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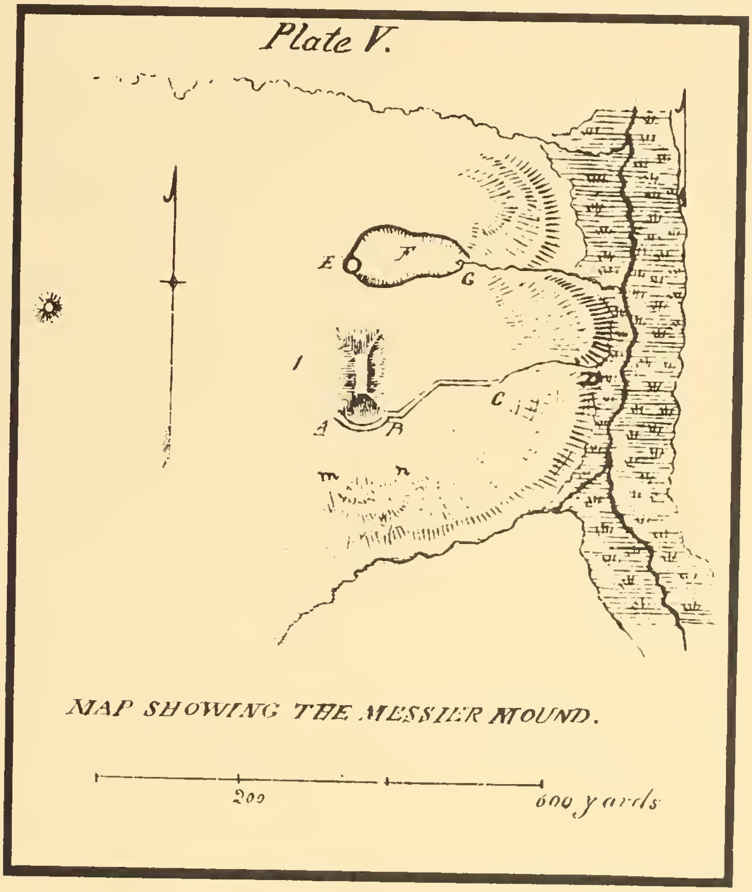
GEORGIA ARCHAEOLOGICAL RESEARCH DESIGN
VOLUME I



MAP SHOWING THE MESSIER MOUND.

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Cover illustration: Mound on Messier's Plantation, in Early County. Plate V from Antiquities of the Southern Indians, Particularly of the Georgia Tribes, by Charles C. Jones, Jr., (New York: D. Appleton and Company, 1873).

This document has been funded with the assistance of a matching grant-in-aid from the United States Department of the Interior, Heritage Conservation and Recreation Service, through the Historic Preservation Section, Georgia Department of Natural Resources, under provisions of the National Historic Preservation Act of 1966.

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GEORGIA ARCHAEOLOGICAL RESEARCH DESIGN

VOLUME I

edited by

THOMAS H. EUBANKS

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Historic Preservation Section Office of the State Archaeologist
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FORWARD

To meet the needs of a comprehensive historic preservation program in Georgia, the Historic Preservation Section of the Department of Natural Resources has been developing the Georgia Historic Preservation Plan process. Throughout this process it has become increasingly evident that overall direction for the historic preservation program in the State requires a better understanding of Georgia's cultural resources -- historic, architectural, and archaeological -- and the input of appropriate practicing professionals and the general public.

The earliest efforts to provide a sound basis for understanding the State's cultural resources originated with the State Archaeologist, Dr. Lewis H. Larson, Jr., who recognized that the mandates of the federal historic preservation program could not be effectively administered by the Historic Preservation Section without a strong cultural resource planning process. Under his leadership, consultations were initiated with the professional archaeological community in 1975 and a process for obtaining archaeological resource information and developing strategies for archaeological resource planning in Georgia was begun. The Georgia Archaeological Research Design Task Force, appointed by the Department of Natural Resources, was then formed to guide this major planning effort.

The Historic Preservation Section appreciates the leadership shown by Dr. Larson and his staff and recognizes the contribution of the professional archaeological community to the State's historic preservation program. We are pleased, therefore, to make available through this document the results to date of the Georgia Archaeological Research Design Task Force's work in the development of survey methodologies. The Georgia Archaeological Research Design Volume I assists those who carry out archaeological surveys -- archaeologists, development agencies, resource managers and the public -- to understand what such a survey should do and how it should be carried out. In this way, the volume serves the resource assessment needs of these groups whose work adds to knowledge about the cultural resource base in Georgia.

Elizabeth A. Lyon, Chief
Historic Preservation Section
State Historic Preservation Officer
Georgia Department of Natural Resources

PREFACE

Initial discussion on a Georgia Archaeological Research Design grew out of needs that became evident in the mid-1970s as federal historic preservation and environmental laws affecting cultural resources were implemented in Georgia. Under these laws, the State Historic Preservation Officer within the Historic Preservation Section, Georgia Department of Natural Resources, has responsibility for providing review and comment on all federal actions that have a potential to affect cultural resources in the state. The State Archaeologist assists the State Historic Preservation Officer in carrying out this responsibility through review and comment on federal undertakings involving archaeological resources. If such review and commentary were to be responsible and rational, I, as State Archaeologist, felt that it should be made in the context of a planning framework.

Such a framework -- including an archaeological research design and archaeological site management recommendations -- would also serve the needs of the Office of the State Archaeologist in effecting the preservation, conservation, and use of archaeological resources on state-owned lands as defined by the Georgia Antiquity Act (Georgia Law 1969 pp. 993-995). These lands, primarily those managed by the Georgia Department of Natural Resources, are characterized by a wide variety of archaeological sites. Effective and responsible decisions regarding these sites require the use of an archaeological resource planning framework.

The research design was not conceived as something that could or would be imposed upon my professional colleagues in Georgia who were engaged in archaeological research. Rather it was viewed as a guide for making management decisions on state lands and for the decisions made by the State Historic Preservation Officer and federal agency officials during the process that is necessary for compliance with the National Historic Preservation Act of 1966 and Executive Order 11593. This process, one involving a number of steps, requires that the archaeological resources in an area of federal activity be assessed, that their eligibility for the National Register of Historic Places be determined, and that adverse effect on them be avoided or mitigated. The success of this compliance process in Georgia depends upon the development of a planning framework that provides direction for assessment and develops an understanding of resource significance for effective mitigation or project avoidance. We need to know what archaeological resources characterize Georgia and we need to know where these resources are located both geographically and chronologically.

To fill these archaeological planning needs the Georgia Archaeological Research Design (GARD) Task Force was established. Archaeologists on the faculties of Georgia universities and colleges with academic programs in archaeology were asked to be members of the Task Force. The Assistant to the State Archaeologist, Thomas H. Eubanks, headed the Task Force and served to coordinate its activities.

The initial meetings of the Task Force developed a phased work plan and an outline for developing the research design components.

The Task Force is proceeding to implement the work plan and to develop planning documents related to the research design. What follows herein, Volume I of the Georgia Archaeological Research Design, is intended to assist in the assessment of archaeological resources and thereby meet the planning needs of federal and state agencies and others with responsibility for the preservation of archaeological resources in Georgia.

Lewis H. Larson, Jr.
State Archaeologist

INTRODUCTION

The Georgia Archaeological Research Design Task Force has been functioning as an appointed work unit and advisory body to the Historic Preservation Section of the Department of Natural Resources since 1975. During that period the Task Force has assisted the Office of the State Archaeologist with the development of archaeological planning documents for the Georgia Historic Preservation Plan. Further, the Task Force has provided guidance to the State Archaeologist with respect to carrying out responsibilities under state antiquities legislation.

The work program developed for the Georgia Archaeological Research Design Task Force sets forth four major phases of activity. The first, a period of orientation and education, provided an opportunity for the Task Force members to review pertinent state and federal cultural resource protection laws along with state and federal archaeological programs. The second phase dealt with specific analysis of the state historic preservation program as implemented by the Historic Preservation Section of the Department of Natural Resources. Currently under development, phase three is a review of prehistory from an archaeological perspective. This review will serve as the basis of a statewide archaeological research design. During phase four, the review and the design will be used to develop archaeological site management recommendations. Those recommendations will contribute to the archaeological component of the Georgia

Historic Preservation Plan.

This volume, which reports the results of one aspect of the analysis carried out during the phase two Task Force activity, addresses methodological approaches for identifying and characterizing archaeological sites in Georgia. Early in the Task Force evaluation of archaeological programs in which the State Historic Preservation Officer and State Archaeologist are involved, it was noted that archaeological survey in and of itself had the potential to answer many questions that would contribute to our knowledge of prehistory and history in Georgia.

The purpose of this volume is to assist those individuals who must contract for archaeological survey in understanding what an archaeological survey should do and how it is carried out. Also, it is intended to provide technical advice to archaeologists who become involved in survey work in Georgia. The volume is not, however, a guide that will answer all methodological questions about doing archaeological survey in the state. It simply offers explanations of methods that have been demonstrated to work in Georgia.

Regulatory Requirements for Archaeological Survey

When individuals or agencies are involved with development projects that are ground-disturbing in nature and involve federal funds, licenses or permits, it is necessary to follow the regulations of the President's Advisory Council on Historic Preservation (36 CFR 800). These regulations were promulgated under the authority of the National Historic Preservation Act of 1966, as amended, and detail the actions required for compliance with the intent of that law.

Generally stated, the regulations call for the following measures to take place early in project planning:

1. Determine in consultation with the State Historic Preservation Officer and the Keeper of the National Register if any properties eligible for or listed in the National Register of Historic Places (districts, sites, buildings, structures or objects) are located within the area of project-related environmental impact.

2. Determine in consultation with the State Historic Preservation Officer and the Advisory Council on Historic Preservation if the project will have an adverse effect on any identified property either listed in or determined eligible for listing in the National Register.

3. Determine in consultation with the State Historic Preservation Officer and Advisory Council on Historic Preservation if steps can be taken to preserve the property intact, alter the project in such a way as to avoid the property, or take steps to mitigate the adverse effects to the property.

It is important to note that the responsibility for carrying out identification studies under these regulations lies with the federal agency issuing the licenses or permits, or providing funding assistance. Because the federal agency frequently requires the actual project developers to carry out surveys to identify archaeological sites (or districts, buildings, structures, or objects) it is important for the project sponsor to understand what is involved in such surveys and what to expect in the way of a compliance report.

The Historic Preservation Section is in a position to assist project sponsors in several ways. First, the Historic Preservation Section can provide available information on known sites (or direct project sponsors to sources for that information) that are located within the project area. Second, when previous archaeological surveys have been performed within the project area, the Historic Preservation Section can provide an evaluation of their quality and make recommendations regarding the need for additional work, if any. Third, if the Historic Preservation Section recommends additional archaeological survey work be performed or recommends survey for an area that has not been previously investigated, the Historic Preservation Section can discuss the type of survey and/or methodology to be employed and assist the developer in defining boundaries for the survey. Last, the Historic Preservation Section maintains a set of guidelines or minimum content standards for archaeological survey reports. These guidelines are revised as laws are amended and new federal regulations developed.

If the federal agency or project sponsor enters into a contract with an archaeologist or institution to have an archaeological survey performed, every effort should be made to insure that the survey report contains not only the archaeological data resulting from any archaeological sites encountered but the information necessary for compliance with the regulations. Because the State Historic Preservation Officer, the Keeper of the National Register of Historic Places, and the Advisory Council on Historic Preservation must evaluate the accuracy and creditability of archaeological survey reports without benefit of first-hand knowledge of the project area and the sites discovered, decisions about how the survey was designed and executed must be discussed in the report. Without a description of why the archaeologist looked in the areas where he looked, the rationale for the methodology selected to locate and characterize sites and the significance of the sites in terms of their ability to yield information important to the understanding of history and prehistory, the reviewers are in a position to do no more than second guess the archaeologist.

If the archaeologist does not discuss his findings in relationship to the criteria for a site's eligibility for listing in the National Register of Historic Places, the research potential of sites identified and their significance within geographic, functional and cultural context, the State Historic Preservation Officer and the Keeper of the National Register cannot make their recommendations and decisions pursuant to the regulations. It is important to realize that traditional rationales for defining the importance of an archaeological site must be stated within the criteria. The determination of a site's eligibility for listing in the National Register is an official determination which is based on very specific information requirements and criteria that are outlined in federal regulations.

Inadequacies within survey reports invariably result in frustration on the part of project sponsors and agencies who must review the work. If the contract archaeologist is aware of his responsibilities from the outset and the project sponsors, with assistance from the Historic Preservation Section, work to insure that proper field evaluations take place, compliance with the regulations can occur smoothly without delay to project development. It cannot be over-stated that properly executed and reported surveys are the key to a successful and expeditious handling of historic preservation compliance requirements.

The Archaeological Survey

The chapters that follow address procedures for conducting archaeological survey in Georgia. The Task Force has intentionally concerned itself with methodology known to be successful in finding and characterizing archaeological sites. Because most project developers will be involved with archaeological sites on land and not in underwater areas, this volume is limited to discussions regarding the identification of archaeological sites in terrestrial situations. Should it become necessary to carry out an archaeological survey in an underwater area, consultation with the Historic Preservation Section would be recommended on a case by case basis.

In the first chapter, Paul Fish discusses the limitations and opportunities of contract archaeological survey. He points out the decision-making process involved in developing a proposal for conducting archaeological survey in specific project locations. Bruce Smith follows with an examination of research designs that are sensitive to existing cultural resource data along with strategies to provide maximal data yield within the limitations of time and funding.

David Hally and Craig Sheldon, in their chapters, comment on field methodologies which can be used to identify sites and evaluate their data potential. Many of the techniques described in those chapters work equally well for site detection and site characterization. The particular benefits of the techniques are discussed in each chapter.

Roy Dickens' chapter addresses the need for proper curation of records and artifacts which are produced as a result of survey activity. The appendices provide information useful for completing a Georgia Archaeological Survey form, coding site data for computerization in the state site file, along with examples of forms that can be used to provide control of artifacts and original records.

It is hoped that this volume will provide federal agencies, private and public development agencies and archaeologists with a better understanding of the needs of archaeological surveys as a part of federal cultural resource management practices. Understanding the aims of the various parties involved in archaeological survey can result in projects that are developed with an appreciation for an enhancement of our cultural heritage.

Thomas H. Eubanks
Assistant to the State Archaeologist

LIMITATIONS AND OPPORTUNITIES OF THE CONTRACT SURVEY

PAUL R. FISH

Introduction

A steadily growing number of archaeologists, federal and state agencies, local governments, and private companies are being drawn into situations involving the contract survey. Such circumstances reflect the necessity, or opportunity, to conduct surveys in which the study area and research logistics are defined by nonarchaeological goals. It is to the benefit of all parties if these surveys are conducted with research as a goal and are able to contribute to an understanding of regional archaeology.

The Need for a Research Orientation

Research in the context of an archaeological survey implies more than a simple identification of the presence and quantity of archaeological remains. The key element of research is a problem orientation. Under the best of conditions, a limited number of observations can be made in an investigation. Orientation toward a central problem provides an explicit rationale for the particular characteristics observed and recorded about archaeological sites in a study area. It permits organization of data collection in such a way that traits relevant to a given set of questions will be observed and that subsequent results of their analysis will fit together in a meaningful way.

To satisfy the ideal standards of the participating archaeologist, the contract survey should be as much an effort at problem-oriented research as it is a catalogue of sites and an assessment of impacts to those sites. However, it is also clear that there are a number of management justifications for coupling traditional archaeological research objectives with other facets of an environmental assessment.

Survey undertaken during any phase of a contract sponsored study is an aspect of mitigation. Often, extensive secondary impacts will occur as a result of a project, but a company or agency cannot be held accountable legally or morally for such impacts. Perhaps it would not even have been possible to predict or define all impacts during project planning. If acceptable research is the goal of early as well as later stages of resource management, useful segments of the archaeological record will be preserved from unforeseen destruction.

Even a preliminary assessment survey almost always is a destructive force with respect to archaeological remains. Most archaeological surveys require surface and/or subsurface collections of one sort or another. Often survey collections represent the entire assemblage of material remains constituting a site. Such destructive actions on the part of the archaeologist and the agency which employs him can be justified only if a meaningful contribution to knowledge results.

If archaeological remains are encountered in the areas that will be affected by a proposed project, an evaluation of the significance of these remains is necessary. In most cases, this can be accomplished only in a research context. Eligibility for listing on the National Register of Historic Places constitutes a legal definition for considering the significance of an archaeological site. Among the criteria for listing on the National Register, the one applicable to most archaeological sites is the research potential in terms of contributions to a knowledge about the past. An evaluation of research potential and therefore significance can only be made relative to a given range of problems to be investigated.

In practical terms, the production of good research is the basis for both technical and popular publication. Simple tabulation and description of archaeological materials is of minimal communicative value. A problem orientation provides a cohesive framework in which survey results can be presented and understood by the academic community and the public. The sponsoring companies or agencies thereby maximize their management of the affected resources and benefit by the formal recognition of their role in supporting scientific and culturally valuable endeavors.

Limitations of the Contract Survey

One of the most notable limitations of a contract related survey is the restriction placed on research design. The study area is usually restricted to a particular area specified by the activity locus of the contracting agency. Such an area may consist of many small segments, be narrow and linear, be biased in favor of a single set of environmental features, or in many other ways fail to coincide with an archaeologically defined universe (See figures 1 and 2). Probability sampling programs are often difficult or impossible to implement. An important constraint on a regional approach is the

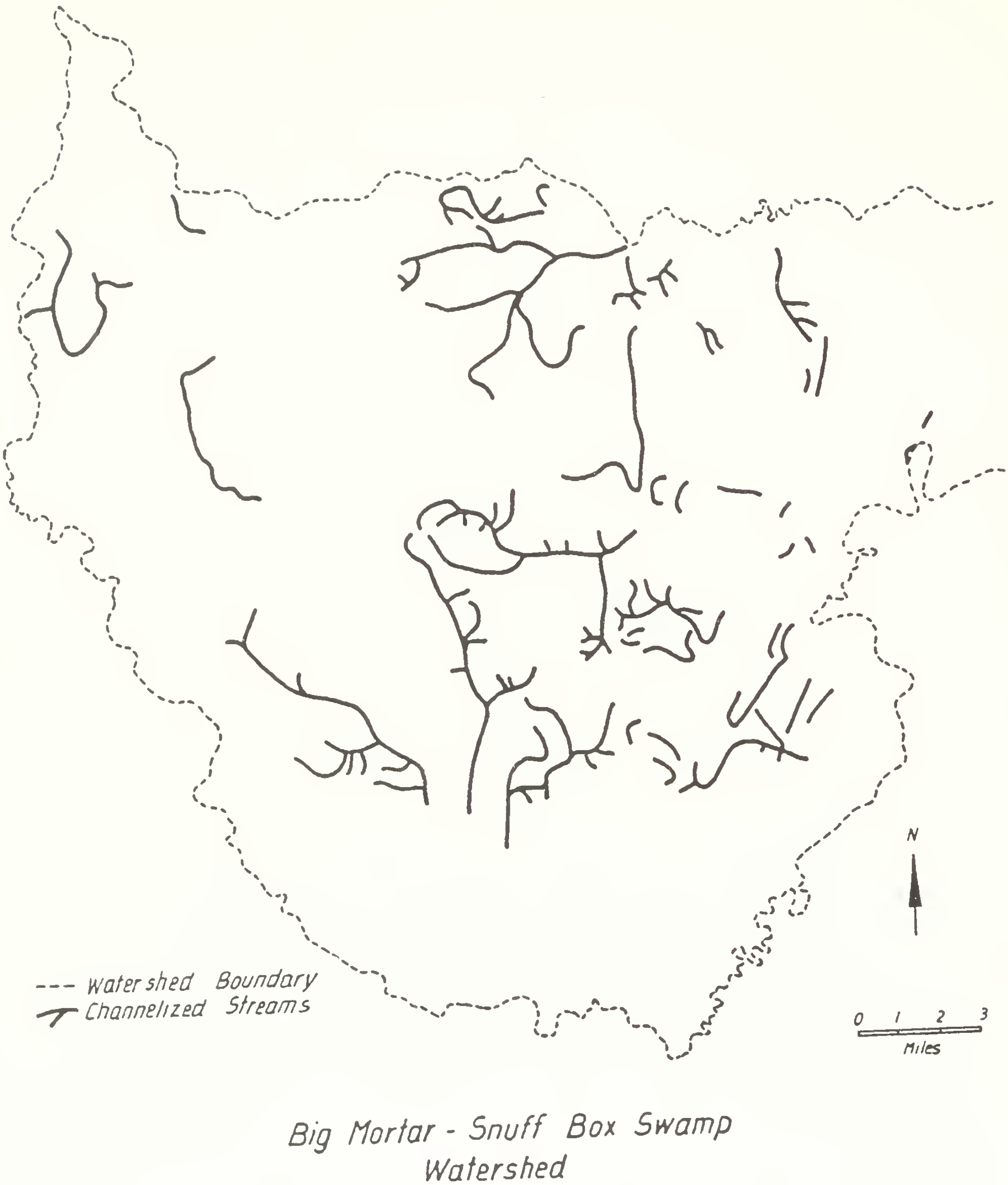


FIGURE 1, CHANNELIZATION PROJECT PROPOSED BY THE SOIL CONSERVATION SERVICE, LONG AND MCINTOSH COUNTIES.

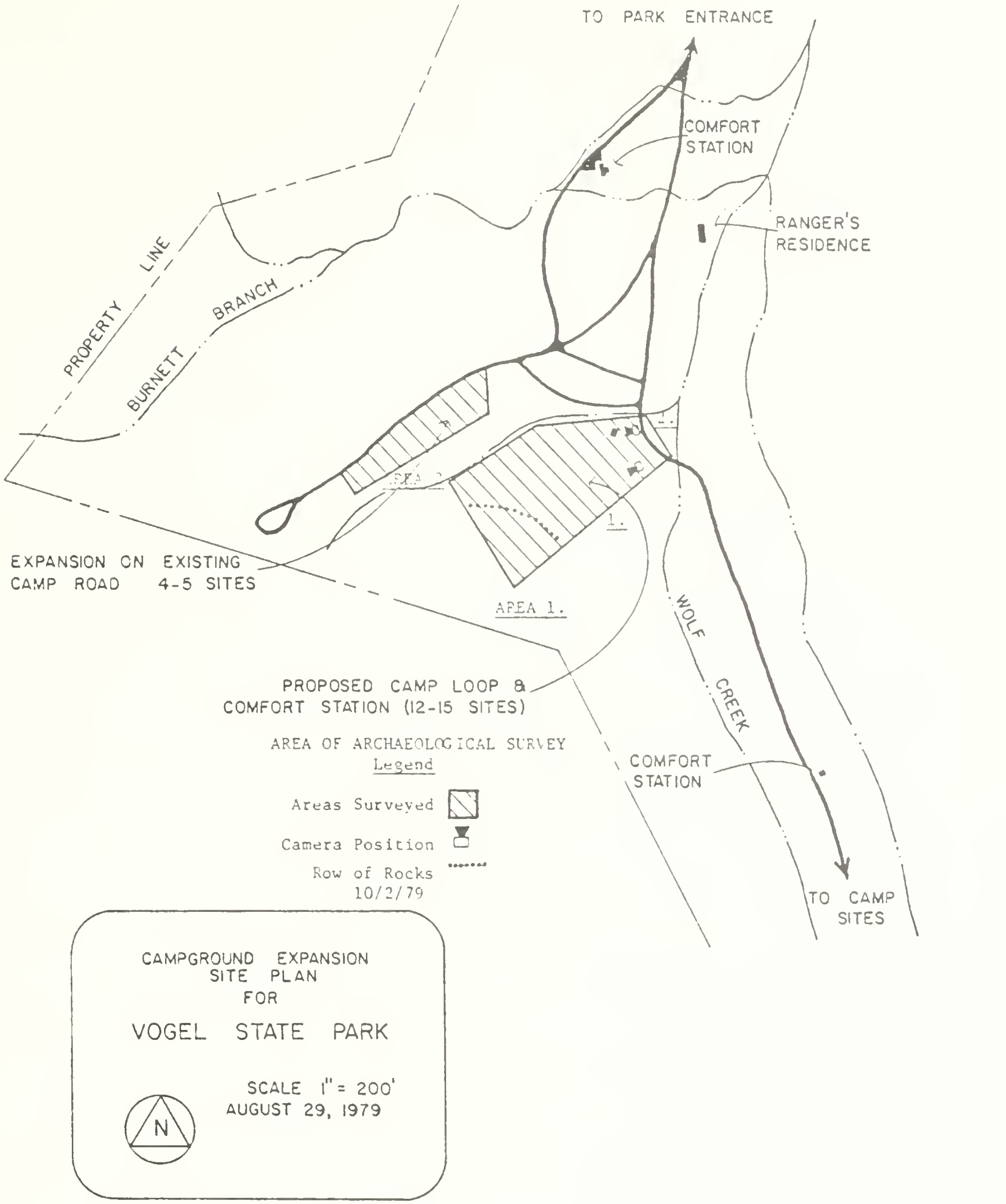


FIGURE 2, DEVELOPMENT OF A CAMP GROUND AT VOGEL STATE PARK.

necessity to confine funded investigation to those areas named in the contract.

Many contract surveys must take place in previously unstudied areas. Archaeological research in the state of Georgia has concentrated on the narrow coastal strand and restricted portions of the piedmont and ridge and valley provinces. With virtually no information available for many regions, it is difficult to define culturally meaningful strata or to predict the most likely locations for sites.

Contract surveys are frequently not directly related to the primary research interests or the regional expertise of the individual archaeologist conducting them. Minimal time is usually provided for background studies and preparation. Since contract funds are often the source of the archaeologist's wages or important income for his institution or firm, the necessity to accept additional contracts may prohibit the pursuit of a single research interest to its conclusion.

Opportunities of the Contract Survey

The most obvious advantage of contract surveys, and indeed contract archaeology in general, is the availability of funding. The magnitude of archaeological activity in the state of Georgia would be very significantly reduced if other sources of financial support were the only ones at hand. In particular, a growing amount of contract archaeology involves small-scale surveys to assess the impact of environmental manipulations. In the light of this fact, the archaeological community is presented with a continuing source of support for investigating the state's prehistory and history.

The association of the contract survey with a sponsoring project can often provide important logistical advantages. Detailed maps, aerial photographs and other such documentation for the study area may have been created or compiled as a result of overall project goals. Project personnel can frequently provide orientation to the study and liaison with local individuals whose knowledge or aid is of benefit. In addition, many projects involve other environmental specialists whose reports or consultations would not be obtainable in other contexts.

Perhaps the most valuable fringe benefit of many contract situations is access to otherwise inaccessible study areas. In undeveloped areas, access by vehicles or other modes of transportation is usually assured by previous project undertakings. In Georgia, where the vast majority of land is privately owned, another vital aspect of access is previously arranged permission from landowners or the purchase of the study area by the project agency. If broad area coverage or appreciable linear distances were attempted outside the project milieu, the securing of permission might be very time consuming if successful.

One potential outgrowth of contract surveys is an opportunity to build on the survey results. Data and conclusions generated from survey can provide the justification for further research supported by non-contract funds. Proposals can be constructed from preliminary survey findings, and the relevance of the data from specific areas to stated problems can be argued. In the same vein, archaeological interest in an unknown area can be sparked on the part of the investigator or his report audience.

PLATE 1, DEFINING AN ARCHAEOLOGICAL SITE IN AN URBAN SITUATION BY TAKING MEASUREMENTS FROM A LOT CORNER MARKER, MARTA RAPID RAIL RIGHT-OF-WAY, ATLANTA.

Conclusion

Archaeologists can incorporate worthwhile research objectives into the performance of contract surveys. Indeed, it is their responsibility to the sponsoring agency. In many ways, successfully pursuing research within the confines of these undertakings requires greater effort and ingenuity on the part of the investigator than does participation in academic research. The contract archaeologist must be very resourceful and innovative in order to formulate research designs based on problems appropriate to his data. Because he cannot control the parameters of the study area and the nature of the remains, he must be acquainted with a broad range of topics and techniques necessary to produce desirable results.

Contract surveys have fostered a holistic approach to the study of the archaeological materials of the regions in which they have been performed. This approach is currently acknowledged throughout the discipline. The isolated artifacts of human activity as well as the more substantial sites are observed. All classes of remains must be considered in the reconstruction of past lifeways when significance in particular study areas is evaluated.

Finally, the widespread participation in contract surveys and other forms of contract archaeology can be seen to encourage a healthy atmosphere within the archaeological community. With the involvement of various institutions in projects throughout the state, parochialism is discouraged. At the same time, communication is promoted as investigators assemble all previous information pertaining to their survey locale and place their results in a regional perspective.

SURVEY METHODOLOGY

BRUCE D. SMITH

Why Are Surveys Necessary?

Often a governmental agency or private firm contracting for archaeological research to be carried out in a proposed project area is not convinced that such research is necessary. Why not check the existing list of archaeological sites and see if any sites are located in the project area? Aren't all archaeological sites in Georgia known and recorded?

While the University of Georgia, Georgia State University, West Georgia College, Georgia Southern and the Columbus Museum of Arts and Crafts maintain archaeological site files, the simple truth is that these files list only a small percentage of the sites existing in Georgia.

A computer coding system is being used now to systematize the information available for known archaeological sites and to record information concerning each site that is found. The Department of Natural Resources has provided United States Department of Interior Grant-in-Aid matching funds for this purpose. The site data becomes part of a central archaeological data bank located at the Computer Center of the University of Georgia. This system will not only provide rapid access to known sites, but also it should eventually provide some degree of predictability of what might be found in project areas based on environmental and other factors.

Governmental agencies too often view required archaeological research as a quick solution to a set of short term problems. It would be advisable and usually less expensive to view initial research with an eye to establishing a solid data base for future research. If the overall development for an area is considered from the beginning of the project, initial research can be structured to include information pertinent to problems beyond the obvious and pressing short term ones. This initial research should not be restricted to locating and determining the significance of archaeological sites in the area to be "directly or indirectly affected" by the project.

In addition to these basic and immediate problems, other questions should be considered which are important for long term planning. Such questions include:

1. What is the nature of the archaeological sites in areas adjacent to the direct impact area that might in the future be affected adversely if the original project were expanded?

2. Would these sites be affected adversely as a result of secondary development which can be predicted clearly as a logical result of the original project?

3. What alternative present/future development plans might be more attractive to the contracting agency or private firm in terms of reducing the financial outlay and time delay involved in satisfying a required archaeological mitigation?

Archaeologists are interested in studying a larger area than the direct impact area for reasons that go beyond the need for long term planning. For archaeologists to improve their understanding of the ways of life of past human populations and thereby be in a better position to assess the significance of individual sites and to develop a comprehensive long term plan for managing archaeological resources, they have to be able to study larger geographical areas than are usually represented by the direct impact areas of proposed projects.

Prehistoric populations invariably depended upon raw materials and food sources that were distributed over a fairly large geographical area. The support area for a specific prehistoric human population often encompassed a number of distinct environmental zones which contained sites associated with the resources of that particular zone. The direct impact areas of the proposed projects usually represent only a portion of such support areas. If the archaeological research is restricted just to the direct impact area, the information obtained may not provide a complete picture of the patterns of the ways of human life. This limited focus of work severely hampers the archaeologist in understanding the populations in question and makes it difficult to assess the importance of individual sites, or even the probability of sites being present within a proposed project area.

A specific example will help illustrate this concept of the support area of a human population. The Ainu are a historically known people who occupied the river valleys of Hokkaido, the northern island of Japan, until the late 1800's (Watanabe 1973). The river valleys and upland areas occupied by the Ainu contained a number of different habitat zones, each of which had a specific set of natural resources that they used (Figure 3). In the process of exploiting natural resources from each zone, the Ainu established:

1. Permanent settlements directly adjacent to salmon spawning grounds (Zone 3).

2. Long fences for driving deer along the base of the valley edge (Zones 3-4).

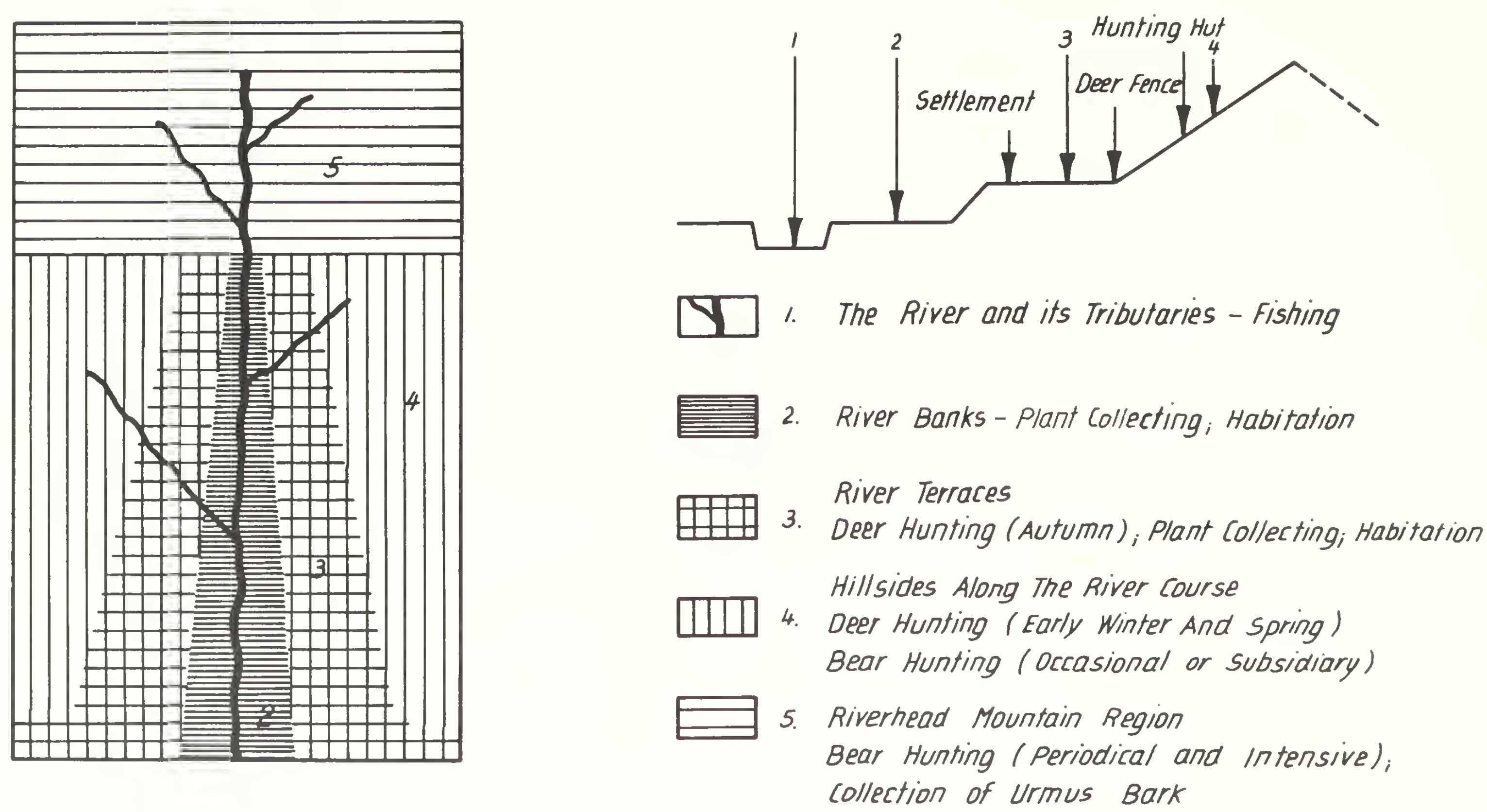


FIGURE 3, DIAGRAM REPRESENTING A RIVER VALLEY AS THE SUPPORT AREA OF AN AINU GROUP, SHOWING THE ECOLOGICAL ZONES EXISTING IN THE VALLEY (AFTER WATANABE 1972, FIG. 8).

3. Deer hunting huts and bear hunting huts in upland areas (Zones 4-5).

4. Fishing huts for spearing salmon (Zones 1-2). (Figure 4).

If the direct impact area for a dam being built downstream included only Zones 1-3 and archaeological research was restricted to this area, deer hunting huts, bear hunting huts and fences for deer drives would not be discovered. An incomplete picture of the way of life of the Ainu population would result.

The importance of contracting agencies allowing archaeologists both freedom and flexibility in outlining the area within which they are going to work can be illustrated further with an example closer to home. Soapstone Ridge, located on the southern edge of Atlanta (Figure 5), was an area occupied and intensively quarried by people throughout the prehistoric period. Sections, usually matrixes for vessels, were cut from this soft stone both above and below the ground. This large, important archaeological area is in the path of the proposed I-675 expressway extension.

The Georgia Department of Transportation proposed three alternative routes for I-675 (A, B, and C shown in Figure 5) and then evaluated the impact of each route on environmental and cultural resources of the area. Dr. Roy S. Dickens, Jr., Department of Anthropology, Georgia State University, assessed the impact of I-675 on the archaeological resources of Soapstone Ridge. This archaeological survey was not restricted to the corridors of the three routes but covered the full extent of the ridge. The importance of working in the larger area is clear. Over 100 archaeological sites were located as a result of Dr. Dickens' survey (Figure 6). Only about a fourth, between 20-25, would have been located had the survey been

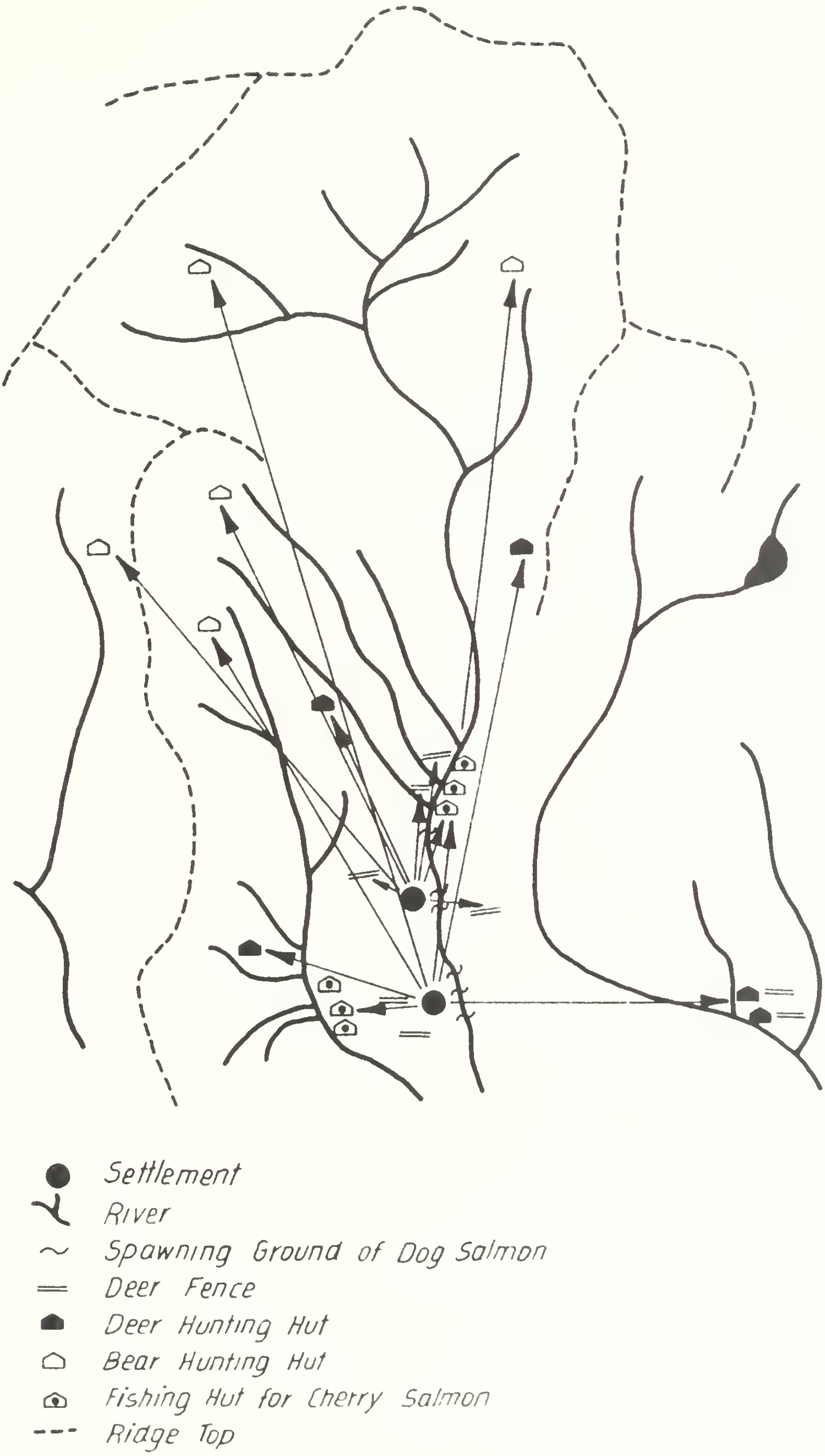


FIGURE 4, EXPLOITATION OF ECOLOGICAL ZONES BY THE AINU GROUP, SHOWING DIFFERENT SITE LOCATIONS (AFTER WATANABE 1972, MAP 2).

restricted to the corridors. This in turn would have impaired seriously any archaeologist's ability to study the interrelationships between sites of different functions on the ridge and would have made it difficult to determine the significance of those sites found. Restricting the survey to exact corridors would have produced little new information about prehistoric occupation of the Soapstone Ridge area.

Having the original archaeological survey cover the larger ridge area was also advantageous for the Georgia Department of Transportation. First, the possibility existed that none of the three alternate routes would have been acceptable, however, the Department of Transportation had the archaeological information available for planning a fourth route without having to contract for another survey. Secondly, by having as much information as possible on archaeological sites within the Soapstone Ridge area, the Department of Transportation would be in a better position to assess the potential secondary impact of the I-675 route on archaeological resources. Thought could be given to which route would minimize the destruction of archaeological sites if residential and industrial development followed the building of the expressway.

Establishing the Research Area

This meeting of minds by the contracting agency and the archaeologist as to the specific area to be studied could be termed formally the "delineation of the research universe." Terms such as research universe, sampling universe, research area and study area are often used when archaeologists refer to the geographical area in which they are working. Establishing the exact boundaries of the research

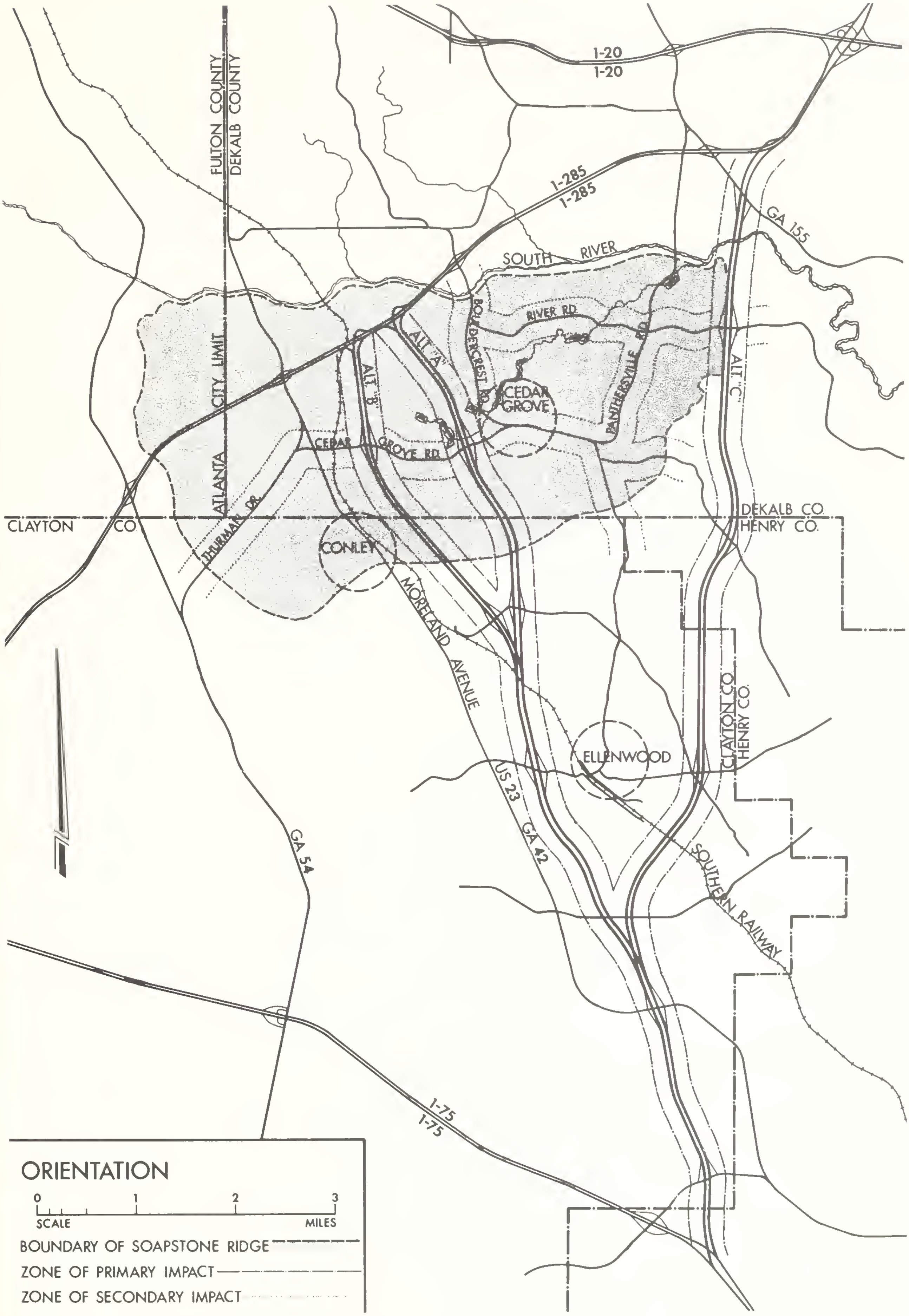


FIGURE 5, THE LOCATION OF THE SOAPSTONE RIDGE AREA SOUTH OF ATLANTA, GEORGIA.

universe is the first step in the survey research and it is an important one. The area agreed upon should be described clearly in the research report and the reasoning that was involved in establishing the boundaries should be set forth explicitly.

The archaeologist also must remember that the research universe should include not only the boundaries of the direct effect area but also the area of probable secondary effects and all of the environmental zones that were most likely used by early inhabitants. The most logical research area would be one which approaches as closely as possible the project support area of the early human populations being studied. This approach will not necessarily cost more in time or money and will amount to a savings if additional development occurs. For the archaeologist the larger research universe will enable him to assess the significance of individual sites, develop long term management needs and collect information that contributes to a more complete and accurate understanding of the way early populations lived.

Sampling Strategy

The next step in the research process is to determine the sampling strategy to be used. If contracting agencies were willing to provide archaeologists with unlimited funds and unlimited time, archaeologists would be willing to locate and study every archaeological site within the research universe. In reality, archaeologists are required to carry out initial research with limited funds and time. Because of these restrictions, archaeologists rarely attempt to locate and study all of the sites within a research universe. They attempt, instead, to locate and study only a portion or sample of

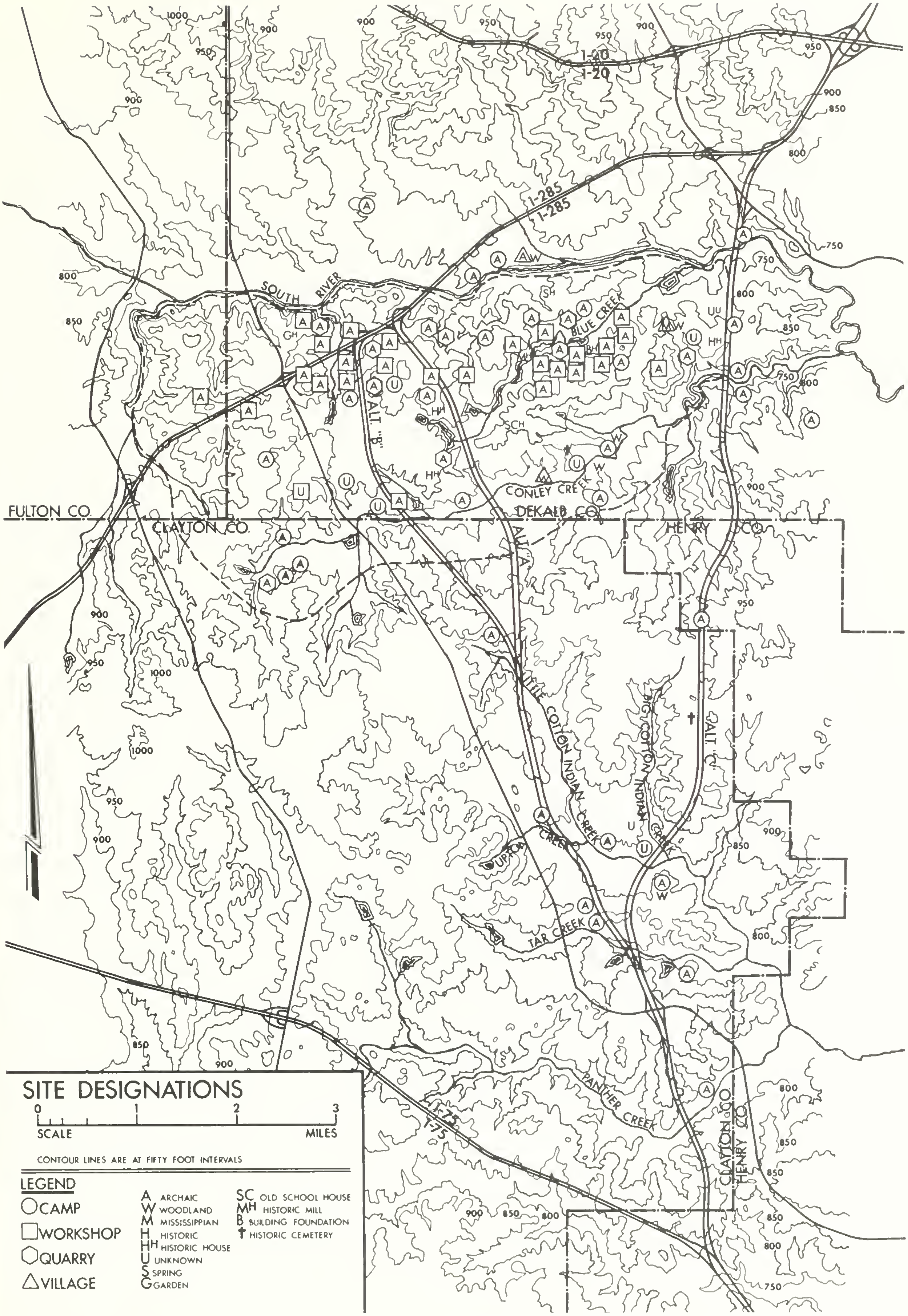


FIGURE 6, THE LOCATION OF FUNCTIONALLY DIFFERENT SITES WITHIN THE SOAPSTONE RIDGE AREA.

PLATE 2, HEAVILY QUARRIED BOULDER SITE LOCATED BY ARCHAEOLOGICAL SURVEY ON SOAPSTONE RIDGE, DEKALB COUNTY.

the total number of sites. This sample has two basic requirements, one built on the other: the sample needs to reflect the whole and to do this it needs to be unbiased.

The need for a representative sample: A representative sample, one which if selected correctly has a predictive value, is needed. It will allow the archaeologist to predict the number and type of sites and how they are distributed throughout the entire research universe. Based on the number, type and distribution of sites occurring in this representative sample, the pattern of site distribution for a larger area can be predicted. For a survey to result in a representative sample of sites, however, it must be planned and carried out according to certain guidelines.

The need for a random sample: To obtain a representative sample, it is necessary for the actual portions of land to be surveyed to be chosen without any bias, either deliberate or unintentioned by the archaeologist. To avoid such potential bias, the areas to be covered must be selected in a statistically random manner. Such samples are termed random samples.

No single procedure will work in every case but a number of different sampling schemes should produce the representative sample. The most appropriate method depends on the characteristics of the specific research universe.

Simple random sample: To use simple random sampling the archaeologist divides the research universe into equal sized units. First, usually on paper, a grid is placed on the research universe breaking it down into a number of small grid or sample units (Figure 7). This network often is aligned with existing geographical features or political boundaries. Once the study area has been broken into units, each is assigned a number. Using a table or some other method of generating random numbers, units are selected for survey. The study area shown in Figure 7, which is the same river valley shown in Figure 3 and 4 contains a total of 321 grid units, each of which has been assigned a letter-number code. A table of random numbers has been consulted and the 32 squares indicated have been selected for survey. This can be termed a 10% simple random sample-quadrat method. Quadrat is the plot, usually rectangular, used for ecological or population studies. The size of the sample actually used depends upon the type and accuracy of the site information that is required. Most archaeological surveys involve sampling fractions of between 15 and 40%.

A simple random sampling scheme such as the one described is appropriate when the research area is situated in a single uniform resource zone e.g., climax deciduous forest with no streams, no topographic variation and uniform distribution of resources. However, such uniformity is rarely encountered. The research area defined by archaeologists invariably encompasses a number of different habitat zones or resource areas, and if a simple random sample is used in such a situation, there is a good probability that some of the resource zones will not receive adequate coverage. You will notice, for example, that the grid units selected for survey coverage in Figure 7 tend to cluster down the middle of the research universe, resulting in inadequate coverage of Zone 4 (Figure 3 shows zones).

Stratified random sample: In this procedure, the total research universe is divided into a number of different zones or strata before sampling units are selected. The term strata as used here does not refer to vertical placement as geological strata but rather is a

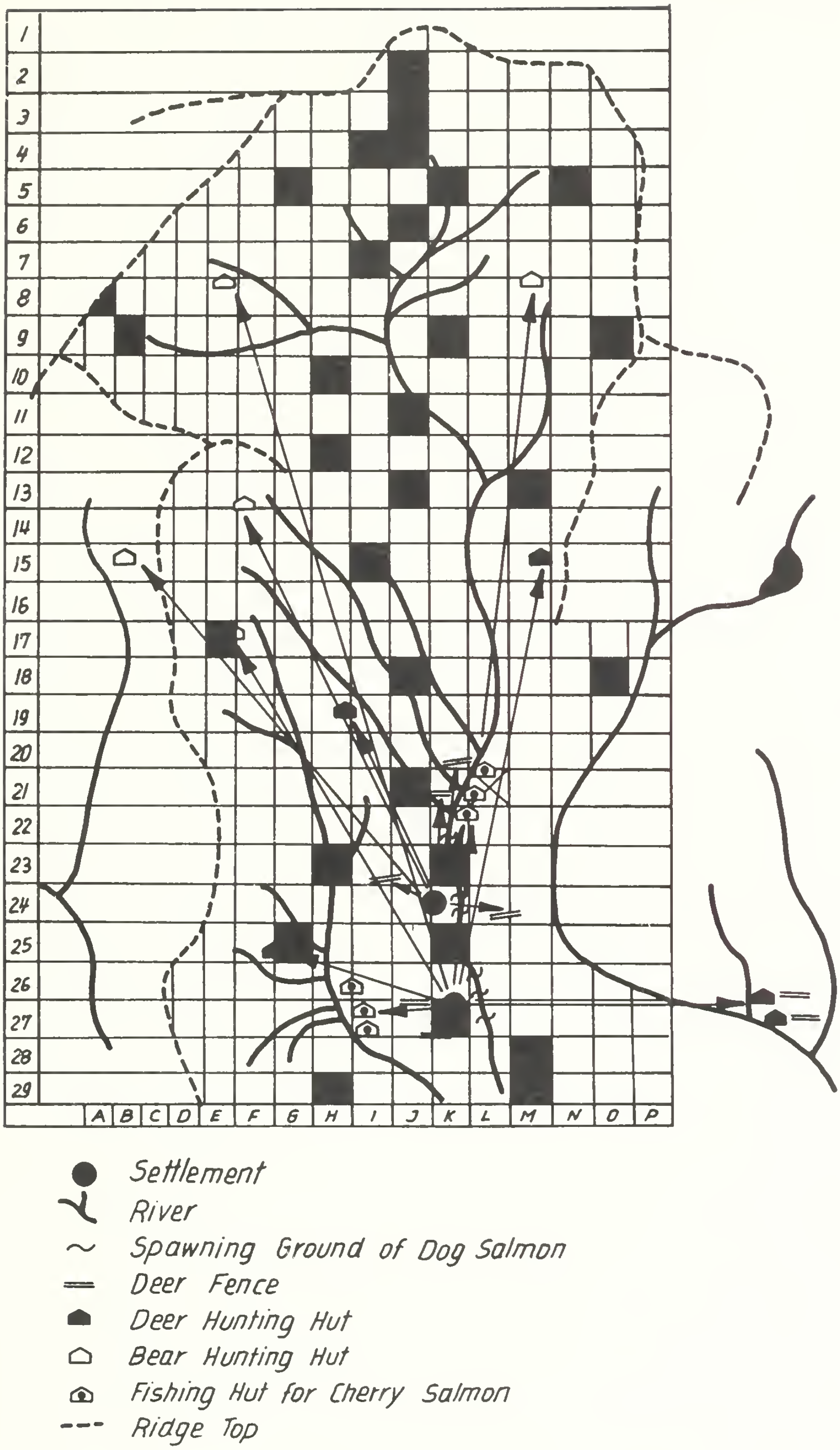


FIGURE 7, THE RESEARCH AREA SHOWN IN FIG. 4, OVERLAID WITH A GRID NETWORK, AND WITH GRID UNITS SELECTED FOR A TEN PERCENT SIMPLE RANDCM SAMPLE (SHOWN BLACKED OUT).

statistical term referring to a section of a total research universe. Archaeologists usually break a research universe down into a number of strata matching vegetation communities or topography. The research universe shown in Figure 4 could be subdivided into four zones or sampling strata on the basis of vegetation and topography (Figure 3):

1. river edge zone (river banks)
2. floodplain zone (river terraces)
3. valley slope zone (hillside along river)
4. upland zone (riverhead mountain region)

A research universe is usually broken down into a number of distinct strata containing relatively homogenous vegetation communities for an important reason: each of the different strata contain different sets of raw materials and food sources and therefore was exploited in different ways for different reasons by human populations. This differential utilization of zones should be reflected by functional differences in sites.

A grid is constructed and overlaid on each strata and a simple random sample is drawn within each strata. This stratified random sampling assures comparable coverage of each resource zone.

This method however is difficult to employ in the field where there are not existing guides as township, section or quarter markers. Few such aids exist in many parts of Georgia, and as a result, it is often difficult to set up and use a grid for defining sampling units. Field crews often have spent more time attempting to find grid boundaries than they have spent looking for archaeological sites. This problem is especially evident in situations where the archaeologist must carry out investigations in areas of dense vegetative cover.

Transect sample: An alternative that avoids such problems is a transect scheme. Transects are long narrow rectangular sampling units that crosscut sampling strata, ensuring comparable coverage of each strata. In the research universe shown in Figure 7, grid lines 3, 8, 12, 21, 25, and 27 could be viewed as a series of six randomly selected east-west transects. Each would crosscut the sampling strata, and would avoid the problems of locating sample quadrats. Field crews could simply be started in the right direction and walk along the transect line, looking for sites within a certain distance on each side. The six transects would cover a total of 67 grid units or more than 20% of the total research universe. Transect sampling schemes are often more attractive than quadrat sampling schemes because of the time and money required to obtain comparable information from the research universe.

Often one of these sampling strategies will be combined with a non-random method which can be expected to yield site information with a minimum of time and effort. For example, fields that have been recently plowed would be more likely to yield site information than areas covered by vegetation because the need for subsurface testing would be minimized. While sites discovered in plowed fields would not constitute a representative sample, archaeologists would be in error if they ignored such easily obtainable information simply because the fields did not fit into their statistically structured sampling scheme.

Similarly, landowners, agents or employees of landowners, foresters, surveyors, consulting engineers, wildlife biologists, game wardens, arrowhead collectors, and amateur archaeologists should be viewed as potential sources of site location information and should be contacted.

Finally, no matter what combination of sampling strategies are employed, it is important for the report to describe:

1. what sampling strategy was used and why
2. what sampling fraction was used and why
3. how sampling units were selected
4. what problems in terms of vegetation cover, alluviation, etc. were encountered in each sampling unit.

The final survey report should include a detailed map showing the sampling area, sampling strata, quadrat/transect areas surveyed and vegetation/alluviation problem areas.

SITE DETECTION

DAVID J. HALLY

The majority of site surveys are conducted on the ground by foot. Sites found in this fashion are usually recognized by the presence of surface artifact scatters, topographic anomalies, or standing architecture. Unfortunately, such indicators may be obscured from the view of the pedestrian surveyor by a number of natural and man-made conditions.

These include:

1. ground cover of decaying vegetation such as leaf mold and pine needles
2. thick, low lying vegetation such as pasture grass and palmetto
3. burial by alluvial or colluvial sediments, humus build-up and recent construction activity
4. submergence as a result of rising sea level, swamp formation or reservoir construction
5. swamps, marshes and impenetrable vegetation which hinder access to site areas.

It is also possible that sites with diagnostic physical features may not be recognized by the pedestrian surveyor because of their low relief and large horizontal size or because of their resemblance to natural features. Examples of such situations include partially filled irrigation canals and defensive ditches, agricultural fields and stone fish weirs.

Finally, in some situations, sites with highly visible features may go unrecognized by the pedestrian surveyor simply because they are unexpected. Old roads and paths may be difficult to detect on the ground for this reason.

In Georgia, live and decaying vegetation covers comprise the single greatest hindrance to site detection. While some areas of the state, specifically sections of the Gulf coastal plain, have a high ratio of cultivated to uncultivated land, pasture, forest and pine plantation predominate in most regions. In addition, extensive recent alluviation of stream and river flood plains in the Piedmont has often resulted in the burial of sites beneath a meter or more of sediments.

Because of conditions such as these, pedestrian surface surveys are often impractical and unproductive or at best can be utilized in only a portion of a survey area. Fortunately, there is a variety of other techniques for site detection which are available for use by the archaeologist. Selection of the technique or techniques most suitable for any particular survey will depend upon weighing several different factors: natural conditions affecting visibility and accessibility of sites; the nature of the sites existing in the area; and the reliability and efficiency of the technique. The bearing of the first two factors on site detection should be evident from the preceding paragraphs and requires no further discussion at this point. The terms, reliability and efficiency, on the other hand, have rather special meanings in the present paper and require definition.

Reliability refers to the likelihood that a given survey technique will detect sites. The important variables that determine the reliability of a survey technique are of quality resolution, exposure size and spacing of exposures. Resolution refers to the kind of site evidence which can be detected with a given survey technique. Irrigation and fortification ditches may be visible in high altitude aerial photographs, but it is unlikely that a small surface artifact scatter can be detected in this way. Buried midden soils are less likely to be detected with a probe than with a hand operated post-hole digger. Finally, even pedestrian surface surveys may vary in resolution quality. The slower a surface surveyor walks, the more likely he is to detect small and/or sparse artifact scatters.

The size of an area exposed to view in surveying varies from the 100's of square kilometers portrayed in high altitude aerial photographs to the effective visual scan (5-10 meters) of a pedestrian surveyor and the 10 cm diameter core obtained from a core drill rig. With the exception of aerial survey techniques where resolution quality becomes a problem, it is generally true that the larger the exposure the more likely sites falling within it will be recognized. Survey techniques such as posthole testing that produce small exposures will tend to yield site samples biased in favor of sites with dense artifact concentrations and highly visible features such as shell strata.

Spacing, which refers to the linear distance between individual exposures, becomes an increasingly important factor in survey reliability as exposure size decreases. Obviously, it poses no problem with aerial photographs. It is a critical factor, however, in subsurface testing with a posthole digger or probe. In general, the greater the distance between exposures, the greater the likelihood that small sites will be missed or under-represented in site samples.

Efficiency is a measure of the overall cost in time and money required to obtain a representative sample of sites in a given area. Obviously, exposure size and spacing are directly related to efficiency. But also to be considered are the speed with which an exposure can be made and its unit cost in dollars. Pedestrian surface surveys proceed at a relatively rapid rate and cost little to conduct. Subsurface surveys involving hand held posthole diggers are costly in time because of spacing requirements and the relatively slow rate at which exposures can be made; but unit operating cost is relatively little. Solid core drilling, on the other hand, is costly in terms of both time and money.

Site detection techniques other than pedestrian surface survey that have been employed by archaeologists or have the potential for use are described in the remainder of this paper. In reviewing them the advantages and disadvantages of each technique are discussed and references to published accounts of their use are provided where available.

Aerial photography using black and white, color, black and white infrared or color infrared film can be an invaluable aid in site detection (Gummerman and Lyons 1971; Lyons and Avery 1977). It is most effective where vegetation cover is light (see, however, Bruder et al. 1975) and with sites that because of their large size and low surface relief are difficult to detect on the ground. Irrigation systems (Judd 1931), roads, military and ceremonial earthworks (Ryan 1975), fish weirs (Strandberg and Tomlinson 1969), midden deposits and even prehistoric agricultural fields (Fowler 1969; Schaber and Gummerman 1969) may be identifiable by this means.

The utility of aerial photography is limited by several factors.

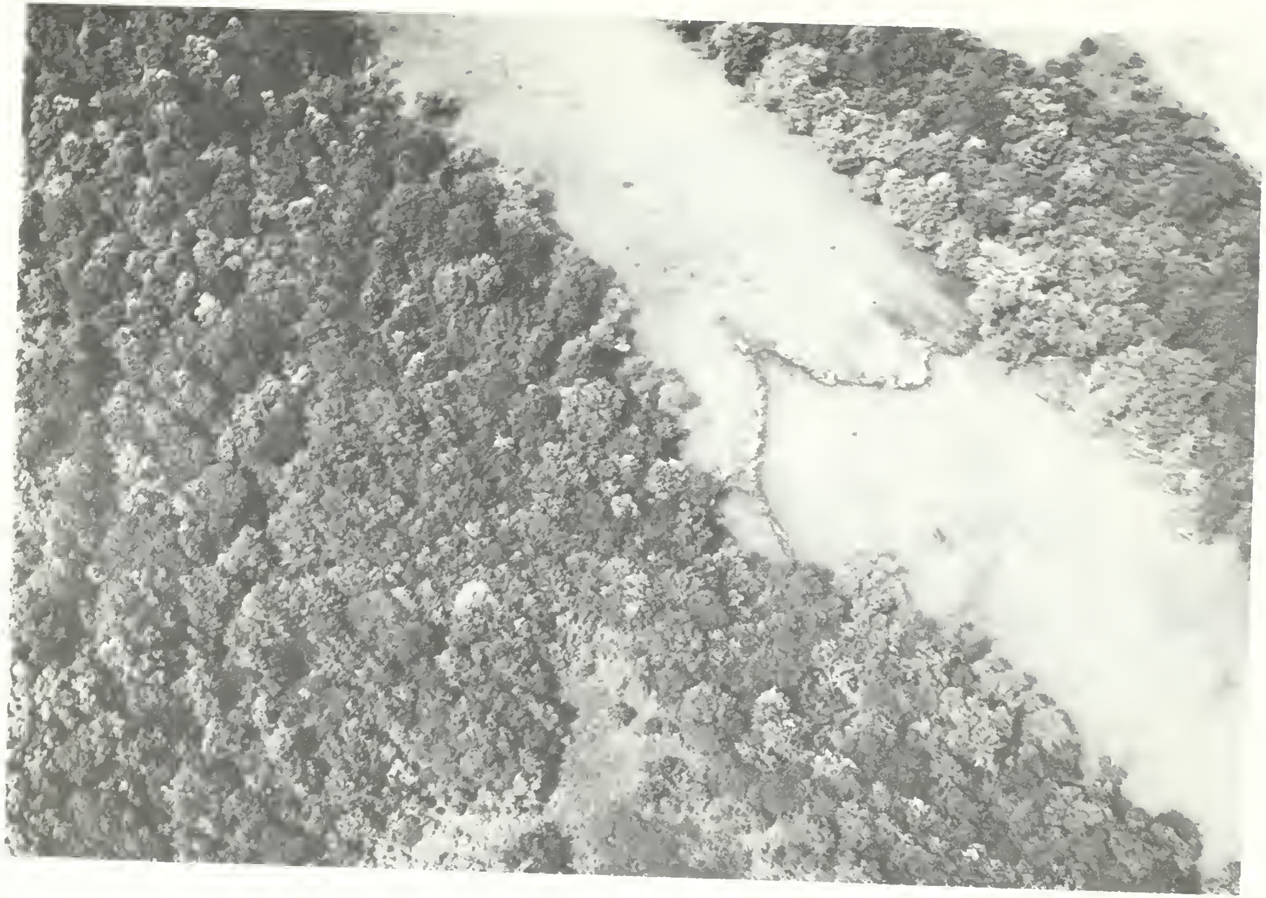


PLATE 3, AERIAL PHOTOGRAPH OF A STONE FISH WEIR (OR DAM) IN THE ETOWAH RIVER, BARTOW COUNTY.

Dense vegetation cover, such as is characteristic of the eastern United States, may conceal the presence of sites. Furthermore, only a restricted variety of sites can be detected with the technique. Finally, costs mount rapidly when imagery or other than black and white photographs, available from United States government agencies, is used.

Geophysical prospecting techniques which measure the electrical (resistivity survey) and magnetic field intensity (magnetometer and metal detector survey) of surface soils are widely used in the exploration of buried sites (Tite 1972). While these techniques have the potential for detecting previously unknown sites, they have seldom been used for this purpose (Bowen and Carnes 1976; Kopper 1970). Reliability of the techniques is rather low since only a limited variety of sites can be detected. Detectable sites include those with architectural and occupation features such as walls, hearths and pits and those with metallic artifacts. Reliability is reduced also by the limited range of field conditions (mainly geological) under which the techniques will operate effectively. The efficiency of metal detectors is relatively great. This equipment is not expensive and continuous 2 m wide exposures can be made at the rate of a slow walk. Magnetometer and resistivity techniques, however, are inefficient since exposures must be close-spaced and aligned in a grid pattern.

Several "on-the-ground" site detection techniques that make use of manually operated or mechanical equipment are available for use in areas where sites are obscured by low-lying vegetation, a few centimeters of soil, or decayed vegetation. Each has its particular advantages and drawbacks which should be considered in choosing among

PLATE 4, METAL DETECTOR IN USE FOR ARCHAEOLOGICAL SITE LOCATION ALONG THE MARTA RAPID RAIL, EAST LINE, FULTON COUNTY.

PLATE 5, USE OF SOIL RESISTIVITY SURVEY FOR THE DETECTION OF ARCHAEOLOGICAL SITES.

them.

In certain forest situations, a fire rake can be used to remove surface debris. Where there is no humus build up, the technique is both reliable and efficient for the detection of surface sites. Wide and continuous exposures can be made rapidly and most site indicators will be visible, especially after a rainfall.

Small shovel tests, measuring approximately 20 cm square and 20 cm deep can be excavated with a light-weight folding shovel in a few minutes time (Hally et al. 1975; Lovis 1976). Overall this technique is neither very reliable nor efficient. Exposures are small and, although unit cost in time and money is not great, the close spacing of tests necessary to avoid bias in the site sample makes the technique expensive. Shovel tests are probably more effective in detecting sites by the presence of artifacts than by soil zones or features. The main advantage of shovel testing is that it can be used in almost all kinds of terrain, in inaccessible locations and in places where vegetation might impede and even prohibit the use of other techniques.

Hand operated garden tillers with pneumatic tires seem to have all of the advantages of the shovel test and few of its disadvantages. The machine is mobile and therefore capable of reaching and operating in all but the most rugged and overgrown terrain. Since it produces a fairly large (.5 m wide) continuous exposure, reliability is great. Efficiency, on the other hand, is low since the machine is relatively expensive to purchase and its forward progress is not too rapid. Furthermore, to maximize reliability, it is necessary to wait until a good rain has fallen before inspecting surface exposures.

In areas where accessibility, terrain and vegetation permit, a tractor mounted plow or fire break trencher are the most efficient and reliable machines for exposing sites lying within 20 cm of ground surface. The latter has the advantage of producing a clean cut approximately 1 meter wide and 30 cm deep flanked by spoil dirt. Occupation features such as postholes may be visible in this cut. Artifacts, of course, can be collected from the exposure after a rain. The major disadvantage of the fire break trencher is lack of mobility and its high purchase cost. The machine, furthermore, is not generally available on a rental basis.

The tractor drawn plow is fast, somewhat more maneuverable than the fire break trencher, and generally available for rental. Because of the large continuous exposure it produces, reliability is high. Purchase or rental costs are more than offset by the speed with which exposure can be made.

For sites lying between 30 cm and 2 m below ground surface, several pieces of equipment are available to the archaeologist. The hand-held bucket auger and posthole digger have many of the advantages and disadvantages characteristic of the shovel test. The main difference is the greater time required to make an exposure with them. When greater depth penetration is required, the bucket auger is superior to the posthole digger as it is physically less strenuous to operate and requires less time per exposure (Bowen and Carnes 1977). The hand-held posthole digger has been used with great success in the Wallace Reservoir located on the Oconee River near Greensboro, Georgia (DePratter 1976; Wood 1976). Vegetation there was heavy and ubiquitous, while the river bottom land was extensively alluviated. Out of a total of 140 sites found in the reservoir area during a survey conducted in 1974, 50 were initially detected with a hand-held

PLATE 6, AUGER TESTING DURING MARTA RAPID RAIL SURVEY.

posthole digger.

Tractor mounted posthole augers can dig a larger (20 cm) test hole and do it faster. They cannot penetrate below approximately 1 meter, however, without the somewhat cumbersome addition of an extension to the auger shaft in each test. The tractor, of course, is plagued by the problem of maneuverability.

A continuous trench measuring up to 10 cm wide and 2 m deep can be excavated with a mechanical ditch digger or ditch witch. Artifacts can be collected from spoil dirt flanking the trench and the trench profile can be inspected for features and soil zones. Since the exposure is also continuous, reliability is great. The machine does not progress very rapidly, however, and may be impeded by large tree roots. Leasing or purchasing expense and relative lack of maneuverability are the major disadvantages of the machine.

For sites buried more than 2 m below ground surface, there are really only three practical detection techniques available: the hand-held bucket auger, the truck or trailer mounted core drilling rig (Price et al. 1964; Johnson and Alexander 1975) and the backhoe (Chapman 1976). With a backhoe, large area tests measuring up to four 1 m squares (1 m x 4 m) and 4 m deep can be excavated in soft alluvial soil in approximately 30 minutes (Chapman 1976). Reliability is great due to exposure size, but efficiency is low due to high purchase or rental cost and spacing requirements. This technique may destroy as much information as it uncovers. Landowners, furthermore, may not allow it to be used because of the problems such large excavations pose for later land use.

For all practical purposes there is no depth limit on a core drilling rig. The technique has the additional advantage of providing the archaeologist with a direct view of buried strata. Although resolution is relatively great for this reason, small exposure size and spacing requirements limit reliability and decrease efficiency. Other disadvantages of the technique are the high cost of equipment purchase or rental, the great amount of time required to make exposures and lack of equipment maneuverability. Overall, the technique is very inefficient.

The hand-held bucket auger would seem to be the most efficient, if not reliable, technique for the detection of deeply buried sites. Exposures can be made more rapidly than with either of the mechanical techniques, and purchase and operation costs are negligible. Perhaps of greatest importance, use of the technique is not restricted by terrain and vegetation conditions. With the use of extension pieces, there is theoretically no depth limitation for the technique. In actuality, the equipment becomes cumbersome and difficult to operate at depths greater than 5 m.

The need to employ random sampling procedures in the selection of sampling units and the problem of locating these units on the ground is clearly described in Chapter 2 of this manual. When using small exposure techniques such as shovel or posthole tests, the problem of locating sampling units is considerable due to the sheer number of exposures required for adequate coverage. The only practical way to overcome this problem is to sample transects or strata within the research universe. Exposures within such areas are most efficiently located by employing a systematic sampling scheme which places exposures in a linear or grid pattern.

SITE CHARACTERIZATION

CRAIG T. SHELDON, JR.

Once an archaeological site has been detected, certain data must be gathered in order to adequately describe the site and assess its potential significance. This phase of investigation is termed site characterization. It would be difficult to over-emphasize the importance of the activities which occur during this phase. Many justifiable criticisms of archaeological surveys relate not to problems of site detection, but rather to inadequacies in the subsequent data gathered from each site.

The basic intent of site characterization is to assess the potential of a particular site for producing certain forms of data and not to measure exhaustively all of the variation of artifacts, features and other data present at the site.

Adequate assessment of a site usually requires information on the following characteristics:

1. an accurate location and physical description of the site
2. the horizontal limits of the site
3. the depth and stratification of cultural deposits
4. the presence of any surface and/or subsurface features
5. preliminary identification of the major cultural components and/or activities at the site
6. the extent of agricultural and other disturbances to the site

7. a field evaluation of the potential impact of any proposed construction or project activities upon the data contained within the site.

Specific projects or surveys may require that additional types of data be gathered and these must be taken into account in the planning of the site characterization phase.

The gathering of these data necessitates a series of explicit and formal testing procedures which must be followed and fully explained in order to assure that the data are of adequate quality. These procedures include development of a site sampling strategy, selection of appropriate surface and/or subsurface testing techniques and accurate recording of the resulting data.

Site Sampling

The necessity for adopting a basic sampling strategy during the testing of an archaeological site is frequently overlooked, particularly if the survey(s) and/or site(s) are small in extent. Surface and subsurface tests executed during the original phase of site detection may demonstrate that a site exists at a particular location, but they do not usually provide the desired data for assessing such characteristics as the depth of deposit, horizontal extent and basic composition of the archaeological materials. Additional testings within the boundaries of the site are necessary and it is critical that this testing be conducted to produce maximal reliable data.

It is obvious that the data produced during testing represents only a fraction of the total data present within a site. In order to provide an effective measure of the extent to which the test data reflect the average conditions throughout the site, the surface and subsurface testing activities should be carried out with reference to a basic sampling scheme. The number and size of test units will vary according to the particular nature of a site and the scope and requirements of the individual research project, but the actual location of the test units must be made with some understanding of the relationships that they bear to the total configuration of the site. A clearly delineated and executed sampling strategy not only increases the probability that all the components and/or activity areas are represented, but also enables a clear understanding of the operational biases which are present in any testing procedure.

Development of elaborate sampling schemes for a half acre of eroded Piedmont hillside or similar area would in most cases be an exercise in futility. Under such circumstances, most archaeologists would conduct a few subsurface tests at locations which they judge best demonstrate the eroded and disturbed nature of the area. This approach would be adequate, but only if the archaeologist clearly documents why a formalized sampling strategy was not used and on what basis he selected the specific locations of the subsurface tests.

Certain basic sampling procedures have been discussed in the chapter on survey methodology. An additional discussion of sampling is presented here as it relates to site characterization.

Availability sampling: Frequently the archaeologist is left few choices in his placement of subsurface tests and is restricted to portions of a site. Limitations may include extensive site damage from construction or erosion, existing buildings, roads, parking lots, crops, landowner preferences, rock falls and project boundaries. Being restricted to the peripheries of planted fields, dirt alleys, flowerbeds and undamaged portions of a site, it is difficult and occasionally impossible to sample all the possible cultural and physical divisions. Availability samples are the most biased and uncontrolled of the sampling approaches but frequently the archaeologist has no alternative. Careful placement of the test units around the portion of the site which cannot be used may reduce some of the effects to the bias.

Judgmental sampling: Judgmental or intuitive sampling refers to testing those portions of a site which the archaeologist considers to have the greatest likelihood of containing important data. This is not a formal sampling procedure and frequently does not show clearly the biases which may be operating (Ragir 1975:286). So called "hot spots" are for the most part not intuitive hunches but informally observed correlations between land features and cultural remains (as artifact scatters, structures and wells) and concentration of subsurface artifacts and features. Following such indicators, the archaeologist frequently can produce large quantities of data with a minimum expenditure of energy but discriminates against those portions of the sites where few artifacts show above ground. If a purely judgmental approach must be used due to restrictions of time and labor, whatever informal surface indicators were used must be described as explicitly as possible. This will enable some subsequent assessment of the biases which were present during the testing of a site.

Random sampling: Random sampling is the most statistically valid procedure considered here and also allows for the greatest control of any operational biases (Ragir 1975). A site is divided arbitrarily into a number of points or equally sized areas, then a certain number of points are selected for testing on the basis of randomly generated numbers.

Selecting a sample purely randomly is the most dependable technique for insuring that all portions of a site have an equal chance of representation, but actual application of this technique has resulted in a number of operational problems.

First, a random sample may exclude sampling a portion of the site known to be highly productive from surface indications or initial subsurface tests or judged so by the archaeologist on the basis of previous experience.

Secondly, randomly selected points occasionally cluster, leaving large areas of a site untested.

Thirdly, if a significant data complex (as a burial, a portion or trace of a structure) lies partially within a selected unit it may be necessary to extend testing into a sample unit not previously selected for excavation. Rigorous adherence to the initial system may preserve the dictates of a random sample, but result in the loss of significant data. Excavating the unselected unit will yield more complete recovery of the special complex but may result in abandoning the random scheme. Problems such as this cannot be resolved by an all-encompassing answer, but rather should be approached as a professional decision based upon information potential given alternative testing. Because of the numerous problems that come with rigorous application of the random sampling procedure, it should be used in conjunction with other techniques.

Systematic sampling: Systematic or interval sampling also involves the use of grid points or equal sized units but a predetermined interval, such as every second or fourth point, is chosen.

This eliminates the clustering problems associated with random sampling. Intervals, however, may not fall within highly productive or discernible areas of a site. The sampling interval inadvertently may coincide with some regularity in the data itself, for example, all tests falling within the streets of a former colonial period street grid system.

Stratified sampling: This is a more recently developed technique which minimizes many of the problems associated with random and systematic sampling and also allows the archaeologist to apply data available to him from past experience (Rootenberg 1964, Ragir 1975, McMichael 1977).

As outlined in the section on stratification of the research universe, a stratified sample is based on the delineation of strata or physically and culturally discernible sections of a site, such as floodplain terraces, proximity of resources, gradients or structures, plazas, palisades. The basis on which the strata were selected must be stated explicitly even if they were judgemental.

The number of units excavated in each strata is proportional to its percentage of the total size of the site. The tests within each strata may be placed randomly, systematically or by a combined approach.

A cautionary note should be injected here in regard to strata based on cultural evidence. Structural remains or other nonrandom clusters of artifacts found on the surface may enable the archaeologist to divide a site on the basis of focal points of activity. It is essential that all strata discernible at a site be tested since many activities confined to one area may not generate as many indications on the surface as activities which are widespread or repeated.

Additional discussion on intra-site sampling strategies and techniques may be found in Rootenberg (1964), Binford (1964), Redman (1973), Ragir (1975) and Mueller (1975).

Regardless of which sampling approach is selected by or forced upon the archaeologist, it is crucial that the procedures employed and the reasoning behind them be outlined explicitly. Such "statements of methodology" are necessary if there is to be any independent assessment of the reliability of the recovered data characterizing the site.

Once the basic sampling strategy has been decided upon, the next problem is determining the sample size or the percentage of the site to be sampled. As Asch (1975:190) states:

> No absolute standard for archaeological sample size can be established; their adequacy must therefore be evaluated in terms of the research problems set forth by the individual investigators and by the larger archaeological community.

For surveys and reconnaissances, rather than full scale excavations, sample size is influenced by three major aspects: the types of data sought, the cultural and physical conditions present at sites and the particular testing modes used.

The types of information needed are the physical dimensions of the site, an identification of cultural components, the existence of stratified cultural deposits and features or areas of specific activities, physical disturbance to the site as caused by agriculture, and an evaluation of how the project will affect the site.

The variation in the size and composition of a site will affect directly the necessary sample size. Thus large, complex sites with discernible internal variation (such as large villages or historical sites) will require a greater number of sampling points in order to assess areas of specific functions or overlapping occupations. Conversely, smaller sites with greater homogeneity in the distribution or deposition of artifacts, features or occupations will require fewer sampling points. An example of the smaller site would be a bluff shelter where the physical limitations of the site restricted the usable area and resulted in the accumulations of debris of each successive occupation one on top of another.

Finally, the capability of each technique with respect to resolution quality, exposure, maneuverability and cost will affect the sample size. For basic site characterization, a large number of small tests will yield more reliable data than a small number of larger tests, even though the sampled portion of the site remains the same (Asch 1975:179). Thus a number of point samples made with small shovels, manually operated posthole diggers or augers distributed within a site according to some formalized sampling procedure would appear to be a more productive and efficient approach. Such small samples are biased however against locations of low artifact density or certain types of features. These biases may be balanced by excavating several larger tests in conjunction with the point samples.

Testing Procedures

In the past, the recovery of artifact samples from archaeological sites was generally restricted to two basic methods--surface collections from cleared areas and small manually excavated test pits. In response to the increasing need for more efficient means of amassing adequate samples during surveys, archaeologists have recently devised and tested a number of alternative techniques and mechanisms. Many of these techniques have not yet been adequately assessed in terms of their reliability, resolution and exposure and all have their distinctive advantages and limitations. In selecting a particular testing mode or combination of modes, it is critical to have a clear understanding of these qualities and to be certain that the applied methods will yield the required data.

Surface Testing

The majority of archaeological sites are detected through surface indications. While examination of materials and conditions found on the surface are seldom adequate for the purposes of assessment, certain procedures may enhance and supplement the subsurface tests.

Systematic surface collecting: Collection of surface materials at a site is seldom adequate in itself since it does not permit adequate assessment of the subsurface potential or conditions. When conducted in a systematic manner, however, it becomes a useful guide for determining the location of subsequent subsurface tests. Sites under cultivation or with enough surface exposed, may be divided into equal parts and artifacts systematically collected on the basis of a total, random interval or stratified plan (Redman and Watson 1970, Binford 1964). If time does not permit establishing a grid, circular sampling areas of a standardized radius may be considered as an alternative.

In much of Georgia, extensive reforestation and conversion to pasture makes systematic surface collecting difficult if not impossible. An alternative approach is the use of mechanical equipment to replow or scarify the original plowzone, exposing it to subsequent rain and then systematically collecting exposed areas. It is not necessary to expose the entire site; plowed strips or transects located on the basis of a formalized sampling scheme will yield adequate information.

In western Carroll County, Georgia, three sites with an eroded shallow plowzone were scarified by several 6 foot (or 1.8 meters) wide transects, each 50-100 feet or 15-30.5 meters long, using a front end loader with a toothed blade. Following subsequent rains, the exposed artifacts were systematically collected. Selected portions of the plowzone were then removed using a bulldozer to uncover features which extended below the plowzone. The replowing or scarification of these sites exposed a greater area and produced a larger artifact sample than the more traditional manually excavated test pits would have (Sheldon 1975). Other mechanical equipment which could be used is listed in Table 1.

Probes: Metal probes are seriously limited in their quality of resolution, but have application under special circumstances. Probing can be useful in locating or tracing buried shell middens, bed rock, walls and foundations. The best design consists of a 4 foot rod (1.2 meters) of ¼ inch (.6 centimeters) tempered steel with a slightly larger steel ball bearing welded to the lower end and a brass door knob attached to the upper end. Considerable time is necessary to develop the skill necessary to use and interpret the results of such probing.

Geophysical testing procedures: While the various electronic remote sensing systems have received comparatively little application in finding sites, their use in site characterization would appear to be more productive due to the limited area and greater control of local background activity. Magnetometers which measure

Table 1

SUBSURFACE TESTING TECHNIQUES

POINT SAMPLES

conventional archaeological test pits
small shovel tests
manually operated posthole diggers
truck or tractor mounted auger
portable gasoline powered auger
truck mounted hydraulic corer
tractor mounted backhoe

TRENCH SAMPLES

tractor mounted backhoe
ditch digger
bulldozer
dragline

STRIPPING AND SCARIFYING

tractor drawn plow, harrow or disc
tractor drawn fire plow
toothblade on tractor or bulldozer
motor grader
garden cultivator
bulldozer

variation in magnetic field intensity, resistivity which measures variations in electrical field conductivity (Tite 1972) and ground penetrating radar (Bevan and Kenyon 1975) are the most commonly employed survey techniques. All have the capacity to detect buried anomalies which on an archaeological site may include pits, hearths, subsurface strata, ditches, tombs and stone and brick walls. Instrumentation costs are generally high but the majority of systems are easily transported. Before these can be used, it is necessary to establish a grid system and determine the local level of background magnetism or resistivity, a task requiring numerous readings. In order to interpret properly the significance of any electronic signature, some subsurface tests must be excavated to confirm that the indicated anomalies are cultural and not natural features. Because of these problems, these geophysical techniques are more efficient when used on large sites where internal arrangements of features are important.

The beat frequency or oscillating types of electromagnetic metal detectors are relatively inexpensive, light and compact. They are suited to historic and those prehistoric sites where metallic artifacts are encountered. By careful plotting of each signal on a site map, it is possible to not only determine relative density of metal artifacts but also to identify pits and dumps, thus allowing them to be incorporated into subsequent subsurface testing schemes.

Some types of electromagnetic surveying instruments may also be used for the detection of buried soil features such as pits, ditches and walls (Tite 1972:32-39).

Photography: Due to their usually small scale, existing aerial photographs are of greater value in site detection than in site characterization. Where vegetation conditions permit they can be useful in recording site locations, determining site boundaries and spatial dimensions and arrangements of surface features. Features which are not easily discernible from the surface may show up clearly in aerial photographs. Examples of such features include agricultural fields (Morrell 1965, Fowler 1969), walls and structures (Kurjack and Andrews 1976) and fish traps (Strandberg and Tomlinson 1969).

Although it is not specifically a testing technique, surface photography is an important aid in site characterization due to its high resolution quality, exposure size and relative ease. Many surveys require site photographs as part of subsequent nomination to the National Register of Historic Places. Where vegetation is dense and no cultural features are visible, site photographs retain considerable value in recording the physical condition and configuration of the land and serve as an aid in relocating the site in the future. Photographs should include a known scale and a reference to direction. They should be planned to record the maximum amount of information visible (Hester et al. 1975:233-248, Conlon 1973). This is particularly necessary where standing structures, walls, ditches, mounds and similar features are present.

Subsurface Testing

A number of alternative subsurface testing techniques have already been discussed in the section on Site Detection and need not be repeated here (See Table 1). Frequently the same technique employed in detecting the presence of a buried site may be used in the site characterization phase. For example, once a site has been dis-

PLATE 7, MOTOR GRADER STRIPPING TO DISCOVER BURIED ARCHAEOLOGICAL FEATURES AT OAKLAND CEMETERY, FULTON COUNTY.

covered through the excavation of small postholes, then additional postholes placed within the parameters of the site according to a sampling strategy should provide the necessary information on depth, stratification and so forth.

As discussed in the section on Site Sampling, the small exposure "point sampling" methods frequently lead to biases against recovery of materials from areas of low artifact density or against certain types of features. In this instance, a combination of different testing modes may be useful. Thus a limited number of large exposure tests, excavated manually or mechanically, might be used in addition to a larger number of postholes or small shovel tests. If the presence of linear features such as stockades, walls, ditches, and so forth are known or suspected, then short trenches excavated by ditch digger or backhoe may be instrumental in revealing their location and extent.

Mechanized equipment offers a number of potential cost and time saving alternatives to manual techniques (Wedel 1951). Depending on their individual qualities of control, capacity, maneuverability and considering rental costs and maintenance, each presents a range of advantages and disadvantages. Caution must be used to insure the equipment is not indiscriminately used in inappropriate situations where it would destroy more data than it recovers.

One of the most frequent flaws of archaeological assessment reports is the failure of the archaeologist to adequately describe the specific techniques and results of the field testing program. The simple statement that a particular test unit yielded no cultural material is insufficient because it does not provide a basis for evaluation of representatives of the test unit. In assessing the

PLATE 8, TRENCHES EXCAVATED WITH A BACKHOE IN ORDER TO CHARACTERIZE A BURIED INDIAN VILLAGE SITE WITHIN THE LAKE OCONEE IMPOUNDMENT AREA.

potential data contained within a site, negative indications are as important as positive ones and should be as fully recorded. In addition to specifying the basic sampling strategy and presentation of a detailed map of the location of each test unit, there should be textual and graphic indications of the type of testing mode (e.g., posthole digger, backhoe, etc.), terminal depth of the test, the soil horizons encountered and an explanation for the absence of cultural materials (e.g., beyond site boundaries or below annual flood elevation).

Recording Site Information

The data produced by surveys and site testing must be clearly and concisely recorded, both for cultural resource assessments and the permanent archaeological record. It would be difficult to overstress the importance of complete and accurate documentation of field data. All too often otherwise fully adequate testing projects are flawed by incomplete field notes and records. For sites which do not meet the criteria for listing in the National Register of Historic Places, the data gathered during the survey becomes critical. It may become the only record of that site's existence and nature.

Location and Basic Site Information

The geographic location of a site must be determined accurately and recorded precisely. This is mandatory not only for future archaeological research but also for planning and resource management. Georgia Archaeological Survey forms are available from the Office of the State Archaeologist and are provided upon request. A sample form and explanation of categories is in Appendix A.

In addition to recording the site on the survey form, it is desirable to complete the computer code sheet for the Archaeological Site Inventory, currently being maintained by the University of Georgia. Once established, this computerized file will serve as a valuable research and planning tool. There is some overlap in the information requested on the survey form and the computer inventory code, but the code does require additional data. Coding information is also included in Appendix A.

Recording of Test Data

The systematic survey of a large area frequently demands that numerous sites be sampled, resulting in a considerable amount of facts to be recorded. To make it possible to compare the data from different sites and to lessen the chances of certain information being overlooked for a particular site, a system of standard recording procedures should be established. This is most effectively done by developing a series of printed forms, either for general or institutional purposes or for specific projects. At minimum, the following records should be maintained:

Daily field log: Kept by the supervising archaeologist, this notebook should record the day to day activities of the investigations and any data not recorded in other forms. This should include the project title, the contract agency, the names of supervisory personnel and laborers, details of the sampling rationale and testing techniques used.

Test unit record: A printed form similar to the Georgia State University excavation unit data sheet (see sample in Appendix B) would be useful in assuring that all necessary information is recorded for each test. This should include the field number of each test, the type of test (posthole, backhoe, etc.), size, elevations, graphic profile sketches and descriptions of all discernible natural and cultural strata and descriptions of features and non-transportable cultural data.

Maps and plans: These should record the location of all visible surface features, both cultural and natural, as concentrations of artifacts, walls, streams or whatever; the location of all test points and systematic surface collection areas; benchmarks and datum points; the boundaries, cultural and natural, which served for stratification of the site, and if possible contour lines and elevations sufficient to depict the basic topography of the site. All maps, plans and drawings must have a legend listing the site name and number, project or survey title, north arrow, scale, datum, field specimen and test excavation numbers, date and name of mapper. These are essential.

Feature and burial forms: Standardized forms for features and burials encountered during testing assure that all pertinent data are recorded. Sample forms are included in Appendix B.

Photographic record: A separate log should be maintained listing the photograph number, project, site, subject, direction of view, the date and the name of the photographer. These details are crucial since photographs are an integral part of the archaeological record. A sample form is included in Appendix B.

Field container log: A separate notebook listing the number of containers of cultural materials, soil samples, etc., recovered from each site or test unit is necessary to record the provenience (horizontal and vertical location) of the material. This information

PLATE 9, PLANE TABLE MAPPING AT A QUARRY SITE ON SOAPSTONE RIDGE, DEKALB COUNTY.

must be maintained in subsequent laboratory analysis.

Records inventory: Frequently site and test data from a single site are recorded in a variety of forms. As an aid in the laboratory phase and any subsequent use of the records, a check list of the number and type of notebooks, maps, plans, logs, cards and forms completed for each site would be valuable.

LABORATORY PROCESSING AND CURATION

ROY S. DICKENS

William Lipe (1974:238-240) has made a convincing case for good management in the laboratory and museum of archaeological remains, and for the obligations that we all must assume when we remove these remains from their original site contexts.

> At some indefinite point in the future, hopefully far in the future, archaeological sites, at least of the prehistoric period, will be very rare, and field work almost a thing of the past. All that will be left for the prehistorian of the future will be the reports we publish today, and the basic records and collections that remain....The report is in no sense a substitute for the basic field data and collections, if someone with a different perspective, a new set of problems, or new techniques wants to examine these basic materials....I submit that we should be even more concerned about the future indefinite preservation of our records and collections than about preservation of our published works...published works are likely to grow more and more obsolete through time and to receive less and less attention, whereas the basic records and collections are likely to grow more important and to be frequently consulted through time, as our supply of actual sites dwindles.

This return to older collections has already begun. For example, Southeastern archaeologists are making increasing use of data gathered under the public works programs of the 1930's and 1940's (e.g., Mason 1963; McKenzie 1966; DeJarnette and Peebles 1970; Peebles 1971; Hatch 1975). Many of these Civil Works Administration and Works Progress Administration projects were conducted in the large river basins, such as the Tennessee Valley, sites that are now flooded and inaccessible to modern archaeologists. With today's prices for labor, materials, and equipment, projects comparable in magnitude to those conducted forty years ago will be few. As Lipe noted, our resource base is also dwindling. For these reasons, the older data become increasingly important.

But what does one find upon opening the boxes and file drawers from past projects? It has been my experience that these older data are in conditions varying from good to unusable. On the more tragic end of the continuum, I have found boxes in which the bags and labels had been eaten by rats or insects, effectively destroying the provenience of the materials. I have found items which are shown in one archaeological context by field photographs, but which are stored in a situation that suggests they were from a different context. I have seen numerous examples of artifacts on which the catalog numbers have become abraded beyond recognition, or where the ink had deteriorated or become detached from the surface. I have discovered 40-year old negatives with cracking or peeling emulsion, and original field documents that have turned brown or on which the ink has eaten through the paper.

On the brighter side, I have found some of these older collections and records that were well organized, accessible, and in good condition. The bad examples usually were not the fault of the original excavators. In most cases deterioration had resulted from hurried processing, adverse storage conditions, or careless curation and handling. Of course, some of the decline in these materials was simply the result of normal aging and could not be avoided with existing archival techniques.

We must recognize that most of our laboratory and storage techniques were not, and still are not, aimed at maximum permanency. How many of us are careful to wash our negatives and prints an extra

30 minutes to make sure that the destructive chemicals are thoroughly removed? Do we store our maps, photographs, and negatives in acid-free holders? How many of us can afford fire-proof filing cabinets for our field data, or dehumidifiers for our collection rooms? Are we always careful to avoid breaking or abrading fragile artifacts for which we are only the temporary custodians? The state of our resource base now demands that we begin to treat archaeological specimens and records as an irreplaceable, but reusable, resource.

TREATMENT OF ARTIFACTS

Field Removal and Transportation to the Laboratory

The archaeologist must take seriously his responsibility for the handling of artifacts during removal from the field and transportation to the laboratory. Fragile items, especially bone, shell, wood, leather, and paper, require special attention. Usually, these materials have survived because of unusual soil and/or climatic conditions. Thus, when they are removed from their field, it is necessary to keep them in a similar environment until they are ready for laboratory treatment. For example, fragile bone or shell may be left in its soil matrix to avoid breakage, and wrapped in burlap to prevent excessive drying (Runquist 1970). Wood from a wet archaeological context should be kept moist until lab treatment can be initiated (Keel 1963).

When artifacts are in transit to the laboratory, they should be handled with care to avoid crushing or breaking. When in temporary storage at the lab, prior to processing, boxes and bags of artifacts should not be placed in areas where they will be in danger

PLATE 10, RECORDING CATALOGUED ARTIFACTS COLLECTED DURING ARCHAEOLOGICAL SURVEY.

of spillage or come under the prying hands of curiosity seekers. Also, containers should not be stacked to such a height as to crush materials on lower levels. Perhaps, the most serious error that is committed when artifacts are in transit, or in temporary storage, is the loss or mixing of provenience data. Labels, tags, and other identifying marks should be clearly written and securely affixed to their containers. Water-proof ink always should be used for labeling boxes and bags in the field.

Laboratory Techniques

Laboratory treatment of artifacts is a complex, time-consuming and often costly process. Therefore, the archaeologist is obligated to determine prior to fieldwork that he possesses the facilities and resources necessary for the proper cleaning, preserving, cataloging, storage, and retrieval of the resulting materials.

Cleaning: An artifact should be cleaned no more than is necessary for analysis, and then the cleaning should be carried out in a careful and thoughtful manner. Too much cleaning can reduce the information content of an artifact. For example, indiscriminate scrubbing might remove tell-tale residue from the edge of a stone scraper, the "cake" from a pipe bowl, or paint from the surface of a potsherd.

Commonly, artifacts are cleaned by hand with brush and water. If tough clay adheres to the surface of pottery, for example, one might use warm water and a mild detergent for cleaning. Certain fragile materials, such as bone and shell, are sometimes best cleaned with a soft brush without wetting the artifact, or with the use of acetone which evaporates quickly. Metals can be cleaned by a number of techniques, including chemicals, sand-blasting, and electrolysis. The latter two techniques usually are reserved for iron, which may be heavily oxidized, especially if recovered from an underwater site. Keel (1963) discusses appropriate techniques for various metals, and Dunton (1964) gives the specifications for setting up electrolytic apparatus in the small laboratory. Chemical and electrolytic cleaning should be carefully monitored as they can destroy an artifact if carried too far. The cleaning of clay, metal, stone, bone, shell, wood, textiles, skins and paper are covered in several manuals (e.g., Plenderleith 1956; Keel 1963) and numerous specialized papers (e.g., Dunton 1964; Runquist 1970; South 1962; Worthy 1978).

Preservation and Restoration: As with cleaning, an artifact should be subjected to preservation treatment (soaking, coating, encasing, etc.) only to the extent necessary to protect the item from future deterioration. Several preservation manuals (e.g., Plenderleith 1956; Keel 1963; Lewis 1976) are available, and the bibliographies of these books contain numerous articles on the treatment of specific materials.

One should always be as certain as possible that he has determined the appropriate technique by experimentation prior to large-scale treatment. For example, if an artifact is recovered in several pieces, a small piece might be tested prior to treating the remaining portions. Better yet, similar, non-artifactual material might be obtained for testing purposes.

Wooden artifacts recovered from a damp environment should be kept submerged or wrapped in wet cloth until treatment can be initiated. Treatment of wet wood usually involves impregnation with a wax or resin substance to prevent shrinkage and cracking during drying.

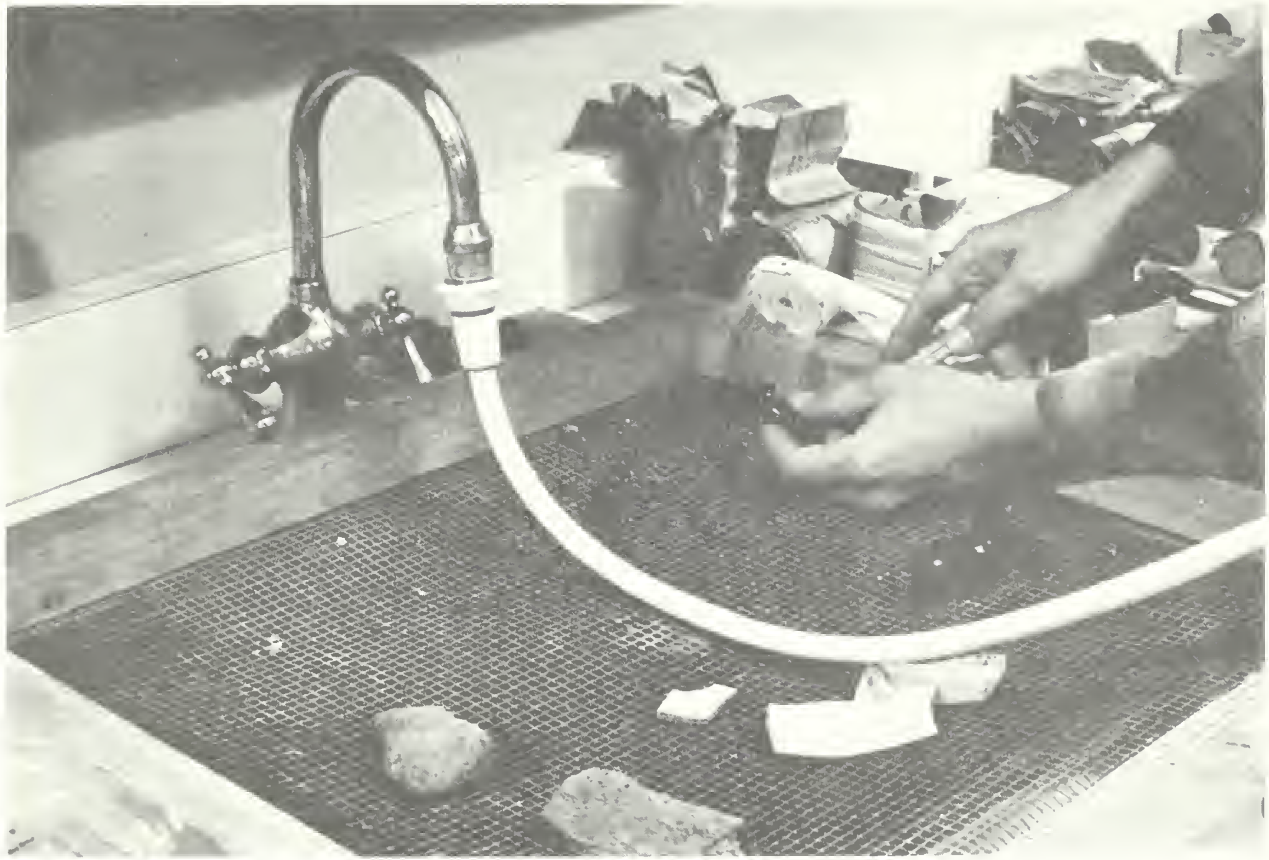


PLATE 11, CLEANING ARTIFACTS AT THE LABORATORY.

Recently, Polyethylene glycol (Carbowax) has proven useful (Seborg and Invenarity 1962). Small wooden items usually can be treated indoors in the normal laboratory setup; however, it might be necessary to treat larger items (e.g., a dugout canoe) in a makeshift tank constructed out-of-doors (Dickens 1964).

After cleaning, bone and shell may be coated with a thin solution of Gelva and commercial-grade acetone; wood and most metals with a clear (matte finish) acrylic such as Krylon or polyurethane; paper with magnesium carbonate; and leather or skins with a light coating of leather dressing. Again, there should be minimal use of these preservatives, as overtreatment can produce destructive and unattractive results. Special care, and multiple techniques, may be required on delicate objects or on objects made from more than one material (e.g., copper-covered or shell-inlaid wooden artifacts).

Restoration of artifacts requires skill and practice. Several articles (e.g., Runquist 1970; Torrey 1940) are concerned with this subject. Usually, restoration is conducted for the purposes of determining the overall configuration of an artifact or to prepare it for exhibition.

Accessioning and Cataloging: A consistent and accurate system of accessioning (recording units of related artifacts) and cataloging (recording individual items) should be maintained by an institution housing archaeological collections. It is totally unacceptable for materials to be brought from the field and left uncataloged for an indefinite period. The accession-catalog system should allow for accessibility in locating and extracting individual items and groups of related items from storage. The accession book and catalogs should be neat and easy to follow, and should be stored in a safe,

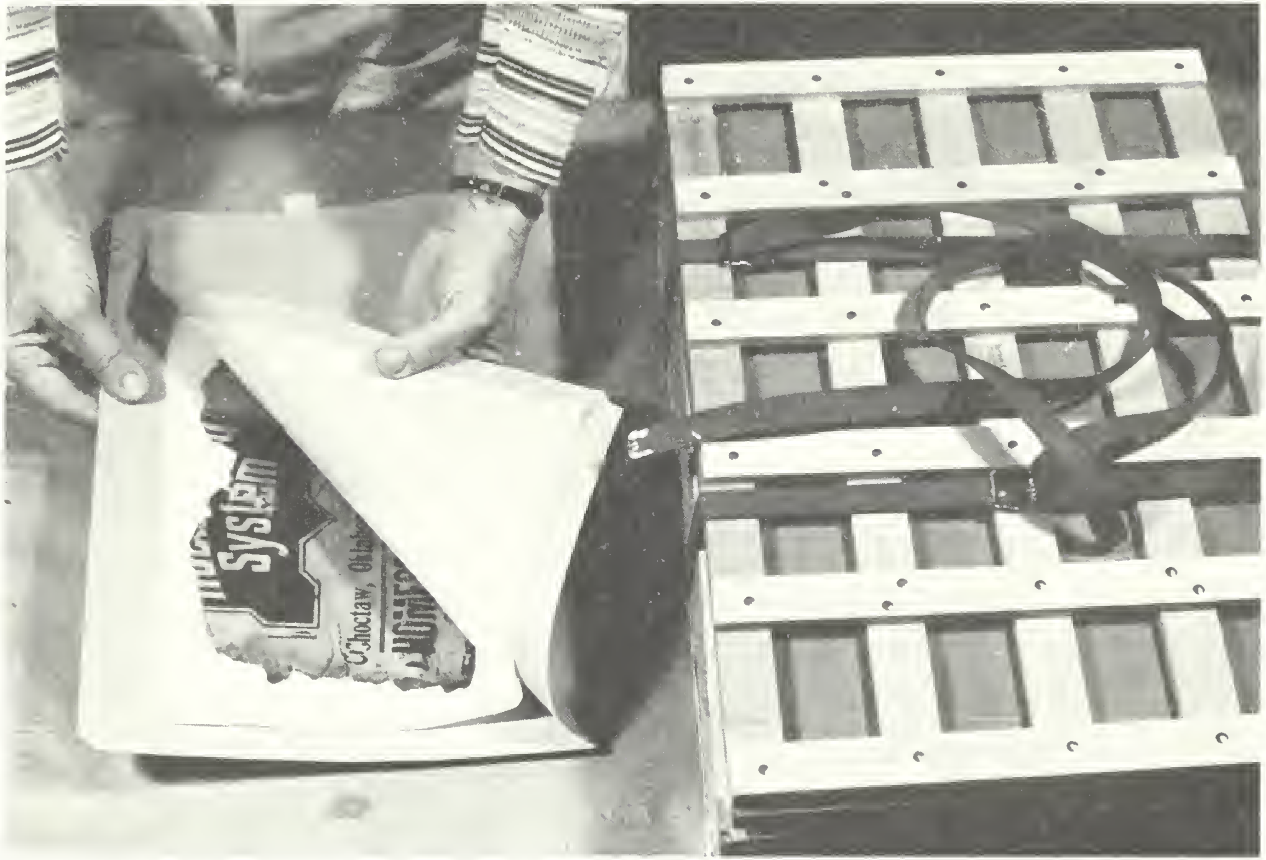


PLATE 12, PRESERVING A PAPER ARTIFACT RECOVERED FROM A PROJECT IN THE ATLANTA AREA.

dry location. Preferably, duplicate copies should be kept in different buildings, in case of fire.

During the cataloging process, and in subsequent retrieval and study, artifacts should be handled with care, keeping in mind that the researcher has an obligation to maintain each item in the same condition that he found it. Fragile items can be easily chipped, abraded, or cracked through careless handling, sometimes destroying important information (e.g., edge-wear patterns and manufacturing marks). Good sources on museum accessioning and cataloging are available (e.g., Lewis 1976; Schneider 1971).

TREATMENT OF RECORDS

Any institution or agency that attempts to conduct archaeological work should recognize that the photographs, maps, data sheets, catalogs, and other records, as well as the artifacts, form a primary archive of each field project. Therefore, it is incumbent upon the archaeologist or curator to maintain these archives in a safe and permanent manner, and to make them readily available to qualified researchers.

Site data forms should be maintained at each institution or agency practicing archaeology. These must be kept up-to-date, neat, and complete. All such data should be forwarded promptly to the Georgia Archaeological Site Inventory at the University of Georgia.

Slides and negatives should be clearly and accurately marked (in most systems the same accession number assigned to the artifacts from a project is also assigned to the field records and photographs). They should be placed in acid-free holders and stored in a clean, dry, fire-proof environment.

Field notebooks and data forms are best stored in fire-proof filing cabinets, and field maps should be kept flat in standard map cabinets. All photographic records, maps, notebooks, and data sheets should be cataloged and indexed in such a manner that a researcher can readily and conveniently use them.

APPENDIX A

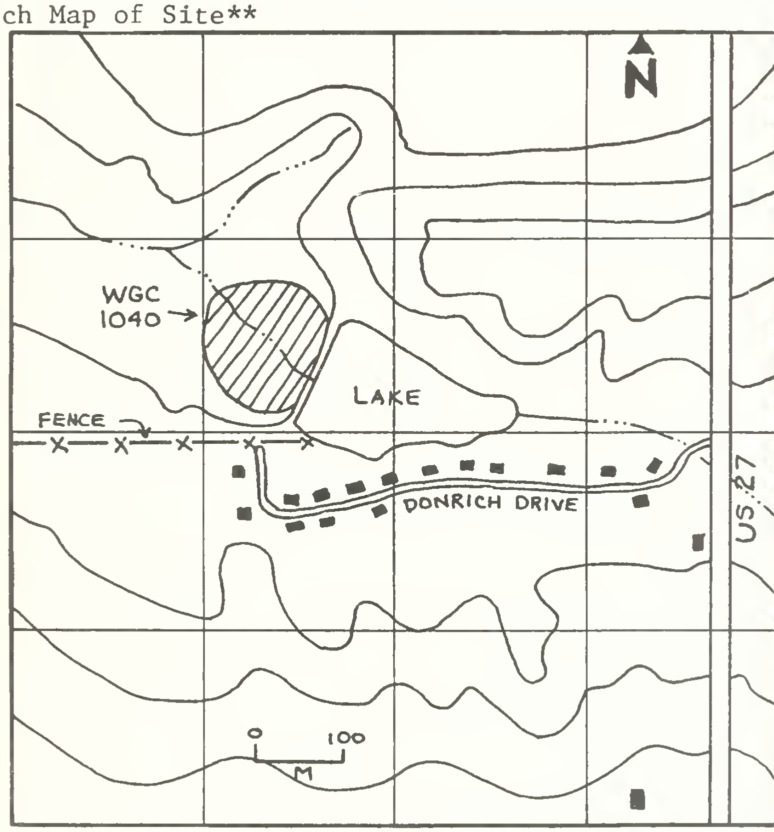
State Site No.* 9Cr129 Site Name Smith Site
Instit.Site No. WGC 1040 Site Photos 35mm B/W, Photo # 216-243

Location (County Carroll Lat. 33° 32' 14" N Long. 85° 05' 14" W)
UTM References

	ZONE	EASTING	NORTHING
A	16	678020	3712325
B			
C			
D			

Owner James R. Smith Address Rt. 1 Box 172, Carrollton, GA 30117
Description (Acreage 5 ;Site Elevation, above sea level 1020' ;Soil Type[s];Present Condition and Use;Intrusions;Topography;Vegetation;Erosion,Etc.) Begin at square in center of Carrollton and proceed west on GA Highway 166 for three blocks and turn south onto US Highway 27. Proceed for 4.6 km and turn right onto Donrich Drive. Proceed 0.95 km west and then north to where pavement ends. Site is located 0.2 km north in plowed field, on both sides of stream, northwest of earth dam.
The site is 150 m in diameter and extends from the immediate stream banks across the narrow flood plain to the lower portions of the surrounding slopes. Soil types include Masada fine sandy loam and Congaree soils. In addition to listed artifacts, fragments of daub and fire cracked rock litter most of the surface area. The area was plowed for pasture in 1973 (July). Some erosion on the lower slopes. The lower portions of the site are occasionally flooded.
emarks and Recommendations Donrich Heights S/D will expand north over the site in 1977. Chattahoochee-Flint APDC contacted in January, 1976.

ap Reference USGS 7½' Topo Carrollton, GA quad 1973
erial Photo Reference ASCS 1-2000/022-184, November, 1969
ketch Map of Site** Official Map



*how relationship to nearby sites, access roads, streams, and major landmarks, and ndicate scale.

**mplete all categories even if unknown (U/K), unavailable (U/A), incomplete (I/C), or e attachment (S/A); explain if necessary.

RECORD OF MATERIALS

Collected by Survey Cartersville Check Stamped: 25/ Mossy Oak Simple Stamped: 8/ Etowah Complicated Stamped: 14/ Lamar Bold Incised: 37/ Chert Triangular Point: 2/ Chert Debris: 18/ Quartzite Blade: 3/ Quartzite Debris: 32/ Daub: 16/ Unidentified animal Bone: 29

Acc. No./Storage WGC 941/73-943/73

Subsequent Collections	Date	Acc.No./Storage
Collector Frederick T. Williams/WGC	8 June 1975	WGC 123/75-126/75
Collector Kenneth B. Mason/WGC	13Feb1980	WGC 099
Collector		

Private Collections

Collector James R. Smith Address Rt. 1 Box 172, Carrollton, GA 30117

Type of Material Similar to that collected by original survey. Includes diabase celt and schist two hole bar gorget.

Collector William B. Smith Address Rt. 1 Box 172, Carrollton, GA 30117

Type of Material Similar to above. Includes Bolen Beveled quartzite projectile point.

Excavation Record	Date	Acc.No./Storage
Supervisor Frederick T. Williams/WGC	8-10Jun1975	WGC 127/75-162/75
Supervisor		

Published Record Frederick T. Williams. 1976 Test Excavations at a Multicomponent Site in Carroll County, Georgia. Report to Chattahoochee-Flint APDC Manuscript

CULTURAL AFFINITY

Preliminary Classification Possible Early Archaic/Early Woodland (Cartersville)/Etowah/ Lamar. Village or major occupation site.

Subsequent Classification

NATIONAL REGISTER OF HISTORIC PLACES

Eligible for Nomination (circle appropriate response): (Yes) No Nominated Registered

Justification Test excavations indicate that the site is stratified and that post holes, pits and other features are present below the plowzone.

Cultural Significance (circle appropriate evaluation): Local (State) National

Justification Contains data relating to problems of regional chronology and cultural adaptation on a state-wide level.

FORM COMPLETION/UPDATE

Date	Name	Prof. Status/Inst.Affil.	Contract/Proj.	Punch Card Submitted (Circle Response)	
19Sep1973	F. T. Williams	Grad. Student/WGC	Chatt-Flint APDC	(Yes)	No
			#65-012	(Yes)	No
15June1975	F. T. Williams	Grad. Student/WGC	NONE	(Yes)	No
1Mar1980	K. B. Mason	/WGC	NONE	Yes	No
				Yes	No
				Yes	No

Georgia Archaeological Survey Form

Instructions

STATE SITE NUMBER:

This number is assigned currently when a completed site survey form and an Archaeological Site Inventory Code form are submitted to the Department of Anthropology, University of Georgia, Athens, Georgia 30602. This number is assigned according to the Smithsonian system --- 9-Crl-29 is Georgia, Carroll County, site 29.

INSTITUTIONAL SITE NUMBER:

This is assigned by each institution according to its own system of site designation. To prevent confusion with the state number, county designations should not be used. A common practice is to use the initials of the institution as a prefix followed by the site number --- WGC 4 is West Georgia College site 4.

SITE NAME:

Names may be assigned arbitrarily, but if names relating to historic usages, landowners, natural landmarks or project area are available, they should be used in order to prevent confusion. Record previously used names also, in order that existing records and collections may be assigned to the correct designation.

SITE PHOTOGRAPH:

This blank is used to record the existence of photographs of the site, its environs and any test excavations. The total number and type of photographs and the appropriate catalog numbers should be indicated.

COUNTY:

Use the full name of the county(s) in which the site is located.

LATITUDE/LONGITUDE:

Use of the Universal Transverse Mercator system for formally designating site location is replacing geographical coordinates based on latitude and longitude, but the latter should be recorded to reduce the possibility of error in transferring older site information to the present forms.

UTM REFERENCES:

These blanks are used to record the Universal Transverse Mercator Coordinates of each site or area. Recording of a single central coordinate point is adequate if the site is small.

OWNER/ADDRESS:

The name and address of the owner(s) should be recorded to facilitate obtaining access, further site information and examining existing collections.

DESCRIPTION:

An indication of size is important.

acreage: Given the increasing conversion to the metric system, the term acreage should be crossed out and the term hectare substituted. A hectare is 100 by 100 meters. That is approximately 328 by 328 feet. It should also be noted briefly if the figure was determined by estimate, map scale, pacing or actual measurement.

elevation: Average site elevation above sea level should be expressed in meters. The elevation in feet may be determined from a United States Geological Survey quadrangle map, then converted to meters by dividing by 3.281.

description: In addition to describing the physical configuration and environs of a site, it is crucial to provide written directions for reaching that site. The directions must be specific, beginning at an easily identifiable place as a town or highway junction. Distances may be determined by vehicle odometer. Only permanent physical or cultural features should be used as landmarks. Basic site characteristics which should be included are

- topography of the site and environs
- dimensions
- visible surface features as mounds, structures, etc.
- distance to fresh or salt water
- soil types
- present surface condition (cultivated, wooded, etc.)

REMARKS AND RECOMMENDATIONS:

Any pertinent data not specifically called for in other blanks may be entered here, as:

potential or specific threats to the site
landowner attitude towards preservation or further investigation
recommendation for future investigations

MAP REFERENCE:

Give the specific designation of the map used to indicate the location of the site. This should be a generally available map, as a USGS quadrangle or a county highway map, and not a special issue. The USGS quads are preferable.

AERIAL PHOTO REFERENCE:

If the site can be located on an aerial photograph, its full designation (the agency which sponsored the photography, the flight number, run designation, frame number and date) should be entered here.

SKETCH MAP OF SITE:

Space is provided for a large scale sketch map showing the site location and extent, access roads, pertinent landmarks and other important information.

OFFICIAL MAP:

Attach a photocopied section of the map listed in the blank for map reference here. The site location and size should be indicated on the map in ink.

COLLECTED BY SURVEY:

These lines are provided for a brief listing of the artifacts recovered by the survey. Although these usually are recovered from the surface, artifacts from test excavations should be listed also. The artifacts should be identified as specifically as possible as to formal and functional type or component.

ACC(ESSION) NUMBER AND STORAGE:

The specific institution catalog number(s) and storage place should be indicated here to insure that the collection may be easily examined at a later date.

SUBSEQUENT COLLECTION:

Indicate the collector, institutional affiliation, date, and catalog and storage numbers of subsequent collections of artifacts from the site.

PRIVATE COLLECTIONS:

Although surface collections made by amateurs/landowners tend to be biased toward intact or unusual artifacts, they are of value in indicating the range of artifact variation present at the site. The collector's name and address should be given as well as any artifact forms which were not present in the collection made by the formal survey.

EXCAVATION RECORD:

Any prior or subsequent excavations at the site should be noted here.

PUBLISHED RECORD:

This blank is provided for any pertinent publications about the site. If a manuscript, paper or unpublished special report exists, list where they are filed or may be obtained.

CULTURAL AFFINITY/PRELIMINARY CLASSIFICATION:

A tentative indication of the periods, components or occupations which appear to be present at the site should be listed here. Interpretations of the function or type of site as village, rock quarry or shell midden should be included. In order to increase comparability between different sites or areas, the period categories outlined in the Archaeological Site Inventory Code available at the University of Georgia should be used.

SUBSEQUENT CLASSIFICATION:

If the preliminary classification is proven correct or invalid as the result of subsequent excavation/analysis, this should be entered here.

ELIGIBLE FOR NOMINATION:

Indicate any action toward recommending the site for nomination to the National Register of Historic Places. The criteria and procedures for this will be discussed in another section.

JUSTIFICATION:

If the site is recommended for the National Register the basis for this needs to be made clear and specific.

CULTURAL SIGNIFICANCE:

Indicate the level of significance (local, state or national) of the site and its data. For a discussion of cultural significance, see Raab and Klinger, 1977.

JUSTIFICATION:

The basis for selecting a level of significance can be made clear by determining if the site contains information relating to research problems on a local, state or national level.

FORM COMPLETION/UPDATE:

The name, professional status and institutional affiliation if any of the persons completing the survey form should be listed here. The date and nature of the survey (contract, private or whatever) should be indicated. The spaces on the right are for indicating the status of entering the site information in the Georgia Archaeological Site Inventory at the University of Georgia.

Archaeological Site Inventory Code

CARD 1

Column	Description	No. Columns
	State Number	
1-2	State Designation	2
3-5	County Designation	3
6-9	Site Number	4
	Institution Number	
10-12	Institution Designation	3
13-15	County Designation	3
16-19	Site Number	4
20-32	Site Name	13
	Universal Transverse Mercator Grid Coordinates	
33-38	Meters East	6
39-45	Meters North	7
46	Accuracy of UTM Coordinates	1
	1 Exact or high accuracy, site is probably not misplaced more than ± 100 meters	
	2 Site may be located more than ± 100 meters off UTM Coordinates	
	3 Prov. Problem - See Site Form	
	4 No Data on Location	
	Site Elevation	
47-51	± Elevation in meters, relative to sea level	5
52-53	Map Source	2
	1 USGS	
	2 Corps of Engineers	
	3 County	
54-59	Map Scale	6
60-69	Map Name	10
70-73	Map Date	4
80	Card Number (1)	1

CARD 2

Column	Description	No. Columns
	State Number	
1-2	State Designation	2
3-5	County Designation	3
6-9	Site Number	4
	Institution Number	
10-12	Institution Designation	3
13-15	County Designation	3
16-19	Site Number	4
	Site Size (When site size exceeds three digits use 999)	
20-22	Length in Meters	3
23-25	Width in Meters	3
26	Orientation of Length 1 n/s 2 e/w 3 ne/sw 4 nw/se	1
27-29 30-32 33-35 36-38	Type of Site (Maximum of four physical characteristics to be coded for each site) (see list on page 89)	12
39	Nature of Site 1 surface (when site is known to be only surface) 2 subsurface 3 surface & subsurface 4 surface is described (subsurface conditions unknown)	1
40	Site Midden (undisturbed occupational strata) 1 present 2 absent 3 unknown	1
41	Site Features (context is important here) 1 present 2 absent 3 unknown	1
42	Standing Architecture (this relates only to historic sites) 1 present 2 absent	1

CARD 2 (continued)

Column	Description	No. Columns
43	Percentage of Site Disturbance 1 no disturbance 2 less than 50% disturbed-road thru site 3 more than 50% disturbed-site is cultivated 4 condition not noted on form	1
44	Status of Investigator 1 amateur 2 professional 3 recorder not reported	1
45	Kind of Investigation 1 surface 2 tested 3 excavated 4 documentary, never professionally verified 5 unknown	1
	Date of Investigation	
46-47	Day	2
48-49	Month	2
50-53	Year	4
54-55	Primary Location of Collection 1 Augusta College 2 Augusta Museum 3 American Museum of Natural History 4 Columbus Museum 5 Cobb-Fulton County Survey 6 Georgia Department of Natural Resources (DNR) 7 Georgia State University 8 Museum of the American Indian (Heye Foundation) 9 National Park Service 10 Shorter College 11 Smithsonian Institution 12 University of Georgia (UGA) 13 Valdosta State College 14 West Georgia College 15 Private Collection 16 Augusta Archaeological Society 17 National Museum Collection 18 University of North Carolina 19 Peabody 20 Forest Service (USFS) 21 Tulane University 22 Kennesaw Junior College 23 Unknown 24 Savannah Science Museum 25 Soil Systems Incorporated (SSI) 26 Georgia Department of Transportation (DOT)	2

CARD 2 (continued)

Column	Description	No. Columns
54-55	Primary Location of Collection (continued) 27 Office of State Archaeologist 28 University of Florida 29 Florida State University Southeast Archaeological Center 30 Corps of Engineers 31 University of South Carolina/Institute of Archaeology and Anthropology	2
56-57	Primary Location of Documentation	
	Date of Entry (Date on the form)	
58-59	Day	2
60-61	Month	2
62-65	Year	4
66	Ownership 1 private 2 municipal 3 county 4 state 5 federal 6 unknown	1
67-68	Preservation State (Maximum of two states to be coded for each site) 1 undisturbed 2 cultivated 3 eroded 4 submerged like Dyer Natural 5 flooded-covered by man made lake 6 vandalism 7 destroyed 8 redeposited 9 graded-by earth moving machinery	2
69-70	Preservation Prospect 1 safe 2 endangered-natural eroding 3 endangered-natural flooding 4 endangered-private cultivation 5 endangered-private construction 6 endangered-pothunting 7 endangered-municipal 8 endangered-county 9 endangered-Corps of Engineers 10 endangered-Soil Conservation Service (SCS) 11 endangered-Forest Service 12 endangered-U.S. Department of Housing and Urban Development (HUD) 13 endangered-Georgia Department of Transportation (DOT) 14 endangered-Georgia Power Company 15 endangered-Environmental Protection Agency (EPA)	

CARD 2 (continued)

Column	Description	No. Columns
69-70	Preservation Prospect (continued) 16 military 17 unknown	2
71	Federal or State Register Status 1 National Historic Landmark 2 National Natural Landmark 3 National Register (state) 4 Georgia Heritage Trust 5 National Register	1
72	National Register significance 1 local 2 state 3 national	1
73	National Register Status 1 ineligible 2 eligible 3 nominated 4 registered 5 eligibility determination obtained (Section 106 of the National Historic Preservation Act)	1
80	Card Number (2)	1

CARD(s) 3 on

Column	Description	No. Columns
	State Number	
1-2	State Designation	2
3-5	County Designation	3
6-9	Site Number	4
	Institution Number	
10-12	Institution Designation	3
13-15	County Designation	3
16-19	Site Number	4
	Cultural Affiliation (Component 1)	
20-21	Period Identification 1 Early Paleo-Indian 2 Late Paleo-Indian 3 Early Archaic 4 Middle Archaic 5 Late Archaic 6 Early Woodland 7 Middle Woodland 8 Late Woodland 9 Early Mississippian	2

CARD(s) 3 on (continued)

Column	Description	No. Columns
20-21	Cultural Affiliation (continued) 10 Middle Mississippian 11 Late Mississippian-if a site is described as protohistoric use Late Mississippian unless trade goods or documentation proves otherwise (Lamar) 12 Historic Aboriginal 13 Historic Non-Aboriginal 14 Unknown	2
22-29	Date Range for Historic Sites (if known) e.g. 18001825	8
30-79	Most Diagnostic Artifact Type(s) Write out or abbreviate type name(s), or if item is not capable of being placed in a known or established type category, provide brief description. (e.g., Lanceolate projectile pt.-100 mm long)	50
80	CARD NUMBERS (3) or greater	1

The Coding System

This is the third edition of the archaeological site inventory code. During the initial process of coding site data using the coding system, it was found necessary to make several minor changes. Most of the changes are self explanatory. However, those categories which offer potential confusion are considered in the following discussion. General considerations for using the coding system, as outlined in the first edition of the code, are reiterated here for convenience.

1. All information that is coded numerically must be right-justified in the field under consideration. For example, if a site number is only three digits in length, such as site 101, the number is entered in columns 7, 8, 9 and not in 6, 7, 8. Column 6 should be left blank in this case.

2. All information that is coded in alphameric or non-numeric symbols should be left-justified in the field under consideration. For example, the county designation RA would be placed in columns 3, 4 and not in 4, 5.

3. If data for any category are either unknown or unobtainable, the columns for that category code should be left blank. The only exception is noted below.
   Card 1, column 47
   If the elevation is above sea level the "+" can be left out. The elevation must still go in columns 48-51. On Card 2, under Site Size, Columns 20-25, if the length or width of the site should exceed the allotted three column field then use the Code 999 to represent the Site Size.

4. Columns 27-38 of Card 2 must be considered as 4 "fields" or 4 "blocks" of 3 columns each. A maximum of 4 codes for physical characteristics can then be used to describe each site. Each code must be placed in only one of the fields of 3 columns.

   The digits from 101 to 199 are reserved for prehistoric aboriginal site characteristics while the digits 201-299 will pertain to characteristics of those sites which have historical aboriginal components. The digits from 301-399 are reserved for historic non-aboriginal site characteristics. This system should allow adequate room for future additions of coding categories. The following list includes a numbered set of categories which have initially been used in coding prehistoric aboriginal site characteristics. Some of the characteristics however are also appropriated for historic aboriginal and historical non-aboriginal site data.

To exemplify the coding of multi-component site characteristics in the 4 "blocks" comprising columns 27-38, consider a site which yields a scatter of both prehistoric aboriginal and historic non-aboriginal cemetery. Columns 27-29 would be coded 101, columns 30-32 coded 104, columns 33-35 coded 208, and columns 36-38 would be coded 301. The list of characteristics used to describe prehistoric aboriginal and historic sites follows:

Aboriginal Site Characteristics

1. Artifact or Shell Scatter
2. Village
3. Shell Midden
4. Earth Mound
5. Rock Mound
6. Quarry
7. Rock Shelter
8. Cemetery
9. Rock Dam and/or Fish Weir
10. Rock Alignment (on land)
11. Petroglyph, Statue
12. Artifact Cache
13. Cave
14. Isolated House or Hamlet
15. Isolated Burial

Note: Characteristics Number 2, Village, and Number 14, Isolated house or hamlet, pertain only to those sites where there can be no question about the nature of the site. Generally, the site characteristics correspond with observations rather than references. Thus, an extensive artifact scatter should not necessarily be interpreted nor coded as a village unless there is firm evidence supporting this assumption.

Historic Site Characteristics

Agricultural:

1. Barn	8.
2. Fence Wall, Stockpen	9.
3. Granary	10.
4. Terrace	11.
5.	12.
6.	13.
7.	14.

Domestic-Public:

16. House or Structure	20. School
17. Out House	21. Cemetery
18. Cave-Cellar	22. Trash Dump (domestic)
19. Church or Mission	23. Municipal Trash Dump

24. Settlement
25. Monument
26. Court House
27. Rock Garden
28. Inn or Hotel
29.
30.

Transportation:

31. Road
32. Railroad
33. Railroad Station
34. Tunnel
35. Stage Coach Depot
36.
37.
38.
39.
40.
41.
42.
43.
44.
45.

Commercial-Industrial:

46. Store
47. Factory
48. Furnace
49. Warehouse-Storage Bldg.
50. Grist Mill
51. Saw Mill
52. Mine or Quarry
53. Land Fill
54. Textile Mill
55. Brickyard
56. Still
57. Sugar Mill
58. Bank
59. Sign
60.

Military:

61. Fort & Battery or associated structures
62. Earthworks
63. Battle Field
64. Camp
65. Military Supply Cache
66. Bomb Shelter (Cold War)
67.
68.
69.
70.
71.
72.
73.
74.
75.

Related to Water:

76. Bridge
77. Dam
78. Levee
79. Canal or Ditch
80. Pier, Landing, Pilings or Dock
81. Mill Pond
82. Well
83. Sewer
84. Water Tank, Trough
85. Ship or Boat
86. Spring
87. Boat Yard
88. Causeway
89. Jetty
90.

Miscellaneous:

91. Historic Artifact Scatter
92. Earth Work of unknown use
93.
94.
95.
96.
97.
98.
99.

5. Every site will have card 1 and 2, but each card thereafter is used to describe separate components at that site. If there is a separable (or single) component at a site that cannot be allocated to one of the named periods, there should still be a card denoting this by using category 14 in columns 20-21. It would be most convenient for future bookkeeping if the cards 3, 4 ... were arranged so that the earliest component was described on card 3, the next most recent on card 4, etc.

6. Card 1, Column 60-69 - Map Name
Often the map name must be cut short or abbreviated because of its length. If abbreviation is necessary and if, for example, the map name consists of two parts (e.g., Flowery Branch), the first part is entered in its entirety while the second part is abbreviated -- FLOWERY BR.

7. Card 2, Columns 1-9 - Site Number
State Site numbers can only be assigned by the Central Site File, University of Georgia.

8. Card 2, Columns 66-67 - Preservation State
Columns 66-67 of card 2 must be considered as 2 blocks of 1 column each. A maximum of 2 codes for preservation state can then be used to describe the conditions at each site. For a site which is under cultivation and has also been pothunted, the coding would be indicated as 2 and 6 in columns 66 and 67, respectively.

9. Card 2, Columns 68-69 - Preservation Prospect
If the site being coded is threatened by either natural or cultural destruction, the most imminent threat (i.e., private cultivation) should be coded, even if there are other potential adverse processes endangering the site.

10. Card 3, Columns 30-79 - Most Diagnostic Artifact Type(s)
It was considered to be impossible to develop a reasonable or manageable code for all potentially recovered artifact "types." These considerations stem not only from the problems surrounding the concept of type, but from the potentially overwhelming number of types of artifacts that might be encountered, especially in historic sites. The suggested strategy therefore is to allow each investigator (person coding site data) the greatest possible leeway in the description of diagnostic artifact types or artifacts per component by leaving 50 columns for actual alphabetic code (English).

11. If the need arises, additional entries may be added to the list of coded characteristics for several categories of data--e.g., Map Source (Card 1, Columns 52, 53), Primary Location of Collection (Card 2, Columns 54, 55), and Preservation Prospect (Card 2, Columns 69, 70). Two columns have been provided for each of these categories so that, for example, additional map sources, institutions, and project agencies can be included. Any suggested additions should first be cleared with UGA, however, so that the coding form can be kept accurate and up to date.

APPENDIX B

WEST GEORGIA COLLEGE
BURIAL DATA FORM

SQUARE______________ SITE______________

LEVEL______________ BURIAL______________

DEPTH______________ CAT. NO.______________

PHOTO______________

DESCRIPTION:______________

OSTEOLOGICAL DATA: AGE__________ SEX__________

PRESERVATION:______________

PATHOLOGY:______________

ASSOCIATIONS:	CAT. NO.

OBSERVER______________ DATE__________

GEORGIA STATE UNIVERSITY LABORATORY OF ARCHAEOLOGY
BURIAL DATA FORM

Date.. Site Number..
Observer.. Burial Number..
Photo Number ....
....

Placement:

Horizontal: location of pelvis (from 0) ....
Vertical: at R.P. .... B.S. is .... +R.P.A.E. .... =H.I. ....
H.I. .... −Reading top of skull .... =H.I. ....
H.I. .... −Reading top of pelvis .... =A.E. ....
H.I. .... −Reading top of pit .... =A.E. ....
H.I. .... −Reading...................... .... =A.E. ....
H.I. .... −Reading...................... .... =A.E. ....

Sketch (manikin)

For scale drawing see ....

Primary: type .... ; deposition ....
orientation ....
Secondary: type .... ; no. of individuals ....
Cremation: type .... ; degree of burning ....
Urn: type .... ; max. dia. .... ; height ....
killed .... ; condition .... ; cover...
Pit: major axis .... ; max. length .... ; max. width ....
max. depth .... ; horiz. relationships ....
.... ; strat. relationships ....
....
Associated Objects:..
....

BURIAL DATA FORM

Burial No. ....

Site No. ....

Skeleton (or Skull) No. ....

Age .... Sex .... Preservation ....

Bones Taken:

Cranial: Calva .... Teeth: U/L 8 7 6 5 4 3 2 1 1 2 3 4 5 6 7 8

Calvaria ....

Calvarium ....

Cranium .... Degree of Attrition: ....

Post-Cranial:

Ribs	Scapula	Femur ....
Sternum	Clavicle	Patella ....
Vertebrae	Humerus	Tibia ....
Sacrum	Radius	Fibula ....
Innominate	Ulna	Foot ....
	Hand	

Posthumous Deformations:

Posthumous Disturbances:

Relationships of Burial:

Field and laboratory treatment (preservation, restoration, etc.):

FORM 6

GEORGIA STATE UNIVERSITY LABORATORY OF ARCHAEOLOGY

FEATURE DATA FORM

Date ....

Observer ....

Site Number ....

Feature Number ....

Category ....

Photo Number ....

....

Placement:

Horizontal: location of center (from 0) ....

Vertical: at R.P. .... B.S. is .... +R.P.A.E. .... =H.I. ....

H.I. .... −Reading at .... =A.E. ....

H.I. .... −Reading at .... =A.E. ....

H.I. .... −Reading at .... =A.E. ....

H.I. .... −Reading at .... =A.E. ....

Sketch (plan and profile)

Measurements:

Max. length ....

Max. width ....

Vertical thickness ....

Interior depth ....

....

....

....

....

Associated objects:

For scale drawing see ....

Description	Location	Cat. No.

Relationships of feature:

Additional observations and interpretations:

WEST GEORGIA COLLEGE
FEATURE DATA FORM

SQUARE________________ SITE________________

LEVEL________________ FEATURE________________

DEPTH________________ CAT. NO.________________

PHOTO________________

DEFINITION____

____

DESCRIPTION____

____

____

____

____

____

____

DIMENSIONS:

MAX. LENGTH________________ DIRECTION________________

MAX. WIDTH________________ DIRECTION________________

DEPTH ENCOUNTERED________________ FROM________________

DEPTH TERMINATED________________ FROM________________

ASSOCIATIONS:	CAT. NO.

OBSERVER________________ DATE________________

GEORGIA STATE UNIVERSITY LABORATORY OF ARCHAEOLOGY

Photographic Catalog

Negative # ____________________

Date ____________________

Site or Locale ____

Unit ______________________________________

Source of Photo ______________________________

Camera and Film ______________________________

Photo description:

GEORGIA STATE UNIVERSITY LABORATORY OF ARCHAEOLOGY
PHOTOGRAPHIC DATA FORM

Accession Number ....

Site or Survey Number ....

Field No.	File No.	Subject	Date	Direction	Comments

PHOTO DATA FORM

Film

Site__________________________ Type______________

Roll #____________

Exposure #__________ Provenience____

Camera______________Lens_________ Shutter speed_________ f/stop__________

Filter____________ Flash___________ Camera height ___________ Camera direc-

tion______________Time________ Weather conditions____________ Date_______

Photographer________________ Remarks______________________________________

____

Exposure #________ Provenience____

Camera____________ Lens_________ Shutter speed_________ f/stop___________

Filter__________ Flash__________ Camera height_____________Camera direc-

tion_____________ Time___________ Weather conditions__________ Date_______

Photographer_________________ Remarks____________________________________

____

Exposure #________ Provenience____

Camera___________ Lens________ Shutter speed___________f/stop____________

Filter___________ Flash________ Camera height____________ Camera direction

____________ Time___________ Weather conditions___________Date__________

Photographer________________ Remarks______________________________________

____

WALLACE RESERVOIR PROJECT
PRELIMINARY ANALYSIS SHEET FOR CERAMIC ARTIFACTS*

SITE NO.__________ RECORDER__________ DATE__________

PROVENIENCE UNIT__________ LOT NUMBER__________

Identifiable Decorated	Body	Rim
Bold Incised		
N. Incised		
F. Incised		
Etowah Comp. St.		
Woodstock Comp. St.		
Napier Comp. St.		
Swift Creek Comp. St.		
Stallings Punctated		
Stallings Incised		
Unidentifiable Decorated		
concentric circle st.		
filfot crossed st.		
line blocked st.		
brushed		
simple st.		
rectilinear comp. st.		
curvilinear comp. st.		
check st.		
linear check st.		
cordmarked		
fabric/basket marked		
corncob/fingernail marked		
cross hatched incised		
punctated		
Unident. decor.		
Weathered		

Undecorated	Body	Rim
plain		
fiber		
grit		
shell		
burnished plain		
fiber		
grit		
red filmed		
grit		
polished black		
grit		
rough plain		
Disc		
Pipe		
Worked Stone		
Other Earthenware		
Subtotals		
TOTAL CERAMICS		

*Rim and body modes are tabulated twice; once as modes and once as types.

Rim Modes (list by type if possible: i.e., Lamar Plain, Swift Creek Complicated Stamped, etc.)

plain ______________________________
rolled ______________________________
scalloped ______________________________
folded ______________________________
  plain ______________________________
  pinched ______________________________
  punctated ______________________________
  incised ______________________________
____
____
____
nodes ______________________________
effigies ______________________________
____
____
____
____
____
____
____
Repair Holes ______________________________
____
____

Body Modes (list by type, if possible)

strap/loop handles ______________________________
strap/loop handles with nodes ______________________________
____
____
____
nodes ______________________________
____
____
____
feet ______________________________
____
____
____
____
____
____
____
____

WALLACE RESERVOIR PROJECT
PRELIMINARY ANALYSIS SHEET FOR POLISHED AND GROUND STONE ARTIFACTS

SITE NO.__________ RECORDER__________ DATE__________

PROVENIENCE UNIT__________ LOT NO.__________

	No.	
Polished Stone		
Atlatl Weight		
Axe		
Celt		
Discoidal		
Bead		
Gorget		
Pipe		
Other		
Unident. Polished Stone		
Formal Ground Stone		
Mano		
Metate		
Mortar		
Pestle		
Pendant/Weight		
Notched-Grooved Weight		
Perforated Weight		
Axe		
Bead		
Stone Disc		
Stone Bowl		
Other		
Unident. Formal Ground Stone		
Informal Ground Stone		
Axe/Hoe		
Shaped Hammerstone		
Pebble Hammerstone		
Non-Pebble Hammerstone		
Pounder		
Grinding Slab		
Handstone		
Palette		
Anvil/Pitted Stone		
Abrador/Grooved Stone		
Facet Use Implement		
Edge Use Implement		
Possible Ground Stone		
Other		
Unident. Informal Ground Stone		
Unworked Steatite		

Weight

Fire Cracked Rock __________

Pebbles __________

Other Stone __________

Comments __________

WALLACE RESERVOIR PROJECT
Preliminary Analysis Sheet for Flaked Stone Artifacts

Site No.__________ Recorder______________________________ Date________

Provenience Unit______________________ Lot No.______________

	Quartz	Lt. Chert	Dk. Chert	Rhyolite	Other	TOTALS
Complete Biface						
Broken Biface						
Flake Tool						
Other Tool						
Core						
Percussion Flake						
Thinning/ Retouch Flake						
Unident. debris						
TOTALS						

	C	P	N	C	P	N
Perc.						
Thinn.						
Unident.						

Fire Cracked Rock _____g

Pebbles _____g

Other stone _____g

Comments____

WALLACE RESERVOIR PROJECT
PRELIMINARY ANALYSIS SHEET FOR HISTORIC MATERIALS

SITE NO.________ RECORDER________ DATE________

PROVENIENCE NO.________ LOT NO.________

Creamware
- Finger-painted (polychrome)________
- Annular ware________
- Hand-painted________
- Transfer-printed________
- Plain(22)*________
- ________

Pearlware
- Stenciled (polychrome)________
- Mocha(6)________
- Finger-painted (polychrome)(8)________
- Embossed(9)________
- Willow transfer pattern(10)________
- Annular ware(13)________
- Blue edged(19)________
- Green edged(19)________
- Underglaze polychrome________
- Transfer-printed(11)________
- Polychrome(4)________
- Plain(20)________
- ________

Other Earthenwares
- Whiteware(2)________
- Mocha________
- Luster decorated________
- Delftware________
- Slipware________
- ________
- Olive Jar________
- ________

Porcelain
- Overglazed enamelled Chinese________
- Underglaze (hand painted)(17)________
- Undecorated________
- ________

Stoneware
- Ironware________
- Brown________
- Blue/gray________
- White (salt-glazed)(43)________
- Black________
- ________

Glass

	Base	Neck	Embossed
Green			
Clear			
Blue			
Purple			
Amber			
Milk Glass			

- Marbles________
- Others________
- ________
- ________

Metal
- Tool________
- Coin (Date)________
- Other________
- ________
- ________

Clothing/Adornment
- Button________
- Buckle________
- Bead________
- Hook/Pin________
- Other________
- ________

Construction Materials
- Nail Square________ Wire________
- Bolt/Nut________
- Brick________
- Drain Tile________
- Roofing________
- Insulators________
- ________

Pipe
- ________
- ________
- ________
- ________

Other
- ________
- ________
- ________

*Numbers in parentheses indicate numbers of type collections and S. South's type numbers.

GEORGIA STATE UNIVERSITY LABORATORY OF ARCHAEOLOGY

LABORATORY SKELETAL ANALYSIS AND INVENTORY

Burial No.______________ Site No.______________

Accession No.______________ Observation in field______________

Preservation______________ Observer______________

Bones present______ absent______ Date______________

Morphological data location______________ Photo No.______________

Sex______________ Lab storage location______________

Age assigned______________ Field data location______________

Criteria: Teeth______________ Epiphyseal union______________

Pubic symphysis______________ Suture closure______________

Other______________

CRANIUM

	Occipital			Vomer	
L	Parietal	R	L	Inf. nasal concha	R
	Frontal		L	Lacrimal	R
L	Temporal	R	L	Zygomatic	R
	Sphenoid		L	Palatine	R
	Ethmoid		L	Maxilla	R
	Ossicles			Mandible	
L	Nasal	R		Hyoid	

TEETH

Left	8 7 6 5 4 3 2 1	Maxillary	1 2 3 4 5 6 7 8	Right
	8 7 6 5 4 3 2 1		1 2 3 4 5 6 7 8	

Comments______________

____

____

THORAX

Cervical:	1 2 3 4 5 6 7
Thoracic:	1 2 3 4 5 6 7 8 9 10 11 12
Lumbar:	1 2 3 4 5
Sacrum:	1 2 3 4 5
Coccyx:	1 2 3 4
Sternum:	Manubrium 1 Mesosternum 2 3 4 5 Xiphisternum 6
Right ribs:	1 2 3 4 5 6 7 8 9 10 11 12
Left ribs:	1 2 3 4 5 6 7 8 9 10 11 12

Burial No.________________

INNOMINATE

L	Ilium	R
L	Ischium	R
L	Pubis	R

APPENDICULAR SKELETON

L	Clavicle	R	L	Femur	R
L	Scapula	R	L	Patella	R
L	Humerus	R	L	Tibia	R
L	Ulna	R	L	Fibula	R
L	Radius	R			

L	Navicular	R	L	Calcaneous	R
L	Lunate	R	L	Talus	R
L	Triangular	R	L	Cuboid	R
L	Pisiform	R	L	Navicular	R
L	Greater multangular	R	L	Cuneiform 1	R
L	Lesser multangular	R	L	Cuneiform 2	R
L	Capitate	R	L	Cuneiform 3	R
L	Hamate	R			

L 5 4 3 2 1	Metacarpals 1 2 3 4 5		R		L 5 4 3 2 1	Metatarsals 1 2 3 4 5		R
L ________	Sesamoids	________	R		L ________	Sesamoids	________	R
	Phalanges (no.)					Phalanges (no.)		
L ________	Proximal	________	R		L ________	Proximal	________	R
L ________	Middle	________	R		L ________	Middle	________	R
L ________	Distal	________	R		L ________	Distal	________	R

Unjoined epiphyses____

____

____

ANOMALIES, PATHOLOGIES, INJURIES, ETC.____________________

____

____

____

____

____

____

____

____

GEORGIA STATE UNIVERSITY LABORATORY OF ARCHAEOLOGY
ETHNOGRAPHIC SPECIMEN CATALOG

Photograph

Accession No. ____________________

Catalog No. ____________________

Photograph No. ____________________

Specimen ____________________

Provenience ____________________

____

Collector ____________________

Date Collected ____________________

Date Accessioned ____________________

Storage Location ____________________

Description and Measurements:

Historical Record:

Cultural Affinities:

References:

Comments:

Evaluator ____________________

Value for Insurance Purposes ____________________

GEORGIA STATE UNIVERSITY LABORATORY OF ARCHAEOLOGY
SPECIMEN CATALOG

Accession Number..

Site or Survey Number..

Spec. No.	Location	Number	Description

Laboratory of Archeology

Georgia State University

Excavation Unit Data Sheet

Date Started________________ Site________________________

Date Completed______________ Accession No.________________

Photo- Roll # Exposure # Area________________________

B&W _____ _____ Unit Type___________________

Color _____ _____ SE Coordinates______________

Material Recovered (No. of Containers) Level_______________________

	Field	Lab
10 lb. bg.		
4 "		
2 "		
1/2 "		
Vials		
Boxes		
Other		
Total		

Soil Color__________________

Soil Texture________________

Features____________________

____

Burials_____________________

____

Other_______________________

____

____

____

Excavation Method:________________

____

____

Workers_____________________

Recorded by_________________

Instrument Height________________

Elevation-Top of Level	NW	NE	SE	SW
Instrument Reading				
Corrected Reading				

Elevation-Bottom of Level	NW	NE	SE	SW
Instrument Reading				
Corrected Reading				

Accession# ______________________ Site ______________________ Square ________________

Area ____________________________ Unit ______________________ Level ________________

WEST GEORGIA COLLEGE ARCHAEOLOGICAL LABORATORY
ARCHAEOLOGICAL RECORDS FORM

Item	Number	Place of Storage
Ledgers	______	______________
Notebooks	______	______________
Legal Pads	______	______________
File Folders	______	______________
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