light gray clay with iron inclusions
	80 cm	gray clay - sterile soil
Test 3.	Same as Test 2.	
Test 4.	0 - 30 cm	dark gray sand
	30 - 80 cm	same as Test 2.
Test 5.	0 - 30 cm	dark gray sand
	30 - 80 cm	same as Test 2.
Test 6.	0 - 20 cm	dark gray sand
	20 - 45 cm	white sand with iron inclusions
	40 cm	water table encountered
	45 cm	gray clay with iron
	60 cm	gray clay with iron - sterile soil
Test 7.	0 - 20 cm	dark gray sand
	20 - 45 cm	white sand with iron inclusions
	45 - 55 cm	gray sand with iron inclusions
	55 cm	sterile gray sand with iron inclusions
Test 8.	0 - 20 cm	dark gray sand
	20 - 45 cm	white sand with iron inclusions
	45 cm	light gray sand with iron inclusions
	50 cm	water table encountered
	55 cm	sterile gray sand with iron inclusions
Test 9.	0 - 20 cm	dark gray sand
	20 - 45 cm	gray sand - no iron inclusions
	45 - 65 cm	gray clay with iron inclusions
	60 cm	water table encountered
	65 cm	gray clay - sterile soil

TABLE 1. (continued)

Test 10.	0 - 20 cm	dark gray sand
	20 - 45 cm	white sand with iron inclusions
	45 - 60 cm	gray clay with iron inclusions
	55 cm	water table encountered
	60 cm	gray clay - sterile soil
Test 11.	0 - 20 cm	dark gray sand
	20 - 40 cm	white sand with iron inclusions
	40 - 60 cm	gray clay with iron inclusions
	60 cm	gray clay sterile soil
		No water table encountered
Test 12.	0 - 20 cm	dark gray sand
	20 - 40 cm	light brown sand with iron inclusions
	40 cm	water table encountered
	40 - 60 cm	gray clay with iron
	60 cm	gray clay - sterile soil
Test 13.	0 - 20 cm	dark gray sand
	20 - 21 cm	white sand
	22 - 45 cm	light brown sand with iron inclusions
	45 cm	water table encountered
	45 - 60 cm	gray clay with iron inclusions (more inclusions than in previous tests)
	60 cm	gray clay - sterile soil
Test 14.	0 - 20 cm	dark gray sand
	20 - 40 cm	white sand with iron inclusions
	45 - 60 cm	gray clay with iron inclusions
	50 cm	water table encountered
	60 cm	gray clay - sterile soil
Test 15.	0 - 20 cm	dark gray sand
	20 - 30 cm	light gray sand with little iron
	30 - 40 cm	white sand with iron inclusions
	50 cm	water table encountered
	40 - 70 cm	gray clay with iron inclusions
	70 cm	gray clay - sterile soil
Test 16.	0 - 20 cm	dark gray sand
	same as Test 15	
	70 cm	gray clay - sterile soil
		No water table encountered
Test 17.	0 - 20 cm	dark gray sand
	20 - 45 cm	gray clay with iron inclusions
	45 - 70 cm	light gray clay with iron inclusions
	70 cm	gray clay - sterile soil
		No water table encountered

TABLE 1. (continued)

Test 18.	0 - 20 cm	dark gray sand
	20 - 45 cm	white sand with iron inclusions
	45 - 70 cm	light gray clay with iron inclusions
	70 cm	sterile soil
		No water table encountered

Test 19. Same as Test 18.

Test 20. Same as Test 18.

Posthole Tests at 9Mi3

Test 1.	0 - 45 cm	gray sand, few iron inclusions
	45 -100 cm	orange/tan sand
	100 cm	orange sand and clay with iron

Test 2. Samesas Test 1.

Test 3. Same as Test 1.

Test 4.	0 - 30 cm	gray sand with iron
	30 - 45 cm	gray clay with iron inclusions
	45 - 70 cm	gray clay with iron inclusions

Test 5. Same as Test 4.