NORTH CAROLINA STATEWIDE ARCHAEOLOGICAL SURVEY: AN INTRODUCTION AND APPLICATION TO THREE HIGHWAY PROJECTS IN HERTFORD, WILKES, AND ASHE COUNTIES

by

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Preface

In the summer and fall of 1977, several dramatic changes occurred within the archaeology program of the North Carolina State Historic Preservation Office. Immediate changes were in staff personnel; almost one third of the staff resigned (for a melange of reasons) and was replaced. Then, in an attempt to develop a more coordinated program, the Archaeology Section was combined with several other sections to form the Archaeology and Historic Preservation Section. Thus, by the fall of 1977, the Archaeology Section had become a branch, and had reevaluated the goals and objectives of the state-level archaeological program (c.f. Mathis 1977a, 1977b).

One aspect of the program which had been largely neglected in the past is what is affectionately referred to as "statewide survey". Although statewide survey program development was initiated in 1973 (the year the Archaeology Section was created by the General Assembly), other aspects of the program (i.e., A-95 review) received the bulk of staff attention. With reorganization, attention was again focused on the collection and evaluation of archaeological site data from around the state. Other aspects of the program were also revised or developed, including an active public education program and a more structured National Register of Historic Places program. The new Archaeology Branch began a campaign to make the public, development planners, and the North Carolina archaeological community aware of the program and of the value of state-level involvement in cultural resource planning and management.

During the reorganization and staff shuffling process, the N.C. Department of Transportation (DOT) approached the Archaeology Branch with three proposed highway construction projects in hand. In accordance with the

N.C. State Code, Chapter 136-42.1 (1971), DOT must consult with the Division of Archives and History on matters relating to "archaeological objects on highway right-of-way." The projects, to be undertaken in Ashe, Wilkes, and Hertford counties, had been "flagged" during A-95 review as having a high probability of adversely affecting archaeological sites. Each of the projects, however, was in a late design stage of planning, with construction contracts due to be let within but a few months. Thus, any archaeological surveys, and if necessary, mitigation of impact, would have to be done as soon as possible. After discussion and debate, the branch agreed to undertake the necessary surveys.

It was soon determined, however, that consenting to undertake the three highway surveys was not the best of ideas. Several unanticipated factors served to delay both the fieldwork and report writing phases of the projects, including difficulties in securing a truck, inclement weather, and more than anything else, a plethora of administrative and management crises involving the cultural resources of the state. Due to these and other less significant problems, summary reports were submitted to DOT following completion of each project; full report writing activities were slowed down to accommodate other branch responsibilities.

In spite of the various and sundry problems encountered along the way, the highway reports were finally completed and are presented in this volume (Parts II, III, and IV). In the process of writing those reports it was decided that some manner of introduction to the philosophies and directions of the Archaeology Branch statewide program was in order. Thus, Part I of the volume contains discussions of the general nature and objectives of statewide survey and of the Cultural Resources Evaluation Programs (CREP), the computer-based data management and graphics systems being implemented by the Division of Archives and History. It is hoped that these discussions will impart at least a general understanding of the role of the Archaeology Branch in cultural resource planning and management, and that they will stimulate discussion among others having an interest in historic (and prehistoric) preservation in North Carolina.

Abstract

In the fall of 1977, the Archaeology Branch conducted cultural resource investigations of three Department of Transportation highway construction projects in Hertford, Wilkes, and Ashe counties, North Carolina. The surveys were undertaken to provide planning information for the Department of Transportation and to initiate and evaluate a revised plan for a North Carolina Statewide Archaeological Survey Program. The plan calls for an ongoing program involving (1) coordination of survey efforts within the state; (2) centralization and computerization of site data files; and (3) a program of data collection and analysis on properties owned and/or controlled by the state. An important component of the program is the development of effective predictive models of prehistoric and historic site locations within the state. Each aspect of the statewide survey plan is discussed herein as an introduction to and framework for the three highway surveys.

A total of 73 prehistoric and historic sites were recorded during the surveys. Although none of the sites were determined eligible for nomination to the National Register, the recovered data have contributed significant new information to the process of developing regional perspectives of the history and prehistory of the respective study regions. The field methods employed during the investigations were evaluated following the analysis phase of the projects in order to increase survey effectiveness in future undertakings within the context of the statewide program.

Acknowledgements

It stands to reason that a project (or in this instance *projects*) which requires as much time to complete as this has would involve a considerable number of individuals in one manner or another. Such is, in fact, the case. However, since each of the highway projects reported in this volume involved different persons at the local and project specific levels, a separate acknowledgments section is provided in the introductions to those reports. In this all too brief "thank you" note I wish only to extend my appreciation to those who saw the start of these projects, have provided assistance throughout the many months of report preparation, and have generally "put up" with my moans and groans and hassles (though not without some returned hassles) through to the finish.

Virtually every member of the Archaeology Branch staff has contributed to this volume. Thomas E. Scheitlin unquestionably deserves the most credit. He not only directed the fieldwork for the Ashe and Wilkes counties projects but also did most of the analyses for those projects, wrote the bulk of the reports, and had to sustain almost continual editorial abuse from the rest of the staff. I extend both thanks and apologies.

Branch staff members Dolores A. Hall, Linda H. Pinkerton, Thomas H. Hargrove, John C. Clauser, Thomas D. Burke, and Carol S. Spears all contributed writing and/or editorial time on various chapters; most also spent some time in the field. Michael T. Southern, of the Survey Branch, spent several days evaluating each of the historic structures recorded during the surveys. Jerry L. Cross, Research Branch, provided all of the historic background for the projects. Jerry Cashion also receives my gratitude for allowing Jerry Cross to assist in the research. To each I extend a big "thank you!"

Drafting and photography were done by Pamela Ashford and Linda B. Luster, with a little drafting assistance from Tom Scheitlin and Mark A. Mathis. Typing and retyping of the draft manuscript were done by Sandra O. Perry and Peggy R. Hopson; both deserve a lot of credit for perseverance beyond the call of duty. Dorothy F. Dunn, in her first "long term" project with the branch, typed the final copy.

And finally, thanks must go to Jacquie R. Fehon, chief of the Archaeology Branch, for not harassing us about this report being so late in production; to Byron (Barney) O'Quinn, Department of Transportation planner, for providing all the project maps and information we could ever need; and to the Historical Publications Section of the Division of Archives and History for correcting the major style, grammar, and punctuation mistakes in the draft manuscript (any such mistakes in this version, however, are the fault of the assembler).

Sincere thanks to all of the above and to those that I have neglected to mention.

Mark A. Mathis
Assembler
May 1979

PART I

INTRODUCTION TO STATEWIDE SURVEY

CHAPTER 1.

Volume Introduction

Mark A. Mathis

INTRODUCTION

In August of 1977 the Archaeology Branch of the Archaeology and Historic Preservation Section, Division of Archives and History, North Carolina Department of Cultural Resources began the first of three intensive archaeological surveys of highway rights-of-way in North Carolina. Field crews, comprised primarily of Archaeology Branch staff members, undertook surveys of the proposed Ahoskie Bypass corridor in Hertford County (8 miles), the U.S. 421 improvements corridor in Wilkes County (5.9 miles), and the U.S. 221 relocation corridor in Ashe County (7.5 miles). Performed under a memorandum of agreement with the North Carolina Department of Transportation (DOT), the surveys marked the initial fieldwork undertaken within the context of the recently redefined statewide archaeological survey program, administered by the State Historic Preservation Officer.

The surveys were undertaken for several reasons, including: (1) the identification and evaluation of cultural resources to be affected by the construction of the highways (standard procedures required by the National Historic Preservation Act of 1966, the DOT Act of 1966, the National Environmental Policy Act of 1969, and various other pieces of federal and state legislation); (2) to assist DOT in complying with the pertinent legislation (each of the projects was in late stage planning at the time of the surveys); (3) to evaluate the capacity of the Archaeology Branch for undertaking intensive archaeological surveys effectively and expediently; (4) to explore the potential for intrasectional cooperative cultural resource investigations (i.e., involving specialists from other fields within historic preservation, such as architectural historians and archivists); and (5) to begin collecting data for the purposes of developing and testing a standardized comprehensive archaeological site record form.

Expenses for the three projects were shared by the Division of Archives and History (wages and salaries) and DOT (field expenses). Summary reports were submitted to DOT upon completion of the three surveys. This volume contains the final reports on those investigations.

PURPOSE AND CONTENT

This volume contains five parts, the first of which is a lengthy but necessarily superficial examination of the role of the Archaeology Branch statewide survey program in archaeology and historic preservation in North Carolina. The discussions in Part I focus on the nature and goals of statewide survey, the role of predictive models in historic preservation planning and management, and the role of computers in achieving the program objectives. In addition, Part I contains some rather generalized models of prehistoric site types and distributions in the state.

Parts II, III, and IV contain the reports on the three highway surveys. The reasons for including these reports in the same volume primarily relate to factors of convenience and finances. Each report is, for the most part, self-contained, although some references may be made to other chapters in the volume. Although the reports are relatively unexciting, and the results of the surveys somewhat less than spectacular, they do reflect the basic theoretical and methodological orientations of the Archaeology Branch regarding archaeological surveys. Part V contains the data collected during the three highway projects, a copy of the site record form used, and the laboratory analysis handbook developed for the projects.

It is hoped that the information provided in this volume will impart a better understanding of the purposes and goals of the statewide survey program. It is further hoped that the reports presented here will indicate to the concerned and interested that while the Archaeology Branch is largely a bureaucratic organization, there remains a strong tie with the realities of archaeological fieldwork and academic research.

CHAPTER 2.

Statewide Archaeological Survey: Nature and Objectives

Mark A. Mathis

INTRODUCTION

As noted in Chapter 1, the three highway surveys reported in this volume constitute the initial fieldwork conducted by the Archaeology Branch within the framework of the statewide archaeological survey program. The purpose of this chapter is to provide a discussion of the statewide program objectives and to present the general research framework developed to guide the highway projects and subsequent investigations undertaken by the branch. Although the individual project reports (Parts II, III, and IV) note minor deviations from the general research design, concepts, and definitions presented, the following discussions should serve as a base for relating the results of those investigations to the overall objectives of the statewide program.

THE NATURE OF STATEWIDE SURVEY

The state of North Carolina, like so much of the southeast, contains a rich heritage of prehistoric and historic archaeological resources (hereafter cultural resources). In like manner, however, North Carolina is experiencing rapid industrial and residential development. Protection and preservation of cultural resources and economic growth are at present only partially and imperfectly compatible; the latter usually occurring at the expense of the former. The statewide survey program developed by the Archaeology Branch is predicated on the belief that this relationship need not be incompatible and that the disparity between the demands of economic development and the precepts of conservation archaeology and cultural resource management in general can and must be reconciled. To do so, however, will require an integrated program of research, planning, and management involving the archaeological community and the various land use planning and development agencies of the state.

In August, 1977, an interim plan for the program was drafted by the branch and distributed among the membership of the North Carolina Archeological Council (NCAC) and a number of state planning agencies (Mathis 1977a). A revised and updated edition of the plan was then distributed in December, 1977 (Mathis 1977b). As stated in those reports, the statewide survey was designed to fulfill the obligations of the Archaeology Branch (and the State Historic Preservation Officer) with regard to:

1) The A-95 review process, through which federal and state funded, licensed, or permitted construction or development projects pass prior to initiation;

2) State Executive Order XVI of 1976, which directs all state agencies to inventory and assess the significance of cultural resources under their jurisdiction; and

3) the National Register of Historic Places (36 *CFR* 60-61) and grants-in-aid programs administered by the Heritage Conservation and Recreation Service, U.S. Department of the Interior.

Translated into specific tasks, the Archaeology Branch is mandated to aid in the development of cultural resource management and planning policies and procedures and to direct, coordinate, and otherwise undertake the necessary archaeological data collection and analysis for the development of predictive models of site location within the state.

Predictive models are perhaps the most important tool used by the branch in the planning and management of the state's cultural resources. Recommendations to construction and development agencies applying for A-95 clearance are based on essentially two factors: (1) the *presence* of known archaeological sites in proposed project areas, and (2) the *probability* of archaeological sites in the areas. Probability-based evaluations are made on approximately one third of the total projects reviewed by the branch each month. Almost one half of those result in negative review comments (i.e., requests for archaeological surveys). The significance of this should be relatively clear, particularly when consideration is given to the fact that the review recommendations often affect the disposition of large sums of public and private funds. The need for reliable predictive models then, is paramount from the perspective of both economic development and cultural resource conservation (c.f. King, et al. 1977).

State Executive Order XVI is perhaps the most unique feature of the North Carolina cultural resource legislation. In the order, the State Historic Preservation Officer (SHPO) is requested to aid state agencies in developing procedural guidelines for the inventory of cultural resources under their jurisdiction. In return, state land-owning agencies are requested to cooperate with the SHPO in the inventory process. This arrangement has lead to the selection of state-owned property as an important source of data collection activities undertaken by the branch. The ultimate goal of the survey program, as regards Executive Order XVI, is the evaluation of all archaeological properties owned by the state of North Carolina with respect to eligibility for nomination to the National Register of Historic Places.

The National Register and grants-in-aid programs administered at the state level by the SHPO are governed by a strict body of rules, regulations, and funding eligibility criteria. In order to receive federal funding for these programs, the state must prepare and implement a statewide plan for the inventory, assessment, and National Register nomination of eligible historic properties (36 *CFR* 61). In doing so, the SHPO is required to collect the necessary information for developing "predictive statements" of the quantities and locations of potentially eligible sites. This also includes the identification of regions in the state for which too little data is presently available for making reliable predictions.

There is a clear relationship between the National Register programs, State Executive Order XVI, and the A-95 review process. The statewide survey program is designed to meet the responsibilities of the SHPO to each of these within a comprehensive framework of archaeological data collection and synthesis, planning, and management. The highway surveys reported in this volume were undertaken as one step towards realizing the objectives of the program. Many more investigations will be necessary, however, before substantive results, on a statewide scale, can be expected. As discussed below and in Chapter 3, the information gathered by the branch in these investigations will be augmented by the incorporation of data collected by other archaeologists in the state. In addition, the branch will be providing supervisory and advisory assistance to a variety of local, state, and federal agencies in the effort to acquire a comprehensive and clear picture of the number, distribution, and significance of the state's archaeological resources. In essence, to be successful the statewide survey program must be a cooperative endeavor, involving both the professional archaeologists of the state and the state's planning and development concerns. Only then can the reconciliation of economic development and cultural resource conservation goals be achieved.

GENERAL RESEARCH DESIGN FOR STATEWIDE SURVEY

In implementing the fieldwork component of the statewide survey program, the Archaeology Branch will employ both general and specific research designs. A general research design, as discussed by Goodyear (1975), is intended to provide structure and continuity to and between different investigations (see also Binford 1962; House and Schiffer 1977). As used here, the general research design is essentially the set of problem domains and general models considered to be the minimum framework for each project undertaken within the context of the statewide survey. It should be noted that at the general design level the specific data types needed to inform on the problem domains are frequently omitted, as is a discussion of the specific methods to be used in collecting and analyzing the data. These components of the research design will be developed at the project specific level, since they will vary with the project area (i.e., field conditions), the cultural occupations under study, and the logistical factors of time and funding.

Since one of the primary goals of the statewide program is the development and refinement of predictive models of site location, the problem domains defined in the general research design are intentionally oriented towards the analysis of site distributions and relationships. One of the central goals of the research, however, is the identification and explication of cultural variability and the processes of cultural change. In the course of the survey program then, as information is collected and compiled, it should be possible to define general patterns of cultural development and, in many instances, provide reasonable and testable explanations for how and why those patterns differ spatially and temporally.

Before presenting the problem domains of the general research design, four issues warrant brief attention: (1) the concept of *site*; (2) considerations of *sampling* during the statewide surveys; (3) the concept of predictive models, as defined and used by the Archaeology Branch; and (4) the *role* of predictive models in cultural resource planning and management.

Site Definition: prior to undertaking an archaeological survey, the level of observational measurement must be determined. In other words, what is and what is not to be considered an archaeological site? The concept of "site" has evolved through the years in response to changes in theoretical and methodological orientations (c.f., House and Schiffer 1975; Plog and Hill 1971). Whereas at one time our knowledge of prehistory was founded predominately on the basis of large village or mound sites (c.f. Phillips, Ford, and Griffin 1951), we now recognize that cultural systems involve a far wider range of activities, many of which occur at small, often nondescript loci. Site definitions, therefore, have tended to become more attuned to the totality of cultural behavior (as it is currently perceived by archaeologists and anthropologists).

In deciding upon a definition of "sites" during the statewide survey program, several basic factors were considered. The primary consideration, of course, was the objectives of the program. Ideally, a comprehensive (predictive) locational model for a cultural system takes into account all behavioral components of that system. It is, in essence, a theoretical reconstruction of the spatial arrangement of activities (i.e., behavior) of the system. Since the objective of the program is to construct comprehensive models, the definition of a site should be sufficiently sensitive to detect even the smallest manifestations of the cultural systems under study. Hence, under most circumstances, a site will be defined on the basis of *any cultural remains considered to be in an archaeological context* (Schiffer 1977). That is to say, a site is any spatial locus having evidence of past cultural activity. A single isolated chert flake or potsherd could therefore be considered a site. The assumption underlying this definition is that cultural behavior is in general structured and nonrandom and, as a corollary, that the distribution of the by-products of that behavior will also tend to be structured and nonrandom. The distributions of isolated finds and small artifact clusters are therefore considered valuable to the understanding and elucidation of the full range of settlement and subsistence activities of past cultures (Plog and Hill 1971; Goodyear 1975). Architectural sites which are abandoned and no longer in *systemic* context (Schiffer 1977) will also be identified under this definition.

Sampling Considerations: some mechanism for acquiring a representative sample of the full range of cultural variability (in this case *sites*) is necessary to the model building process. As will be discussed below, models are developed on the basis of observations of the environmental and cultural characteristics of a large number of sites. If only a restricted portion of a region is examined, the corresponding models will tend to reflect only the activities undertaken within that area and not necessarily the full behavioral range of the cultural systems involved. It is relatively well known, for instance, that Archaic period hunter-gatherer societies often traversed extremely large regions during their yearly quest for food and other raw materials. Consequently, a small scale archaeological investigation might record only a fraction of the (types of) sites associated with those societies (c.f. King 1978). System reconstruction then, would only be partial. The recent highway surveys are a case in point and will be discussed further in this volume.

Small scale surveys, however, can and should contribute to the modeling process (c.f. Cheek, et al. 1977; Talmage, et al. 1977). Contributions can only be realized, however, if strict methodological controls are employed during survey. In other words, the sample provided by a survey can be evaluated only when it is described in detail. If the survey methods are explicitly stated, the results of the investigation can then be integrated into a broader regional analysis. A number of small projects (samples) can contribute as much to the modeling process as a few large projects when incorporated into a broader framework.

In undertaking a survey of any area, several basic assumptions are usually made. It is assumed, for instance, that the survey results represent some fraction of the total sites or cultural manifestations in the project area; it is not normally assumed that a 100% sample has been derived, regardless of the intensity of the survey. The nature of the archaeological record, under most circumstances, precludes the possibility of a complete or total recovery survey in the eastern U.S. (c.f. House and Schiffer 1975; House and Ballenger 1976; Lovis 1976; Chartkoff 1978). The factors of erosion, sedimentation, forest growth, and quite frequently, contemporary human development, serve to limit even the most intensive of investigations. A comprehensive archaeological survey is one which covers as much of the project area as physically possible with sufficient surface and subsurface examinations to record all detectable large or moderate-sized sites. Small sites, such as a hunting camp consisting of a scatter of chipped stone debris, may also be recorded, but this is often little more than a fortuitous occurrence. The sample of sites derived from a survey then, will frequently be weighted in favor of the larger, more easily discovered sites, despite the fact that the small sites may occur in much greater frequencies.

The Archaeology Branch anticipates direct and indirect involvement in archaeological investigations of all sites and types in the coming years, from the smallest sewer line survey to major regional overviews. Each project, whether undertaken directly by the branch, or by other archaeologists under contract to one of many federal, state, and local agencies, will be carefully examined with regard to its contribution to the process of developing predictive models. As noted above, however, an archaeological survey represents a sample of geographic space, not necessarily of the cultural manifestations within that space (c.f. Mueller 1975). For this reason, in order to evaluate the relationship between the geographic and the archaeological samples, and in turn, to reasonably and justifiably equate the two, several minimal methodological requirements have been defined by the branch for the statewide surveys.

(1) Each project area should be precisely delimited with regard to the total geographic space under consideration (e.g., acres, hectares, or some other spatial measurement), with precise maps drawn of the *total project area*.

(2) The *actual area surveyed* should be precisely defined and mapped.

(3) The *methods* employed during the survey should be made explicit.

(4) All *limitations* to the survey (i.e., heavy vegetation, land access denial) and all potentially biasing factors should be made explicit.

(5) All cultural resources (i.e., sites and structures) should be properly examined and precise dimensions and *locational information* recorded.

Equipped with this information, site densities, distributions, and relationships can be determined on a project by project basis with a measure of confidence. Results of individual projects can then be compared and combined to develop local and regional perspectives. Conversely, without this information survey projects must remain isolated samples of space with limited utility within a regional framework, since an evaluation of the archaeological sample size and fraction, and therefore representativeness, is rendered either difficult or impossible.

In summary of the above, the objectives of the statewide survey, as well as of the more academic researches into culture process and past human behavior in general, require the examination and evaluation of how and why we gather and utilize data. Furthermore, since the data are assumed to represent a sample of the archaeological record, it follows that sufficiently stringent criteria must be established and followed to allow evaluation of the sample. In undertaking surveys of state-owned properties, the Archaeology Branch will endeavor to adhere to this philosophy, to provide further insight into some of the problems of (and possible remedies for) sampling in North Carolina archaeology, and to maintain a level of comparability in data collection and analysis for each project. The ultimate goal of the statewide program in this regard is to define a quantifiable, statistically representative sample of the state's archaeological resources from which a set of statistically relevant predictive models may be derived.

Predictive Models: a predictive model of site location is an artificial representation or replica of the distribution of the types of sites in an area or region. By the very definition of "predictive," such models are based on data from an incomplete sample of a study area and are projections or extrapolations into the unsampled or unsurveyed portions of that area. As suggested, most predictive models are developed from data derived from *predictive surveys* (c.f. King, et al. 1977), which usually involve an examination of some percentage of the total study area (i.e., a 5 to 50% sample). The data derived from the sample examination (i.e., the observations of the types of sites and associated environmental features) are then used to make statements regarding the probability of other sites in other parts of the area. Depending upon the manner by which the sample was collected, the predictive statements will frequently be as valid and useful to project planners for certain purposes as a complete survey data set (King, et al. 1977).

This type of predictive model, however, is normally derived on a project area-specific basis and is only infrequently used to predict site locations beyond the study area. One reason for this is that archaeologists and/or historic properties surveyors are hesitant to use data from one region to predict site locations in another. This is generally acceptable, as there is frequently locational (i.e., settlement) variation between regions. Another reason, particularly for states like North Carolina where controlled probabilistic sampling has only recently been introduced (e.g., Woodall and Snavely 1977), data useful for predictive models are extremely limited, most having been derived from "intuitive" investigations (c.f. King, et al. 1974).

The problem is that the Archaeology Branch must predict site locations in diverse environmental and cultural situations. Such is the nature of the A-95 review process. This is done on a day-to-day basis without benefit of probabilistic samples and, in all but an uncomfortably few number of instances, without benefit of even intuitive samples. The predictions put forth during the A-95 process are therefore predicated primarily on the intuitive understanding and acceptance of a rather basic assumption about human settlement behavior. This assumption underlies not only the A-95 review process but also operates as the primary theoretical framework for the locational model development goal of the branch statewide program. In brief terms, this assumption holds that *human settlements will tend to be located according to a fairly limited and consistent set of ecological* *criteria*. This has been stated in a variety of ways by different scholars and has been frequently referred to within the constructs of the principle of "least effort" (Zipf 1949), the "mini-max" model (c.f. Gumerman 1971), and/or the law of "minimum effort" (Losch 1954). These principles, laws, and/or models all have in common the basic proposition that human activities tend to be carried out at locations which afford maximum access to desired or culturally "important" resources (see Hill 1971; Renfrew 1977), and further, that this tendency is sufficiently patterned and consistent to be predictable (Cancian 1966). The objective then, as regards the development of predictive models, is to observe and correlate the relative occurrence of specific types of behavioral loci (sites) with their associated spatial and environmental characteristics. More will be said on this in the following sections and in Chapter 3.

Attempts to define environmental criteria which are applicable to the location of aboriginal settlements are rare in North Carolina, with the few attempts found primarily in unpublished manuscripts (e.g., Phelps 1975a; Robertson and Robertson 1974, 1978; Coats n.d.; and Woodall and Snavely 1977). Understandably, the net result of these studies has been the identification of only two basic (environmental) common denominators--the proximity to potable water and well-drained soils. These variables, however, apply primarily to base settlements (see the following discussions), and when used indiscriminately (i.e., without adequate environmental data), can have a relatively low total predictive power.

The goal of the statewide survey predictive modeling program is to identify a broader range of environmental and cultural variables to be used in projecting within reasonable confidence intervals (1) where sites can be expected to occur (i.e., high, medium, and low probability areas); (2) what types of sites can be expected in different areas; (3) the relative abundance of different sites in different areas; and (4) the probable condition and significance of those sites. In some instances, predictive sample surveys will be undertaken to achieve this goal, some of which it is hoped will be *cumulative* (c.f., King, et al. 1977), such that early sampling predictions can be tested through an eventual "total survey" of the study area. In other instances, data gathered by other archaeologists, using a standardized computer format site form (see Chapter 3), will be used in the modeling process.

The Role of Prediction in Cultural Resource Planning and Management: there is little doubt that most archaeologists familiar with a particular region can predict with some measure of confidence where sites (and even what types of sites) are likely to be found in that region. The accuracy of prediction, however, will probably decrease sharply as an archaeologist enters a new cultural and/or natural environment. Cultural resource planners (for example, A-95 reviewers) must be capable of providing accurate and effective predictions on a regional, multiregional, and statewide basis. In a state of the size and natural and cultural diversity of North Carolina, this is indeed a substantial task; it is also somewhat unrealistic under normal circumstances. It is unrealistic for the simple reason that the A-95 review system, as it concerns cultural resources, assumes in part that a comprehensive inventory has already been made. No state has such an inventory available. Thus, many of the comments (i.e., predictions) returned by the review staff are at best "in the ball park" projections.

Accurate predictive models are valuable land use planning tools, particularly when translated into easily-understood graphical displays (see King, et al. 1977; Benchley 1976: Dincause and Meyer 1976). The incorporation of accurate predictions at an early planning stage can result in a far greater level of efficiency in minimizing unnecessary impacts on cultural resources and, in turn, assure more effective compliance with federal and state cultural resource protection and preservation legislation. In addition, the early integration of this information in the life of a proposed development project can dramatically reduce the need for total project area intensive investigations, as well as reductions in potential mitigation expenses and project delays.

As suggested in the *Airlie House Report* (Davis and McGimsey 1977; see also King, et al. 1977), the efficiency and effectiveness of cultural resource planning and management activities can often depend upon when those activities are initiated within the planning schedule of a development project. Most projects of large size or magnitude, such as many highway construction and watershed projects, follow a relatively well-defined schedule of planning stages spanning several years. At the most general stage, a region (or regions) is selected for a planning study. At this stage, a cultural resource *overview* is appropriate in that information can be compiled on the extant (i.e., known) resources of the region, and general statements can be made regarding potential long range impacts on known and predicted resources. Precision of site location predictions is generally quite low at this stage but is normally considered sufficient to provide "early warning" of potential conflicts between cultural resources and proposed development.

Using the overview results, more specific development locations within the region can then be considered such that, when feasible, high probability areas or areas known to be culturally significant can be avoided (i.e., through zoning ordinances or project relocation). During this stage of the project planning process, prior to the specific identification of final project location alternatives, a cultural resource *assessment* would be most effective. With limited sample fieldwork (having done much of the general background investigation during the overview stage), more precise site location predictions, often involving the production of relative site sensitivity maps, and recommendations for least impact alternate locations can be made available.

Having delimited one or more minimum impact alternate locations, a *reconnaissance* investigation, involving a probability sample of the alternates, should be conducted. This level of investigation should be sufficient to make sound recommendations to project planners regarding the best choice for the project location. Under the most ideal conditions, the alternate selected would be that which would have the least impact on significant cultural resources.

While the "least impact" location for the project may be selected, an *intensive* investigation, to locate and fully assess the nature and significance of the individual sites, will often be necessary. This study would entail a survey of the remaining (unsampled) portion of the project area in order to adequately provide impact assessments and mitigation recommendations for significant properties. *Mitigation* could then proceed as either *in situ* preservation, project redesign, or, as a last resort, partial or total excavation.

Not all projects, however, follow such a schedule, and even fewer incorporate cultural resource considerations at the recommended times. Hence, many if not most smaller projects are initiated at the intensive stage of investigation and upon occasion enter directly into the mitigation phase (e.g., the classic case of the bulldozer chasing the salvage archaeologist). The advantages of early planning stage integration, however, are numerous, particularly in terms of monetary expense and project scheduling. The role of predictive models in this process is reasonably simple: by providing general predictions and then refining those predictions through a series of sampling phases, cultural resource impacts can frequently be minimized. Additionally, when intensive or mitigative investigations are required, sufficient data have already been collected in the previous stages to allow efficient and responsible completion without delay to the project. This also has positive implications for more effective assessments of individual site significance.

In addition to the above, the development of regional predictive models for areas larger than a development project's actual impact zone (i.e., at the overview stage), can be used as a base for other projects in the region. In other words, if long range land use planning overviews were undertaken for a region for which predictions of the general distributions of cultural resources were prepared, that information should be available for any subsequent development projects in the region, reducing much of the background research lead time and allowing greater precision in budgeting estimates for fieldwork. The previous overview could also eliminate the need for surveys of every minor development project and would be continuously added to and refined with each required investigation.

GENERAL PROBLEM DOMAINS

During the course of the statewide survey program, the Archaeology Branch will be designing its investigations to inform on one or more of seven general problem domains. Several of these could be subsumed under the general heading of "predictive model development." The process of predictive modeling, however, involves a number of discrete analytical tasks; the problem domains discussed below reflect these differential tasks.

The general problem domains defined by the branch for investigation include:

Problem Domain 1: the estimation of site densities and the identification of archaeologically sensitive areas

Problem Domain 2: the analysis and identification of site occupation chronologies

Problem Domain 3: the analysis and identification of site functions

Problem Domain 4: the analysis of settlement patterns

Problem Domain 5: the evaluation and documentation of individual and/or total site significance

Problem Domain 6: the evaluation of archaeological survey field methods and techniques

Problem Domain 7: the investigation of ancillary archaeological, anthropological, and historical research problems

Problem Domain 1: Site Densities and Sensitivity Areas

In previous discussions it was noted that one of the most important and easily understood land use planning tools is a set of archaeological site density estimates and sensitivity maps. Density estimates can be derived in a relatively straightforward manner by employing a well-defined sampling program. Sensitivity maps, a graphical representation of the density estimates, can then be prepared as guides for land use planners and developers to minimize both adverse site impacts and project delay and expense. This is particularly effective when such information is provided in the earliest stages of the planning process (i.e., overviews and assessments) (c.f., King et al. 1977).

Density Estimates: the most important consideration in calculating site densities for an area or region is the reliability of the available data base. A major problem now faced by cultural resource planners and managers in estimating site densities is that prior to recent years systematic and/or probabilistic sampling in archaeological surveys was rarely attempted, thereby precluding quantitative evaluation of the site data (c.f., Bettinger 1977; King, et al. 1977; Rogge and Fuller 1977). The investigations undertaken by the Archaeology Branch, therefore, whether overviews or intensive surveys, will employ strict controls in data collection and evaluation, such that density estimation can begin to take form with reasonable confidence. The recent investigation in the Randleman Reservoir (Woodall and Snavely 1977) is a good example of such an endeavor in North Carolina.

Sensitivity Mapping: having defined the estimated numerical densities of sites for an area, a series of maps can be produced. Such maps can display high to low density areas, site-type densities, and site/development "conflict" areas. "Conflict" projections can be produced by superimposing the site density and present and projected land use maps (c.f.

Dincauze and Meyer 1976; Benchley 1976; King, et al. 1977). In addition, site destruction rates, based on the density estimates and analyses of land use practices, can be generated to provide information on the present and future status of the overall resource base (c.f., Schiffer and House 1975, 1977; Ford, et al. 1972; Scholtz 1968; McGimsey and Davis 1968).

Problem Domain 1: Summary of Procedures

(1) select appropriate sampling program

(2) select appropriate data collection methodology

(3) implement project design; collect and analyze data

(4) calculate site/site-type densities

(5) produce density-sensitivity maps

(6) redesign sampling/data collection program [optional]

Problem Domain 2: Site Occupation Chronology

Temporal assignments of sites and/or site components are normally derived from established or accepted artifact-type/cultural chronologies. Under most circumstances this is accomplished through examination of "diagnostic" stone tools (projectile points) and ceramics collected from or observed at a site. The primary published source of information for projectile point chronologies in North Carolina is Coe (1964), while ceramic information is available in Coe (1964), Keel (1976), and Dickens (1976). Since the data contained in these volumes are derived from a limited number of excavated contexts, additional information must also be obtained from researchers familiar with the different regions of North Carolina.

As implied above, the chronological sequences established for North Carolina were developed from excavated contexts at a relatively small number of sites, most of which occur in the piedmont and/or mountain regions of the state. While it must be stated that these chronologies have withstood the tests of many years of archaeological investigation and do in fact provide a solid framework for temporal interpretation, the very nature of artifact typologies, combined with the cultural diversity characteristic to North Carolina prehistory, precludes unconditional blanket application. This in no way suggests that revision of the chronological sequences is either imminent or necessary, merely that casual acceptance through "pigeon-holing" of artifacts can lead to gross misinterpretations of data. For this reason, high resolution temporal assignments will frequently be difficult or impossible for survey (surface) collected data, and in many instances consultation with informed researchers will be required.

Problem Domain 2: Summary of Procedures

(1) define artifact-type/cultural sequences

(2) perform collection of artifacts at sites; analyze

(3) apply artifact-type/cultural sequences

Problem Domain 3: Site Function

Determination of site function is one of the more important, yet difficult tasks facing the survey archaeologist. Based on surface (and occasionally small subsurface) collections of materials, an attempt is made to identify the types of activities represented at a site. In doing so, two *a priori* analytical procedures are implied: (1) a functional typology of artifacts has been developed; and (2) a model(s) of activity-specific artifact combinations has been generated. In other words, site function assignments require some method of identifying the types of artifacts expected to occur at a site as a result of (or in association with) specific types of behavior. The models presented at the end of this chapter are a preliminary attempt to develop the basic site activity-type interpretive framework; the artifact definitions presented in Appendix I are an initial framework for a functional typology.

In essence then, site function assignments are based on the presence or absence of various artifact types as defined within the framework of the settlement-subsistence models generated for the region and cultures being investigated. For instance, a site assigned to a "lithic workshop" category will be expected to manifest quantities of such artifact types as hammerstones, anvil stones, primary and secondary flakes, preforms, blanks, and various sizes and shapes of waste material. Since a variety of activities were frequently carried out at these sites, however, such as butchering and other food processing (depending upon duration of occupation), a broader range of artifact classes may also be present (c.f., Baker 1974; Goodyear 1974; Mathis 1976; Binford 1973). Under certain circumstances, specific functional assignments, as with a lithic workshop, may be possible. In most instances, however, such precise identification will not be possible at the survey level of analysis. For this reason, most assignments will be in terms of either *base settlement* (i.e., habitation) or *specialized activity* (i.e., temporary or limited use). Base settlements, in a general sense, are defined as sites wherein the full range of technological variability characteristic to the identified cultural system is observed (Price and Krakker 1975; Goodyear 1974). Sites not manifesting a broad range of artifact variability will usually be assumed to have been loci of short term, specialized procurement, processing, or manufacturing activities. Some of the specific artifact classes expected at these generalized site types are presented in the settlement models below.

Problem Domain 3: Summary of Procedures

(1) define functional typology of artifacts

(2) develop settlement-subsistence models

(3) perform controlled collections of artifacts at sites; analyze

(4) apply artifact typology and settlement-subsistence model

Problem Domain 4: Settlement Patterns

It should be evident that the study of settlement patterns--the manner by which human populations are distributed about the environment--is the essential ingredient in predictive model development. It should also be evident that the data needs and analytical processes noted above (Problem Domains 1, 2, and 3) are of primary concern to settlement pattern studies.

With the increase in public funding, settlement pattern analyses have assumed a greater role in conservation/contract archaeological surveys (c.f., House and Schiffer 1975; Schiffer and Gumerman 1977; Klinger 1976a). One reason for this is that such studies are, by virtue of the data needs, well suited to both large and small-scale survey projects. While it is true that the final analysis of settlement patterns will require substantially more data than can be provided by survey projects, it is through the surface identification of sites in a region that initial pattern recognition must begin. From a compliance perspective, settlement analysis in survey research designs can also provide a framework for site significance assessments, since such analyses normally attempt to encompass the full range of archaeological site variability. In other words, even the smallest of sites takes on a measure of significance when observed from an overall settlement system perspective (c.f., Cheek, et al. 1977; Talmage, et al. 1977).

Furthermore, when initiated at the regional level of analysis (e.g., major river basin studies), small scale survey project data can be incorporated and utilized more effectively, thereby imparting greater overall value to the often small amount of site information collected (i.e., one or two sites). The fact that most surveys are artificially bounded by political or project impact zone lines rather than by natural, ecological, or cultural boundaries, neither negates or reduces the settlement pattern information potential of those surveys. It simply means that total system analysis during a single project may be unlikely or difficult.

One of the most commendable achievements in recent years is the attempt by the Southwestern Anthropological Research Group (SARG) (Gumerman 1971; SARG 1974) to establish a set of basic goals and philosophies regarding regional and multiregional settlement pattern research. The essential aspect of the SARG project is the recognition that the identification and understanding of man-land relationships (prehistoric and historic) requires a broad-based regional perspective and a general plan or framework for interpreting the archaeological record.

In addition to providing insight into the general nature of site distributions (a reflection of population distributions), settlement pattern analyses can contribute to the elucidation, understanding, and ultimately, the explanation of culture change. As noted in previous discussions, this is partially accomplished through analyses of temporal variability in settlement-environment relationships.

Given the nature of the Archaeology Branch survey program, the achievements of a SARG program are a long way off in North Carolina. While the various archaeological concerns of the state frequently work from a general settlement pattern perspective, there presently exists no unified or coordinated effort towards developing a regional or statewide framework into which the evergrowing body of site data can be integrated. The models presented below were generated to serve as minimal theoretical bases for the branch settlement pattern analyses. Since the models are concerned more with generalized site types than the spatial patterning and ecological relationships of sites, it is anticipated and hoped that refinements, adjustments, elaborations, and perhaps even total revisions will be suggested and made by both the branch and state archaeologists in the future. The approach taken at this point, however, is to present a generalized starting point from which regional and multiregional perspectives may develop in a structured and consistent manner.

Problem Domain 4: Summary of Procedures

(1) define functional typology of artifacts

(2) define artifact-type/cultural sequences

(3) develop settlement-subsistence models

(4) select appropriate sampling program

(5) select appropriate data collection methodology

(6) implement program; analyze

(7) apply numbers 1, 2, 3

(8) redesign sampling program; refine models [optional]

Problem Domain 5: Evaluation of Significance

It perhaps goes without saying that the single most difficult, frustrating, and sometimes onerous task facing conservation/contract archaeologists (and to no small extent contract sponsors) is the assessment of site significance. In recent years, the concept of significance has been a topic of considerable discussion and debate within the archaeological community, and it is quite likely that such will continue for some time into the future. As will be suggested here, the reasons for this are relatively simple to isolate; a solution, however, is not.

Formal recognition of the importance of historic and particularly archaeological properties in the United States came as early as 1889 with passage of the Act to Establish Casa Grande. The bill was passed by Congress for the repair and protection of the Casa Grande Ruin (and subsequently extended to other ruins in the Southwest). Through the years, additional federal legislation was passed, increasing the public and private awareness of and concern for the material vestiges of the past, as well as expanding the legal base for preservation. In 1966, with the passage of the National Historic Preservation Act, this concern was realized in the formal establishment and expansion of the National Register of Historic Places. The National Register, administered by the secretary of the Department of the Interior, was to be a listing of all cultural resources of national, state, and/or local significance. Any site or property listed on the National Register is afforded a level of protection from adverse impacts due to any federally funded, licensed, or authorized undertaking; those sites not listed on or considered eligible for inclusion on the Register are not usually afforded such protection. Since historic and archaeological sites frequently occur in locations which are also considered valuable to present day economic growth and development, all such properties simply cannot--in strictly practical terms--be preserved. Thus, archaeological sites are often declared eligible for the National Register but are then excavated rather than preserved. Mitigative excavations, however, are expensive, and while the expense of funds is authorized for most federal and many state-sponsored projects, those funds are limited. "Allocation" then, is a key word.

The methods used for evaluating the significance of archaeological sites vary almost as much as do the types of sites being assessed; yet in the long run the net result remains much the same--some sites are preserved (through on-site preservation or data recovery) and some are not. With regard to the National Register, archaeological sites acquire a "significant" status primarily by having yielded or having the potential to yield information important to the study of history or prehistory (36 *CFR* 60.6). Since some information can be extracted from virtually any archaeological site, there is a need to establish a set of parameters--or thresholds--for individual site significance evaluations. In other words, how much and what kinds of information must an archaeological site contain in order to be significant?

As discussed by a number of archaeologists in recent years, one of the more effective means of setting site significance parameters is through the use of problem-oriented research designs (c.f. Schiffer and Gumerman 1977; Raab and Klinger 1977; Glassow 1977). The objective of the research design, as it relates to significance assessments, is to identify a set of valid research problems, the types of data required to inform on those problems, and the methods to be used to extract and apply the data to the problems. By using a research design then, each site may be examined with respect to problem-solving data content and thus assigned a relative significance status. Some of the problem domains discussed above (numbers 2, 3, and 4) specifically relate to the problem-oriented approach to significance assessments. More refined research-based significance criteria can and must be developed on a project by project basis, varying with the amount and nature of previous archaeological investigations and the condition of the overall resource base of the study area.

In addition to their scientific significance, all sites recorded during the statewide survey will be assessed with respect to other criteria established for the National Register, including but not limited to:

(1) association with persons or events that have had a significant impact on national, regional, state or local history;

(2) representation of a style, type, period, or method of construction which is unique, rare, or is a particularly well-preserved example thereof; and

(3) preservation of cultural deposits sufficient to provide contextual interpretive data.

Although these approaches to site significance will serve as the fundamental basis for evaluation made during the course of statewide survey, it is immediately recognized that they are of only minimal value when used outside of a known context (i.e., a syntheses of local, regional, and/or state history and prehistory). Thus, in the coming years the Archaeology Branch will assist in the development of syntheses and compilations of extant data, such that the characteristics of individual sites may be compared with those of the overall resource base. The significant elements of sites can then be exposed against the backdrop of the previously recorded sites and their inherent data. This approach, which is usually referred to with reference to regional research design development, has been adopted by the Archaeology Branch for two basic reasons: (1) it can contribute to ongoing and future archaeological research; and (2) it can lead to achieving the long term goal of preserving a representative sample of the resource base (c.f. Lipe 1974).

Until such a time as regional research designs have been developed, however, the evaluation of site significance will remain in the hands of the individual archaeologist. This requires that the archaeologist become as familiar as possible with the archaeology of the general region around the study area (i.e., project overviews). In addition, the evaluating archaeologist must remain as objective as possible, avoiding the pitfalls of "pet research" pigeon-holing (i.e., "only stratified sites are significant because my research can only be conducted at stratified sites").

Finally, reason and common sense must be exercised in the evaluation process, with the archaeologist looking beyond the site, the artifacts, and the data. In other words, how will the assessment affect the project plans, the economic growth of the area, and even the preservation of the site itself? In effect, is the "significant" site really that important when compared with the long term expenses of preservation or excavation?

Unfortunately, these are not problems which can be dealt with in this or similar discussions. In the future, however, it should be possible to make the decision-making process easier and the evaluations between archaeologists more consistent. (See also the discussion of significance in Chapter 10.)

Problem Domain 5: Summary of Procedures

(1) develop research/survey design (sampling/data collection strategies)

(2) develop criteria for significance assessments

(3) implement design; analyze

(4) assess individual/or total site significance

Problem Domain 6: Survey Methods

Faced with the fundamental need to provide effective evaluation of the cultural resource base, archaeologists undertaking contracted surveys throughout the country are regularly seeking to improve upon their methods of locating and assessing the significance of sites under variable field conditions. As implied elsewhere, no archaeologist can realistically hope to record every site in a project area. He/she can, however, design and implement a field program which, given the factors of variable surface visibility, land accessibility, manpower, and project scope, will provide a reasonable and workable data base for project planners and developers, as well as archaeological researchers.

At the outset of a project, particularly a large scale assessment or reconnaissance survey, two basic problems are necessarily addressed: (1) the type of sampling scheme to be employed; and (2) the actual field methods to be used in implementing the sampling scheme. Both will of course depend upon the scope of work for the project (i.e., the sponsor's planning needs) and the environmental situation. For the larger projects, spanning several months to several years, multistage survey programs involving a variety of sampling stages and field methods are generally considered the most appropriate (c.f., Schiffer and Gumerman 1977:188-189; Doelle 1977; Judge et al. 1975; and Mueller 1974). Smaller projects or projects initiated late in planning, however, are frequently limited to a single stage and hence do not have the benefit of earlier stage "refinement" data. This means that the methods and techniques used must be maximally effective during the one and only field phase of the project. Few archaeologists are without fear and loathing, for example, of the irate project sponsor calling to report a previously unrecorded midden site uncovered by the bulldozer *after* an "intensive" survey of the area.

Once a project sample unit--the area to actually be surveyed--has been selected, the investigator must decide upon the methods to be used in finding the cultural resources in that unit (which for smaller projects may be the entire project area). The method(s) selected will frequently depend upon the desired intensiveness of the survey, which for an increasing number of contracted projects is specified in the contract scope of work. Many surveys, however, continue to be conducted in a manner which has been aptly referred to as the "self-fulfilling prophecy" method (House and Schiffer 1975:40-41). This simply involves an intensive examination of areas where sites are expected to occur, while neglecting lower site probability areas within the project boundaries. Use of this method in the past has contributed substantially to the data base deficiencies noted in the discussion of Problem Domain 1. In addition, it is rapidly becoming less and less acceptable to contracting agencies for archaeologists to report that certain portions of project areas were not surveyed because of ill-defined survey limitations. The days of surveying only the exposed areas, such as road cuts, cattle paths, or plowed fields, are rapidly fading. For this reason it is particularly important that the contract archaeologist become familiar with the full range and, as is possible, actually test various methods of locating sites which are not readily visible on the surface. The work of Lovis (1976), Wood (1976), Chartkoff (1978), House and Ballinger (1976), and Claassen and Spears (1975) are examples of such attempts.

The point to the foregoing is not to suggest that the problems of survey methodology are new or that solutions to them are to be found in any single project or research report but to simply note that there is no standardized procedure for undertaking an effective cultural resource survey. Concomitantly, it is equally crucial to note that efforts to provide adequate and reliable site data are necessary and therefore require that the data collection methods employed be constantly reviewed and refined. In undertaking its statewide survey program then, the Archaeology Branch will be attempting to design, test, and evaluate new and old methods of finding sites. While no cookbook recipe is likely to be developed in the process, it is hoped that by investigating different methods under varying field conditions our ability to provide maximal data recovery will be enhanced. In essence, we will not be totally satisfied with any set methodology for all possible project situations. The broader problems of sampling, at the intersite, intrasite, and artifact levels will also be addressed whenever possible.

Problem Domain 6: Summary of Procedures

(1) select one or more sampling programs

(2) select one or more data collection strategies

(3) implement project design; collect and analyze data

(4) evaluate each strategy

(5) redesign sampling/data collection program [optional]

Problem Domain 7: Ancillary Problems

In addition to those noted above, survey projects have the potential for informing on a broad range of anthropological and archaeological research problems. Examples include prehistoric lithic resource utilization, trade and exchange, and general population dynamics. The nature of survey data, of course, limits the full potential of such studies. However, a framework can be established on an areal or regional basis such that general patterns can be exposed and then examined more closely at the individual site level when excavations or more specific investigations are deemed necessary or desirable. The use of survey data for research into human behavior has been demonstrated frequently over the years (e.g., House and Schiffer 1975; Klinger 1976a; House and Ballenger 1976; Gumerman 1971; and Binford 1968) and is an increasingly frequent feature of federally-funded contract scopes of work. An integral aspect of incorporating general research problems in survey designs is that such problem orientations can aid in the task of assessing the significance of the recorded sites.

While the Archaeology Branch is not presently set up to undertake detailed studies of the types suggested above, the data collection methods employed during the statewide surveys will be designed to derive information on as broad a range of topics as possible. In doing so, it is hoped that a variety of problems will be exposed and openly discussed and/or debated by the archaeological community of North Carolina and contiguous states. The approach then, is to propose research problems and hypotheses, submit them to professional scrutiny, and refine or revise them as necessary. It is suggested that the role of the Archaeology Branch in North Carolina archaeology can only be fully realized when this perspective is adopted.

Problem Domain 7: Summary of Procedures

(1) develop research design problems and hypotheses

(2) select sampling program(s)

(3) select data collection strategy(ies)

(4) implement and analyze

(5) apply data to research problems

(6) revise/refine hypotheses, models [optional]

Summary of Problem Domains

As is readily apparent in the foregoing discussions, the Archaeology Branch statewide survey program is designed to address a variety of specific but interrelated problems. With regard to the primary objective of the program--the development and refinement of predictive models of site location--Problem Domains 1 through 4 are of particular importance. While the generation of generalized site density estimates for project areas is a relatively uncomplicated process, provided adequate sample parameters are established, the identification of site function and cultural occupation(s) and the broader investigation of settlement patterns require that a basic research approach be taken to the survey program. In addition to contributing to the process of predictive modeling, this approach also aids in providing a viable framework for the assessment of individual and total resource significance. Archaeological surveys, however, are rarely as effective as the archaeologist (and none too frequently, the contract sponsor) would desire. Some sites inevitably go undetected, particularly in forested or alluviated areas. For this reason, attempts will be made to refine the field techniques used for finding "hidden" or obscured sites. In addition, all survey projects, large and small, can contribute to the study of human behavior, much of which can be directly linked back into the predictive modeling process. When possible then, data should be compiled which can contribute to one or more ancillary research problems. Since many if not most of the sites recorded during an impact-related survey will be destroyed, it is obvious that a maximum of data should be recovered prior to destruction, even if the data is not immediately used during the project.

GENERAL SETTLEMENT MODELS

The purpose of this section is to present a series of general models of prehistoric settlement systems in North Carolina. Since the models are proposed to serve only as a preliminary interpretive framework for prehistoric site types, discussions of specific geographic and cultural variability are intentionally vague or are omitted altogether. Subsequent investigations by the branch, in combination with those of the other archaeologists in the state, will be used to fill in holes in the models or to revise and refine them. Contact and historic period settlement models are not presented in this report due to the complexities inherent in such modeling, as well as to the fact that a partial interpretive framework is already available in several ethnographic monographs (e.g., Lewis 1951; Paschal 1953) and early and recent histories of North Carolina.

Development of the following models is dependent upon acceptance of the basic assumption that the prehistoric cultural systems of North Carolina evolved (independently or through outside stimulation) through a series of generalized stages or phases of increasing socio-cultural and technological complexity. It is further assumed that this process occurred as a continuum, beginning with low technology hunting and gathering socio-economic systems and culminating with higher technology agriculturally-based or-supported socio-economic systems. Within this framework of cultural process is the changing composition and distribution of population aggregates.

Hunter-gatherer societies are herein assumed to have been primarily characterized by a band-level social organization (Service 1966; Wobst 1974; Yellen 1977; Jochim 1976; Lee and Devore 1968). Depending upon the natural and cultural environment, the size of the band may have ranged between twenty-five and 600 individuals, with the nuclear or extended family being the primary social unit. As band members carried out basic subsistence activities through the year, a series of living and working sites were established. The subsistence strategies of hunter-gatherers are usually accepted to have involved regular settlement relocations in response to the seasonal availability of wild plant and animal foods. Recognizing that the densities and distributions of these resources vary during the different seasons, it is further assumed that the numbers of individuals occupying living and working sites at different times of the year also varied. For the purposes of the following general models, band composition at the different sites is proposed to have been fluid and flexible but to have consisted of one or more of four basic components (adapted from Klinger 1976a): (1) the *macroband*--consisting of a number of microband units (i.e., totalling twenty-five to 600 individuals), although the entire band may or may not aggregate at any one time; (2) the *microband*--consisting of two or more family units or portions thereof; (3) the *family*--consisting of up to nine individuals, although an extended family may contain more; and (4) *specialized activity*--consisting of one or more individuals for the purpose of hunting, gathering, tool manufacturing, processing, etc.

In the proposed models, the site types identified are limited to the macroband, microband, and specialized activity aggregates. It is assumed that individual family material manifestations in the archaeological record would frequently be such that distinction from microband and specialized activity units would be difficult. Isolated individual family unit sites, in fact, may have been established only for short term specialized activities, rather than extended habitation. Distinction between micro- and macroband sites may also be difficult (i.e., a quantitative difference) but are distinguished in the models because they are proposed to have represented specific responses to some aspect or aspects of the socio-economic system of the band and to have been established in correspondingly different locations at specific times of the year.

The model for Woodland period agricultural-based societies is at this time less concerned with the population composition or social units at different sites. Instead, sites are defined solely on the basis of the general range of activities represented. It is assumed, however, that the basic social organization inherent to the agriculturalists (or horticulturalists) was in most instances on the order of a tribe, with the latest developments, such as those represented at the Town Creek site, approximating a chiefdom level organization.

Paleoindian

Perhaps the greatest problem in developing a model of Paleoindian settlement in North Carolina, even in the most general sense, is that so little is actually known about the period from any part of the state. Fluted projectile points, the most obvious manifestation of the early part of the period, have been reported by professionals and amateurs in about half of the counties of the state, the bulk of which are in the piedmont physiographic region (Perkinson 1971, 1973). Numerous finds have also been reported from the southern part of Virginia (Williams and Stoltman 1965; see also McCary 1951). It should be noted that the high incidence of fluted points in the piedmont may actually reflect a combination of two factors--more intensive collecting by both professionals and amateurs, and a greater amount of soil deflation than in the other regions (Trimble 1974), thereby exposing Paleoindian materials on the surface. It has been suggested in fact, that the area of highest Paleoindian concentration was probably the coastal plain region but that the combination of little archaeological research and a general lack of research into the complex environmental processes in the region have served to severely limit the development of a clear picture of the distribution and nature of Paleoindian period sites (Joffre Coe, personal communication; see also Williams and Stoltman 1965).

In addition to limited archaeological and environmental research, there exists a basic problem in identifying Paleoindian sites when they are found. As regards typologically and morphologically "diagnostic" artifacts, the Paleoindian material culture was apparently rather limited. Characteristic projectile points (e.g., Clovis, Folsom, Quad, Hardaway-Dalton), for instance, tend to be the only accepted time-markers of the period. During a survey investigation, unless one of these or other accepted point types is recovered, there is little possibility of confidently identifying the sites as Paleoindian. Much of the rest of the Paleoindian tool kit resembles too closely those of later time periods, particularly the early Archaic. It therefore seems quite possible, if not probable, that some of the small scatters of lithic debris frequently encountered during a survey are in fact Paleoindian sites. In other words, until further research into the tool kit(s) of the Paleoindian is undertaken, such that a wider range of morphologically distinct tool categories is defined, many of the sites which we find belonging to the period may be labeled "undetermined cultural affiliation."

Although the probability of locating Paleoindian sites must be recognized as low for much of the state, a generalized settlement model may still be proposed such that any sites assigned to the period can be placed into at least a preliminary settlement framework. Based on work elsewhere (e.g., Wilmsen 1968; Gorman 1972; Wendorf and Hester 1962), the period was characterized by a hunting and gathering subsistence system, with a particular adaptation to the exploitation of the terminal Pleistocene megafauna (e.g., mastodon, bison, mammoth). It is quite probable, however, that only a small portion of the average Paleoindian diet consisted of meat from the megafauna, with the bulk being derived from collectable plant foods, deer, and other small game. No late Paleoindian sites, (e.g., Hardaway-Dalton) have been found, for instance, in association with extinct megafauna (c.f. Morse 1973). Regardless, the process of acquiring food throughout the year required a settlement system involving at least seasonal movements, corresponding to the seasonal availability of the plants and animals. In recent years, the classic picture of the wandering, nomadic bands of Paleoindians chasing along behind the huge mastodon and bison has been replaced by one of a more localized, or at least regionally-based, settlement-subsistence systems (c.f., Wilmsen 1968, Gorman 1972, Gardner 1974a, 1974b). As perceived here, the settlement system of the period represents one end of an aboriginal socio-cultural continuum in North Carolina, the other end being the more sedentary systems of the Woodland and Contact periods.

As discussed above, during the Paleoindian period it is suggested that large regions were occupied by perhaps no more than a single band-sized group. During the course of a year, the group dispersed and merged as necessary in the process of acquiring food and other raw materials. Whether this involved seasonal establishment of stable macroband base settlements or simply periodic coalitions of several family or microband units for "game drives" or other group activities remains to be determined. Reuse of specific locations over considerable periods of time has, however, been suggested in research at several Paleoindian sites (e.g., Gardner 1974a, 1974b; Coe 1964; McCary 1973; Redfield and Moselage 1970).

For the present, it will be assumed that some form of temporary or seasonally occupied macroband base settlement was characteristic of at least the latter part of the period. In addition, it is proposed that smaller base camps were established during the year by microband units, perhaps consisting of no more than a single family. Associated with both the macroband and microband base settlements is the series of specialized activity sites, established in the day to day procurement of food and other raw materials (i.e., hunting and gathering camps, butchering stations, quarries).

Following from the above, it is suggested that at least two, and possibly three, types of sites were characteristic of the Paleoindian settlement system:

(1) macroband base settlements
(2) microband base settlements
(3) specialized activity sites

Macroband base settlements: although largely hypothetical at this juncture, these sites would have been occupied on a periodic or seasonal basis by several microband social units, perhaps for the purpose of co-operative animal drives, hunting ventures, or quarrying. The range of activities and therefore the range of function-specific tools represented at these sites would be dependent in part upon the length of occupation and number of reoccupations (c.f. Binford 1973; Yellen 1974), but several basic sets of artifacts can be suggested, including projectile points, scrapers, knives, gravers, a variety of flakes, cores, and fire-cracked rock. Indications of at least temporary shelters may also be expected

(Gardner 1974a, 1974b). Favored site locations, particularly if such sites were established for cooperative labor in hunting, would have been near bogs, swamps, ravines, gullies, or other natural "traps" for the megafauna (Gorman 1972). The swampy or wetland areas not only served as possible megafauna traps but were also high yield areas for a variety of smaller animals and edible plants. In general, macroband settlements are expected along river and stream floodplains and floodplain margins. During the earlier parts of the period, these locations may have been the focus of much of the Paleoindian settlement-subsistence system, with all manner of sites being established within a short distance of the floodplain region. Later, however, as the climatic conditions changed (i.e., warming), biological communities became more diverse and the seasonal variations in those communities more important to the Paleoindians. Thus, movements into the upland regions by smaller segments of the macroband probably became more frequent, though such may have also occurred often in earlier times.

Based on the results of continuing investigations, the Thunderbird site in the Middle Shenandoah Valley of Virginia (Gardner 1974a, 1974b) appears to fit the general model as a macroband base settlement. In his report on those investigations, Gardner (1974a, 1974b) suggests that the site was a reoccupied base settlement for a local group or groups and that one of the important drawing cards of the location was the readily available lithic raw material (jasper). He goes further by suggesting that during the Paleoindian period, access to high grade (chippable) lithic raw material was probably a primary factor in base settlement location, so much so in fact that it may have even "confined" the macroband to "lithologically restricted locations" (Gardner 1974a). For the present, the settlement model proposed here will follow Gardner's model, to the extent the macroband base settlements are suggested as occurring most frequently in association with sources of chippable stone. As discussed below, however, this does not necessarily extend to microband settlement locations.

Microband base settlements: following the model, Paleoindian macroband aggregations occurred for only a portion (or portions) of the year. It is proposed that the remainder (and probably the bulk) of the year was characterized by a dispersion of microband social units about the band territory. During this portion of the settlement cycle, the microband would carry out a variety of subsistence activities (e.g., small game hunting, gathering) at one or more base camps which were located with respect to the seasonally available resources.

Following Gardner's lithic resource "dependency" model (quotation marks mine), these camps or settlements need not be located near a source of stone, as preforms, blanks, or cores for tools would have been prepared during the macroband aggregation, transported to the camp, and used as the need arose. Additional raw material could of course be procured as necessary from virtually any creek bed in the piedmont and mountain regions of the state. The coastal plain, however, may have presented more of a problem, as naturally occurring stone is rare or absent in most of the region.

Variations in the proposed settlement pattern may be observed because of this.

Due to the smaller social unit at the microband base camp, the quantities and densities of artifacts should be less than at the macroband settlements, though similar activities may have occurred. In addition, curation (c.f. Binford 1973), by transporting useable materials to successive camps, may have been a necessary or regular occurrence in areas of only low grade or limited sources of stone. Thus, identification of the sites as Paleoindian microband base settlements may be difficult in many instances. In areas of abundant lithic resources, however, there was probably less concern with conservation of material. Thus, reoccupation of specific locations by the microband may result in substantial deposits of preserved artifacts. The Hardaway site, for instance, at which quantities of late Paleoindian materials were excavated, is suggested to have been "occupied intermittently" over time by a relatively small group (Coe 1964:81). The variability in the tools assigned to the Paleoindian occupations (e.g., a variety of scrapers, drills, blades, projectile points), however, indicates that a significant range of activities occurred at the site, though actual numbers of artifacts are relatively small compared with later occupations. For the present, the occupations here would tentatively be placed in the microband base settlement category; but the possibility of a macroband occupation cannot be precluded.

At this time then, microband settlements are suggested as occurring in a more dispersed pattern than macroband settlements and in more diverse environmental situations. Although proximity to water and well-drained soils are standard locational criteria, access to specific resources, which may have required seasonal movement into areas of considerable distance from the floodplains or lowlands, was probably an equally important factor. Since tools may have been prepared during the period of macroband aggregation, areas away from the stone sources could be exploited.

Specialized activity sites: the most frequent manifestation of any aboriginal settlement-subsistence system is probably the small specialized activity site. Established in the day to day business of procuring food and raw materials, these sites may be represented in the archaeological record by as little as a single artifact. Individually, such sites represent a narrow behavioral spectrum, the materials present having been lost or discarded in the process of such activities as hunting, butchering, point resharpening, etc. As noted elsewhere, these sites should occur in far greater frequency than any other type of site yet frequently consist of so few artifacts as to be below the threshold of archaeological visibility.

Although appearing at times to be randomly dispersed throughout the landscape, specialized activity sites are assumed to have been established within a relatively well-defined cultural-environmental framework. For example, procurement-specific sites (i.e., hunting camps, lithic workshops, collecting stations) should be expected to occur in close proximity to the areas in which a desired resource occurs. Predicting where such sites are most likely to occur, however, is at best difficult without a comprehensive program of environmental analysis and reconstruction. This is particularly true if the environment has undergone changes through the years (as in the case with much if not most of North Carolina, especially since the introduction of large scale agriculture and commercial lumbering).

In the western parts of the country several of the better studied Paleoindian sites could be classified as specialized activity sites (c.f. Gorman 1972; Wilmsen 1968; Goodyear 1974). The Williamson site in Virginia may be classified primarily as a quarry-workshop specialized activity site, though some indications of temporary habitation have been noted (McCary 1951). The less spectacular specialized activity loci, however, such as small game kill sites and plant gathering and processing sites, will likely go unnoted due to the scarcity of materials and the natural processes affecting the sites over the last 10,000 or more years.

Model summary and discussion; Paleoindian

Three generalized types of sites are proposed for the Paleoindian period: (1) macroband base settlements; (2) microband base settlements; and (3) specialized activity sites. Although the macroband settlements are purely hypothetical at this point, occasional or periodic cooperative aggregation of single family or multiple family units is suggested for such activities as megafauna hunts, herd animal drives, and perhaps quarrying. These settlements may also have served as forums for exchange and/or trade and as means for maintaining intraband (and therefore territorial) social stability (c.f. Lee and Devore 1968). Marriage ties may also have been strengthened and/or established during these gatherings. It is suggested that such sites will be found in areas offering maximum access to multiple resources, such as lithic raw material outcrops and high yield econiches or ecotones. Archaeologically, such sites are expected to manifest the full range of functional variation noted for the tool kits of the period.

Smaller, and manifesting a lower overall density of materials, is the microband base settlement, occupied on a temporary or seasonal basis. Sites of this type would be expected to occur more frequently than the macroband settlements but would also be expected to occur in areas offering maximum access to exploitable natural resources.

Specialized activity sites, the most frequent of all site types, were established near or in the general vicinity of a specific set of resources or were established during the actual process of resource procurement. The range of artifact functional variability is expected to be very narrow at these sites and frequently will occur in such small absolute numbers as to go unobserved by the archaeologist.

Development of the foregoing generalized model is predicated on the understanding that (1) settlement-subsistence systems are dynamic and are sensitive to environmental changes as well as technological innovations; (2) regional variations in the adaptive systems, dependent upon natural resource availability and variability, will be observed; and (3) the archaeological record is incomplete, therefore offering only a partial substructure for interpretation. In essence then, the settlement model proposed for the Paleoindian period in North Carolina is but an abstract framework by which collected data can be partially interpreted. It does not reflect temporal and spatial variation, though we recognize that variation probably existed. The latter part of the Paleoindian period, for instance, wherein the Hardaway-Dalton-Quad cultural systems began to adapt to a broader range of exploitable plants and animals, probably saw an increasing emphasis placed on the macroband base settlement than the earlier subperiods. Trade and exchange networks probably solidified, and the overall population grew, reducing the general size of the social/ cultural territories but broadening overall band interaction spheres. By late Paleoindian times a settlement system involving a centralized, seasonally occupied large base settlement may have been well established, foreshadowing the eventual permanent villages of the later Woodland period (c.f. Morse 1973).

Archaic

Although essentially a continuation and elaboration upon the basic settlement pattern of the late Paleoindian period, the Archaic period saw an intensification and diversification of plant food and small game exploitation. Based on the noticeable increase in the numbers of sites, both absolute population and settlement sizes increased throughout much of North Carolina during the period (c.f. Woodall and Snavely 1977; Phelps 1975b; see also Coe 1964). While the exact causes for this change are still incompletely understood, general environmental changes at the end of the Pleistocene are frequently cited as contributing to the processes of regional subsistence diversification.

As with the Paleoindian settlement model, the model proposed for the Archaic consists of three general site types: (1) the macroband base settlement; (2) the microband base settlement; and (3) the numerous task-specific specialized activity sites.

Macroband base settlements: these sites were established on a semi-permanent basis and occupied for one or more seasons of the year by several microbands and perhaps even several macrobands. The macroband bases, frequently located along the major streams (Phelps 1975b), thus allowing maximum access to exploitable riverine resources as well as to the major communication and exchange routes, are characterized by the presence of both manufacturing and processing tools and can also be expected to manifest storage and refuse pits, evidence of shelter construction, and burials. (It should be noted, however, that at the time of this writing no Archaic period burials have been recorded.) Well-drained soils continue to be an important factor in settlement location. Occupation of these sites may be suggested as occurring primarily during the winter months when food plant availability is more restricted and animal species, particularly white-tailed deer, are concentrated in high yield mast areas (c.f. Smith 1975). Fishing, with weirs, nets, spears, and line and hooks, was also an important activity and may have been efficient and productive with a relatively large number of individuals lending a hand.

Microband base settlements: during the warmer seasons of the year, wild plant foods and small animals are more widely distributed about the environment, thereby allowing (requiring?) the macroband to split into smaller units, which then established one or more base settlements elsewhere in the band territory. Like those of the Paleoindian period, the Archaic period microband settlements were probably established on a temporary basis in locations allowing maximum access to the seasonally available foodstuffs. The smaller stream systems appear to have been favored locations for many of these sites in North Carolina, with stream confluences being particularly well suited to the demand for maximum resource access (c.f. Phelps 1975b).

The difference between the archaeological records of the macro- and microband settlements is probably quantitative rather than qualitative. Both manufacturing and processing material culture is expected, as are occasional pits, hearths, and other features indicating habitation. If the sites were seasonally reoccupied, as is suggested at some Archaic component sites (c.f. Coe 1964), midden development could also be expected.

Specialized activity sites: articulated with both base settlements are again the numerous small task-specific limited activity sites. The discussion above is also applicable to the Archaic period sites. Few differences, except in the presence of diagnostic artifacts, are expected between the sites of the two periods. Variations in site locations are expected, however, given the more diverse economy of the Archaic, though the basic factor of maximum resource access should hold true. A site type to be added to the list of specialized activities would be those associated with fishing, an important resource to many Archaic period economies.

Model summary and discussion: Archaic

As with the Paleoindian model, the foregoing is an extremely generalized and idealized construct and does not specify temporal or spatial variation, both of which occurred during the Archaic period. Through time, for instance, there is a predicted increase in the size of semipermanent base settlements as well as in the duration of occupation, such that by the late stages of the Archaic (i.e., Savannah River manifestations) it is quite probable that year-round occupation of sites by a portion of the macroband may have been frequent. In addition, an increased knowledge of native plants and the development of more efficient methods of procurement and processing may have been important factors in the eventual development of rudimentary horticulture (Struever and Vickery 1973). Seasonality and scheduling, however, are considered the most characteristic features of the period. The proposed model for the Archaic obtains from this assumption, hence the continuation of the dual base settlement system.

As concerns the locations of Archaic sites, the variables of multiple resource availability, soil drainage, access to water, and access to communication networks are suggested as most important (see Phelps 1975b, and Chapter 6). Macroband, semipermanent settlements are expected primarily along the larger streams, while the smaller microband settlements are expected along both the large streams and their tributaries. A more dispersed pattern is expected for the smaller base settlements, with the "hinterland" locations of many corresponding to seasonally available/ exploitable plant and animal communities.

Specialized activity sites might be expected to occur throughout the region of study, since a broad range of plants, animals, and lithic raw materials were exploited, requiring movement into numerous ecological zones. It is anticipated, however, that specific zones will eventually yield greater frequencies of Archaic period specialized activity sites than others, reflecting the adaptation of some Archaic period economies to specific sets of resources. By the time fully sedentary, agriculturally-based (or augmented) economies were established, differential exploitation of resources was probably well defined in much of North Carolina.

Woodland

As with the Paleoindian to Archaic period transition, the Archaic to Woodland transition, in general, was a gradual process of adaptation, rather than an abrupt shift. Agriculture, one of the hallmarks of the Woodland cultural period, did not simply occur, arrive, or begin overnight in most areas but was a culmination of several millenia of intensive native (i.e., local) plant exploitation (Struever and Vickery 1973; Yarnell 1977). Rudimentary horticulture, an activity which may have been initiated during the late Archaic, eventually developed into full scale agriculture, with corn, beans, and squash being characteristic crops in much of the Southeast.

During the early part of the Woodland period, the settlement pattern probably remained much the same as it had been during the late Archaic, with centralized settlements being occupied on a semipermanent seasonal basis and numerous smaller habitation sites being established seasonally in the hinterlands by family or microband groups. It was probably not until the middle to late Woodland period that permanent villages (per se) developed. The proposed Woodland period settlement model then is based on the later developments, when a sedentary settlement-subsistence system had been adopted by much of aboriginal North Carolina.

Four basic types of sites are identified: (1) habitation; (2) habitation/ceremonial; (3) ceremonial; and (4) specialized activity.

Habitation: into this category are grouped all permanently occupied sites, including villages, hamlets, and farmsteads, which lack evidence of other than residential use. While the presence of burials is suggestive of ceremonial activities, a distinction is made between casual or independent interments and such features as ossuaries and/or burial mounds; the latter being considered "ceremonial" or "ritual" in a broader perspective. Sites containing such manifestations are discussed below.

Furthermore, while distinctions between villages, hamlets, and farmsteads should be possible, a single inclusive category is deemed sufficient for the present.

As suggested above, agriculture is assumed to have become an important subsistence activity at different times in different places and in some areas probably never had a substantial impact on the aboriginal economies. In addition, hunting, gathering, and fishing continued to provide a significant portion of the daily caloric intake, even in areas where intensive agriculture was practiced (Plog 1974; Woodall and Snavely 1977). Therefore, many cultural systems operating during the general time frame of the Woodland period probably retained much the same type of seasonally oriented settlement pattern as that of the Archaic period. The adoption of and/or adaptation to an agriculturally-based subsistence economy, however, required a different settlement strategy than that of the Archaic hunter-gatherers.

In particular, a viable agricultural economy requires access to suitable croplands. Naturally fertile, arable soils were therefore important and favored by the Woodland peoples for the location of settlements. Although artificial soil fertilization may have been practiced among the more advanced agriculturalists, this was probably done as an additive to already naturally fertile soils, rather than an attempt to "claim" or build up poor soils. Since suitable soils are most frequent in the floodplains of the larger streams and rivers, it is in these areas that the core of the Woodland settlement is expected. It can therefore be suggested (perhaps even assumed) that with an increased emphasis on domesticated plants there was a corresponding increase in the floodplain settlement orientation.

Permanent habitation sites then, whether as large villages or small two-to-three family farmsteads scattered along the floodplains or floodplain margins, would normally be expected to occur on low rises, knolls, levee remnants, terraces, and ridges adjacent to the streams and rivers but above normal flood level. In addition to providing access to suitable agricultural lands, such locations naturally provide access to potable water, a variety of exploitable plants and animals, and to transportation, communication, and exchange routes. Stream confluences, particularly along the larger river systems, may have been especially favored locations.

The more obvious archaeological manifestations at these sites would include midden accumulation, storage and refuse pits, evidence of house construction, hearths, burials (other than ossuary, cemetery, or mound), and a full range of subsistence and maintenance oriented tools and byproducts. Ceramics, another hallmark of the Woodland period, as well as chipped stone, shell, or bone (e.g., deer scapula) hoes or hoe fragments would also be expected to occur.

Habitation/Ceremonial: although ceremonial or ritual activities probably occurred at all Woodland period settlements, some sites appear to have been more important (and larger) than others, to the extent that they may have served as regional or areal centers for such activities. The ossuary sites along the coast, for instance, while being occupied as villages, may have also served as central interment locations for the smaller, subsidiary communities of the region (David S. Phelps, personal communication). Other sites fitting this general category might include the Warren Wilson (Dickens 1976) and Garden Creek (Keel 1976) sites. In other words, the habitation/ceremonial site category would consist of those sites assigned to the general Woodland period which have evidence of both residential and extra-residential activities, this being observed most frequently in the presence of mounds or other earthworks, ossuaries, and/or large cemeteries.

Environmental-locational variables common to these sites should be much the same as those noted for habitation-only sites. Mound sites, however, are more common in the southern portion of the state than elsewhere, and ossuary sites more so along the coast.

The archaeological record at these sites should also contain the same general varieties of materials and features noted above, with the addition of the ceremonial or ritual-oriented structures or features. Furthermore, if such sites served as meeting, trade, or religious centers, a broader range (quantitatively and qualitatively) of nonutilitarian and trade items should be observed.

Ceremonial: in many areas of the eastern United States local cultures/ societies established certain locations as nonresidential ceremonial activity sites. Usually, such sites (as presently known) consisted of one or more burial or funeral mounds. Although perhaps more frequently found in association with habitation deposits, such sites are also known to occur in isolation from residential areas (see Struever 1968; MacCord 1966). It is the isolated mound or cemetery sites to which this site category refers.

Burial mounds (and/or cemeteries), such as the McLean Mound in Cumberland County, North Carolina, were apparently constructed or established to serve as a common burial site for a nearby and possibly dispersed population (cf. MacCord 1966). While these sites may produce some evidence of residential use, the quantities of such materials are generally insufficient to suggest other than temporary occupation, perhaps only for the duration of the burial ceremonies. Although sites of this type are better known further to the west, particularly in association with the middle Woodland Hopewell cultural phenomena (see Struever 1968; Struever and Houart 1972), the McLean, McFayden, and Red Springs mounds in the south-central-southeast part of the state appear to fit this general description.

In most instances, ceremonial sites, particularly burial mounds, should be expected to occur in the general vicinity of habitation sites, which would suggest ridges, knolls, or other natural rises in stream or river floodplains, or on other natural rises along the floodplain margins.

Specialized Activity: like the peoples of earlier cultural periods, those of the Woodland undertook a variety of activities away from the base settlement. Although agriculture or horticulture may have supplied a substantial portion of the average diet, hunting, gathering (or collecting), and fishing continued to be important subsistence activities. These and other procurement activities can be assumed to have occurred at one or more discrete loci, which may or may not be preserved in the archaeological record. While the discussions of specialized activity sites of the Paleoindian and Archaic periods are generally applicable to the Woodland, a comment regarding the material implications and problems of identification is warranted.

In undertaking archaeological reconnaissance surveys, the investigator is frequently restricted to performing some form of surface collection of artifacts from which cultural and functional identifications must be derived. A relatively common statement in survey reports, in which only surface collections were used, is that the presence of one or more potsherds indicates habitation. Two basic assumptions underlie such a statement: (1) that which is on the surface of an archaeological site is but a fraction of that below the surface; and (2) that pottery was manufactured, used, and deposited only at base settlements or habitation sites. The first assumption is quite obviously valid under most circumstances, depending upon the erosional and depositional history of the site area. The second assumption, however, may be less valid, and demands further anthropological and archaeological examination. While it is not the purpose of the present study to fully examine this issue, the general settlement model proposed here for the Woodland period cultures of North Carolina considers the possibility that ceramics *were* occasionally transported during specialized procurement activities, perhaps during such tasks as collecting berries, nuts, and other wild plants and for cooking during hunting expeditions. Further discussion of this is presented in Chapter 10.

Model summary and discussion: Woodland

In proposing the Woodland period model, emphasis has been placed more on the functional nature of sites than the social composition. Habitation sites without major ceremonial features, for instance, may occur as small dispersed farmsteads or as villages of sizeable population. The expected locations of the permanently inhabited settlements, however, are limited primarily to the floodplains and floodplain margins, allowing access to fertile croplands. Ceremonial and ceremonial-habitation sites are also expected to occur in or near the major floodplains. Specialized activity sites, on the other hand, can be expected throughout a region.

During the early Woodland, settlement patterns probably changed very little from the late Archaic patterns. With the introduction and adoption of intensive agriculture, however, more sedentary settlement systems developed, involving year-round site occupation. The model presented above applies primarily to these systems.

Like the preceding models, that for the Woodland is by necessity quite generalized. The subsistence activities of the Woodland period peoples of the state probably varied considerably with the corresponding resource availability or scarcity in the three major physiographic regions. Given this, the settlement patterns noted in each may also be expected to vary. In addition, influences or intrusions of the more southern and western Mississippian cultures, as evidenced at the Town Creek site, must have had an impact on the local settlement systems. The purpose of this and the preceding models then, is to provide a generalized site typology, such that preliminary sorting of the thousands of sites recorded and yet to be recorded in the state can begin with at least a minimal structure. There can be no question that the models will be altered and revised in time and may simply be incorrect or inappropriate in the eyes of many of the state's archaeologists. Until such a time as revisions are suggested and made, however, the models will be used by the branch as a partial base for initial data interpretation during the statewide survey.

CONCLUDING COMMENTS

The discussions above have been provided as an all too brief introduction to the statewide survey program and general research design. The nature of the program precludes more detail than has been presented at this time. The general problem domains to be addressed during the survey and data synthesis aspects of the program were presented as a general orientation to the data requirements and goals of the program. The models proposed, dealing primarily with the general types of sites expected in the prehistoric archaeological record of North Carolina, are intended to provide not only a framework for data analysis and interpretation but for purposes of planning and management of the resource base. As regards the latter, the more precise the information provided land use planners and developers, the greater the possibility for minimizing the long term adverse impacts to the resource base. This includes a general statement regarding the types of sites in a proposed project area as well as the probable locations of those sites. Table 2.1 is provided as a summary of the preliminary settlement models discussed above. As data is collected and synthesized, the table will be revised and expanded to better provide for geographic and cultural variability.

Cultural Period	Site Type	Floodplains	Floodplain Margins	Secondary Streams	Uplands (Interior)	Lithic Outcrops	Swamp/Marsh Margins
		GENERAL TOPOGRAPHIC SITUATIONS					
Paleoindian	Macroband		X			X	X
	Microband		X	X		X	X
	Spec. Activity	X	X	X	X	X	X
Archaic (early and middle)	Macroband		X			X	X
	Microband		X	X		X	X
	Spec. Activity	X	X	X	X	X	X
Archaic (late)	Macroband	X	X				
	Microband	X	X	X		X	X
	Spec. Activity	X	X	X	X	X	X
Woodland	Habitation	X	X				
	Habitation/ Ceremonial	X	X				
	Ceremonial	X	X				
	Spec. Activity*	X	X	X	X	X	X

*Includes small seasonal hunting stations

Table 2.1. Generalized predictive model for prehistoric (noncoastal) sites.

CHAPTER 3.

Cultural Resources Evaluation Program

Thomas E. Scheitlin

INTRODUCTION

The Archaeology Branch has concluded the initial planning stage of a data management system called the Cultural Resources Evaluation Programs (CREP). The need for such management systems stems from the branch's legal responsibilities for A-95 review and for implementation of statewide survey (see Chapter 2 and Mathis 1977b). Various data management systems have been evaluated, based on the large sets of archaeological data necessary to meet these responsibilities. We have concluded that a series of data forms designed for direct key entry and the integration of two computer management systems and several analytical programs will best fulfill these needs.

EVALUATION OF DATA MANAGEMENT NEEDS

Prior to the development of a particular system of data management, it is necessary to evaluate the problems and requirements of such a system. The responsibilities of the Archaeology Branch require the integration of four types of data on cultural resources--locational, cultural, environmental, and managerial--into a system capable of streamlining the environmental review process and supporting field research (statewide survey). Discussions will center on the inherent nature of the data, its collation, and the physical needs of such a system.

Site specific data provides a basis for our understanding of cultural resources. This data must fulfill minimal needs and include locational, cultural, environmental, and managerial information. These data classes, however, should not be looked upon in static terms. The professional and legal requirements for site information have greatly increased over the years and will continue to increase as cultural resource managers, archaeologists, anthropologists, architects, and historians continue to explain and define cultural processes. It is, however, important that the data on which a management system is based contain the most comprehensive yet cost effective information possible.

Survey information is very important in the understanding of the nature of site data; the development of predictive models of site density relies on knowledge of the methodology and intensity of a given survey. Without this information, it is only possible to produce models of high site probability, as site density information would be impossible to calculate.

The above discussion indicated but a few of the present data needs for cultural resource management. However, information collected at sites in the past has frequently not included these minimal data requirements. Resurvey of all previously recorded sites is economically unfeasible at present. Information from those sites, though not meeting our present data requirements, is still valuable.

Perhaps the most important information about sites is their location. If this information is not available, the overall body of data is tremendously limited, as it has no frame of geographic reference. Analytical needs also require the addition of cultural information, with predictive models requiring all of the above, plus environmental data. Fortunately, in the past both locational and cultural information have usually been recorded for sites. Environmental data that is missing can be re-created without revisiting sites by the use of maps (soils, topographic, botanical, etc.).

Given the minimal locational criteria for sites, most of the recorded sites in the state must be included in the site files. The best estimates of the number of prehistoric sites recorded in the state is in the neighborhood of 8,000 to 10,000 with 100 plus historic sites and 10,000 plus historic structures. Considerations of management systems must weigh heavily the size of the site data files and the variability inherent in the data.

A discussion of the data needed to meet the state's cultural resource management needs necessitates a brief discussion of the present condition of the site files. At least seven sets of prehistoric site files exist in the state, none of which are totally inclusive (Mathis 1977b). The mere centralization of this site data is the most important step in the development of a cultural resource data management system. Historic sites are intermixed with the prehistoric site files and both will be collected similarly. Historic structures are kept in a centralized file in the Division of Archives and History.

Given the data requirements, a management system must be able to meet two basic interrelated needs, those of environmental review and statewide survey. Environmental review requires three specific tasks from a management system. First and most basic to the review process is the capability to isolate sites located in proposed project areas and to list management information on the significance of the site and/or the cultural information of the site. Secondly, retrieval of information about the methodology and intensity of previous surveys in the area, if any have occurred. Finally, there is a need for the development of predictive models of site location/settlement patterns in and around the project area (see Chapter 2 for a discussion of predictive models). A system that will accomplish these tasks will greatly speed the review process.

Statewide survey requires the same information on site location, previous surveys in the area, and predictive modeling. Survey projects, however, will require more than a simple evaluation of the above data. It should be able to provide refined models incorporating data gleaned during the various stages of field research. The management system must also allow the investigator to stratify the project area based on predictive models and current land use. Figure 3.1 outlines the mechanics of such a management system for review and survey purposes.

Several options were evaluated by the branch for data management systems on several levels. Perhaps the most important decision was to implement a computerized rather than a manual management system. This decision was based on several factors. First, the already large quantity of data will increase dramatically over time; secondly, the ability to analyze directly the data without the need for key-entering data for every analysis; and finally, because computerized systems are simply much faster than manual systems.

As pointed out above, statistical analysis is one of the necessary features of this system, because the modeling that the branch will be undertaking will be of a mathematical nature and not intuitive. This decision is based on the belief that mathematical models are much easier to evaluate than intuitive models. Mathematical or statistical models of site location also reduce the effect of archaeological bias on the models, as intuitive models may represent the archaeologist's particular research interests more than the archaeological resources as a whole.

DATA COLLECTION FORMS

The decision to use a computerized system for cultural resource management required the development of computerized data recovery forms. Thus, relevant data needed to be categorized onto forms that could be efficiently transferred to computer tapes. It was immediately realized that it would be impossible to record all of the needed information on the various types of sites onto one form, so four separate site forms were envisioned--prehistoric archaeological, historic archaeological, historic structures, and underwater cultural resource forms. These forms are similar in format and inspired by computerized archaeological site forms used by Arizona State University and the Arkansas Archaeological Survey (Gaines personal communication; Klinger n.d.). The forms contain

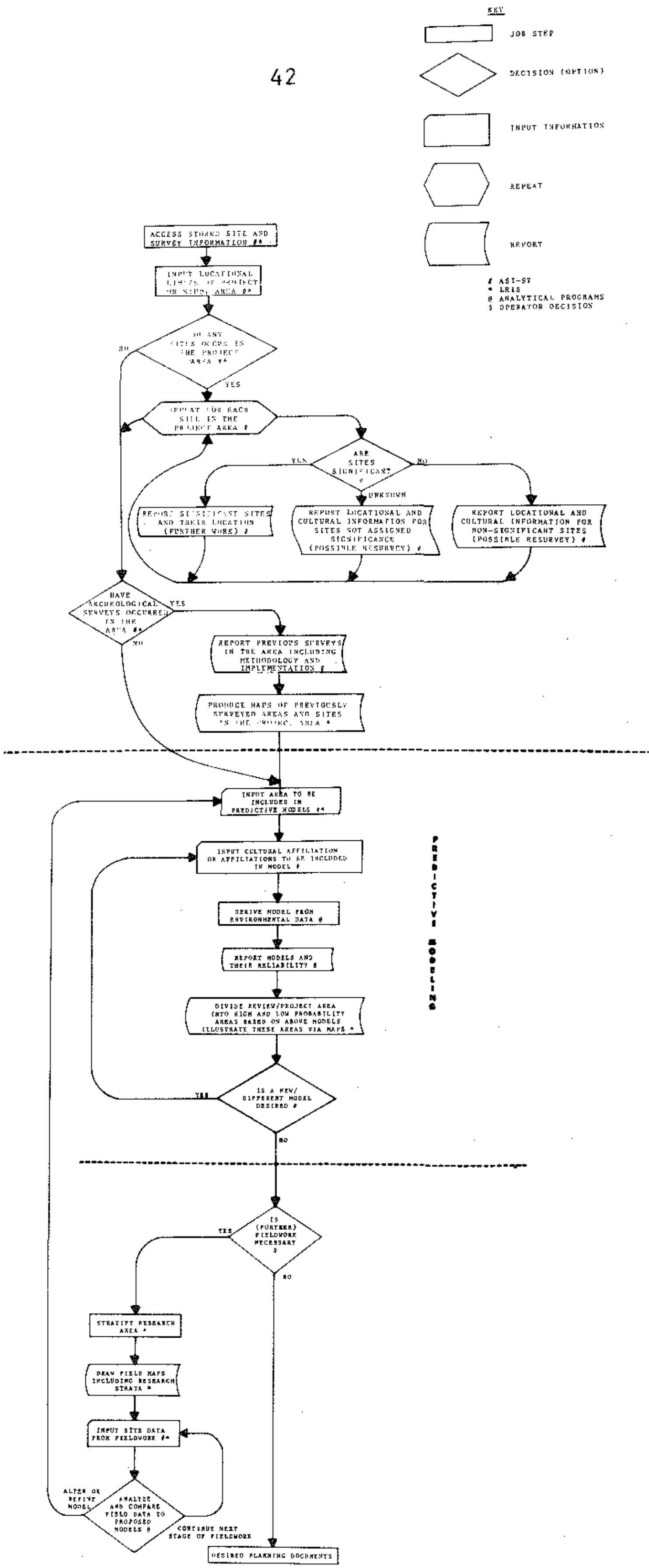

Figure 3.1. Diagramed requirements of a management system for North Carolina's cultural resources.

ecological, cultural, and managerial information about sites and surrounding areas, and represent what is presently considered to be the minimal information for management and analytical needs. These forms are not meant to be a static nonresponsive data base but serve as the beginning point from which a data base can grow. Thus, the site forms are expected to change slightly from year to year.

The prehistoric site form was the first developed and an initial draft was distributed to the North Carolina Archaeological Council for comment during the latter half of July, 1977. The form has been through three revisions to reach its more or less final version late in November, 1977 (see Appendix J). Various stages of this form were used during the highway projects reported on in Parts II, III, and IV of this volume. All site information has since been transferred onto the finalized forms. In developing a finalized prehistoric site form, it was realized that much of the data requested had not been collected in the past. As there are a large number of previously recorded sites in the state, it was decided that a short form, eliminating the information generally not collected, would streamline information transferral into the new computerized format. Thus, a site form for previously recorded sites was designed (see Appendix J). The short form data categories are the same as those on the longer form, but with about 30% of the information deleted. The data from both forms will be input into the computer in the same manner. Thus, previously recorded sites will have blanks in many of the environmental variables. A handbook was then designed to explain the use of these forms and to explain the data categories and coding procedures (see Appendix J).

A preliminary historic site form and handbook were designed in late September, 1978. Comments are currently being solicited prior to final revision. A historic structures form has also been drafted and is expected to be finalized in the near future. The underwater cultural resources form is being drafted and should be completed in the first quarter of 1979.

At least one other form is anticipated. Information on survey methodology (project specific), intensity of survey, and the sites found using these methodologies is needed. Such records will provide the branch with information pertaining to site densities in sampled areas.

The above-mentioned forms should provide the branch with a comprehensive, interactive file of archaeological and management information.

COMPUTER SYSTEMS TO BE IMPLEMENTED

The computerization of site information requires a minimum of two types of data manipulation: data management and data analysis. Initial considerations were given to existing management systems which have been used for archaeological and museum data banking, such as SELGEM and GRIPHOS. These systems were rejected primarily due to costs and efficiency (Chenhall 1975; Scheitlin n.d.). At present there exists no single program or system that will meet all of the demands noted above. Therefore, two specific programing systems will be used in conjunction with various statistical programs. Present plans call for the use of a business-oriented data management system called ASI-ST, the Land Resources Information Service (LRIS), the Statistical Analysis System (SAS), and the Statistical Package for the Social Sciences (SPSS). The overall management system employing the above programs will be called Cultural Resources Evaluation Programs (CREP).

ASI-ST will serve as the main data management portion of the computer system. Its primary function will be to write printed reports, to sort, merge, and edit data, and to write data sets on tape for use with other programs. ASI-ST was chosen to operate as the driver for the data management system because it is available at no charge from the State of North Carolina's Administrative Computer Center. At present there are no funds available to develop a data management system which would function as a viable alternative to ASI-ST. It is hoped, however, that ASI-ST will eventually be replaced by a program written by a member of the staff. Such a system will be specifically designed to deal with cultural resource management data. ASI-ST has not at this time been implemented but should be in full use by the first quarter of 1979.

LRIS is perhaps the most innovative of the computer systems to be used. It is a Data General Eclipse-based graphics system designed to record and output map data. LRIS has the ability to store polygons (irregularly shaped objects), lines, and points. Thus, it is possible to store information on soils, present land use, population density, hydrology, roads, archaeological sites, and areas that have been surveyed archaeologically. Actually, the system has no limits as to what types of data can be input, so virtually anything that can be put on a map can be input into LRIS. The system has the ability to draw numerous types of maps such as contours, polygons, roads, and the like, in any combination. The archaeological uses of such a system are enormous. A-95 review of proposed project areas, for instance, can be input and the system will draw a map of the archaeological sites in the area and areas (if any) that have been covered by archaeological survey. It is also possible for the system to stratify a research area environmentally and to draw field maps of that area illustrating the research strata as they relate to roads, streams, buildings, and topography. This will obviously be an invaluable aid in field research. LRIS will also be used to spatially single out areas which, based on predictive models, have a higher probability of site occurrence. The possible uses of LRIS appear to be infinite and are limited primarily by investigative creativity and cost considerations.

Finally, various statistical programs will be used to numerically analyze the data and to provide mathematical predictive models. We initially plan to utilize SAS and SPSS but will use any analysis program considered appropriate to research and administrative goals. The needs of the CREP are indicated in Figure 3.1; this figure also indicates which program will be utilized for each task. Schematic interrelationships of the programs themselves are indicated in Figure 3.2.

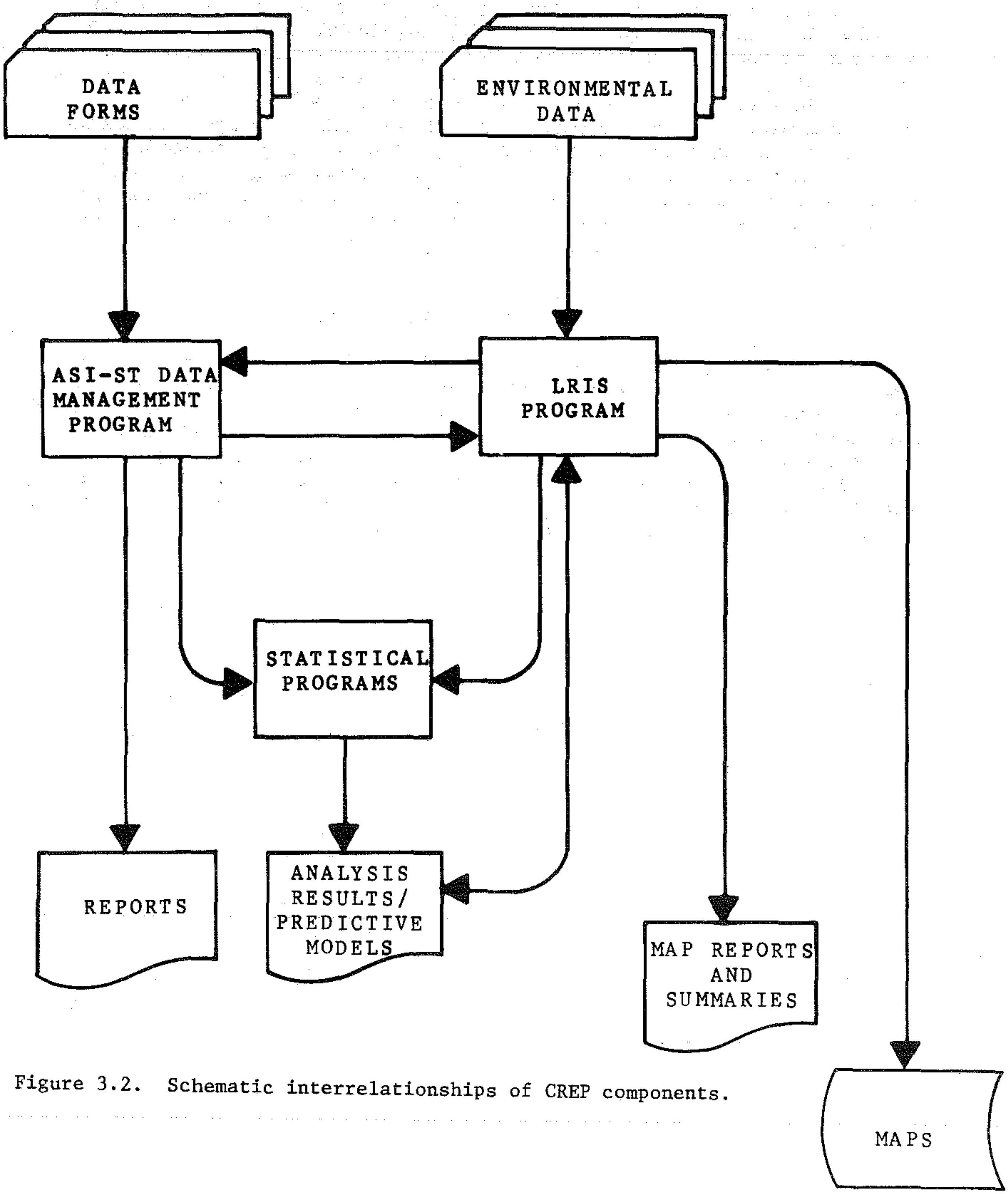

Figure 3.2. Schematic interrelationships of CREP components.

COMPUTER ANALYSIS OF THE THREE HIGHWAY PROJECTS

The Ahoskie, Ashe, and Wilkes highway surveys were initially planned to make full use of the branch's planned computer facilities, but as CREP was still in the development phase, this proved to be impossible given the time constraints of the projects. All of the surveys did use the branch's prehistoric site forms, however. This information will be added to the known data base of archaeological sites in the state. Though some amount of computer analysis was certainly a possibility for these surveys, it was felt that such analysis would have been ineffective given the small amount of area and shape of each project. This decision is additionally supported by the small sample size in each survey. Thus, as the data did not warrant statistical analysis, none was undertaken.

SUMMARY AND CONCLUSION

The Archaeology Branch has embarked on a multifaceted computerized approach to meet its needs of environmental review and statewide survey. Computerized forms have been and are in the process of being developed which will speed the entry of data onto computer tape. Computer systems which will serve the management and analytical needs of the branch have been evaluated and isolated for use. The complete implementation of CREP, bringing the branch into compliance with its legal and philosophical requirements, should be realized by the end of 1980.

THE AHOSKIE BYPASS HIGHWAY PROJECT

PART II

Management Summary

PURPOSE OF THE STUDY

The Ahoskie Bypass highway project is designed to involve construction of approximately 8 miles of 400 foot wide (average) corridor in central Hertford County, North Carolina (state project #6.804142, Clearinghouse #75-1834). In accordance with federal and state environmental and historic preservation legislation, an archaeological survey was conducted along the proposed corridor by the Archaeology Branch, Division of Archives and History, Department of Cultural Resources, under a memorandum of agreement with the North Carolina Department of Transportation. The survey was designed to locate and assess the significance of any cultural resources to be affected by the highway construction process and to make the appropriate recommendations for mitigating adverse impacts to those resources found to be significant (i.e., eligible for inclusion in the National Register of Historic Places).

CONSTRAINTS ON THE INVESTIGATION

The primary constraint on the investigation was the seasonally dense vegetation encountered in some portions of the project corridor, particularly in the vicinity of Ahoskie Swamp and the upper reaches of Horse and Flat swamps. Approximately 94 acres (19% of the total project area) were inaccessible due to this factor. In addition, several of the cultivated fields encountered consisted of mature peanut or soybean crops, both of which provided a relatively dense ground cover and thus only minimal ground surface visibility. This constraint was dealt with by reducing the survey interval.

SURVEY METHODS

The bypass survey was conducted using a standard pedestrian walkover tactic. Two surveyors walked at intervals ranging from only a few meters to 25 meters apart (depending upon surface cover) inspecting the ground surface for evidence of past cultural activity. A single artifact was considered sufficient to intensify survey coverage to identify the extent and general nature of the activity locus. In areas where the ground surface was obscured by natural vegetation, shovel tests were placed at intervals ranging from a few meters to 25 meters. Approximately 32% of the total 500-acre project was in cultivated field at the time of the survey; approximately 55% was in forest. Approximately 63% (32% cultivated field, 31% forested) of the total project was surveyed.

RESULTS OF THE INVESTIGATION

A total of 38 historic and archaeological sites were recorded during the survey, 28 of which are within the Ahoskie Bypass right-of-way. The other ten sites were recorded in the process of traveling to and from the project corridor. Of the total sites recorded within the corridor (n=28), six (21%) contained only prehistoric components, 13 (46%) contained only historic components, and nine (32%) contained both prehistoric and historic components.

The prehistoric components represented suggest use of the project area from the early Archaic through the late Woodland periods, primarily for hunting and gathering activities. No prehistoric sites were identified which would suggest permanent habitation. The historic sites identified within the project corridor primarily represent early twentieth-century (Depression Era) tenant farm structures, all of which are now uninhabited and in various states of disrepair. Seven (7) such structures were recorded within the corridor. In addition, five family cemetery plots were identified, all of which have been or were being moved for the bypass construction. One nineteenth-century mill site was recorded immediately adjacent to the corridor, although most of the site lies outside of the construction lane. Finally, a site of an early twentieth-century portable sawmill was recorded, represented by a large sawdust pile and several liquor bottles.

Of the sites located outside of the right-of-way, five contained only prehistoric components, two contained only historic components (both are structure sites), and three contained both prehistoric and historic components.

CONCLUSIONS AND RECOMMENDATIONS

In assessing the significance of the recorded archaeological sites the criteria established for eligibility to the National Register were augmented by a series of general problem domains (in order to address criterion "d", 36 *CFR* 60.6). None of the archaeological sites were found to contain information or the potential to yield information sufficient to qualify for inclusion in the National Register. In addition, none of the historic structures, which were examined by an architectural historian, were found to qualify for the National Register.

Thus, no significant properties were identified during the survey which would involve Section 106 of the National Historic Preservation Act (1966) or Section 4(f) of the DOT Act (1966). No further archaeological investigations are therefore required prior to initiation of the highway construction.

REPORT CONTENT

The following report documents the general environmental and cultural background of the project area (Chapters 5, 6, and 7), the research framework for the study (Chapter 8), and the survey methods employed (Chapter 9). The results of the study are then provided in Chapter 10. Specific site characteristics are provided in tables contained in Appendix C. Artifact data collected during the project are provided in Appendix F.

CHAPTER 4.

Introduction: The Ahoskie Bypass Archaeological Survey

Mark A. Mathis

INTRODUCTION

The Ahoskie Bypass project (state project #6.804142; Clearinghouse #75-1834) was undertaken in conjunction with two other highway archaeology projects during the latter part of 1977. These surveys were initiated for several basic reasons: (1) to assist the N.C. Department of Transportation (DOT) in complying with the mandates of the various pieces of federal and state environmental and historic preservation legislation; (2) to evaluate the capacity of the Archaeology Branch (then Section) for undertaking in-house archaeological surveys; (3) to test a newly designed computer format site record form; and (4) to begin implementing the statewide survey data collection process.

The primary objective of the Ahoskie Bypass survey was of course the identification and evaluation of cultural resources to be affected by the highway construction process. Had significant archaeological or historic sites been identified in the project right-of-way (ROW), mitigation plans would have been developed and implemented to minimize adverse impacts due to the bypass construction. Although no formal proposal was prepared for the survey, the memorandum of agreement between DOT and the Division of Archives and History, Department of Cultural Resources (DCR), signed in July, 1977, outlined the aforementioned project objectives and the survey budget estimates (see Appendix A).

Due to prior commitments by the Archaeology Branch, fieldwork on the Ahoskie Bypass project was not initiated until August 18. At that time, the author and Dolores A. Hall, another branch staff archaeologist, began the first of twelve days of survey. Several work days were spent during the second week of fieldwork attempting to secure a truck (the small compacts available through the State Motor Pool are not designed for travel on rough and frequently muddy roads). For this reason, the survey was not completed until September 2, 1977. On the final two days of the project fieldwork, the field crew was joined by John W. Clauser (branch historic archaeologist), Thomas D. Burke (branch archaeologist), and Michael Southern (Survey Branch architectural historian). These individuals provided assistance in the evaluation of the historic archaeological and architectural sites and in additional subsurface testing of several prehistoric sites and high probability areas.

Although laboratory processing and analysis required a total of two weeks (usually with only one lab person), the process of writing this report rapidly ran into problems. Due to a variety of delaying circumstances, a shortened summary report was submitted to DOT on November 2, 1977.

PROJECT DESCRIPTION

The Ahoskie Bypass project is located in south central Hertford County. The bypass follows an 8-mile corridor from the junction of N.C. 350 and N.C. 11, approximately 4.5 miles southeast of the city of Ahoskie, to the junction of S.R. 1408 and U.S. 13, approximately 2 miles north of the city (Figure 4.1). As designed, the corridor averages approximately 400 feet (121 meters) wide, with three intersections which range up to 800 feet wide (242 meters) and covering a total of approximately 500 acres (200 hectares). About 2.5 miles of the proposed bypass, which is designed for four lanes, will use existing highway right-of-way (ROW) (N.C. 350-N.C. 11). The remaining stretch of ROW crosses forest and farmlands.

The primary topographic features along or near the ROW are the swamp and marshlands of Ahoskie (which was channelized in the early 1960s), Horse, and Flat swamps. Attempts to drain the wet margins of these swamps over the years are evident by the numerous small drainage ditches frequently encountered. Many, if not most of these attempts, however, appear to have failed, since the swamp margins are now covered with extremely dense secondary growth vegetation. Except for the swampy areas and the intermittent presence of open cropland, the corridor crosses relatively flat and uncomplicated terrain.

REPORT CONTENT

In the following six chapters are presented discussions of the general environmental setting in the project area (Chapter 5), the prehistory and previous archaeological researches in or near the Ahoskie Bypass project area (Chapter 6), the historical setting (Chapter 7), the research objectives of the survey (Chapter 8), the survey methods and techniques (Chapter 9),

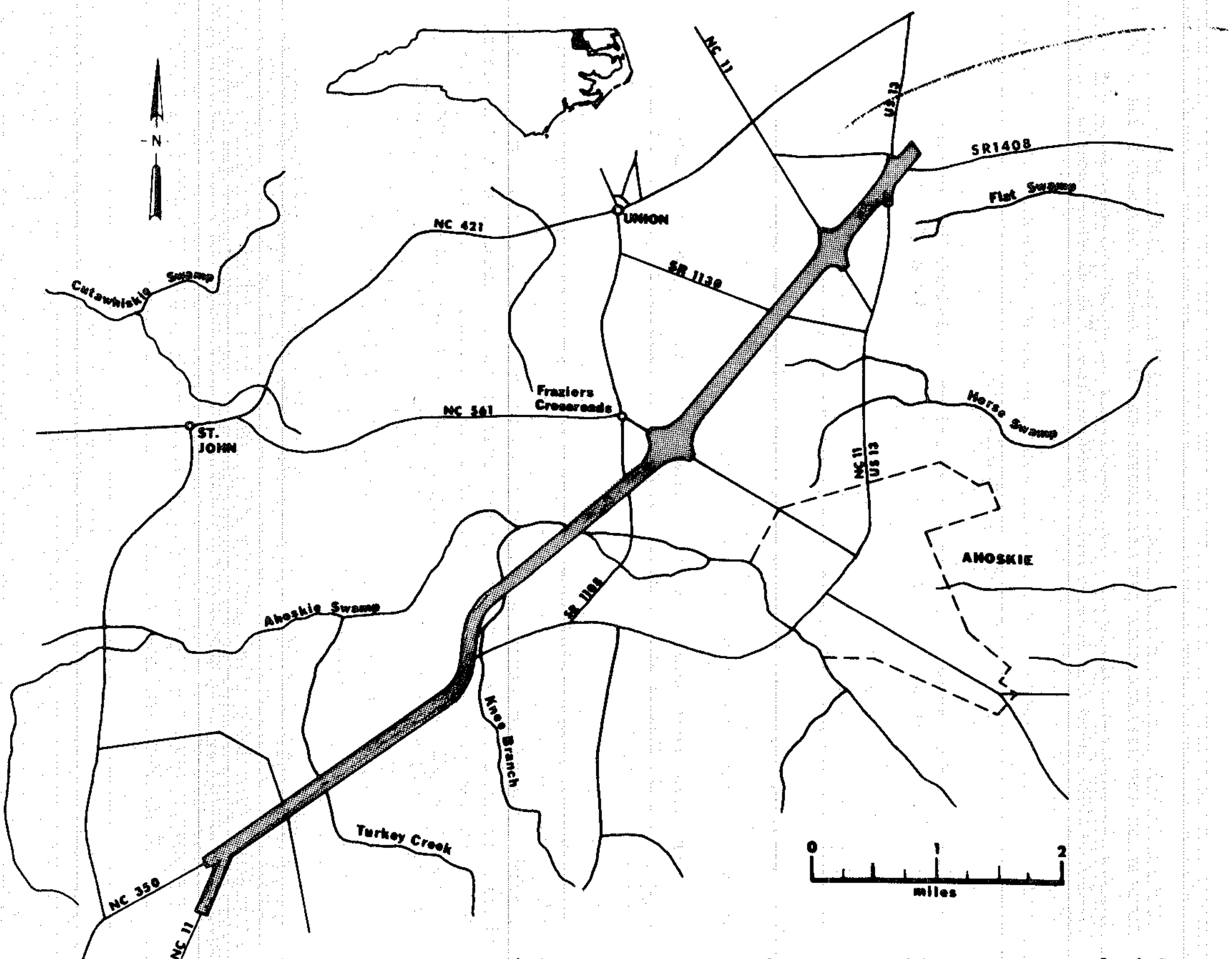

Figure 4.1. Locational map for the Ahoskie Bypass, Hertford County, North Carolina.

and the survey results and recommendations (Chapter 10). Since many aspects of the project have been discussed in some manner in Part I and are not necessarily repeated in the following, it is recommended that the reader peruse those chapters prior to continuing. The discussions in Chapter 2 are particularly relevant to those in Chapters 8, 9, and 10.

ACKNOWLEDGEMENTS

The Ahoskie Bypass fieldwork was undertaken primarily by Dolores A. Hall and Mark A. Mathis. John W. Clauser, Jr., and Thomas D. Burke assisted during the final days of the project in shovel testing several sites and low surface visibility areas and in evaluating the historic archaeological sites. Michael T. Southern, an architectural historian, provided the historic structure evaluation during the project.

Artifact analyses for the project were performed by Carol Spears, Thomas Burke, Mark Mathis, Linda Pinkerton, and John Clauser. (John did all of the historic artifact analysis.)

The historical background for the project was prepared by Jerry L. Cross; special thanks must also go to Jerry C. Cashion for giving of his and Jerry Cross's time during the project.

While in the field, several persons provided valuable information to the survey crew, including Mr. Percy Minton, Ahoskie; Mr. Archie Whitley, Winton Soil Conservation Service Office; Mr. Bill Greene, Ahoskie; Mr. G. A. Taylor, DOT--District Highway Construction Engineer, Ahoskie; and Ms. Louise Boone, Winton Library. Special thanks must go to Mr. Minton, whose knowledge of the archaeology of the area was extremely valuable to the survey. Additional thanks go to Dr. David S. Phelps, East Carolina University, whose intimate knowledge of northeastern North Carolina Coastal Plain archaeology was made accessible to us at all times (and used frequently) and to Dr. Joffre L. Coe, UNC-Chapel Hill, who provided valuable insight into the often confusing artifact sequences of the region.

Jacquie Fehon and Tom Scheitlin are to be thanked for their assistance during the report writing. Barney O'Quinn, DOT planner, provided all maps and pertinent right-of-way information. Pam Ashford and Linda Luster did the drafting and photography, and Sandra Perry and Peggy Hopson the typing of the manuscript.

I thank you one and all.

CHAPTER 5.

Environmental Setting

Linda H. Pinkerton

INTRODUCTION

In this chapter the Hertford County environment is described to provide a context for the cultural activities represented at the archaeological sites found in the area. Since little environmental analysis has been conducted in the immediate area of the Ahoskie Bypass, it has been necessary to examine the county as a whole. The information provided below should, however, afford some insight into the natural circumstances in which the cultural systems of the past (and to some extent the present) operated.

Hertford County is located in the north central coastal plain physiographic region of North Carolina. It is bordered by the state of Virginia on the north, by Northampton County on the west, Bertie County on the south, and Gates County and the Chowan River on the east.

TOPOGRAPHY

The Coastal Plain, once the bottom of an ocean, extends inland an average of 150 miles. It is a flatland traversed by a sequence of broad rivers--the Chowan, Roanoke, Tar, Neuse, and Cape Fear--and is bounded on the east by the Atlantic Ocean and on the west by the higher lands of the piedmont. The demarcation between the two provinces is referred to as the fall line, where sedimentary rocks give way to crystalline rocks. The plain rises in elevation gradually from sea level at the coastline to nearly 500 feet above sea level in the sandhills district.

Except near the edge of the piedmont and at major rivers, relief is slight, resulting in slow-flowing streams and poor drainage (Clay 1975: 112).

The coastal plain is divided into two regions in accordance with relative elevation and drainage. The outer coastal plain is closer to the ocean and extremely flat. It averages less than 20 feet above sea level and contains large swamps and lakes, reflecting poor drainage conditions. The inner coastal plain is higher in elevation and is greatly dissected and better drained (Clay 1975:113). It is composed of two extensive terraces, the Coharie and the Sunderland, dating to the late Tertiary and early Pleistocene periods. The separating scarps are low topographic features that are most easily recognized in the vicinity of major streams (Clay 1975:112). The topography of Hertford County is thus generally level to gently sloping.

GEOLOGY

Underlying surficial Quarternary deposits in Hertford County are an eastward thickening succession of blue-gray clays, sands, marls, and shell beds of late Miocene age. These are referred to as the Yorktown formation. This formation, exposed intermittently along the major streams and occasionally in marl pits of the interstream area, is composed typically of glauconitic sand and calcerous clay containing thin beds of indurated shells. The thickness of the formation is variable, and the individual lenticular beds in Hertford County cannot be traced for long distances (Boney 1977). Underlying the Yorktown formation is the Beaufort formation. In the central and eastern part of the county, sediments of late Cretaceous age (the Peedee formation) lie below the Beaufort formation. The Black, or Tuscaloosa, formation underlies the Peedee in all parts of the county (VEPCO 1964).

Surface rocks represent deposition during the Cenozoic era. They consist largely of loosely consolidated to unconsolidated sediments: clays, gravels, limestones, and marls. Their origin is mostly from nearshore deposition of marine sediments largely derived by erosion of older rocks (Clay 1975:113). Marl has been mined in the past near Murfreesboro and Winton, but no mining has been done in recent years. Common brick clay has been found in the area, but the most valuable geologic resources are sands and gravels used for construction purposes (Wooten 1977).

As concerns lithic resources for the manufacture of prehistoric stone tools, the Hertford County area is essentially barren. The small gravels noted above would not have served as a viable source for the local tool industries, requiring the makers to travel to sources outside of the area or otherwise acquire materials through an exchange system.

SOILS

Most of the soils of Hertford County are deep and have medium to somewhat fine texture. Silt-loam surface soils and silty-clay-loam subsoil textures are predominant because of large areas of fine-textured geologic materials. Both surface and subsoil colors are dark because of generally poor drainage. Surface soils erode very slowly due to the slight relief and the ability of the sandy soils to absorb water. Upland bogs, composed of brown peats or black mucks are partly the result of decomposed plant remains. The clays, sands, and gravels of the Quaternary Age covering the county occur at elevations of 80 to less than 15 feet above sea level. This material ranges in thickness from a few feet to more than 60 feet, the thickness being greatest in and adjacent to the Chowan and Meherrin River valleys (Virginia Electrical Power Co. (VEPCO) 1964). The water level in the surface material is generally within 2 to 20 feet of the land surface (Boney 1977).

Detailed soil maps have not yet been completed for the bypass project area north of Ahoskie Creek. The following soil types are found south of Ahoskie Creek:

Norfolk fine sandy loam: this is a gently sloping, well-drained deep soil of the uplands with 2 to 6% slopes. It is low in natural fertility and organic matter content but well suited to most plants grown in the area.

Craven fine sandy loam: this is moderately well-drained, nearly level soil on broad smooth areas. It is low in natural fertility and organic matter content. The soil is strongly acid and during periods of frequent rainfall high water table may be a problem for plants. The high clay content of the subsoil presents permeability and percolation problems. Its slopes range from 0 to 4%.

Bibb fine sandy loam: this is nearly level, poorly drained soil on stream floodplains. The soils are low in natural fertility and high in organic content and available water capacity. A high water table, low load bearing capacity, and frequent flooding are major limiting factors for most uses of these soils.

Coxville fine sandy loam: this is poorly drained soil lying on broad smooth flats and shallow depressions of upland interstream areas. Slopes are less than 1%. The potential uses of this soil are limited by the seasonally high water table, surface ponding, moderately slow permeability, and moderate shrink-swell potential (Mid-East Commission 1974).

Only soil associations have been determined for the project area north of Ahoskie Creek. Soil associations found in the project area are given below:

Roanoke-Cape Fear: this is poorly to very poorly drained soil with firm clay loam and sandy clay loam subsoils. The Cape Fear has been rated poor for general agriculture while the Roanoke has been rated fair to poor.

Craven-Duplin-Marlboro Association: these are well-drained soils with friable to very firm sandy clay or clay subsoils. The composition is 50% Craven, 20% Duplin, 10% Marlboro, and 20% remaining soils. The Craven is rated fair to good for general agriculture, while Duplin and Marlboro are rated good for general agriculture.

Lenoir-Coxville-Craven Association: these are moderately well, somewhat poorly, and poorly drained soils with firm to very sandy clay and clay subsoils. The association is composed of 40% Lenoir, 30% Coxville, and 15% remaining soils. Both Lenoir and Coxville soils are rated fair to good for general agriculture, while Craven is rated fair to good (Boney 1977).

CLIMATE

Hertford County is located within the humid-subtropical climate zone. Tempered by the adjacent expanse of ocean water, the winters are short and cold but not severe. Summers are long, moderately warm, and humid. Below-freezing temperatures and hot spells exceeding 100°F occur infrequently and for periods of short duration. The average annual temperature is approximately 60°F, ranging from an average minimum temperature in January of slightly below 40° to an average of more than 78° during July, the warmest month of the year. An average of 210 frost-free days begins around April 8 and continues until November 8. The ground freezes only to a very shallow depth.

Precipitation is fairly evenly distributed throughout the year with the important crop months of June, July, and August having average monthly amounts varying from 4.3 to 6.1 inches. All seasons receive sufficient precipitation to maintain forest vegetation. Average annual precipitation is approximately 47 inches. Snowfall averages 7.9 inches annually and seldom covers the ground for more than a day or two at a time (Clay 1975: 93-100).

HYDROLOGY

Hertford County is drained by the Chowan, Meherrin, and Wiccacon rivers and Potecasi Creek. Potecasi Creek and the Wiccacon River drain into the Chowan River. The Meherrin River forms a portion of the western boundary of Hertford County then turns eastward and crosses the northern portion of the county, emptying into the Chowan. The Meherrin originates to the north in Virginia, has a slope of less than 1 foot per mile in Hertford County, and experiences mild effects from ocean tides.

The Chowan River is formed by the confluence of the Nottoway and Blackwater rivers at the North Carolina-Virginia state line and forms the eastern boundary between Hertford and Gates counties. It flows southerly and southeasterly for approximately 52 miles into the west end of the Albemarle Sound. This river has been called an estuary or an extension of the Albemarle Sound, since wind and ocean tides affect it throughout its course with tidal wind effect and seawater encroachment being observed as far upstream as Franklin, Virginia, on the Blackwater River. The sound's greatest effect, however, is in the lower 22.4 miles of the Chowan River; ocean tidal effect is minimal, as it does not usually reach more than 6 inches in the Albemarle Sound. Intricate and variable flow patterns exist in the Chowan--at times it is torpid, while at other times it flows upstream as well as down (N.C. Department of Natural and Economic Resources (NC DNER) 1977). It has practically no slope and is nearly at sea level between the mouth of the Meherrin River and the Albemarle Sound. In past years, the Chowan River was a primary means of transportation, but today its cargo is confined chiefly to pulpwood and oil barges (VEPCO 1964). The Army Corps of Engineers has channelized the river 12 feet deep and 80 feet wide from its mouth to the confluence (U.S. Corps of Engineers 1977).

FLORA

Hertford County lies within the southern pine forest community, dominated by loblolly pine with sweetgum being second in importance. The principal types of vegetation in the area consist of woody-cypress, tupelo gum, black gum, red maple, ash, herbaceous smartweed, dayflower, wild millet, and arrowhead (Boney 1977). With few exceptions, such as swamp forest and small tracts of hardwood slopes, the county is characterized by mixed transition woodlands and scrub growth. Vegetative zones identified include swamp forest, bottomland, scrub, mixed transition, hardwood slopes, pine, and pine plantation. There is a considerable mix of woodland and fields, resulting in extensive edge habitat.

Characteristic species found in the low-lying wooded swamps, such as Ahoskie Swamp, include bald cypress, tupelo gum, and black gum. Atlantic white cedar is also occasionally found. Sycamore, river birch, red maple, and evergreens such as wax myrtle and holly are characteristic of the swamp forests, as are willow, cherrybark, and water oaks. On seasonally flooded margins of the swamp forests, sweetgum and yellow poplar are dominant.

Seasonally flooded bottomland, in which the soil is covered with water during variable seasonal periods but usually well drained during much of the growing season, supports sweet gums, black gums, river birch, oak, hornbeam, ironwood, ash, beech, elm, loblolly pine, alder, persimmon, honeysuckle, wild grape, fall panicum, dayflower, groundnut, smartweed, and tick (Wooten 1977).

Species of bottomland communities surrounding streams include cypress, sweet gum, yellow poplar, sycamore, river birch, and ironwood. Oaks, such as willow, cherrybark, overcup, and swamp chestnut oak have also been observed.

Wetlands serve as a refuge area for a variety of wildlife and are excellent areas for growing certain types of timber. Flooded by more than a foot of water in the winter, these wetlands tend to dry up during the growing season, when growing plants greatly increase their demand for available water (Wooten 1977).

Hardwood slopes communities are dominated by beech, red maple, red oak, black oak, sweet gum, winged elm, sourwood, and evergreens such as holly, wax myrtle, and red cedar. Loblolly or short-leaf pines are occasionally found. Sweet bay and the larger semideciduous horse sugar are also present. On the north faces of steep slopes galax and Christmas fern are sometimes present. Several large southern magnolias have been observed in the area.

A considerable amount of scrub occurs in scattered, often large tracts throughout the county. Much of the scrub is dominated by young pines and xeric or dryland oaks (e.g., post, black, turkey, and scrubby post oak). Sweet gum is occasionally found in thick stands and is present throughout. Other scrub areas have a few pines and red cedars, but scrub oaks are more prominent.

As a result of the timbering and agricultural uses in the area, the mixed transition community is the most characteristic of the county. In some areas pines are dominant while in others xeric oaks are more numerous. Yellow poplar and sweet gum are found throughout the transition community. Where streams traverse mixed transition communities, or along the woodland field edges, somewhat dense evergreen growth occurs with such species as holly, wax myrtle, fetter bush, leucothoe, leatherwood, and sweet bay.

Loblolly pines comprise most of the stands of pine community in the area, but some areas have mixed pine stand with loblolly and short-leaf pines present (Boney 1977).

The predominant forest regions in Hertford County are types as the white pine-hemlock, which is predominant in the southeast and along the Chowan, Meherrin, and Wiccacon rivers, and the loblolly pine type which is prominent in the remainder of the county. Hertford County is approximately 65% forested at present (NC DNER 1977).

Typical aquatic vegetation of streams include water lily, arrow arum, bulrush, smartweed, and pickerelweed (Boney 1977).

Edible plants of the southeastern pine forest include lambsquarters, wild oats, wild jalap, strawberry, bull brier, bilberry, red mulberry, sugar mulberry, squaw huckleberry, false solomonseal, dangleberry, deerberry, dewberry, blackhaw, muscadine grape, summer grape, buckeye, chinquapin, persimmon, oak acorns, black walnut, mockernut, pignut, hackberry, and atamosco lily (Fernald 1936; Kearney 1901--cited in Binford 1964). In the deciduous hydrophytic forests edible plants such as cutleaf cornflower, bull brier, bilberry, downy shadblow, elderberries, blue vervain, pawpaw, muscadine grape, fox grape, tuckahee, sensitive fern, jack-in-the-pulpit, and tearthumb could be gathered (Shreve, et al. 1910; Grimes 1922; Fernald 1940, 1936; Binford 1964).

FAUNA

The principal wildlife species in the Ahoskie area are racoon, rabbit, mink, otter, deer, and bear (Wooten 1977). The scrub and mixed transition woodlands, often characterized by a mix of woodlands and agricultural fields, is conducive to small game animals but does not support good populations of larger game animals. Hertford County populations of bear, marsh rabbit, duck, goose, and turkey have been appraised as poor, while bobwhite, dove, quail, squirrel, woodcock, snipe, racoon, and opossum have been rated as good (Boney 1977).

An abundant deer herd exists in the county, with high populations occurring in the southwestern quarter. A remnant bear population exists along the Chowan River near Harrellsville. The gray fox is also found in the area; but the wildcat is uncommon presently. The only potentially rare or endangered species of the area is the southern bog lemming, which is most often found further east in the Dismal Swamp (Boney 1977).

The most commonly found mammals of the seasonally flooded bottomlands are gray squirrel, rabbit, racoon, fox, mink, muskrat, beaver, deer, and opossum. Representative mammals of the woodlands of Hertford County include short-tail shrew, gray fox, chipmunk, skunk, white-tailed deer, fox, squirrel, golden mouse, black bear, bobcat, white-footed mouse, and long-tailed weasel. Opossum, shrew, cottontail, mouse, and rat inhabit the fields. In the marshes, wetlands, and swamps, shrew, marsh rabbit, nutria, otter, rice rat, and black bear can be found. Inhabitants of areas around ponds, streams, lakes, rivers and other water include nutria and river otter. Cotton rat, meadow jumping mouse, white-tailed deer and eastern harvest mouse usually reside in the meadows and pastures. Hollow trees and attics are frequently inhabited by a variety of bats. Other mammals to be found in the county are the eastern mole, eastern cottontail, cotton mouse, white-footed mouse, eastern wood rat, meadow vole, pine vole, fox squirrel, and Norway rat (Wooten 1977; Boney 1977). The most important single species in the subsistence economy of the aboriginal peoples of the region, however, was probably *Odocoileus virginianus* (white-tailed deer) (Swanton 1946).

The woodlands of Hertford County contain over twenty-two species of reptiles and amphibians. Among the more common are the hognose snake, scarlet snake, ringneck snake, salamander, spring peeper, skink, glass lizard, kingsnake, oak toad, green anole, six-lined racerunner, milk snake, tree frog, eastern spadefoot, red-bellied snake, fence lizard, and corn snake. A variety of snakes are found in association with streams, chiefly water and ribbon snakes. Snapping turtle, yellow-bellied turtle, river cooter, two-toed amphiuma, green treefrog, dwarf waterdog, bullfrog, and a wide variety of salamander are also to be found. Pond dwellers include a wide variety of turtles, as well as Florida cooter, water and ribbon snake, tiger, two-lined and dusky salamander, red-spotted newt, green treefrog, grass frog, bullfrog, and stinkpot. A variety of environments contain water snakes, green and pickerel frog, narrow-mouthed toad, marbled salamander, leopard frog, brown mole, and garter snake, southern toad, black racer, squirrel treefrog, and gray tree frog. Mud snake, southern copperhead, cottonmouth, and crickety frog are found in the lowlands. The swamps contain over seven species of snake. Among the more common are brown water snake, mud snake, southern copperhead, and cottonmouth rattler. Amphiuma, salamander, cricket frog, treefrog, and chorus frog also inhabit the swamps. Painted turtle, water snake, chorus frog, and newt are found within the marshes. Stinkpot, yellow-bellied turtle, cooter, cottonmouth, and bullfrog occupy the lakes in Hertford County. Additional reptiles and amphibians found in the county are anole, lined racerunner, milk snake, earth snake, worm snake, three-lined salamander, green snake, box turtle, glass lizard, grass frog, cricket frog, carpenter frog, greater siren, dusky salamander, spotted salamander, slimy salamander, mud salamander, and red salamander (Boney 1977).

Hertford County lies within the Atlantic Flyway migration route for waterfowl. The primary waterfowl species in the area is the wood duck, which occurs along small water courses and in swamps and hardwood bottomlands. Mallards and a few other ducks are commonly found on and near the Chowan River. Only a few Canada geese are present. Good populations of bobwhite and mourning dove are also present. A sample of the representative birds of the area include the yellow-bellied cuckoo, heron, black duck, ring-necked duck, ruddy duck, four varieties of woodpecker, vulture, hawk, osprey, bobwhite, turkey, woodcock, snipe, sandpiper, gull, mourning dove, swift, hummingbird, kingfisher, sapsucker, kingbird, flycatcher, screech owl, chickadee, titmouse, pewee, thrasher, thrush, waxwing, common flicker, bunting, swallow, purple martin, blue jay, crow, wren, mockingbird, catbird, robin, bluebird, starling, sparrow, warbler, meadowlark, blackbird, Baltimore oriole, cardinal, evening grosbeak, and purple finch (Boney 1977).

The Atlantic seaboard produces approximately 900 pounds of fresh and anadromous fish per square mile under commercial fishing conditions (Rostlund 1952--cited in Binford). In Hertford County, white perch, bluegill, and other panfish, such as warmouth and flier, comprise over 70% of the catch (Boney 1977). The Chowan drainage basin blackwater streams are generally swampy. The larger streams are classified as catfish/sucker and the smaller streams as largemouth/pickerel and redfin/warmouth. Varieties which inhabit the Chowan River and its tributaries are banded sunfish, black crappie, bluegill, bluespotted sunfish, chain pickerel, channel catfish, largemouth bass, pumpkinseed, redbreast sunfish flier, redfin pickerel, warmouth, white perch, and yellow perch (Boney 1977). The Chowan is considered an anadromous fish route from its mouth to the Virginia state line. The primary varieties are American shad in the Chowan and Meherrin rivers, striped bass in the Chowan, Meherrin, and Wiccacon rivers, and herring (alewife and bluejack) (Rivers 1976). Nongame aquatic species in the project area include golden shiner, pirate perch, three varieties of darter, tadpole, madtom, American eel, and mosquitofish (Wooten 1977). Large numbers of sunfish and largemouth bass usually inhabit ponds (Boney 1977). Channelization for drainage and flood damage reduction, however, has been extremely disruptive of stream habitat and associated wetlands (NC DNER 1977).

Aboriginal fishing technology used in the freshwater tidal habitat included impounding weirs, boats, line fishing and spearing (Swanton 1946: 332, 337). Chain pickerel and long-nosed gar were the fish most probably taken in significant quantity by impounding weirs (Binford 1964). Various species of fresh water mussel would have been found in the tidal flats also (Binford 1964).

LAND USE

The major portion of Hertford County's 233.6 thousand acres is commercial forest land. The major forest type of the commercial forest lands is loblolly pine, while oak-gum cypress and hardwood-pine types constitute the remainder (VEPCO 1964).

Approximately 35% of Hertford County is prime cropland. Major crops include peanuts (32.1%), corn (39.9%), cotton (9.8%), soybeans (8.2%), and tobacco (6.9%) (VEPCO 1964). This compares with the cultivation of corn, beans, squash, sunflower, and probably maypop by the groups inhabiting the regions at the time of the initial European contact (Beverely 1855; Strachey 1953; Hariot 1946; and Smith 1884--cited in Binford 1964).

While the 23,529 residents of Hertford County are primarily rural, mechanization of agriculture has led to large out-migrations of displaced farm workers. The population has become increasingly "rural nonfarm" as many commute to the nearest industrial plant (Clay 1975:6).

CONCLUSIONS

Despite the lack of detailed environmental information pertaining specifically to the Ahoskie Bypass project area, several general statements are possible regarding the probable types of cultural resources in the area and the potential for preserved archaeological sites. One of the most obvious features of the project area is its relationship to low-lying swampy or marshy reaches, such as Ahoskie, Horse, and Flat swamps. These areas contain(ed) large quantities of exploitable plants and animals and may have been important hunting and gathering zones for the early inhabitants of the area. Although difficult to determine at this point, these swamps may also have served as viable transportation routes. It has been reported, for instance, that prior to channelization operations along Ahoskie Swamp in the early 1960s, canoe travel was relatively easy; logs, stumps, and other collected debris in the channel now largely preclude such use (personal communication, Mr. Percy Minton, Ahoskie).

Although the swamps may have provided high yield food resource zones, as well as access to a variety of other raw materials (e.g. fine clays for ceramics, cane/reeds for arrow and/or dart shafts), other factors may have served to restrict intensive use of the area. For agriculturalists, both late prehistoric and historic, the area was not particularly well-suited to productive cultivation due to the moderate to poor drainage and the generally low natural fertility of the soils. In addition, the project area is not immediately adjacent to or on any large river or stream system, which means that the inhabitants of the area would have been away from the major transportation and communication routes. Finally, except perhaps for an occasional but rare occurrence of redeposited cobbles, the project area lacks any manner of naturally occurring lithic raw materials. Since stone was often a particularly important raw material for tool manufacture, such a limitation may have further restricted intensive occupation (i.e., village establishment) to areas affording greater access to the communication and trade routes along the larger streams.

One final factor which should be considered is the combination of recent centuries of lumbering and agriculture and the naturally low rates of soil deposition and erosion characteristic to the area. Topsoil distribution throughout the area tends to be relatively uniform, with the clay subsoil base lying an average of around 25-30 centimeters below the surface. In most instances, this means that any cultural deposits will be within 25-30 centimeters of the ground surface and therefore susceptible to the destructive forces of the plow and other surface disturbances. Thus, although archaeological sites may be present in vast numbers, only a few will have been preserved intact and *in situ*.

CHAPTER 6.

Previous Archaeological Research and Prehistory

Dolores A. Hall

INTRODUCTION

Although historic records and the accounts of the early explorers of North Carolina yield information concerning the Indian inhabitants of the region, few archaeological investigations have been accomplished in the area of Ahoskie to date. Archaeological investigations have been conducted in the Hertford County area by Binford (1964) and Phelps (1976b, 1977a, 1977b) and by graduate students from the University of North Carolina (Chapel Hill) under the direction of Dr. Joffre L. Coe (Wilson, in preparation). Binford's study was primarily concerned with cultural diversity and its manifestations during the European contact period. Phelps has conducted environmental impact surveys in this and other areas of the coastal plain region. These investigations will be discussed in more detail below. The work by Wilson consisted of a survey along the banks of the Chowan River for the Alliance for Progress during the summer of 1977. Several aboriginal sites were located in the area, though information concerning the nature and size of these sites was unavailable at the time of this writing.

The bulk of the archaeological work in the area has been conducted by Dr. David S. Phelps of East Carolina University. In the course of three surveys conducted in connection with the A-95 review process (Phelps 1976b, 1977a, 1977b), however, only one prehistoric aboriginal site was located. This site, 31Hf23, is an early and late Woodland period "temporary campsite," probably associated with a seasonal occupation (Phelps 1977a:10). Located at the confluence of the Chowan River and a small tributary, the site fits a preliminary model for site location constructed by Phelps for similar topographic situations.

Phelps' model, based on data collected from over 300 archaeological sites within the coastal plain region, is concerned with the determining factors of site selection during prehistoric times. To a certain extent, these factors also influenced early historic period occupation. However, during the historic period, certain economic and technological factors not present during prehistoric times came into consideration. Historic and prehistoric occupation areas, however, do not always overlap.

Certain environmental conditions and requirements are necessary for human occupation of any area. These conditions, as summarized by Phelps (1975a), are as follows:

(1) sufficient elevation above normal ground water and/or flood levels;

(2) close proximity to food resources (depending upon the particular subsistence system);

(3) available drinking water; and

(4) relative accessibility (depending upon the mode of transport or communication).

Using these factors and criteria, Phelps has been relatively successful in predicting site location within the coastal plain region. This has been evidenced in several of his reports (Phelps 1975a, 1975b, 1975c, 1976a, 1977b). A general picture of the prehistoric occupation and activity within the coastal plain region, based upon his model and the results of surveys of several watersheds, is presented below. The basic cultural periods used by Phelps are largely based upon the results of Coe's excavations at the Gaston site near Roanoke Rapids, North Carolina (Coe 1964).

PREHISTORIC CULTURE HISTORY

Paleoindian (ca. 12,000 B.C. to ca. 8,000 B.C.)

The earliest occupation of the coastal plain area was during the Paleoindian period. While the majority of sites dating from this period are related to the transitional stage between the late Paleoindian and the early Archaic, projectile point types representing earlier phases, such as Clovis and Quad, have been recovered. No systematic study of the Paleoindian period has been conducted in North Carolina. However, Mr. Phil Perkinson, a member of the North Carolina Archaeological Society, has been collecting and compiling data on the spatial distribution of fluted points in the state for several years. While the distribution of the eighty-three fluted points reported extends throughout the state, the majority have been recovered from the piedmont (Perkinson 1973). No explanation is given for this concentration, but it is probable that the distribution is correlated to the amount of archaeological investigation in the different regions of the state. The lack of systematic studies and the disturbed nature of the known sites are factors which contribute to the lack of detailed information concerning the Paleoindian period. Consequently, only very generalized statements can be made at this time.

Subsistence and settlement patterns during this time were based on a hunting and gathering economy, with small groups or bands occupying a series of temporary camps along the smaller creeks and tributaries (Phelps 1975b). These camps were relatively small and were probably seasonally occupied for the exploitation of specific natural resources. Although none have been found to date, larger base camps can be anticipated to have been located along the major stream systems. This is especially the case when a major lithic source is in close proximity to the stream system (Gardner 1974:43). Temporary campsites tended to be located on the higher ridges in areas of relatively well-drained soils along the stream channels, but outside of floodplain areas. Based on the number and size of known transitional sites, population density was probably very low.

No remains of this cultural period were located during Binford's (1964) survey. This may be due to the focus of the study and the types of data being collected rather than to the actual absence of Paleoindian occupation in Hertford County.

<u>Archaic</u> (ca. 8000 B.C. to ca. 1000 B.C.)

The occupation of the coastal plain region increased drastically during the Archaic period. The changing climatic conditions, available resources, and the technological innovations of the period made the coastal plain region ideally suited to the Archaic period economic base--the intensive exploitation of plant foods and the emergence of fishing as a subsistence pursuit. This change is indicated by the increase in the number and size of sites. The broadened subsistence base and exploitation techniques allowed larger bands of people to occupy seasonal camps, resulting in the appearance of semisedentary base camp sites along the minor stream systems. Based on available data, it is likely that population density and numbers also increased. This increase in population and a broadened subsistence base has also been suggested for the piedmont area of North Carolina (Woodall 1977:4). During his survey of the Randleman Reservoir area, for example, Woodall (1977) noted the increase in number and size of sites during the Archaic period.

The temporary, seasonally occupied camps of the Archaic were located along the smaller streams on relatively high ridges with well-drained soils, while the larger semisedentary base camps were most often found along the larger stream systems (Phelps 1975b:15). These sites were almost always located at the confluence of the stream and one of its tributaries, on areas of land that protrude out into the floodplain. These areas offered the maximum number of exploitable resources within the smallest land area.

During the Archaic period, the major portion of the coastal plain region was forested and offered both riverine, swamp, and upland climax-type floral and faunal resources (see Chapter 5). Thus, a wide range of edible resources was readily available, with a minimum of energy required for exploitation. As supported by the data collected during his studies, Phelps (1975d:42) postulates that during the Archaic period, well-drained soils, higher elevations, and a water source are the primary factors in site selection.

Woodland (ca. 1000 B.C. to European contact)

Settlement patterns in the coastal plain region changed considerably during the Woodland period. This was apparently due to several factors, the major factor being the introduction of agriculture. As the aboriginal population began to rely more heavily upon domesticated plants for subsistence, fewer large settlements were established in the areas away from the major river systems. Marginal areas, such as those around swamps, were utilized only on a temporary basis for seasonal hunting and/or collecting activities. Although higher elevations and well-drained soils are found in some of these areas, the soils frequently do not contain sufficient natural fertility to support substantial agricultural activity. Only the floodplain areas of the major rivers were suitable for this type of subsistence, and many of these were marginal without the aid of artificial fertilizers.

As a result, the middle and late Woodland periods are characterized by large settlements or villages along the major river systems, with only temporary hunting camps being located within the more easily accessible interior regions. During the early stages of the Woodland period, however, the subsistence and settlement patterns were probably similar to those of the late Archaic period (i.e., emphasizing hunting and gathering activities). It was not until later in the Woodland period that the domestication of plant foods had a noticeable impact upon settlement patterns. Even during these later periods, however, agriculture contributed only a portion of the total caloric intake of the aboriginal populations. Hunting and gathering continued to supply a major portion of the diet, and in some areas agriculture played a very small role, if any, in the subsistence base of Woodland period inhabitants (Woodall 1977:4).

European Contact

The first professional survey in the northeast coastal plain region of North Carolina was conducted by Lewis R. Binford during the late 1950s (Binford 1964). The survey covered portions of Virginia and North Carolina around the Meherrin, Nottoway, and Chowan rivers. The present discussion focuses primarily on Binford's work in the area of the Chowan River and Ahoskie Swamp in Hertford County. This area is designated as his Wyanoake (or Weanock or Weanoc) One Sampling Area (Binford 1964:264). The major purpose of the investigation was a study of cultural diversity and the process of diversification, particularly in reference to aboriginal populations just prior to, during, and after initial contact with European populations. The research was initiated by a review of the descriptive accounts of the aboriginal populations by early explorers and settlers in the region. Binford then attempted to locate the villages and habitation areas mentioned. Due to several factors, however, this method met with little concrete success, although he did locate seventeen archaeological sites within Hertford County. Of these, only three could be identified as documented historic-period aboriginal sites. Small seasonal camps from the Archaic and Woodland periods accounted for the remaining fourteen sites.

As a result of the data collected and the historical research, Binford constructed preliminary models concerning the subsistence and settlement patterns of the area, particularly in reference to the contact period. Our investigations in the area, however, have uncovered a number of discrepancies within Binford's report and it should be noted that his interpretations and conclusions should be closely scrutinized prior to acceptance.

At the time of European contact and shortly thereafter, the two documented aboriginal groups within the Ahoskie area were the Chowanoc and the Wyanoake. Both were horticulturalists, with corn, beans, squash, and sunflowers being the primary subsistence crops. According to Binford's research, these groups also relied heavily upon hunting and gathering activities for subsistence. Agricultural activities accounted for approximately 50% of the aboriginal diet, with fish, seafood, turtles, deer, and bear supplying the remainder (Binford 1964:35-44).

The Chowanoc occupied the territory along the Chowan River and its major tributaries. According to historical sources, the Chowanoc occupied at least seven settlements or villages along the Chowan River, with several smaller hamlets interspersed between the larger villages (Binford 1964:108). Very little is known of the Chowanoc directly, although Binford has inferred from accounts of other groups that the Chowanoc were loosely organized politically into groups governed by "chiefs," although these chiefs had little real power and the position was not hereditary (Binford 1964:113). The groups of chiefs acted together usually in matters of offense and defense by forming loose alliances. Little is known of the relations between the Chowanoc and the European settlers, although those with the Meherrin, Nottoway, and Wyanoake were generally friendly. Evidence of this is found in the fact that the English assisted the Indians when they were attacked by the Tuscarora, and again when the Nottoway assisted the English during the Tuscarora War and the French and Indian War (Brock 1884 and McIlwaine 1909 and 1912b, as cited in Binford 1964:211;228). By 1701 all but a small handful of the Chowanoc population had been decimated, and these few then settled in a single village along Bennetts Creek in present Gates County (Swanton 1946:124).

The Wyanoake occupied the territory from the mouth of the Meherrin River to the mouth of the Roanoke River and as far inland as the head of Cutawhiskie Swamp (Binford 1964:185). Although Binford has described a more specific area of Wyanoake occupation in his dissertation, the locations mentioned do not correspond to the actual geographic conditions of the area. However, Binford does mention the location of a Wyanoake settlement as occurring near present day St. Johns, North Carolina (Binford 1964:185). A large aboriginal site does exist in this area although the location cited by Binford does not. From 1647 to 1653 the Wyanoake did inhabit the area near St. Johns. The two major settlements were known as Auhotsky and Cotchawesco.

About 1653 the Wyanoake moved to an area near the present day Courtland, Virginia, but returned to Cotchawesco in 1662. In 1667 the Wyanoake were attacked by another aboriginal group (probably the Tuscarora) and again moved to present day Virginia, settling near the area of what is now Wakefield (Binford 1964:196-7). Apparently the Wyanoake were not a large group and continued to be the victims of attacks from other local native groups. In 1693 they abandoned their last settlement, and what remained of the group went to live with the Nottoway in Virginia.

SUMMARY

As can be seen from the historical accounts and the results of the limited archaeological reconnaissance surveys, the area around Ahoskie was apparently never a center of any long-term, permanent occupation by aboriginal populations. Although the Wyanoake did settle near Ahoskie Swamp, their villages were located closer to present day St. Johns than to the present town of Ahoskie. Based on this information, the sites located within the Ahoskie area probably represent small, temporary, seasonally occupied hunting and/or gathering camps dating from both the Archaic and Woodland periods. The possibility of these specialized activity sites relating to the Wyanoake occupation of the area, however, is quite high. As the Ahoskie Swamp area is an ideal environment for the exploitation of plant and animal foods, it is quite likely that some of these sites are evidences of the Wyanoake hunting and gathering activities.

From all available evidence, it seems likely that the Ahoskie area was utilized primarily as a hunting ground and as an area for the collection of plant foods during prehistoric times. As noted above, the presence of any large middle and late Woodland villages is theoretically precluded by the poor fertility of the soil and the distance of the area from any major river system.

CHAPTER 7.

Historical Background of Hertford County

Jerry L. Cross

INTRODUCTION

Since a ribbon-like geographical space, i.e., the Ahoskie Bypass corridor, is difficult at best to examine specifically within a historical research report, the following discussion focuses more on Hertford County as a whole. In doing so, some detail may be lost, but an overall interpretive context is afforded.

EUROPEAN SETTLEMENT: THE EIGHTEENTH CENTURY

Settlement of the area now known as Hertford County began about 1700 when the population of the Albemarle District spilled across the Chowan River. Almost simultaneously there came a considerable influx of immigrants from southern Virginia. Most were of Anglo-Saxon stock and many were newly arrived independent artisans: carpenters, coopers, blacksmiths, millers, wheelwrights, cobblers, and tanners, whose talents were not needed in Virginia because the large established plantations already provided such services. The first settlers took up land along the Chowan, Meherrin, and Wiccacon rivers; then along their tributaries; and finally among lesser waterways such as Potecasi, Chinquapin, and Turkey creeks, Mill, Fort, Ahoskie, Snake, Chapel, and Long Branches, and Bear, Horse, Whiteoak, Cutawhiskie, and Ahoskie swamps. No settler wanted to be very far from a landing site, either on a river, creek, or navigable swamp. A few Indian trails could hardly be termed roads and the thick woods and impassable marshlands greatly impeded land travel. Thus, water provided the best mode of transportation and access to navigable bodies was a virtual necessity in the first decades of the eighteenth century.

Long before the white man crossed the Chowan River, the land in present Hertford County had been occupied by several Indian tribes, the most notable being the Meherrins. By the time white settlers arrived, the Indians had been decimated by tribal wars and disease, but that failed to prevent frequent outbursts of violence. The Meherrins were blamed for several white massacres, and in 1707 Colonel Thomas Pollock led an expedition which forced the Indians northward. Later it was discovered that the marauders were not Meherrins at all but renegade Susquahannahs who had migrated from the Maryland-Pennsylvania area and settled among the Meherrins. With the dispersal of hostile natives and a burgeoning population east of the Chowan River, westward expansion gained momentum. In 1722 the Chowan Precinct was divided and the land west of the Chowan River was called Bertie Precinct. All of what is now Hertford County was included. The first courthouse for Bertie was at Athosky, the former Weyanoke Indian town now known as St. John.

Regardless of whether the early settlers were planters, artisans, merchants, or mariners, most engaged in some degree of farming. Abundant water had created rich, fertile bottom lands promising bountiful harvests. Very early, tobacco became the most valuable crop because it could be bartered or sold to obtain sugar, molasses, salt, or any other necessities. Where specie was in short supply, tobacco along with corn, wheat, dressed hides, flaxseed, and good clean tar, served as legal tender. Bartering was common practice and it was not necessary for everyone to grow tobacco for use as money. One could exchange marketable items such as staves, shingles, or headings for several thousand pounds of tobacco which was then used to buy land, pay debts, or to ship to England for credit.

As long as commodity money prevailed, all sections of Bertie Precinct participated equally in the economy. By the time Hertford County was created, in 1760, a fledgling plantation system based on a cash crop had emerged and a socioeconomic dichotomy appeared in the new county. In the northern two thirds of Hertford County, small plantations sprang up, slaves were brought in, and tobacco became a cash crop. A few large plantations were established, most notably that of Bathsheba Hill, the largest, with more than 4,000 acres. Robert Sumner, Matthias Brickell, and William Murfree each owned at least 1,000 acres and twenty or more slaves. But a typical plantation in the 1770s consisted of 100 to 200 acres, a two-story frame manor house with brick chimneys, a detached kitchen, and anywhere from one to fifteen slaves. Trade was predominantly with Virginia where the goods were exported through the port at Norfolk.

In contrast, the southern third or southern tier of the county (wherein the Ahoskie Bypass is proposed) had few farms large enough for commercial production. Numerous swamps and marshlands crisscrossed the southern tier leaving only small patches of land suitable for farming. Furthermore, the soil in the area was not conducive to repetitive growth of clean culture crops such as tobacco and later cotton. Farming in the southern tier was primarily for subsistence and local bartering. For cash incomes the people depended upon the blessings of the surrounding forests. Naval stores, particularly tar, led the way, with other such products as deer skins, beaver furs, hides, tallow, wax, and feathers adding to the export list.

Houses were most often small, one-story structures, usually log with some frame ones scattered throughout the region. Some families owned a few slaves each, but the peculiar institution was to have its greatest concentration to the north along the Meherrin River and its tributaries. Although family ties and tradition made Virginia an important trade center for the people of the southern tier, they also chose to send goods to the port at Edenton via the Wiccacon and Chowan rivers.

Despite the economic differences, Hertford County as a whole prospered. Settlements grew up along the major rivers, and by 1766 Winton had been established and became the county seat. Yet the most promising community was Murfree's Landing, named for William Murfree, an early leader in the county whose home and plantation were there. By the time of the American Revolution, Murfree's Landing (or Ferry) had become the social and economic center of Hertford County and remained so for over a hundred years. In 1787 it was incorporated as the town of Murfreesboro. No similar communities developed in the southern tier. There the social, cultural, and economic patterns remained much the same as they were at the time of settlement. As dawn broke on the nineteenth century, the dichotomy between the southern tier and the northern part of the county was becoming more obvious. But it was to be catapulted into history with the arrival of "King Cotton."

"KING COTTON": THE NINETEENTH CENTURY

The Industrial Revolution in Europe had created vast markets for raw cotton and the invention of the cotton gin had made the crop commercially profitable. Increasing demand for cotton instigated expansion of farm land and addition of slaves to work the fields. Small plantations grew into large estates and fine antebellum homes began to appear. Though not as successful as Warren and Edgecombe, Hertford County became a willing vassal of "King Cotton," as evidenced by the census of 1850, which shows vast acreage under production and a slave population outnumbering whites. The advancement of the plantation economic system, most of which took place in the northern part of the county, had devastating effects upon the southern tier.

The import of cotton cloth seriously damaged the markets for hides and skins, long a mainstay of cash income for people of the southern tier. To make matters worse, the leading product--naval stores--grew proportionately less profitable as cotton demand consumed more and more of the export trade. With economic resources dwindling, many sold their farms to absentee owners, often planters who used the land to supply provisions to their plantations where more acreage was turned to cotton production. Some stayed with their farms and eked out a living barely beyond the subsistence level. A few attempted to build their own plantations, but since the soil would not sustain a cotton culture, corn, peas, and lumber were substituted as the economic bases. One who succeeded in such a venture was William W. Mitchell.

Mitchell acquired a sizable estate east of present day Ahoskie where he built a fine antebellum home. In time an office, schoolhouse, carriagehouse, and smokehouse were added to the grounds. The house, built ca. 1832, is listed in the National Register of Historic Places and is located approximately 1,000 meters east of the proposed bypass. Mitchell's family included four daughters, which may have prompted his interest in female education. In 1848 he was one of the founders of Chowan Female Institute, now Chowan College, and served as the second chairman of the board of trustees. Mitchell was prominent in the community and successful in his endeavors, but his plantation never matched the scope and grandeur of those farther north, such as Melrose or Mulberry Grove. For the southern tier, he was the exception rather than the rule.

The Civil War brought still another change in the relationship of the southern tier and the rest of the county. Because of the lack of towns, roads, and plantations, the southern tier did not suffer the disaster that befell Winton or the constant threat of invasion felt by Murfreesboro. Federal troops passed through the easternmost section of the tier on their way to strategic objectives farther north, but basically it was a militarily unimportant area. Its inability to keep pace with the rest of the county was its salvation. The plantation system had never really taken hold in the southern tier; therefore, the loss of slave labor after the war was not felt as keenly there as elsewhere in the county. Economically the war had an equalizing effect, removing the dichotomy that had existed for nearly a century. Prewar prosperity disappeared, and even today Hertford is not among the wealthier counties. One note should be added at this point. The dichotomy that existed in Hertford was not unique to that county. Rich and poor were scattered in every North Carolina county. But in Hertford, there was a clear geographical division found in few other counties. Of course there were obvious economic and social differences among residents of the northern part as well, but the clarity of a geographical division lended itself easily to a background study as outlined in the heading of this report.

RECONSTRUCTION AND AHOSKIE: INTO THE TWENTIETH CENTURY

From the ashes of Reconstruction, Hertford County began rebuilding an economic and social system. This time the southern tier took the lead, though not by its own choosing. The story began with the coming of the railroad in the 1880s. Incorporators of the Carolina and Norfolk Railroad planned to run the line from Tarboro to Pinners Point, Virginia. As originally planned, the track would have passed through St. Johns and Winton in Hertford County, but a Winton landowner named Anderson feared the effects of a roaring engine belching cinders and smoke upon his timber and livestock. He refused to sell. An alternate route a few miles to the east was selected which at one point crossed an old post road leading to Edenton. Near the intersection a large saw mill and gin were built in 1888 and soon families moved to the area for the convenience of transportation. Within a year the community had grown sufficiently for sustaining a private school operated by Dr. J. H. Mitchell. Later, in 1889, a post office was established and a town began to grow. In 1893 the town was incorporated as Ahoskie, taking its Indian name from the swamp and creek in the area and perhaps from the old name of the St. Johns community.

A new town in a new era was free to develop without encumbrances. Perhaps the philosophy of the early residents is best expressed in a quote taken some years ago from an "old-timer" in the town:

> These people came here with the idea of making money. They were not bound by tradition nor awed by aristocracy. The place had no vested interests to defend the status quo, and no status quo to defend (Sharpe, 1958:868).

Fletcher Powell began a successful effort to attract outside investments in the new town. With a source of capital new businesses were established and a lumber industry begun which spawned subsidiary manufactures such as boxes, baskets, and other wood products. The area in and around Ahoskie filled with people who came to work in the mills and factories. They owned little or no property, thus making Ahoskie purely a product of the New South concept rather than a carry-over from the Old South. Partly for this reason Ahoskie was not retarded by traditions and memories of the old ways and soon outstripped its older rivals of Winton and Murfreesboro.

SUMMARY AND CONCLUSIONS

Although Ahoskie gave the southern tier preeminence in the economic revival of Hertford County, it can be misleading in the overall view. The county has remained predominately agricultural. Tobacco has again become a leading crop followed closely by the peanut industry. Corn and cotton also add significantly to the county's economy. While the lumber and manufacturing industries have made Ahoskie the largest town in Hertford County, they are comparatively small by industrial measurements and are not characteristic of the county as a whole. Outside of Ahoskie, the southern tier consists mostly of small, scattered farms, the only intrusion over the years being the introduction of modern conveniences.

In conclusion, the recorded history of the area emphasized in this report does not reveal significance beyond the local level. No major events occurred and no people of statewide significance have left reminders of their presence, excepting perhaps the William Mitchell House. Although it is not in the immediate vicinity of the bypass, the only possible place of historical interest is the community of St. Johns. If a Weyanoke Indian town called Athosky did exist there, it would be a welcomed addition to the knowledge of Indian culture in North Carolina.

CHAPTER 8.

Ahoskie Bypass Research Perspective

Mark A. Mathis

INTRODUCTION

The research objectives of the Ahoskie project were consistent with those identified in Chapter 2 for the statewide survey program. Six of the seven general problem domains discussed in that chapter were also defined for investigation during the survey, including:

(1) estimation of site densities;

(2) identification of site chronologies;

(3) analysis of site functions;

(4) analysis of settlement patterns;

(5) evaluation of site significance; and

(6) evaluation of survey methodologies.

Although data was also collected for ancillary studies (Problem Domain 7), no treatment of those studies will be provided in this volume. Furthermore, since the discussions in Chapter 2 of problem domains 2, 3, and 5 are sufficiently detailed and are generally applicable to the present study, additional comments are considered unnecessary here. Therefore, the following will deal only with the problems of estimating site densities, the analysis of settlement patterns in the Ahoskie project area, and the evaluation of survey methodology.

SITE DENSITIES

Site density estimation is usually a relatively simple process, provided the site data are identified with respect to the nature of the sample and the sample size and fraction. Since ecological stratification of the Ahoskie project corridor was rendered difficult to impossible by the relative lack of variability in either the soils, elevation, or other defining characteristics, the density estimates were calculated simplistically. Briefly, several estimates were to be calculated on the basis of the amount of surveyed area relative to the total project area and the number of sites recorded. Comparative estimates were derived according to the field conditions encountered and the distance to permanent water.

SETTLEMENT PATTERN ANALYSIS

In Chapter 2 a number of general site types were defined for the three basic prehistoric cultural periods of North Carolina. The site types have been proposed as gross analytical units representing the minimal component variability of aboriginal settlement systems. During the Ahoskie project, the general models incorporating these site types were used as a basis for the investigation of prehistoric uses of the local environment. In other words, the questions asked concerned the types of sites located in the project area and how they related to the settlement and subsistence systems operative in the past. The models (and site types) defined in Chapter 2 were used to frame and interpret the results of the survey. Prior to entering the field, however, several general predictions (hypotheses) were made regarding the types and distributions of sites expected in the project corridor. These hypotheses are summarized below for each of the major cultural periods.

Paleoindian

As noted in Chapter 6, the archaeological record of the Paleoindian period in the coastal plain of North Carolina is only incompletely understood. Utilization of the region is suggested, however, by the fluted point finds reported by Perkinson (1973). Furthermore, Dr. Joffre Coe has suggested that the coastal plain may eventually be found to have been an area of extensive Paleoindian activities, particularly in the areas inland from the tidewater region (personal communication; see also Williams and Stoltman 1965). The model presented here, however, tends to minimize the probability of intensive Paleoindian occupation in the coastal plain, except perhaps in those areas along or near the fall line.

Gardner's (1974a, 1974b) work in the mountain regions of Virginia has led to the proposition that an important variable in Paleoindian settlement patterning was the availability of chippable lithic raw materials. In essence, if the large and small game hunting subsistence activities were as important to the Paleoindian economies as is indicated in the archaeological record, and if stone was the primary raw material for hunting implement manufacture, then access to sources of stone was an important consideration in settlement location decisions. Since stone is transportable, however, it would be difficult to fully justify the suggestion that a stone-using economy must be confined to an area of naturally occurring lithic raw materials, particularly in light of our lack of information concerning the trade and exchange systems that may have been operating at the time.

The point to these statements is that much of the coastal plain of North Carolina is barren of naturally occurring chippable stone (e.g., quartz, chert, rhyolite). Secondary cobble deposits may be found eroding from some of the major stream beds but usually near the fall line. In other words, given our present knowledge of Paleoindian technology, long term occupation of much of the coastal plain would have required frequent movements into the western part of the region to procure necessary raw materials or the development of an exchange/trade system sufficient to meet the raw material needs of the inhabitants.

For the present it is assumed that both procurement mechanisms were employed by the Paleoindians of the coastal plain, though the possibility of established trade networks at this early time is not suggested without extreme caution. It is proposed however, that while evidence of Paleoindian activities in the Ahoskie area may be recorded, such activities were of a temporary or transient nature. Sites associated with the macroband aggregations (see Chapter 2) are not expected to occur in or around the bypass project area. Sites representing microband or family unit occupations of short duration may occur, however, as may a variety of specialized activity sites.

Two basic assumptions underly these predictions: (1) that the band organization of the Paleoindians was insufficiently complex to support a set of exchange networks for the continuous import of stone; and (2) that lithic raw material was a critical resource to the Paleoindian populations and therefore served to limit the duration of activities in areas lacking natural supplies.

In the Ahoskie corridor then, Paleoindian activities are expected to be manifested primarily as small lithic scatters. The possibility exists, however, that such sites may be encountered but not recognized due to a lack of diagnostic artifacts.

Archaic

As with other parts of the state, the occupation of the coastal plain appears to have increased during the Archaic period, the reason lying primarily with the broadened subsistence orientation, i.e., the technological capabilities to exploit a wider range of natural resources (see Chapter 6). In the Ahoskie Bypass area, the Archaic period occupations are suggested to have consisted primarily of small camps, established by the microband or family during one or more seasons of the subsistence year. Based on the models presented in Chapter 2 of this volume and by Phelps (1975d:42), the larger semipermanent macroband sites would be more evident further to the east and north, along the Chowan and Meherrin rivers, and to the southwest, along the Roanoke River.

Although stone continued to be an important raw material, it apparently became less critical in settlement decisions than during the Paleoindian period. An increased reliance on wild plant foodstuffs may have decreased the need for constant replenishing of the raw material stores. Caching of raw materials at base camps or selected locations around the settlement area could also reduce the settlement limitations imposed by lithic resource scarcity (c.f. Mathis 1977c). In addition, research in other regions has shown that trade and exchange systems expanded considerably during the Archaic period (Gagliano 1967; Winters 1969).

Woodland

The adoption of an agricultural (or horticultural) subsistence base probably had a significant impact on settlement patterns in the coastal plain. Based on Phelps' (1975d) model, the area of heaviest Woodland period habitation would have been along the Chowan, Meherrin, and Roanoke rivers, while the Ahoskie Swamp area would have served as an inland hunting and gathering zone. Woodland occupations in the Ahoskie area then would be expected to manifest evidence of small lithic scatters indicative of temporary hunting or other exploitative activities. Ceramics, the primary diagnostic artifact of the period, would not be expected at these sites if the manufacture and use thereof is associated solely with permanent habitation sites. The sites expected in the project zone would be expected to fall within the specialized activity site type range. As will be suggested below, however, the area may have been used by small groups of horticulturalists on a seasonal basis. That is, small farmsteads may have been established along the margins of Ahoskie Swamp during the growing season.

Early Historic Aboriginal

The only concerted effort to investigate early historic Amerind occupations in the general area of the project was by Binford (1964). Some of the problems with his study have been noted in Chapter 6. The investigation, however, suggested that the Wyanoake once occupied the area around St. Johns, immediately west of Ahoskie. Horticulture and hunting and gathering were engaged in by the Wyanoake. The proximity of the project area would therefore indicate a high probability of sites being encountered which may be associated with this group, whether as specialized activity sites or small farmsteads.

Historic

The information provided in Chapter 7 reveals that the Ahoskie area was not a center of particularly heavy historic activity until the recent century. This can be partially attributed to the relative lack of suitable agricultural lands. The distance from the major waterways would also have reduced the desirability of the region during the earlier colonial period. The primary agricultural products were better suited to lands along the larger rivers, leaving the Ahoskie area as a hinterland hunting and forest product region. The latter portions of the historic period, however, did see attempts to establish an intensive agricultural base in the area, and with a variety of modern drainage and fertilizing practices has been largely successful. Based on this, the primary historic activities in the project area would be evidenced as small farmsteads thinly scattered along the corridor.

EVALUATION OF SURVEY METHODOLOGY

In preparing for the Ahoskie fieldwork it was noted that roughly 50% of the project area was forested. Since it is not considered adequate to ignore areas of poor surface visibility, as was frequently done in the past, some manner of subsurface examination was necessary to determine the presence and/or absence of significant cultural deposits. Subsurface survey methods have been the subject of considerable investigation in recent years and warrant continued examination under varied field conditions. The methods employed during the Ahoskie project (see Chapter 9) were evaluated following completion of the survey and are provided in Chapter 10.

CHAPTER 9.

Ahoskie Bypass Survey Design

Mark A. Mathis

INTRODUCTION

The methods and techniques employed during the Ahoskie project were designed to satisfy both the DOT-DOCR memorandum of agreement and the objectives of the statewide survey. Due to the field conditions at the time of the survey, the methods were varied as deemed appropriate for maximal data recovery. The problems and limitations encountered during the survey and the field techniques employed are discussed below.

ACCESSIBILITY

Although right-of-way acquisition negotiations were still underway at the time of the survey, landowner access was assured by DOT. A few landowners inquired about the nature of the activities, but none denied access to their properties. Furthermore, since paved or dirt (farm) roads allowed relatively easy access to most of the project zones, and DOT survey stakes had been set in recent months, there was little problem in finding and following the bypass corridor. In only a few instances was the survey crew forced to rely on a compass reading to confirm survey bearings.

While the above posed no serious problems to the survey, examination of some parts of the project area was severely hampered by the seasonally dense vegetation and residential or commercial land use. As shown in Table 9.1, approximately 121 acres (24% of the project area) were not accessible due to dense forest growth. This includes approximately 84 acres of poorly drained swamp-like vegetation and 10 acres of dense secondary forest (predominately greenbriar and scrub pine). After several attempts to penetrate these areas proved overly time consuming, archaeologically unproductive, and potentially hazardous to crew health and sanity, the remaining portions were declared "inaccessible" to the survey. An additional land area of approximately 63 acres was not examined closely because of residential use (i.e., manicured lawns, occupied structures) and highway pavement.

Field Condition	Approximate Total Area[1] (acres)	% of Total Project Area	Approximate Area Surveyed (acres)	% of Total Project	Range of Estimated Surface Visibility[2]
Forest	275	55%	154	31%	0-10%
Cultivated Fields	162	32%	162	32%	5-100%
Tobacco[3]	---	---	---	---	75-100%
Soybean[4]	---	---	---	---	5-25%
Peanuts[4]	---	---	---	---	5-25%
Corn[4]	---	---	---	---	40-60%
Corn[5]	---	---	---	---	5-25%
Developed	63	13%	---	---	0-10%
TOTAL	500	100%	316	63%	---

[1]Area figures not available for specific crops

[2]% of 1 square meter ground surface visible to standing surveyor

[3]Harvested (stalk only)

[4]Mature crop

[5]Recently harvested and plowed

Table 9.1. Field conditions, survey coverage, and surface visibility estimates during the Ahoskie Bypass survey.

VISIBILITY

Due to the timing of the fieldwork--late summer--ground surface visibility was frequently limited by both natural and agricultural vegetation. Referring again to Table 9.1, a general breakdown of estimated visibility ranges is provided for some of the more common field conditions. These figures are based on field observation approximations of the average amount of ground surface visible per square meter.

SURVEY COVERAGE

As suggested in Chapter 2, the probability of finding archaeological sites during a survey (assuming sites are present) is dependent upon the intensity of surface or subsurface examination. Survey intensity, as used here, relates to the combination of several factors, including amount of area actually covered, the field conditions encountered, the methods employed, and the level of observational measurement (i.e., site definition). The Ahoskie project survey area and field conditions have been noted above; the site definitions used for the project are discussed below (see also Chapter 2). The survey methods used during the project varied according to the different field conditions but are generally referred to as the "pedestrian tactic" (Mueller 1974:10). This simply means that the survey was conducted by walking over the project area in search of evidence of past cultural activities.

Three variants of the "pedestrian tactic" were employed. For the present these will be termed the *crop row*, *subsurface forest*, and *exposed surface walkover* survey methods. The general areas covered by each are shown in Figure 9.1.

Crop Row Survey: as shown in Table 9.1, approximately 32% (or 162 acres) of the project area was in cultivated fields at the time of the survey, most of which consisted of parallel crop rows spaced slightly over 1 meter apart. These fields were surveyed by walking the rows at estimated intervals of 25 meters, which averaged out to about every twentieth row. Since surface visibility varied with the type of crop under cultivation, the survey interval was reduced as necessary to provide comparable coverage for different fields.

Subsurface Forest Survey: approximately 55% (or 275 acres) of the total project area existed in forest or heavy vegetation at the time of the survey. Of this area, 154 acres were surveyed by walking a zig-zag path along the corridor and placing "shovel tests" at intervals of approximately 25 meters. Shovel tests consisted of roughly circular excavations of from 50 to 75 centimeters in diameter through the topsoil and into the subsoil (which averaged around 35 centimeters below the surface). The excavated soil was then hand or trowel sifted for cultural materials. Figure 9.2 provides an idealized illustration of the surveying design. In areas of potentially higher site probability, such as along the Knee Branch and Ahoskie Swamp terraces, the shovel testing interval was decreased to provide more intensive survey coverage. In addition to the subsurface tests, all exposed surfaces, such as fallen tree spoil and animal burrows, were closely inspected,

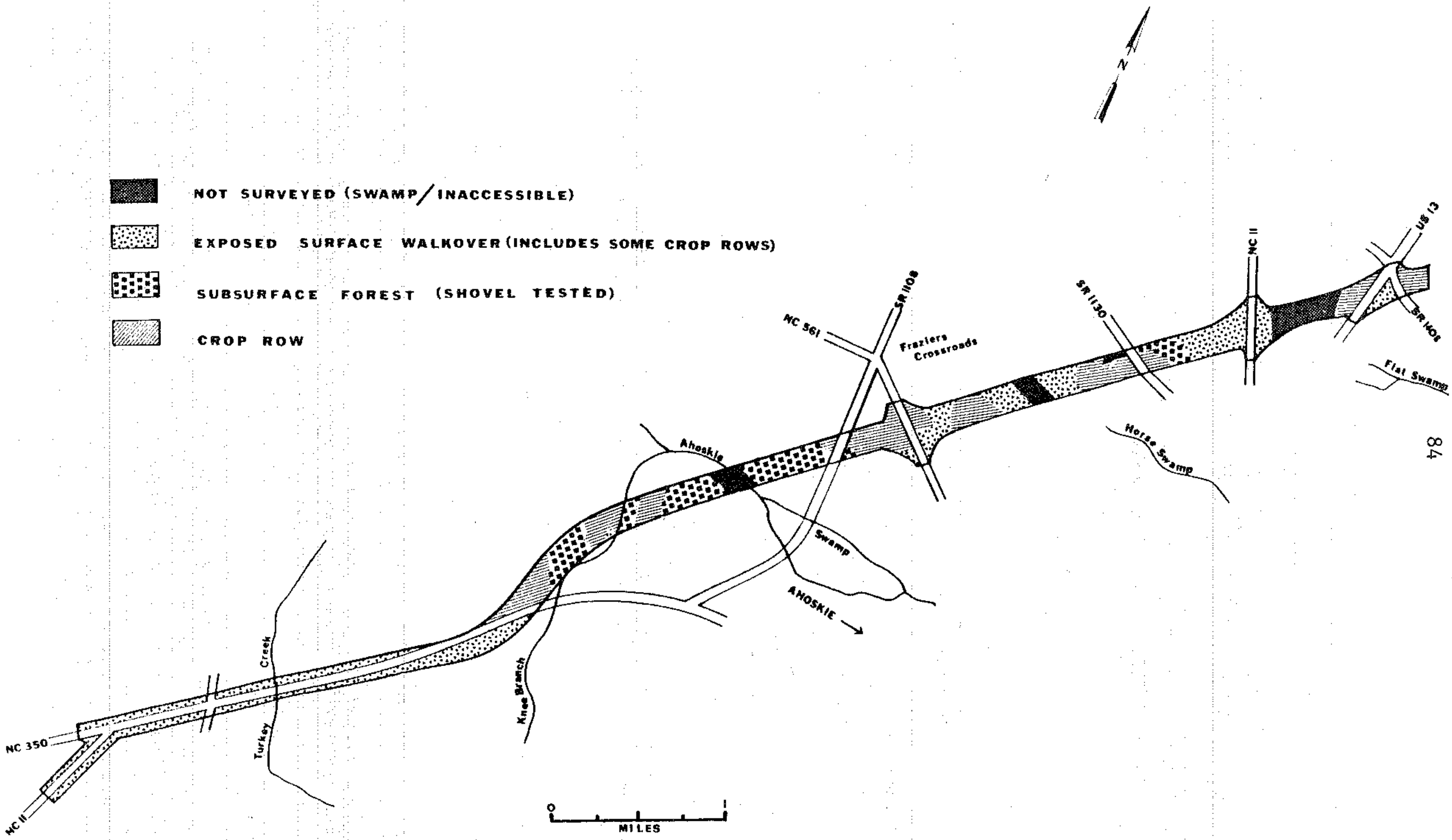

Figure 9.1. Survey coverage map for the Ahoskie Bypass.

Exposed Surface Walkover: this method was used in all forested areas but was also the primary survey technique used along the existing highway segment (from the junction of N.C. 350 and N.C. 11 to Knee Branch). A walkover of the existing highway right-of-way was deemed sufficient since the paralleling culvert profile afforded high surface visibility, particularly when flanked by cultivated fields (in which the crop row technique was usually employed). Although much of the area flanking the present right-of-way had been previously disturbed, the walkover examination was conducted to provide information regarding both the locations of sites (disturbed or not) and the factors contributing to their destruction or preservation.

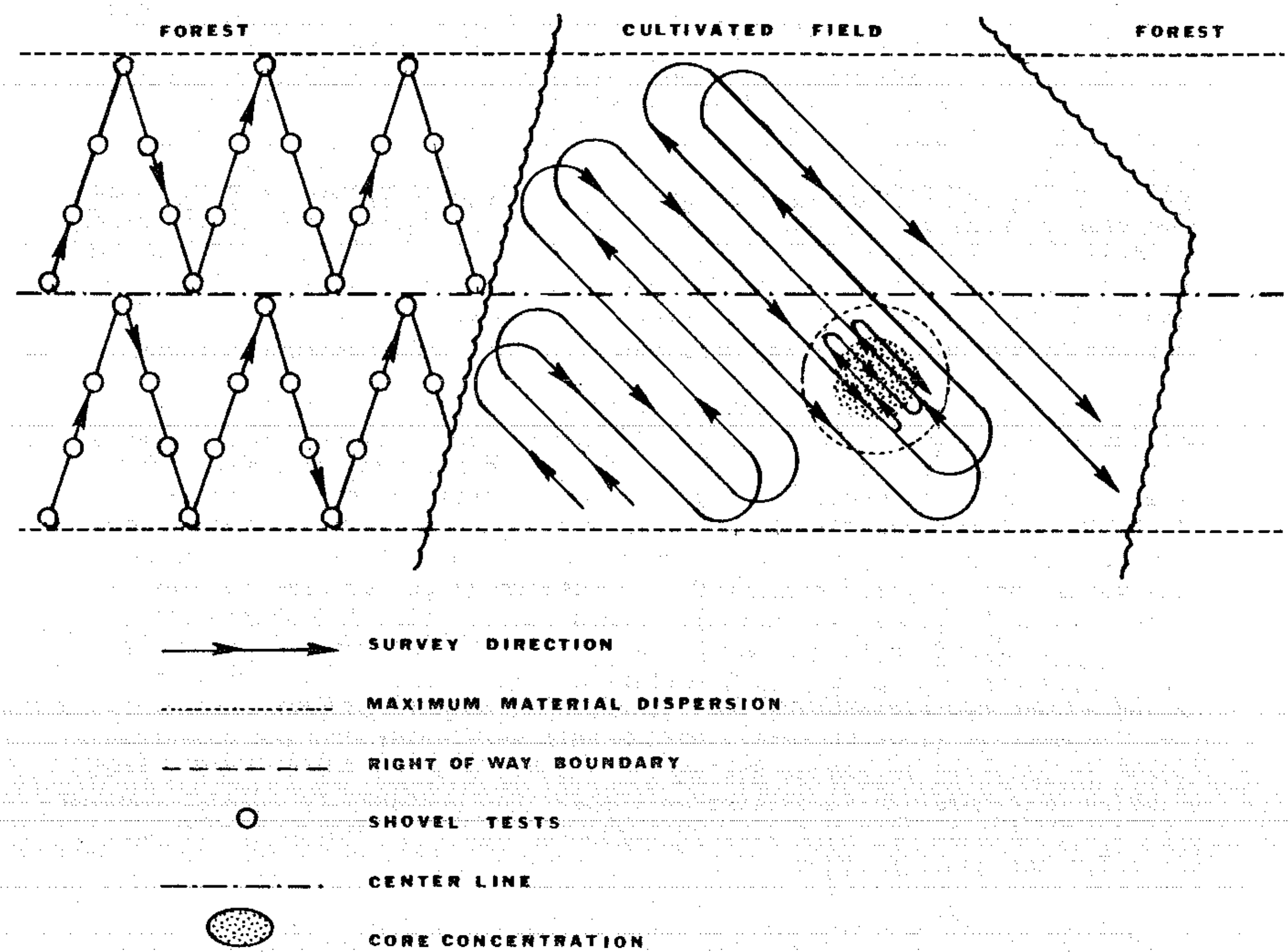

Figure 9.2. Idealized diagram of survey and site collection methods.

SITE DEFINITION

During the Ahoskie survey a multifaceted approach was taken with regard to the definition of a site. The minimal definition used for prehistoric sites was any spatial loci exhibiting evidence of past human behavior (cf. Plog and Hill 1971:8). A single flake or potsherd was therefore considered sufficient for designation as an archaeological site. Historic sites, on the other hand, were defined by the presence of generalized clusters of artifacts or features, rather than isolated finds. Single historic artifacts, however, were noted during the fieldwork for later reference.

The distinction between the prehistoric and historic site definitions was predicated on the understanding that while specific historic behavior (i.e., habitation, land use) is poorly known within the project area (see Chapters 6 and 7), use of the region for lumbering and agriculture has occurred for well over one and a half centuries. It is therefore expected that a thin scattering of historic materials would be found throughout the project area. Identification of each isolated artifact as a site would have resulted in perhaps a hundred or more historic sites having been recorded in the relatively small project area. An alternative to this would have been a "nonsite" approach (c.f. Thomas 1975), whereby the distributions and densities of historic artifact categories could be examined without regard to spatially restricted or delimited artifact clustering. Given the nature of the Ahoskie project, however, such an approach was not considered feasible in terms of potential information return and cost effectiveness.

Although the prehistoric site definition was sensitive to isolated artifacts, a problem was encountered in attempting to establish parameters or cut off points between isolated artifacts and artifact clusters. For example, in the area where the bypass corridor crosses Knee Branch (see Figure 9.1) aboriginal materials were observed for several hundred meters along the stream terraces. While concentrations of materials were usually observable, some "sites" consisted of artifacts dispersed over an area of as much as 30 hectares (7.5 acres), with surface material densities of as little as .002 artifacts per square meter. Furthermore, the distance between artifacts was as much as 25 meters or more. The problem then, was defining when one artifact becomes spatially unassociated with another, i.e., becomes an isolated find. Though this particular problem presented itself in only two instances during the Ahoskie project (Hf46, Hf47), both of which were observed in cultivated fields, the probability of encountering similar situations in other surveys suggests that the problem should be given further consideration.

Another (similar) problem was encountered in the same general area of the project, this being the delineation of distinct clusters of materials. As noted above, this area of the corridor and immediate vicinity was found to contain a high density of prehistoric materials scattered along the terraces of Knee Branch (as it nears its confluence with Ahoskie Swamp). Three sites (Hf53, Hf54, H568), in particular, were identified in this area on the basis of general concentrations of materials, rather than discrete clusters. Precise boundaries were difficult or impossible to establish between the sites, as a sparse scattering of materials was observed between the areas of material concentration. This approach to site definition was an appropriate action, since the artifact collections revealed differences in both temporally diagnostic and functional categories of artifacts, suggesting that different occupations and activities were represented at each site. By defining sites in this manner it is assumed that the dispersion of materials, such that one "site" grades into another, is a result of at least two factors: (1) the activities undertaken at a site during an occupation were not necessarily confined to a well bounded area (i.e., refuse was dropped both in and around the site), and (2) lateral displacement of materials has occurred through the years as a result of historic clearing and plowing activities (c.f. Roper 1976). Although Roper's study suggests that lateral displacement due to plowing may be less significant than once thought, the plowing history in northeastern North Carolina spans a considerably longer period of time than that in Illinois, the area used for the displacement study. For the present, it is assumed that some artifact displacement has occurred due to plowing in the Ahoskie area, resulting in a dispersion of materials from original proveniences.

Historic structures and features were designated as sites when they were determined to be in *archaeological context* (Schiffer 1976:28). That is, if the structure or feature was no longer used, or was no longer in a *systemic context* (Schiffer 1976:28), it was declared a site. A slight deviation from this was in the case of cemeteries which had not yet had the burials transferred to another plot (all were to be moved eventually). A temporal cut off point for historic sites was set at 1930, though some of the structures may postdate that time by a slight margin.

DATA COLLECTION

A principal concern in archaeological survey is the type, quantity, and quality of data collected at each newly recorded site. In dealing with sites destined to be destroyed, such as those in the Ahoskie Bypass corridor, this concern takes on an even greater significance. The philosophy adopted by the Archaeology Branch in this regard is that it is the obligation of the professional archaeologist to record as fully as possible all potentially useful information about a site, not simply that which addresses the principal investigator's major research interests.

Given the variety of data needs identified by the archaeological profession, the prehistoric site form developed by the Archaeology Branch contains a wide range of data class requests. Furthermore, for ease of data storage, retrieval, and manipulation, the form has been designed for direct key entry onto computer cards or tape (see Chapter 3 and Appendix J).

In addition to the newly designed form for recording the sites, U.S.G.S. quadrangle maps (7.5 and 15 minute scales), bypass corridor aerial photographs (1:200 approximate scale), and construction blueprints (1:100

scale) were used during the survey. Information on soils associations and series were acquired directly from the district U.S. Soil Conservation Service office in Winton.

When cultural materials were observed during the survey, an attempt was made to define the limits of the material dispersion and to determine whether there was a core or concentration area within the overall distribution. All site dimensions and environmental data were recorded in a log book for later transferal onto the site form. In addition to the site form information, a collection of materials was made at each site (with the exception of Hf46 and Hf47). Two basic collection strategies were employed during the survey: controlled and select.

Controlled Collections: in order to establish a quantitative data base by which inter- and intra-site functional variability could be examined, sites were subjected to either total or sample collections. Where total numbers of artifacts were relatively small or were spatially concentrated, all observed materials were collected. In the few instances where the numbers of materials were relatively large or were widely dispersed, only a sample was collected. For many of the sampled sites (all of which occurred in cultivated fields), this involved approximately a 25% collection in that every fourth row of the field was intensively collected. In essence then, a series of swaths, approximately 1 meter wide and 4 meters apart, were collected across the entire site (see Figure 9.2). If a core area was defined for a site, however, only that area received a controlled collection, with the dimensions of the collection area and estimated sample fraction being recorded to maintain quantitative controls.

The controlled collection strategy used during the present investigation was considered more appropriate for studies of the total inter-site artifact variability than the traditional "dog-leash" method frequently used in the Southeast (c.f., Binford 1964). While both methods are designed to provide a statistically defined sample of the materials at a site, the method employed here, loosely referred to here as the "swath" or transect method, is felt to provide a more representative sample of the full range of artifacts at the site. Representative, as used in this sense, refers to that found on the surface of a site; whether or not a sample is representative of the subsurface deposits remains a looming question in archaeological research.

Select Collections: in site areas not covered by controlled collections, a select or "grab" sample collection was made. These collections focused primarily on temporally diagnostic artifacts but were also used to recover unusual or anomalous artifacts, function-specific artifacts not observed in the controlled collection, and a sample of the variety of lithic raw materials present at the site.

Ahoskie Bypass Survey Results and Recommendations

CHAPTER 10.

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INTRODUCTION

Upon completing the Ahoskie fieldwork, all collected materials were taken to the Archaeology Branch laboratories for washing, cataloguing, and analysis. After washing, each artifact was accessioned according to site provenience and collection strategy. This number was written directly on the artifact in indelible black ink and coated with clear fingernail polish to prevent obliteration by handling during the analysis. The prehistoric materials were then sorted into a series of analytical categories. These categories were defined on the basis of probable artifact functions, i.e., the use to which the artifact was put. The artifact category definitions used during the analysis are provided in Appendix I. Historic materials were identified according to specific type when possible and the numbers of each type recorded. All of the materials collected during the survey will be curated by the Archaeology Branch, where they will remain available for subsequent analyses.

A total of 38 sites were recorded during the survey, 28 of which will be directly affected by the Ahoskie Bypass construction activities. The remaining 10 sites were recorded in the process of traveling to and from the survey corridor; no direct project impact is anticipated at these sites. Of the total recorded sites, 10 (or 26%) had only prehistoric components, 13 (34%) had both prehistoric and historic components, and 15 (40%) had only historic components. Table 10.1 provides a listing of the observed condition and general time periods of occupation identified for each site. General site locations are shown in Figure 10.1. Since none of the sites recorded are considered significant with respect to the National Register of Historic Places (see discussion below), a narrative description of each site is considered unnecessary. Instead, all cultural and environmental information collected at the sites is provided in Appendix C in tabular form for interested researchers.

Site #	Cultural Components	Present Condition
31Hf47	Unidentified prehistoric	Cultivated field
31Hf49	Middle Archaic	"
	Historic (Q)	
31Hf50	Early-Middle Woodland	"
	Late Woodland	
	Historic (O,P)	
31Hf52	Middle Archaic	"
	Historic (P)	
31Hf53	Middle Archaic	"
	Early-Middle Woodland	
	Historic (P)	
31Hf54	Middle Archaic	"
	Late Archaic	
	Early-Middle Woodland	
	Late Woodland	
	Historic (O)	
31Hf58	Unidentified prehistoric (IF)	"
31Hf59	Early-Middle Woodland	"
31Hf60	Historic (P)	"
	Woodland (IF)	
31Hf61	Early-Middle Woodland	"
31Hf62	Historic (P)	Removed cemetery
	Early-Middle Woodland	
31Hf63	Early-Middle Woodland	
	Historic (R)	Powerline road, forest
31Hf64	Unidentified prehistoric (IF)	Cultivated field
31Hf65	Middle Archaic	"
	Late Archaic	
	Early-Middle Woodland	
	Historic (S)	
31Hf67	Unidentified prehistoric (IF)	Tree farm
AB-4	Historic (R1)	Structure foundation
AB-6	Historic (R1)	Deteriorating structure
AB-7	Historic (R1)	"
AB-9	Historic (R1)	"
AB-11	Historic (R1)	Structure foundation
AB-12	Historic (R1)	Deteriorating structure
AB-13	Historic (Q,R)	Removed cemetery
AB-14	Historic (Q,R)	"
AB-15	Historic (S)	"
AB-22	Historic (R1)	Deteriorating structure
AB-27	Historic (S)	Removed cemetery
AB-35	Historic (R1)	Sawmill site (overgrown)
AB-39	Historic (Q)	Grist mill site (overgrown)

(See Codes under Table 10.1b)

Table 10.1a. Cultural components and condition of sites in the Ahoskie Bypass right-of-way.

Site #	Cultural Components	Present Condition
31Hf46	Unidentified prehistoric Historic (S)	Cultivated field
31Hf48	Early Archaic Historic (R)	Fire tower site
31Hf51	Middle Archaic Early-Middle Woodland	Cultivated field
31Hf55	Unidentified prehistoric	"
31Hf56	Early-Middle Woodland Late Woodland	"
31Hf57	Early-Middle Woodland	"
31Hf66	Late Archaic (IF)	"
31Hf68	Early Archaic Late Archaic Early-Middle Woodland Late Woodland Historic (O,P)	"
AB-21	Historic (R1)	Deteriorating structure
AB-23	Historic (R1)	Structure foundation

Table Codes

O-1585-1776
P-1777-1861
Q-1862-1900
R-1900-Present
R1-circa 1930s
S-Undetermined Historic Period
IF-Isolated Find
AB-Ahoskie Bypass project site number
Hf-Hertford County, state site abbreviation

Table 10.1b. Cultural components and condition of sites *not* in the Ahoskie Bypass right-of-way.

The remainder of this chapter is divided into four sections. The first provides a general discussion of the prehistoric site survey results as they relate to the problem domains and models discussed in Chapters 2 and 8. A summary of the historic archaeological sites is then presented (by John Clauser), followed by a synopsis of the architectural analysis (by Michael Southern). The final section attempts to tie these chapters together with a series of summary statements, post fieldwork and analysis observations, and recommendations for future archaeological investigations in the Ahoskie area.

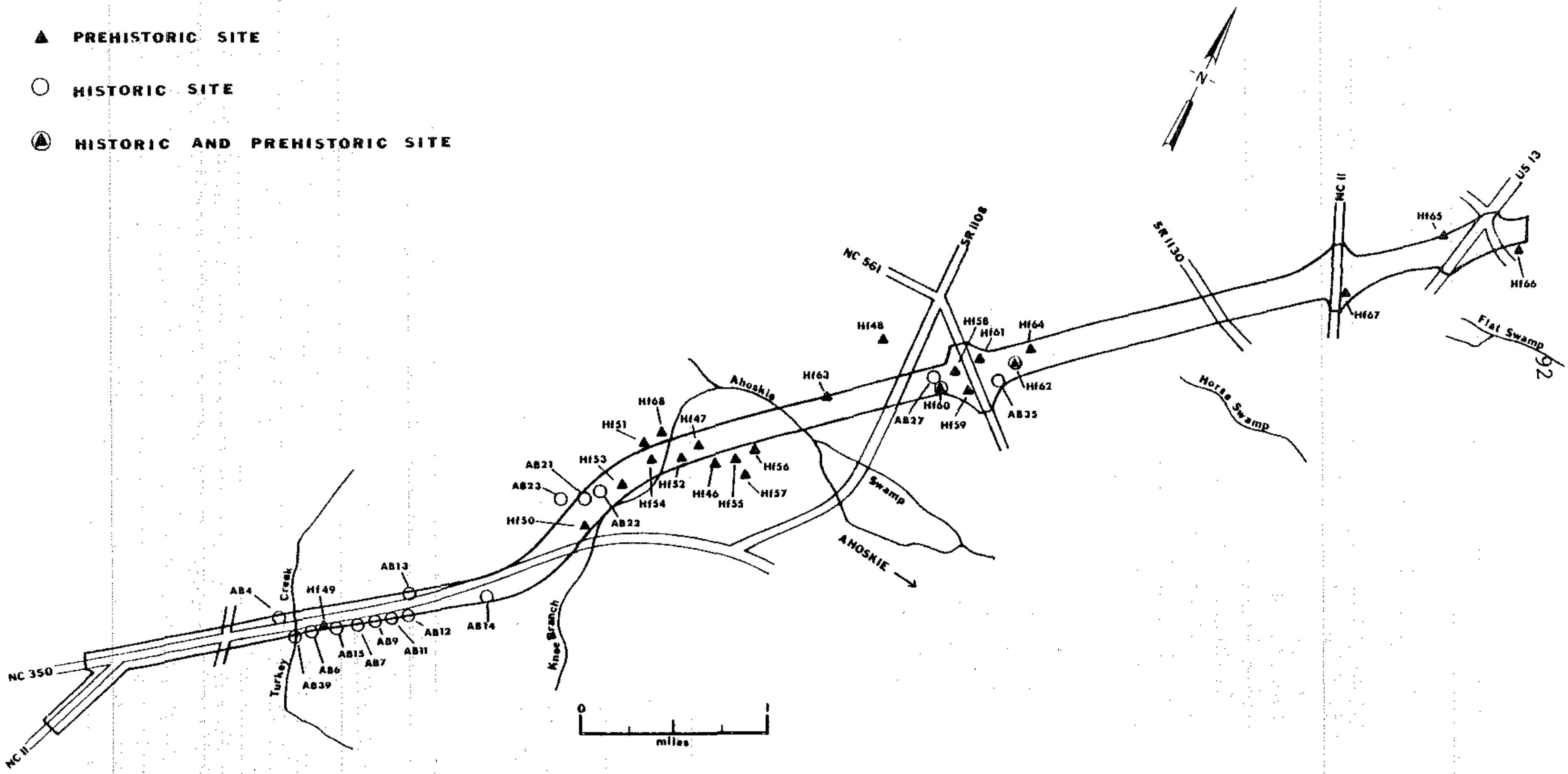

Figure 10.1. General locations of sites recorded during the Ahoskie Bypass Survey.

PREHISTORIC SITE ANALYSIS

Site Density Estimation

In calculating site densities for the Ahoskie Bypass project area, only those sites recorded within the corridor were used (n=15 sites). The methods employed in the calculation process were quite simple, i.e., dividing the number of sites found under differing field conditions by the proportion of the total project area surveyed under those conditions. The effectiveness of the survey was then calculated for each of the estimates based on the estimated number of sites within the right-of-way versus the number actually recorded. Table 10.2 provides a summary of the number, density, and survey effectiveness calculations. The total project area is estimated at approximately 500 acres (200 hectares). A discussion of the density estimates derived for the project area is provided below.

	Area Surveyed (in acres) (% of Total Project)	# of Sites Recorded	Estimated # of Sites in ROW	Estimated Site Density (sites/mi^2)	Survey Effectiveness
Estimate 1	316 (63%)	15	23.7	30.9	63%
Estimate 2	162 (32%)	13	40.1	51.4	37%
Estimate 3					
A	85 (17%)	6	7.7	45.2	77%
B	231 (46%)	9	15.2	24.9	57%
A+B	316 (63%)	15	22.9	35.1	65%
Estimate 4					
A	40 (8%)	6	16.3	96.0	37%
B	122 (24%)	7	22.4	37.6	40%
A+B	162 (32%)	13	38.7	47.6	39%

Table 10.2. Prehistoric site number, density, and survey effectiveness estimates for the Ahoskie Bypass project (see text for discussion of estimate characteristics).

Estimate 1. This estimate was based solely on the total number of sites recorded in the right-of-way (ROW) and the actual area surveyed. Since 15 sites were found in 63% (316 acres or 126.4 hectares) of the project area, approximately 9 sites are estimated to occur in the unsurveyed portion of the ROW, for a total of about 24 sites. This estimate, however, assumes a homogeneous distribution of sites along the corridor and a consistently effective survey return for the areas actually covered, including both the cultivated fields and the forested areas.

Estimate 2. In order to filter out the possibility of missed sites due to dense ground cover, a second estimate was calculated using only the cultivated field (crop row) survey data. These areas (totaling 162 acres or 64.8 hectares) represent approximately 32% of the total project. Since 13 sites were found in these areas, a total of approximately 40 sites are estimated to occur in the ROW, meaning that 26 of the estimated 28 sites in the remainder of the ROW were missed during the survey. As with Estimate 1, however, this figure also assumes a homogeneous distribution of sites along the ROW.

Estimate 3. In an attempt to at least minimally reduce the potential estimate error caused by the assumption of distributional homogeneity, the ROW was divided into two units: (A) those portions of the ROW within 1,000 feet (303 meters) of permanent water (i.e., Ahoskie Creek, Knee Branch, Turkey Creek) and (B) those areas greater than 1,000 feet from permanent water. Respectively, these areas represent approximately 22% (110 acres or 44 hectares) and 78% (390 acres or 156 hectares) of the total project area. Eighty-five acres of A and 231 acres of B were actually surveyed, with 6 sites recorded in A and 9 sites in B. Based on these figures, it was estimated that a total of about 8 sites should have been found within 1,000 feet of the permanent streams and 15 sites in the remainder of the ROW. As in Estimate 1, however, the areas actually surveyed included both cultivated fields and forested areas. These estimates, therefore, assume comparable data recovery under both survey conditions.

Estimate 4. Dividing the ROW into the same units as used in Estimate 3, only the crop row survey data was used. Therefore, only 40 acres of A and 122 acres of B were used in the calculations. A total of 6 and 7 sites respectively were recorded in these areas. Thus, approximately 17 sites are predicted to occur within the A areas and 22 in the B areas. These figures are considered more accurate than the preceding, since better control is had on both the survey effectiveness and generalized site distribution factory.

The estimates presented above are obviously rather simplistically derived. Although Estimate 4 is considered the more accurate with regard to the numbers of prehistoric sites within the ROW, the sites per square mile figures must be taken only as preliminary estimates for the general project area. Several factors, which were not controlled for in the estimates, may serve to increase or decrease the projected site numbers and densities. The most obvious of these is the fact that the bulk of the area within 1,000 feet of water is found along Knee Branch as it nears its confluence with Ahoskie Creek. Forty percent (6) of the sites recorded in the ROW were found in this area, indicating the favorable location of the confluence of the two streams. That the Ahoskie Bypass ROW crossed this particular location serves to illustrate the points made earlier regarding density estimates derived from highway survey data. The density estimates for the A areas (within 1,000 feet of water) are therefore to be considered applicable only to comparable confluence locations and not to all permanent stream crossings. The fact that only one small site (31Hf49) was found at a nonconfluence stream crossing tends (though with only limited power) to support this. Six additional sites were recorded in the area of the confluence but were outside of the ROW. Survey coverage figures were not recorded for these sites, since they were found in transit to or from the ROW. The proximity of these sites, however, in conjunction with those in the ROW, further illustrates the particularly favorable nature of the location near the Knee Branch-Ahoskie Creek confluence. Further discussion of this and other problems, particularly with regard to survey effectiveness, are presented below.

Based on the foregoing, the site densities in the general area of the project can be expected to range from as low as 25 sites/mi^2 in areas greater than 1,000 feet from permanent water sources, to as high as 96 sites/mi^2 at stream confluences. The number of sites expected within the ROW of the Ahoskie Bypass range from a low of 23 to a high of 41. At least 8, and as many as 25 prehistoric archaeological sites, therefore, went undetected by the survey team, resulting in an overall survey effectiveness of from around 33% to 65%.

Site Occupation Chronologies

As shown in Tables 10.1a and 10.1b, prehistoric occupation of the Ahoskie area has occurred since at least early Archaic times. Based on the presence of diagnostic artifacts, the number of occupational components increased from the Archaic to the Woodland periods. Six of the 23 recorded sites could not be placed in time due to a lack of diagnostic artifacts.

A total of 12 Archaic period components were identified, including 2 early, 6 middle, and 4 late period components. The early Archaic components were identified by the occurrence of 2 Kirk corner-notched point types, 1 of which, however, appears to be a transitional type between the earlier Palmer and later Kirk morphological types (Joffre Coe, personal communication) (Figure 10.2a). The middle Archaic period components were defined by the presence of 1 Morrow Mountain I projectile point (Figure 10.2b), 5 Morrow Mountain II points (Figure 10.2c), 2 Guilford points (Figure 10.2d), and 2 Halifax points (Figure 10.2e). The late Archaic was identified by 2 Savannah River stemmed projectile points (Figure 10.2f). Based on this, the most intensive use of the area during the Archaic occurred during the middle Archaic and, more specifically, during the Morrow Mountain phase.

Woodland period occupations were identified almost exclusively by the presence of ceramics. Subperiod component identifications were made on a

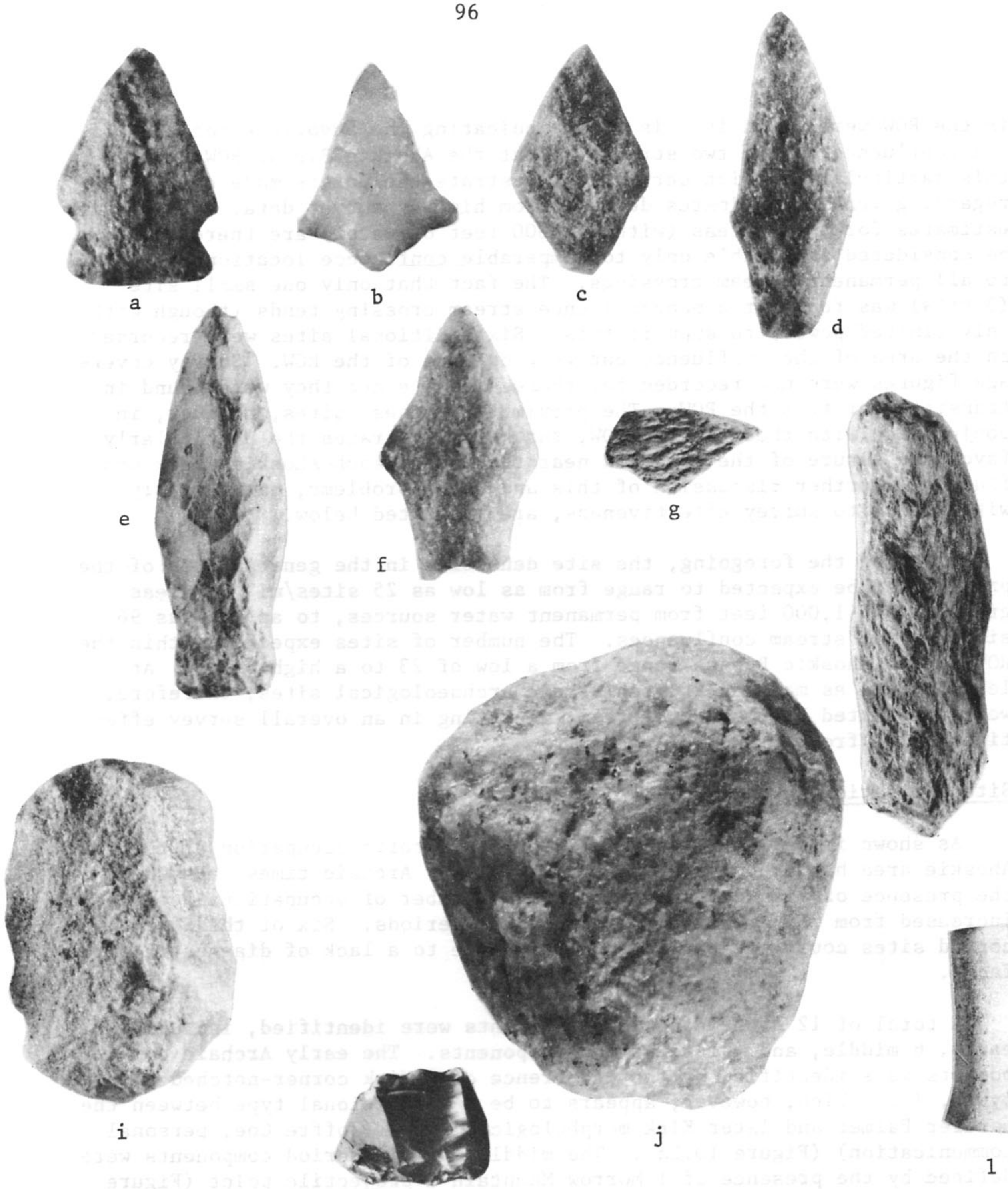

Figure 10.2. Examples of artifacts from the Ahoskie Bypass project.

tentative basis, since most of the recovered potsherds were rather small and severely eroded.

Eleven early-to-middle Woodland components were identified by the presence of cordmarked or residual (i.e., eroded), fine sand-tempered sherds (Figure 10.2g). Two late Woodland components were defined by the presence of cordmarked crushed quartz and grit tempered sherds. One of the late Woodland components was also identified by a small triangular Gaston-type point (Figure 10.2g). Two sites were placed in the general Woodland period, as indicated by the presence of a single potsherd at each, though neither was identifiable with respect to a specific subperiod.

In summary, there appears to have been two general periods of time during which the Ahoskie area was particularly well used by aboriginal populations--during the middle Archaic and again during early to middle Woodland times. The obvious question at this point, assuming the chronological placement of the recorded sites is reasonable, is why there was an apparent reduction in use of the area during the late Archaic and then again in the late Woodland? This matter will receive further discussion below.

Site Functions

Determinations of site function were based primarily on the analysis of artifact variability. Site size was also considered but was found to vary independently of artifact variability. Of the 15 sites recorded in the ROW, 7 produced less than 10 artifacts, including 4 isolated finds. The general categories and artifact counts for each site are provided in Appendix F.

No permanent or long term habitation sites were identified during the survey. A few sites produced surface materials suggestive of multiple activities (e.g. Hf54, Hf63, Hf53), but the presence of more than one identifiable cultural component at those sites injects a measure of doubt with regard to the temporal associations of the activities. In other words, those sites manifesting the broadest ranges of artifact types also yielded materials of two or more identifiable occupations. All of the sites recorded during the survey, therefore, can probably be classified as specialized activity loci. However, seven sites yielded two or more potsherds, raising the question of whether ceramics are permanent settlement-only artifacts or were also transported during various exploitative tasks away from the base. Woodall (1978) has recently posited that in the piedmont these small ceramic sites may be seasonal camps, established on a short term basis by the Woodland peoples, possibly during hunting and/or gathering expeditions. These sites, therefore, might correspond with the microband base campsite type discussed in Chapter 2 of this report. Since the area along the margins of Ahoskie Swamp, and particularly in the vicinity of the Ahoskie Creek-Knee Branch confluence, were probably high yield locations for wild plants and animals, it is quite reasonable to assume that small Woodland-period groups--carrying ceramic vessels--established temporary hunting and gathering camps in the area. Although the ceramic sites in the Ahoskie Bypass ROW could represent farmsteads once surrounded by small slash and burn type croplands, the generally narrow range and number of other artifacts does not support the hypothesis.

Table 10.3 provides a listing of the recorded sites by the proposed functional assignments. The first column consists of those sites which are considered to have been created in the process of undertaking a specialized activity. The second column consists of those sites which, by virtue of the artifact numbers and variability, *may* have functioned as temporary microband base camps. It should be noted, however, that the temporary base campsites relate to those containing Woodland components (and ceramic artifacts). While the Archaic components at those sites may also have been base camps, the mixing of artifacts on the surface precludes distinction. The sites identified as specialized activity loci, therefore, are simply those suggested to have served no other function at any point in time.

Specialized Activity	Temporary Microband Base Camps
Hf-46*	Hf-50
Hf-47	Hf-51*
Hf-48*	Hf-53
Hf-49	Hf-54
Hf-52	Hf-56*
Hf-55*	Hf-57*
Hf-58	Hf-63
Hf-59	Hf-65
Hf-60	Hf-68*
Hf-61	
Hf-62	
Hf-64	
Hf-66*	
Hf-67	

*Not in ROW

Table 10.3. Functional assignments of prehistoric sites recorded during the Ahoskie Bypass survey.

Settlement Patterns

Paleoindian. That no identifiable Paleoindian components were recorded during the survey suggests that (1) the area was not suited to the Paleoindian exploitative system and hence not used sufficiently to leave behind easily observed traces of their material culture; (2) that the natural formation processes (cf. Schiffer 1976) in the area have concealed or obliterated all traces of deposited material culture; and/or (3) the highway corridor simply missed all Paleoindian sites. Since there is little information upon which to base an assessment of either possibility, the question must presently go unanswered. The relative lack of soil deposition in the area since the late Pleistocene, however, suggests that if Paleoindian occupation had been frequent, evidence of such would likely have been observed during the survey. A fourth possible explanation, however, is that the survey simply was not sufficiently intensive to detect Paleoindian sites.

Archaic. Based on the relative occurrence of diagnostic artifacts, utilization of the Ahoskie Bypass area during the Archaic period reached a zenith with the middle Archaic Morrow Mountain phase. As expected, the early Archaic was represented at relatively few sites (n=2); less expected was the decrease in frequency of identifiable late Archaic components (n=4 sites). The high frequency of Morrow Mountain components, however, is not unusual to the coastal plain; David Phelps (personal communication) has also noted the relatively greater occurrence of the Morrow Mountain phase materials over other Archaic period phases. In addition, it has been observed that the late Archaic Savannah River phase occupation tends to be relatively light in many parts of the region, at least when compared with Morrow Mountain and Woodland phase sites.

In the Ahoskie Bypass area, the observed settlement trend from the early to late Archaic lends support to the generalized model presented in Chapter 2 and the predictions noted in Chapter 8.

The Ahoskie data also tends to support the assumption that there was a general population increase during the Archaic (as evidenced by the general increase in numbers of later Archaic components). The decrease in late Archaic Savannah River components in the area, in spite of probable population growth, can probably best be explained as a "prelude" to the later Woodland period floodplain orientations. In other words, during the Savannah River phase, the subsistence strategies of previous generations were being refined (i.e., Caldwell's (1958) "primary forest efficiency"), with an increasing awareness of the floodplain and floodplain margin ecotones. Thus, settlement locations along the Chowan, Meherrin, and Roanoke rivers would have existed as more attractive habitation sites in terms of subsistence maximization. The Ahoskie area and similar inland regions continued to be exploited, but as seasonal hunting/gathering grounds rather than central base settlement areas. In contrast, it may be suggested that during the Morrow Mountain phase the settlement-subsistence strategies were generally less oriented towards the major river course, with greater emphases on the inland ecotonal zones (e.g. the Ahoskie Swamp margin) than in the later periods.

The settlement model suggested for the Archaic period, then, essentially follows a pattern involving three generalized phases: (1) a gradual increase in subsistence diversification during the early Archaic, with a corresponding population increase and exploitation of resources (and therefore site establishment) in a greater number of environmental areas than during Paleoindian times; (2) a culmination of the diversification process during the middle Archaic (Morrow Mountain phase), wherein base settlement location was a factor of natural resource availability, with little or no settlement centralization along or in a specific environmental ecotonal zone (e.g., river floodplains as opposed to inland swamp margins); and (3) a gravitation of base settlement orientations towards the floodplains and river margins during the late Archaic (i.e., Savannah River phase) but with continued seasonal exploitation of inland resources.

Woodland. Interpretation of the Woodland period settlement in the Ahoskie area is complicated initially by the general lack of good temporal controls over ceramic data. As noted elsewhere, most of the Woodland chronological identifications were based on the tempering ingredients in the ceramics. Many of the sites have necessarily been lumped into an early-middle Woodland category, since subperiod-specific breakdown (based on surface treatment combined with temper) was precluded by the eroded nature of most of the collected potsherds. However, the data available suggests a continuation of the late Archaic period settlement trend in the area, i.e., an increasing base settlement orientation towards the major river systems.

Twelve (12) sites were identified as containing early-middle Woodland components while only three had late Woodland; one could only be assigned a general Woodland period position. If it is assumed that there is a continuing population increase, as well as a continued intensification of the floodplain orientation, then the Ahoskie data does not provide any startling new settlement evidence.

The single most significant aspect of the Woodland period sites in the area is the data suggesting the use of ceramics during specialized activities (i.e., hunting/gathering trips). This was briefly discussed above. There was no evidence collected which would indicate that these small ceramic sites served as anything other than short term activity loci. In addition, the fact that all of the late Woodland components were also associated with early-middle Woodland materials suggests a series of reoccupied, established seasonal exploitative stations. The greater number of early-middle Woodland sites suggest that the hypothesized population increase in the region was occurring at a faster rate than the floodplain centralization (characteristically associated with the late agricultural subsistence systems). If this assessment is correct, then a possible explanation may be that a predominately floodplain-oriented agricultural subsistence system had yet to be established during the early to middle Woodland phases. Thus, hunting and gathering (or collecting) would have continued to provide the bulk of the dietary requirements well into the Woodland period, perhaps even until the latter part of the period. As such, the number of short term exploitative sites in the Ahoskie area would be greater during the earlier-middle Woodland phases than during either the late Archaic or later Woodland phases.

This model, as with most archaeological models, is derived from a relatively small sample of the area's archaeological population. Revisions and modifications are expected to occur as further investigations are undertaken in the area.

Early Historic Aboriginal. Only one site (Hf68) produced any artifacts suggestive of early historic-period Indian. At this site, several early colonial artifacts were collected, including two gun flints and three green wine bottle glass sherds that may have been used as cutting tools by the aboriginal inhabitants. The presence of numerous later historic ceramics, glass, and metal fragments, however, may indicate use of the site or vicinity as an early "garbage dump" (John Clauser, personal communication). The possibility of early trade (referring again to the gun flints and glass) with the Indians exists but is only tentatively suggested (see Figures 10.2k and l).

Given the proximity of the area to the reported village near St. Johns (Binford 1964), the general lack of sites of early historic aboriginal affiliation is rather surprising. Although the present sample is obviously rather small, this would suggest a virtual abandonment of the immediate area, even as a hunting-gathering territory. Further work is obviously required to adequately address this problem.

Evaluation of Survey Methods

To even the most versatile and adventurous of archaeologists, highway surveys are an anathema, particularly with respect to finding and using sites to project into unsurveyed areas or areas for which little is known. Highways, as well as many other development projects, cross terrain and vegetative zones which are not particularly conducive to methodologically consistent archaeological investigation. In the present instance, the Ahoskie Bypass corridor included plowed fields, dense secondary growth, swampland, and pine and hardwood forest. Thus, the survey methods were necessarily varied in order to acquire a maximum of information on cultural resources in the corridor.

While the cultivated field (crop row) survey presented little problem, except in instances where the crop was at a mature stage of growth and hence allowed for only minimal surface visibility, the naturally vegetated areas caused no small amount of methodological grief. In particular, the problem of locating archaeological sites in areas of minimal to zero surface visibility reared its ugly head on a regular basis. It is little consolation to note that this problem also plagues virtually all survey archaeologists in the eastern woodlands of the United States. The numbers of recent professional papers addressing the problem attests to this (e.g., the "Nonstructural Site Discovery in Heavily Vegetated Areas: Methodologies and Techniques" symposium at the forty-third annual Society for American Archaeology meeting, Tuscon, 1978).

During the present survey, the primary method used for subsurface examination was shovel testing at intervals averaging approximately 25 meters. No cultural materials were recovered from any of the hundreds of shovel tests performed, either at known sites or in areas considered to have a maximum probability of containing sites. This is quite disturbing, particularly with regard to the tests made at the known sites. Several possible factors can be suggested as contributing to these negative results:

(1) chance placement of shovel tests at nonartifact loci within sites;

(2) extremely low artifact densities in general, minimizing the probability of encountering cultural materials in a 50 centimeter diameter test unit;

(3) small artifact size, reducing the probability of observing cultural materials without sifting through a fine mesh screen; and/or

(4) no cultural deposits (or only very small sites) in the low visibility areas and only surface materials in cultivated fields.

While it cannot be denied that chance will inevitably be an important uncontrollable factor when dealing with an unknown, such as "a likely site location," it is difficult to find a full explanation therein. Reduction of testing intervals and an increase in unit size would appear to be a partial solution to the chance factor. However, in the area of and immediately adjacent to Hf63, a series of tests on the order of 1 meter^2 and at intervals of less than 10 meters also produced negative results. The same results were had, using the same procedure, at Hf50 and Hf65, as well as in several maximum probability areas. Fine mesh sifting, which was not undertaken, may have produced more positive results. More will be said on this below.

Based on calculations made from the controlled surface collection, surface artifact densities at sites in the project area average around .12 artifacts per meter^2, or 1 artifact for each 8.3m^2. Stretching the power of assumption to an extreme, to the extent that the materials observed on the two dimensional surface are assumed to be the only materials present at the site, this would place the probability of encountering an artifact in a .25m^2 test unit at about .03, or 1 in 33. The correspondence of surface to subsurface materials has been discussed on several occasions (Redman and Watson 1970, Baker 1978, Roper 1976, Rick 1976, Binford, et al. 1970). At the Ahoskie sites, however, no correspondence was evident. Apparently, the shovel tested sites contained artifacts in sufficiently low densities to elude detection. In the high probability areas, artifact densities, and perhaps site size as well, may also have been the primary reason for the negative results.

The size of the artifacts themselves may also have contributed to the negative results. It is relatively well known, for instance, that variable recovery rates will be experienced with a differential in screen mesh sizes (cf. Thomas 1969; Roth 1976). Since the fill from the shovel tests was only hand and trowel sifted, it is quite possible (if not probable) that the smaller artifacts were simply overlooked. Fine mesh screening then, would seem to be a necessary procedure to insure a measure of control over data recovery.

For the areas identified as having the highest probability for sites, the suggestion that there are (were) no sites actually present does not set well. The site locations and site density estimates presented in previous sections indicate that the areas of concern were, for all practical purposes, identical (environmentally) to those where sites were recorded. Again, it is questionable in the author's opinion that no sites were present whatsoever.

The conclusion, based on the available information, and on no small amount of intuition, is that there are sites present. Short of clearing and plowing the entire forested areas, however, the probability of site discovery utilizing the shovel testing method employed during the present project seems rather low. Furthermore, it is doubted that such an undertaking (clearing large areas) would be cost effective given the soil development and predicted site types (and their information content) in these areas. Large archaeological sites, or small sites with midden accumulation, would probably have been detected; the relatively small, low artifact density sites characteristic to the area, however, will likely go undetected using the shovel test procedure. Future investigations in the area, utilizing the same and different techniques, should be equipped to address this problem more specifically.

Evaluation of Site Significance

Archaeological sites threatened by highway construction activities may be evaluated with respect to at least four levels of significance: (1) insignificant; (2) potentially significant; (3) significant--Section 106; and (4) significant--Section 4(f).

Insignificant sites are those which are not considered eligible for the National Register of Historic Places and which hold little possibility of providing useful information beyond simple locational data. Such sites primarily include the isolated finds and very small nondescript surface artifact scatters. In applying an "insignificant" label to a site, it is understood that there are no subsurface deposits of consequence; by simply recording the location of the surface material, adequate mitigation of any potentially adverse effect is afforded. Diagnostic artifacts, if present, should be collected to provide temporal controls; otherwise, material collection may not be necessary.

Potentially significant sites are, as suggested above, those which manifest characteristics such as high artifact density and a potential for buried cultural deposits and which may, through subsurface investigations, be found to contain significant scientific information. Frequently, such sites may contain only a limited overall body of information, such that limited test excavations (either shovel tests or structured excavations) would be sufficient to mitigate potential adverse impacts by, for example, highway construction.

A significant-Section 106 site falls under the protection of the National Historic Preservation Act of 1966 in that it is determined that the site meets one or more of the criteria for inclusion on the National Register. If the site is directly threatened by construction or other indirect impacts from a federally sponsored, funded, or licensed project, a determination of effect by the Advisory Council is required. If the determination is one of "no adverse effect," mitigation through data recovery (i.e., excavation) may be possible. An "adverse effect" determination would be issued if data recovery were not considered a feasible mitigation alternative. Such a site would thus be considered (with respect to highway construction) a "significant-Section 4(f)" property.

Significant-Section 4(f) sites are those to which Section 4(f) of the DOT Act of 1966 applies. This section of the act restricts the use of federal funding for any highway projects which require the taking and/or use of land from any historic site of national, state, or local significance unless there is no prudent or feasible alternative. Thus, a site which has been determined to be too large, too complex, or simply too important to be dealt with through data recovery operations must be protected from any adverse impacts and therefore avoided by the highway construction process if possible.

During the Ahoskie project, recorded sites were identified with respect to the categories of significance described above. These categories, however, are not criteria for assessing significance. The criteria used in evaluating site significance were derived primarily from those defined for the National Register and noted in Chapter 2. Following those criteria, none of the sites recorded are considered Significant-Section 106 or Significant-Section 4(f). Several factors may be cited as a basis for this evaluation:

(1) All of the recorded sites have experienced severe disturbance by lumbering, clearing, and cultivation operations (perhaps for as much as 200 years); thus, none of the recorded sites contain intact deposits;

(2) soil development in the area has been slight; hence, all cultural deposits appear to be on or very near the ground surface, making them susceptible to the disturbances noted above;

(3) although the archaeology of the area has been relatively sketchy, the sites recorded during this project do not exhibit characteristics which would indicate any unique qualities, i.e., they are not unusual or rare; thus, similar sites can be expected to occur relatively frequently in areas not presently threatened by development; and

(4) the information content of the recorded sites can be tapped (and the adverse impacts mitigated) through total or controlled surface collections sufficient to define the general size, shape, cultural affiliation, and probable functions thereof.

While none of the sites are considered eligible candidates for the National Register, several were initially identified as potentially significant and therefore received additional attention during the survey. In order to substantiate the claim that intact subsurface deposits were not present at these sites, shovel tests were performed. No cultural material was recovered during the shovel testing at these sites (see discussions above).

HISTORIC ARCHAEOLOGICAL SITE ANALYSIS

General Results

Preliminary historic research (Chapter 7) indicated that there was little chance that significant historic sites would be present within the corridor of the proposed bypass. Much of the land is relatively low in surface elevation and would be swamp if it were not for extensive drainage operations in recent times. Early travelers' reports of the area indicated that the land was covered with heavy forest and undergrowth, only occasionally broken by Indian trails and game paths. Physiographic conditions, therefore, were not conducive to relatively low technology European settlement.

As there was no major waterway through the area, travel and the transportation of trade items would have been extremely difficult. The 1775 Mouzon map of North and South Carolina shows much of the area within the Ahoskie Bypass corridor as swamp (Figure 10.3). Many of the modern names for the smaller tributaries, such as Ahoskie Swamp, Horse Swamp, and Flat Swamp, demonstrate the accuracy of this description. While there is some higher ground within the general region, the low lying character of the land may help to explain the dearth of historic sites in the portion surveyed. Until recent times, the technology simply was not available to properly exploit this type of environment.

Although general conditions are not favorable for early settlements or farmsteads, there are suggestions of early European activity in the vicinity of Ahoskie. The Mouzon map, for instance, shows two trails in the area. Both appear to have been fairly well traveled, though there is no indication of any permanent "stopping-off" place near the survey corridor. One trail, a wagon route from Virginia, passed to the west of Ahoskie; the other was a post road which passed to the south. They appear to have met near what is presently known as Frazier's Crossroads. Thus, with the exception of a few marginal subsistence farms, early colonial activity in the area seems to have been limited to passing through, with perhaps a short stop to rest animal and traveler. With better land to the south and west, there was little reason to attempt to farm the overgrown swamp lands.

The plantation system, as evidenced to the north and east, never really took root in the area. The soil was not suited for the repeated production of cash crops such as cotton, and there was no cheap form of transportation available. Although Ahoskie Swamp appears to have been navigable by canoe or raft, it could not provide the mass shipment capability required to move great quantities of goods to market. By the time the Carolina and Norfolk Railroad came to the Ahoskie area in the 188Cs, slavery, the plantation system, and the South's hope for secession had died.

Figure 10.3. Portion of the 1775 Mouzon Map showing Ahoskie Swamp.

In the long run, however, the anonymity of the area may have been its saving grace during the Civil War. Even armed conflict, that man-made variable that often makes the obscure extremely important, had little effect on Ahoskie. There were no strategic targets in the area; roads were poor, and the lack of major plantations made the probability of major looting gains unlikely. In short, there was no reason for troops to move into the vicinity. The generally low economic level characteristic to the area spared Ahoskie the agony that often accompanies prosperity during war.

There were two brief periods of economic growth in the area. The first was during the 1880s when the railroad arrived. At that time, Ahoskie experienced a rather short-lived economic boom. The second occurred during the depression of the 1930s. It appears that Ahoskie experienced a sudden and rather dramatic increase in population during this period. The field inspection of standing structures in the bypass corridor and surrounding area revealed a number of buildings constructed during the 1930s (see below). These were of varying degrees of construction quality and appear to represent a sudden influx of population into the area. The pattern is relatively common for the era, representing a migration of displaced farmers to the nearest urban center in an attempt to find employment.

It is interesting to note that the buildings of poorest construction were observed nearest the existing road, while those using more sophisticated construction techniques were located further away. Although exact figures are not available, it would appear from evidence gathered in the field that Ahoskie was able to support this influx at a time when most of the nation was unable to keep current levels of population employed. If these structures do indeed represent a migration to the area, there must have been enough work available to support the increase. This theory would be relatively simple to prove or disprove. Tax and employment records are available and would supply the necessary data. However, time restraints on this report require that it remain a matter of conjecture for the present.

The natural setting and the economic history of the Ahoskie area has painted a rather grim picture for the location of historic archaeological sites. The written record has indicated that there was comparatively little activity in the area. The activity that did take place was confined to the relatively small areas of high land. These areas were settled first and, unfortunately, have been in continued heavy use to the present. The resulting intensity has resulted in the nearly complete destruction of any context related to the historic materials discovered during the present survey. The ravages of constant reuse, heavy agricultural activity, and the generally tenuous nature of the sites in the area have decimated the historic archaeological record.

Excluding standing structures, a total of twelve historic artifact scatters were located during the survey (see Tables 10.1a and 10.1b). Of these, eight yielded twelve artifacts or less. In one case (Hf56), only a single artifact was recovered. No structural remains were associated with the artifact scatters and no particularly heavy material concentrations noted. All appeared to be relatively evenly distributed, thin scatters of materials. Although most of the evidence has been destroyed, the presence of the materials indicates that some early colonial activity did take place in the Ahoskie area. Examination of the materials and site locations, however, provides few clues as to the nature of the scatters. It would appear that they are probably little more than secondary deposits, i.e., trash dumping. In the case of Hf60, the concentration of brick, ceramics, and metal fragments would suggest use of the location for either a very short term occupation during the late eighteenth to early nineteenth centuries or as a dump. Another site at which a considerable amount of historic material was collected--Hf68--is also a probable dumping area. The earliest materials from the site may have been trade items, used by the aboriginal occupants, but the presence of numerous later historic materials suggests that a more likely explanation is to be found in the use of the general area as a dumping grounds. The location of Hf68, near the Ahoskie Swamp-Knee Branch confluence, which is also the area of at least thirteen other historic and prehistoric sites, may have served as a secondary or tertiary travel route or path. If so, then a gradual accumulation of materials through loss or discard would be expected in the vicinity. The presence of historic materials at several of the neighboring sites lends support to this hypothesis.

In addition to the artifact scatters noted above, one mill site (AB-39) was recorded, though it lies just outside of the proposed corridor. The site presently consists of minimally visible wood beam fragments and severely eroded earthworks. Local information suggests that the structure was a grist mill, but it was more likely a saw mill, perhaps a portable variety. No other information regarding ownership, date of construction, or use is available at this time.

Five small family cemetery sites were identified within the corridor, all of which have been or were being relocated by DOT at the time of the survey. The information available concerning these cemeteries indicates use primarily during the late nineteenth and early to middle twentieth centuries.

Evaluation of Significance

With the exception of the family cemetery sites which still contained burials at the time of the survey (but which will be removed prior to highway construction), none of the historic artifact scatters located within the proposed corridor can be declared significant (either under Section 106 or Section 4(f)). Although Hf68 and Hf60 may be of minimal significance with respect to locational data, they are not considered important enough to require further investigation and are not eligible for the National Register. The criteria used in this evaluation are (1) the severity of site disturbance; (2) the lack of material concentrations sufficient to suggest long term or primary use deposition; and (3) the lack of evidence to suggest association with an event(s) or person(s) of note. The mill site (AB-39), located outside of the ROW, may be of minimal significance and should be reexamined and evaluated in any future impact studies in the area. If threatened with destruction, subsequent investigations may be required to adequately address Sections 106 and 4(f).

HISTORIC STRUCTURES ANALYSIS

General Results

An examination of the proposed bypass corridor revealed five standing structures, presently abandoned, that will be razed during highway construction activities. Each of these was identified as a "depression cottage"-type dwelling, built for (and frequently by) sharecroppers and farm laborers during the first few decades of the twentieth century. All are of light frame construction. One is of the "shotgun" form, one is a traditional two-room plan, and three are of three- and four-room plans. Figure 10.4 provides a representative illustration of the basic style and condition of these structures.

Figure 10.4. Example of Depression Era structure (AB-6) in the Ahoskie Bypass right-of-way.

Evaluation of Significance

While no systematic study of dwellings of this type has been done to the author's knowledge, the case could be made that these dwellings--examined as a whole or set across the region, state, or nation--have a significance to the study of society of the period. The structures are representative of a lifestyle and dwelling type of the less fortunate socio-economic class of rural North Carolina (and the Southeast in general) during the first three or four decades of this century. This is not to say, however, that a serious case can be made for the preservation of any of these specific structures. At this time, the existing photographs and field notes taken at each structure are considered adequate documentation and therefore mitigation of adverse impacts. Under existing standards, none are considered eligible for inclusion in the National Register and no further investigation is warranted.

Additional Comments

A single National Register property--the William Mitchell House--is located on the north side of N.C. 11-350, ca. 1.0 mile west of the junction with S.R. 1108. The structure is near but well outside of the proposed corridor. Several other structures in the general vicinity have also been identified and recorded by the Division of Archives and History, many of which appear to qualify for inclusion in the National Register. None, however, is considered close enough to the Bypass corridor to be adversely affected by construction.

Two additional structures of minor significance to the locality are the Elm (or Elam) Grove Church, located on the northwest side of N.C. 11-350, ca. 0.5 miles east of the S.R. 1109 junction, and a small frame bungalow, located immediately east of the church. The church is an early twentieth century "Country Gothic"-type frame structure with a later brick veneer. The bungalow is a simple, well-maintained and landscaped representative of the 1920s and 1930s period. Neither structure appears to be within the corridor, though both may experience indirect impacts due to their proximity. The destruction of either structure would be wasteful, though neither would presently be considered eligible for inclusion in the National Register.

SUMMARY AND RECOMMENDATIONS

General Discussion

The survey of the Ahoskie Bypass corridor produced several bits of interesting information about the history and prehistory of the area. Aboriginally, the area as a whole appears to have been exploited relatively extensively by small mobile groups of hunters and gatherers from at least the early Archaic through late Woodland periods and probably carrying over into the early Historic period (i.e., 8000 B.C. to the early eighteenth century). The archaeological visages of these exploitative ventures are represented in the area by a series of relatively small scatters of lithic debris (debitage), discarded or lost projectile points and fragments, cutting and scraping tools, and, during the later episodes, small quantities of ceramics. Semi-permanent or permanent habitation sites do not appear to have been established in the area, the reasons for which can only be hypothesized at this time. Following the settlement models proposed for the area, it is suggested that the sites recorded during the survey are at most temporarily occupied microband (i.e., single family or small group) exploitative stations, established for a few hours to several weeks at a time. During the period of occupation, microband members carried out a series of hunting and gathering (or collecting) activities in the general vicinity. In many instances, evidence of these activities will be discovered (i.e., isolated flakes or projectile points and fragments), though many if not most will probably remain well below the threshold of archaeological visibility.

That long term habitation is not apparent in the area suggests very simply that the necessary cultural/environmental criteria for such were not met. In essence, the land either could not or was not considered sufficient to support permanent occupations. This was probably a combination of natural and cultural factors, including the relative isolation from the larger transportation/communication networks found along the neighboring major rivers. In the Woodland period, during which agriculture became an important subsistence activity, the major rivers and their margins would have been far more attractive to permanent habitation also because of the greater natural soil fertility.

Highway archaeological projects, as has been noted frequently, are notorious for providing only a narrow perspective of the actual archaeological situation; at the same time, they can be utilized as megatransects across a variety of ecological zones. As further investigations are undertaken, the new information will either negate, support, or refine the models identified herein.

Historically, the picture looks much the same until the recent centuries. Since the colonial settlement-subsistence strategies were largely based on intensive agriculture, the Ahoskie Bypass area was not particularly well-settled, primarily it appears, because of the relatively low natural fertility and poor drainage of the soils. It was only in the nineteenth and twentieth centuries, when the mechanisms for exploiting the land were sufficiently developed, that the population began to increase in the area. Because of this, the area exists as an interesting and potentially informative study universe for the investigation of rural socio-technological adaptation to somewhat less than optimal natural conditions.

The Ahoskie, Horse, and Flat swamps, which have been in existence since at least the early eighteenth century, would have been prime hunting and gathering locations to the aborigines and appear to have been frequent haunts for just that purpose. In the same vein, however, the swamps mean poor drainage, which is not conducive to productive agriculture. Thus, intensive cultivation of the area remained minimal until relatively late. The role of the swamplands in affecting the local prehistoric and historic settlement patterns is undeniably important and obvious and should be examined more closely in the future. Paleo-ecological studies of the swamplands would provide extremely valuable information about the various climatic, vegetational, faunal, geomorphological, and ultimately cultural sequences of the region (e.g., Carbone 1978).

Project Impacts on Cultural Resources

A total of thirty-eight archaeological sites were recorded during the Ahoskie Bypass survey, twenty-eight of which will be directly affected by construction activities. No direct impacts are expected at the remaining sites, as they exist outside of the construction corridor. Two additional historic structures, both still in use, were also recorded by an architectural historian. These structures are adjacent to but outside of the proposed corridor and therefore should not be affected by the project. Since they were not identified for destruction or relocation, it is assumed that long term adverse effects will not occur. Since the sites located within the corridor have been determined to be insignificant with respect to the National Register and have been systematically identified and recorded, it is not anticipated that construction activities will result in the loss of important archaeological or historical information.

Recommendations

No further archaeological work is recommended in the Ahoskie Bypass corridor prior to commencement of construction. It is strongly recommended, however, that in subsequent projects of this nature DOT should undertake or have undertaken the necessary archaeological investigations well in advance of letting the actual construction contract. In doing so, the potential for construction delays or corridor relocation, both of which could result in substantial losses of time and/or financial outlays, would be avoided or minimized.

THE WILKES COUNTY U.S. 421 ARCHAEOLOGICAL PROJECT

PART III

Management Summary

PURPOSE OF THE SURVEY

The Wilkes County U.S. 421 archaeological project was designed to provide the North Carolina Department of Transportation with information on any cultural resources within the proposed highway corridor (state project #8.1778801; Clearinghouse #CH75-1137). The objective of the study was to locate, analyze, and evaluate the resources in the corridor. In reaching these goals a research framework was designed and implemented which included: site density estimation, identification of site chronologies, evaluation of site significance, evaluation of survey methodologies, and analysis of settlement patterns in the area.

SURVEY METHODS

A field survey covered approximately 165 acres (100%) of the proposed right-of-way corridor. This included cultivated fields and gardens, pastures, areas of secondary growth, wooded areas, and disturbed areas (including the existing U.S. 421 highway). Varied survey methods were applied to these areas according to ground cover and slope. These methods included unstructured shovel tests, visual inspection of areas with extensive surface visibility, and 3-inch bucket augering to provide soils information. Using one or more of these methods, the entire project was walked on foot.

RESULTS

A total of nine archaeological sites was recorded by the survey. All exhibited prehistoric components; five also contained historic components. The aboriginal sites were composed only of lithic materials assignable to Archaic (three sites) and Woodland (one site) periods. The remaining five sites yielded no diagnostic artifacts. Eight of the recorded sites were within the proposed right-of-way. Of the five sites which produced evidence of historic occupation, one was dated to the middle to late nineteenth century; the remaining historic sites contained no datable artifacts.

Historic sites and structures were initially identified during the field survey and later examined by a historic archaeologist and an architectural historian. Thus, evaluations of significance were determined for all cultural resources. These resources have been greatly disturbed by both natural and artificial forces, including erosion, flooding, cultivation, and material reuse. Prehistoric site density estimates for the floodplain portions of the project indicate that at least 32 to 33 sites should occur in the right-of-way; only eight were recorded during this survey.

CONCLUSIONS AND RECOMMENDATIONS

This project has served to provide an intensive archaeological reconnaissance of the Wilkes U.S. 421 highway right-of-way. No sites were found to be significant by the National Register of Historic Places criteria, and no further archaeological testing or survey is recommended. However, density estimates indicate the possibility that significant nonrecorded sites may occur in the project area. Thus, should any cultural remains be unearthed during highway construction, an archaeologist should be consulted prior to further work in the recovery area.

REPORT CONTENT

This report contains discussions of each aspect of the Wilkes County U.S. 421 project, including the environmental setting (Chapter 12), the archaeological background (Chapter 13), the historical background (Chapter 14), the research design for the project (Chapter 15), the survey methods and techniques employed (Chapter 16), and the results of the survey (Chapter 17).

CHAPTER 11.

Introduction to the Wilkes County U.S. 421 Archaeological Project

Thomas E. Scheitlin

INTRODUCTION

In October of 1977, the Archaeology Branch of the Division of Archives and History, North Carolina Department of Cultural Resources, conducted an intensive archaeological survey of the proposed realignment and widening of U.S. 421 in western Wilkes County (state project no. 8.1778801; Clearinghouse nos. CH75-1137 and CH76-2142). Undertaken in accordance with a July, 1977, memorandum of agreement between the division and the North Carolina Department of Transportation (DOT), the objective of the survey was to locate and evaluate the significance (i.e., eligibility for the National Register of Historic Places) of any cultural resources which would be adversely affected by the highway construction activities and to make the necessary recommendations for mitigating those effects.

PROJECT DESCRIPTION

The U.S. 421 project involves a 250-400 foot wide, 5.895-mile segment from Wade Harris Bridge to its intersection with S.R. 1304, following a northwest/southeast direction paralleling the valley of the South Prong Lewis Fork Creek. South Prong Lewis Fork Creek is one of two natural passes into the Appalachian Mountains in North Carolina (see Figure 11.1). The project involves approximately 165 acres, including 54 acres (33%) in disturbed areas (roads, streams, disturbed areas near roads, and standing structures), 13 acres (8%) in pasture/lawn, 11 acres (7%) in field/garden, 53 acres (32%) in woods, and 29 acres (18%) in secondary growth (see Table 11.1).

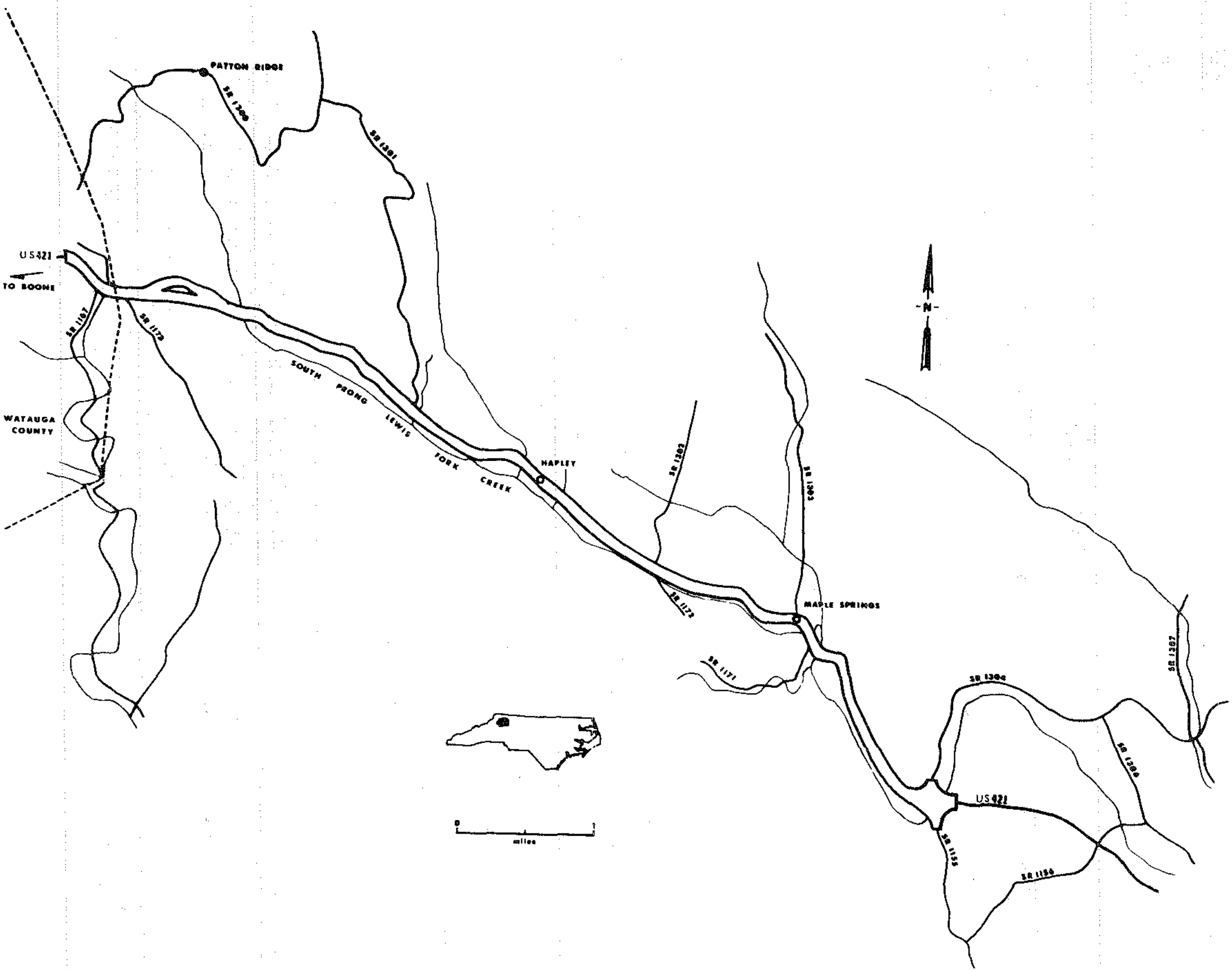

Figure 11.1. Location of the Wilkes County U.S. 421 highway corridor.

	Developed/ disturbed*	Pasture/ Lawn	Cultivated fields/ gardens	Woods	Secondary growth	Total
>500 feet from water	1.07		1.1	1.3	1.6	5.1
<500 feet from water	54.9	12.8	10.9	53.1	27.9	159.6
TOTAL	56.0	12.8	11.9	54.4	29.4	164.5

*Includes roads, buildings, streambeds

Table 11.1. Acreage estimates for field conditions in the Wilkes County U.S. 421 project right-of-way.

Deep Gap Pass, as the mountain valley corridor is called, has been traveled for centuries, if not millennia. Evidence of this includes remnants of two previous roads or paths, in addition to the present highway. As such, the project area has experienced extensive use and alteration over the centuries. Thus, in historical times, much of the pass has been altered in such a way as to destroy cultural resources and/or stimulate erosional and depositional forces (alluvial and colluvial) in the area. The chances of intact and undisturbed archaeological sites surviving to the present must be considered as low.

A two-member survey team from the Archaeology Branch undertook the investigation of the project area from the 14 to the 20 of October, 1977. The investigation included a pedestrian walkover of the entire survey area, shovel testing areas with no ground surface visibility, and augering at selected points along the corridor. Information was also recorded about the standing structures and historic sites during the survey. An architectural historian visited the area and investigated the structural remains on October 31; a historic archaeologist returned to the survey area for an indepth analysis of the historical remains on December 15.

A search of the site records of the Research Laboratories of Anthropology, University of North Carolina-Chapel Hill, produced five sites in the vicinity of the project corridor. However, none of these sites are located in the proposed right-of-way and none were visited during the fieldwork.

REPORT CONTENT

This report will detail the environment (Chapter 12), the previous archaeological work in the area (Chapter 13), and the historical background (Chapter 14) for the area. It will then present the research design for the project (Chapter 15), the survey design (Chapter 16), and finally, the results, conclusions, and recommendations (Chapter 18).

ACKNOWLEDGEMENTS

Many thanks must go to the people that have had a hand in this report, from initial planning to the final report.

Coordination with DOT occurred through Mr. Byron (Barney) J. O'Quinn. Further information on the project right-of-way and land access was provided by Mr. W. E. Winstead from the North Carolina Wilkesboro DOT office. Mr. Winstead provided information regarding an access to the survey area and suggested several land owners who might provide some insight into the area's cultural resources. Mr. Sherwood Jones of the Raleigh DOT office provided environmental information on the project area.

The field crew consisted of W. Dale Reavis and Tom Scheitlin. Dale also gathered information from the local Soil Conservation Service Office, as well as spending several chilly mornings in the field. Michael T. Southern (Survey Branch, Division of Archives and History) performed the architectural survey and John Clauser (Archaeology Branch) the historic archaeological investigations.

While in the field, a number of persons in the area were consulted on where they had found prehistoric artifacts and historic sites. This led to the finding of two sites and the investigation of a reported mill site. These landowners include: Mr. Edgar Taylor, Mrs. Florence Shepherd, and Mr. Charles S. Triplett.

Help with artifact analysis and the identification of previously recorded sites in the vicinity was provided by Dr. Joffre L. Coe of the Research Laboratories of Anthropology, UNC-Chapel Hill. Dr. Burton L. Purrington, Appalachian State University, also provided insight into the nature of prehistoric remains in the area.

Finally, one cannot forget the many people in the Archaeology and Historic Preservation Section that have added to this volume both in research, writing, and technical support. These people include Jerry L. Cross, Thomas H. Hargrove, Linda Luster, Sandra Perry, Pamela Ashford, Peggy Hopson, Jacquie Fehon, and Mark A. Mathis.

CHAPTER 12.

Environmental Setting

Thomas H. Hargrove

INTRODUCTION

Wilkes County is located in the northwestern part of North Carolina. Still one of the state's larger counties, with an area of 765 square miles, Wilkes County extended to the Mississippi River in the eighteenth century. Now bounded on the west by Watauga and Ashe counties, on the north by Alleghany County, on the east by Surry and Yadkin counties, and on the south by Caldwell, Alexander, and Iredell counties, Wilkes lies in an area almost equally divided into mountains and piedmont. One estimate (Lee 1955:41) gives the county a terrain with 56% in piedmont and 44% in mountainous areas. Mountains lie in the northern, western, and southern parts of the county. To the north and west is the Blue Ridge, extending into the county for distances between one-half mile to 3 miles and ranging in elevation from 3,000 feet to 4,000 feet above mean sea level (MSL). The southern border of Wilkes is formed by the Brushy Mountain range with elevations of 1,500 to 2,500 feet (Sharpe 1966:1083-84). Elevations on the piedmont plateau fall slightly below 1,000 feet. The plateau's terrain varies from rolling to steep and broken, with occasional scattered monadnocks.

Between the piedmont and the western mountains proper is an intermediate zone of foothills. This zone, called the "Blue Ridge Front", is a 7-mile wide belt of rough, steep landscape with narrow valleys and high, sharp ridges rising to elevations of 2,000 feet (N.C. Division of Highways 1975:7). The U.S. 421 survey area is located in this transitional zone. The survey was conducted along the banks of the South Prong of Lewis Fork Creek, which originates in the county's western mountains and flows southeast before joining with the North Prong about 3 miles above the

Yadkin River (now the W. Kerr Scott Reservoir) (Powell 1968:280, 466). The South Prong runs between Dividing Ridge (2,400-2,600 feet high overlooking the survey area) on the south and Yates Mountain (2,200-3,000 feet) on the north. The survey area located on or adjacent to the stream banks ranges in elevation from ca. 1,445 feet to ca. 1,240 feet.

IMPORTANCE OF THE LEWIS FORK CREEK VALLEY AS A MOUNTAIN PASS

The trail from the Lewis Fork Creek mouth to Deep Gap in Watauga County is one of the few passes connecting the upper piedmont and the Appalachian plateau. For perhaps several thousands of years this route has provided access to a wide variety of ecological zones found at various elevations. In recent millenia, this range has included the "oak-chestnut" uplands and the "oak-hickory" lowlands, as well as various coves, slopes, and river bottoms (Shelford 1974:18-20). The pass may have served in the same way during glacial and post-glacial periods. During full glacial conditions (20,000-15,000 B.P.), Appalachia was apparently largely covered with a tundra, similar to that now found in the Arctic, while lower areas in the southeastern United States were covered with boreal forests. In late glacial times (15,000-10,000 B.P.), a boreal forest began to occupy the highlands while lower elevations saw the appearance of forests composed of birch, hemlock, beech, hickory, elm, and scattered pine. In post-glacial times, the uplands shifted from boreal forests to mixed coniferous-deciduous forests to the oak-chestnut forests of prechestnut blight days. The modern lowlands shifted from domination by northern hardwoods to oak-pine, oak-chestnut, or oak-hickory forests (Carbone 1974:89-91).

In prehistoric times, the gap would have served to connect a variety of ecological zones used by hunters and gatherers and by agriculturalists dependent on supplements of game and wild plant foods. In historic times, the gap became a route for explorers and then a conduit for the western movement of European colonists. The earliest known description of Deep Gap underlines the vital importance of this pass for those traveling on foot or even by horse.

In the winter of 1752 Bishop Spangenberg of the Moravian Church led an expedition into western North Carolina in search of land for the creation of Moravian settlements. At one point in the journey, the party's guide led the expedition into mountains which he mistook for the Brushies. The explorers quickly lost their way in mountains which they learned were part of the Blue Ridge, not the Brushies. The area they found themselves in seemed trackless and uninhabited, and their efforts to return to the east were frustrated again and again by the lack of a passage through the Blue Ridge. When the Spangenberg party finally emerged from two weeks of confused wandering, it was by way of Lewis Fork Creek. The Bishop's words attest to the importance of this mountain gap:

> "We were completely lost, and whichever way we turned we were walled in.... We crossed only dry mountains and dry valleys, and when for several days we followed the river [New River] in the hope that it would lead us out we found ourselves only deeper in the wilderness, for the river ran now north, now south, now east, now west, in short to all points of the compass! Finally we decided to leave the river and take a course between east and south, crossing the mountains as best we could. One height rose behind the other, and we traveled between hope and fear, distressed for our horses, which had nothing to eat.
>
> At last we reached a stream [Lewis Fork] flowing rapidly down the mountain, followed it, and happily reached this side of the Blue Ridge. We also found pasturage for our hourses, and oh, how glad we were!" (Spangenberg 1922:57).

Throughout historic times, Deep Gap and the valley of the South Prong of Lewis Fork Creek have served as an important passageway between the piedmont and the Appalachian plateau. As early as 1806, the county government attempted to upgrade the trail through the valley, which now lies under parts of U.S. 421 and the highway improvements of 1977. Europeans had settled in the valley of the South Prong at least as early as 1792, when a Baptist church was founded there (see Chapter 14).

MODERN CLIMATE

The mean annual temperature for Wilkes County is 60°F. The average temperature for January is 38.5°F, rising in the summer to an average July temperature of 74.8°F (Sharpe 1966:1, 102). The varied terrain complicates this picture, however, and summer temperatures in the mountainous western region may run closer to 70°F and in the lower eastern part closer to 76°. Winter temperatures may similarly vary, with January temperatures of about 36°F in the west and 40°F in the southeastern part of the county. Another complicating factor in describing the climate of Wilkes is the presence of "thermal belts" on many mountain sides. Some of the mountainous areas allow temperature inversions of 20°F or more, which may prevent late frosts and encourage the growth of various fruits, particularly apples (Lee 1955: 10-17). The Brushy Mountains, with their peach and apple orchards located above the frost line and below the freeze line, provide outstanding examples of these thermal anomalies. But for Wilkes County in general, the first killing frost occurs around October 15, with the last killing frost around April 24. The average annual precipitation is 53.01 inches (Sharpe 1966: 1084, 1102). Two annual dry seasons occur; the first lasts from September through March; the second, lesser dry spell runs from March to June (Taggart 1973:3).

PALEO-ENVIRONMENT

The climate of the area in glacial times was significantly different from the modern climate in more than temperature. The presence of the huge ice sheet not far to the north influenced moving air masses to create winters which were probably milder than modern winters and summers drier than the wet summers now characteristic to the area (Gardner et al. 1976: 27-28). As today, vegetation in the paleo-environment was influenced by elevation. From 20,000 to 15,000 B.P., full glacial conditions created tundra in the Appalachian highlands, while boreal forests dominated lowland areas. Late glacial years (15,000-10,000 B.P.) saw the spread of boreal forests into the highlands, while lower altitude forests shifted to dominance of birch, beech, hemlock, hickory, and elm, with some pine. Since the retreat of the glaciers, the uplands have shifted from boreal forests to mixed coniferous-deciduous forests and finally to oak-chestnut forests. The southeastern lowlands changed from northern hardwood domination to oak-pine, oak-hickory, or oak-chestnut associations (Carbone 1974: 89-91).

Some of the fauna which might have lived in the area can be seen in late glacial deposits from Saltville, Smyth County, in southwestern Virginia, about 35 miles northwest of the New River and 60 miles northwest of the Yadkin. This faunal assemblage and related pollen have been dated to 13,460 B.P., when the Appalachian area was dominated by grasses, sedges, pine, spruce, and fir in an association described as "open boreal woodland." The dominant mammal was the mastodon (*Mammut americanum*). Other megafauna included musk ox (*Bootherium* sp.), woodland musk ox (*Symbos* sp.), Moose (*Cervalces* sp.), *Bison* sp., caribou (*Rangifer tarandus*), wooly mammoth (*Mammuthus primigenius*), and the long armed ground sloth (*Megalonyx jeffersonii*) (Gardner et al. 1976:29-30).

HYDROLOGY

The mountains and the piedmont of Wilkes County are cut by numerous rivers and streams, including the headwaters and tributaries of the Yadkin River. The major watercourses are the two main Yadkin tributaries--the Reddies and Roaring rivers--and the Yadkin itself, which runs east to west along the length of the county as it descends from mountains to piedmont. The varied terrain and elevations of the Wilkes County streams provide a relatively wide range of aquatic environments within the county borders. These physiographic characteristics also contribute to the severe floods which have devastated the county in the last two centuries. The area's first well-recorded flood of modern times occurred in July, 1916. After two weeks of continuous rainfall, nearly 2 feet of water fell within 24 hours. In the ensuing disaster, eighty lives were lost. Numerous farms in the river valleys were washed away, and other farms were destroyed by heavy depositions of sand. Another, more serious flood occurred in 1940, when flood waters rose 3 feet above the record levels set in 1916 (Sharpe 1966:1084, 1090).

The Yadkin and its tributaries can be divided into the cold mountain section, the cool foothills section, warm piedmont sections, and a warm coastal section. Each one has a distinctive temperature, fish population, bottom formation, and amount of turbidity. Three of the sections occur in Wilkes County. The cold water section, represented by the upper sections of the Yadkin, the Fisher, Mitchell, Roaring, and Reddies rivers, and Elk Creek, is characterized by clear water, rocky bottoms, and steep gradients. Some cold water streams are now polluted with soil eroded from farms and road cuts, but most of these streams are free of turbidity. As a result, the clear, cold water of the mountains supports a large population of bottom-dwelling stoneflies, mayflies, and other benthic organisms. These provide fish food not found in such abundance in the more turbid waters of lower elevations. The cold water streams range from 8 to 56 feet in width and from .2 to 1.2 feet in depth. The cool water sections of the foothills, represented by the lower sections of the Yadkin (between Elkin and Patterson), the Fisher, Reddies, and Mitchell rivers, and Stoney Fork, Buffalo, and Elk creeks, are characterized by bottoms of sand, gravel, and boulders, by seasonal turbidity following heavy rains, and a decrease in benthic fish-food species. These streams average in width between 12 to 250 feet and in depth from .2 to 3.0 feet. The warm water section of the upper piedmont, represented chiefly by the South Yadkin, is characterized by high turbidity, clay or sand bottoms, and very low numbers of fish food organisms. Streams average in width from 9 to 85 feet and in depth from .3 to 4.3 feet (Tatum et al. 1963:11-21).

The length of the South Prong of Lewis Fork Creek has been estimated at 15 miles (Tatum et al. 1963:A-49) and at 18 miles (Fish 1968:310). The drainage area of the South Prong has been estimated at 11 square miles (Thomas and Bonham 1975:107), with the upper reaches in the cold water section and the lower in the cool water section. From its mouth to the mouth of Fall Creek, the South Prong averages about 30 feet in width. From the Fall Creek confluence to the origin of the South Prong, the stream's average width is about 12 feet (Fish 1968:310).

SOILS AND GEOLOGY

The surveyed section of the South Prong of Lewis Fork Creek runs through two soil associations--the Ashe-Chandler association and the Chester-Ashe-Hayesville association.

Ashe, Hayesville, Chandler, and Chester soils are generally rated as unsuitable for farming. Their very low fertility and their tendency to erode drastically make them more suitable for forest land, or occasionally for use as pasture or orchard land (Curle 1962:48-49; King, Turpin, and Bacon 1974:11-13). A county-wide survey conducted in 1918, before the chestnut blight, found that 95% of the mountain area soils in Wilkes County had been left in woodland, mostly oak, hickory, and chestnut, with an occasional poplar or white pine. Farming on these soils was a difficult undertaking. The survey of 1918 estimated that soils such as the Chandler and Ashe could produce a maximum of 10 to 25 bushels of corn per acre if fertilizer were applied. This yield is comparable with the 1918 survey's estimate of the yields from the Congaree alluvial soils of the larger river valleys. The Congaree soils at that time normally produced a minimum of 25 and a maximum of 75 bushels of corn per acre, without fertilizer (Jurney and Perkins 1918:318-24). River bottomland in Wilkes County is rare, ranging from several yards to one-half mile or slightly more in width, even on the largest rivers (Sharpe 1966:1084). The banks of the South Prong of Lewis Fork Creek currently support very few crops, most of the land being left to forest, pasture, or orchards (N.C. Division of Highways 1975:9-11). Some of the piedmont soils of Wilkes County, such as the Cecil, Appling, and Davidson, may be suited for crop production but are heavily dependent on slope conditions and may erode easily if disturbed (USDA SCS 1962:1-2, 46).

Wilkes County, in general, lies over a foundation of mica gneiss, mica schist, and granite, with occasional appearances of horneblende gneiss (N.C. Department of Conservation and Development 1958). The U.S. 421 corridor lies over a foundation chiefly of mica gneiss, with occasional appearances of mica schist, and one appearance of hornblende gneiss near Maple Springs. Granite gneiss is common in the western section of the valley (N.C. Division of Highways 1975:7).

FLORA

Shelford (1974:17-29, 39, 57) has attempted to reconstruct the pre-European contact, prechestnut blight ecological communities of the southeastern United States. The two communities most relevant to the study of Wilkes County's prehistory are probably the "oak-deer-chestnut" association of the uplands (1,500-2,000 feet or higher), grading into the "oak-turkey-hickory" zone of the piedmont. Since the loss of the chestnuts (formerly 50-80% of the oak-chestnut canopy), the upland deciduous forest has been characterized by a "red oak-chestnut oak-white oak" association. Pines were scattered throughout the deciduous forest zones, with Virginia pine (1,400-2,400 feet), pitch pine (2,400-3,500 feet), and table mountain pine (over 3,500 feet) mixed with hardwoods or growing in isolated, pure stands.

Slightly to the southwest of Wilkes County, another section of the Blue Ridge escarpment in North Carolina was surveyed in an effort to outline plant communities at elevations between 900 and 3,000 feet (Cooper and Hardin 1970:311-15). Five major communities were abstracted and further broken down into subgroups. Communities were influenced not only by elevation but by direction and degree of slope, amount of soil moisture, and exposure or lack of exposure in covers or on slopes, ridges, and knobs, soil types, and soil depth. Comparisons of this area and others, however, should be made with caution and with careful attention to local microclimates. A summary of the Cooper and Hardin (1970) study is given here, but with the omission of the detailed descriptions of each community provided in the original article.

1. Riverbank Shrub Thicket occurs along open rivers and on creek banks. It is distributed throughout the 900-3,000-foot elevation covered by the study and consists chiefly of alder, (*Alnus serrulata*), willow (*Salix nigra*), and *Rhododendron maximum*.

2. The Disturbed Floodplain Forest occupies land once cleared for farming and settlement and now abandoned. These communities occurred in the Cooper and Hardin study below 1,800 feet. Dominated by Virginia pine (*Pinus virginiana*) and white pine (*Pinus strobus*), the disturbed areas are also occupied by various berry-plants (*Vaccinium* sp. and *Rubus* sp.) and mountain laurel (*Kalmia latifolia*). This forest is a successional stage in a return to a Mixed Mesophytic Forest.

3. Mixed Mesophytic Forests were found below 2,200 to 2,500 feet. The "Cove segregate" variant is located in moist, protected areas, and consists chiefly of red maple (*Acer rubrum*), sweet birch (*Betula lenta*), beech (*Fagus grandifolia*), tulip poplar (*Liriodendron tulipifera*), basswood (*Tilia heterophylla*), and hemlock (*Tsuga canadensis*), with sweetgum (*Liquidambar styraciflua*) at lower elevations. The "Cove segregate" was found to have the greatest variety of herbs in the study.

   The "Slope Segregate" of the Mixed Mesophytic Forest tends to occur on more open slopes near creeks and rivers. Depending largely on moisture gradients, this community may trend into the Cove segregate in damper areas and into the oak forest communities on drier, more open slopes. The Slope variant is distinguished from the Cove segregate by the presence of pignut and mockernut hickory (*Carya glabra* and *C. tomentosa*), blackgum (*Nyss sylvatica*), whiteash (*Fraxinus americana*), chestnut oak (*Quercus prina*) and black oak (*Q. velutina*).

4. Upland Oak Forests tend to appear on exposed upland slopes throughout the 1,000-3,000-foot range of the study.

   The "Chestnut Oak" type is dominated by chestnut oaks, red oaks (*Q. rubra*), red maple, scarlet oak (*Q. coccinea*), white oak, and sourwood (*Oxydendrum arboreum*). At lower elevations it occurs on east and north facing slopes, unlike the "mixed oak-hickory" variant, which appears on the lower elevations on south and west facing slopes with less moisture. In this second variant, white oak matches the chestnut oak in importance, and hickories make up a large percentage of the canopy.

5. Pine dominated forests occur throughout the range of the study but are concentrated on dry, exposed areas or on steep slopes with shallow soil made up of more clay and rock than is suitable for hardwoods.

The section below will deal with the possibilities for exploitation of these areas by gatherers of wild foods. It should be remembered, though, that the natural forest was not necessarily the aboriginal forest.

When Spangenberg visited Caldwell County in western North Carolina in 1752, he noted that in some areas:

> "There is not much hardwood, mostly pine. The forest could be much improved with care, for it has been ruined by the Indians, who are accustomed to set fire to large tracts to drive the deer to a given spot, and that keeps the young trees from growing" (Spangenberg 1922:48-49).

The previously mentioned disappearance of the dominant chestnut from the uplands and its replacement by oaks should also be taken into account when reconstructing the prehistoric and early historic environment. The prehistoric and early historic environment of the U.S. 421 survey area probably contained a wide spectrum of floral communities and their associated fauna. With elevations ranging from 1,445 to 3,000 feet or more (disregarding the nearby Yadkin River floodplain), the range of ecological types would have included aquatic zones, riverbank shrub thickets, mixed mesophytic forests, chestnut and oak forests, stands of pine, and probably subclimax or "disturbed floodplain forest" vegetation in areas burned-over for hunting or otherwise cleared for farming.

The wild edible foods which would have occurred in the area probably included chestnuts (*Castanea dentata*), acorns (*Quercus* sp.), nuts of *Juglans* species, a variety of hickory nuts (*Carya glabra, C. tomentosa, C. pallida*), hornbeam (*Carpinus caroliniana*), and beech mast (*Fagus grandifolia*). Grapes (*Vitis* sp.), hog peanuts (*Amphicarpa bracteata*), huckleberries (*Gaylussacia baccata*), a variety of other berries (*Vaccinium* sp.), jack-in-the-pulpit (*Arisaema triphyllum*), paw paw (*Asimina triloba*), and strawberry (*Euonymus americanus*) occurred in and around the mesophytic forests and occasionally elsewhere.

Disturbed areas in particular would have supported a variety of foods, such as blackberries (*Rubus allegheniensis*), dewberries (*R. flagellaris*), *Vaccinium* sp., mayapple (*Podophyllum peltatum*), wild lettuce (*Lactuca canadensis*), polk weed (*Phytolacea americana*), elderberries (*Sambucus canadensis*), various docks (*Rumex* sp.), milkweed (*Asclepias* sp.), Galinsoga (*Galinsoga ciliata*), *Amaranthus* sp., and *Chenopodium* sp. (Cooper and Hardin 1971:311-13; Taggart 1973:13-18; Fernald et al. 1958).

FAUNA

Shelford's (1974) reconstruction of the pre-European deciduous forests of North America includes estimates of the animal populations associated with them. In addition to beaver (*Castor canadensis*), elk (*Cervus canadensis*), rabbit (*Sylvilagus* sp.), opossum (*Diedelphis marsupialis*), and probably bison (*Bison bison* Linn.) (Dickens 1976:6), animals in the Wilkes County area included deer (*Odocoileus virginiana*), wolf (*Canis lupus lycaon*), mountain lion (*Felis concolor*), bobcat (*Lynx rufus*), black bear (*Ursus americanus*), fox (*Vulpes* sp.), raccoon (*Procyon lotor* Linn.), squirrel (*Sciurus* sp.), and eastern chipmunk (*Tamias striatus* Linn.).

In the pre-European forests, at around A.D. 1600, deer populations probably fluctuated cyclically, with a minimum of 10 animals and a maximum of 84 per square mile. Four hundred (400) deer in the given area probably represented an optimum number. Black bears probably numbered five individuals per 10 square miles of forest (Shelford 1974:23, 28-29)

Even before the massive destruction of migratory birdlife in the late nineteenth and early twentieth centuries, Wilkes County was probably affected by few of the major flyways. However, the county was probably visited regularly by flocks of passenger pigeons (*Ectopistes migratorius*), which Lawson reports were heavily exploited for meat and fat. Once common in the mountains and piedmont of North Carolina, the last passenger pigeon in North Carolina was reported in 1894.

The most common migratory game birds seen in North Carolina rarely travel as far from the coast as the Appalachian Front. Birds occasionally seen in the western part of North Carolina include the canvasback (*Nyroca valisineria*), the ring-necked duck (*Nyroca collaris*), the greater scaup duck (*Nyroca marila*), the bufflehead (*Charitonetta albeola*), the common mallard (*Anas platyrhynchos platyrhynchos*), the gray duck (*Chaulelasmus steperus*), the blue-winged teal (*Querquedula discors*), wood duck (*Aix sponsa*), ruddy duck (*Erismatura jamaicensis rubida*), and the American Merganser (*Mergus merganser americanus*).

Bird populations which would have lived in the area in pre-European times would have included the now extinct Carolina paroquet (parakeet) (*Conuropsis carolinensis carolinensis*), Canada ruffed grouse (*Bonasa umbellus togata*), an inhabitant of forested mountains, the bobwhite (*Colinus virginianus virginianus*), commonly found in fields and pastures, the eastern mourning dove (*Zenaidura macroura carolinensis*), a resident of fields and open woods, and turkey (*Meleagris gallopavo silvestris*). In Shelford's estimate (1974:23, 28-29) the turkey population in A.D. 1600 probably averaged twenty individuals per square mile.

Raptors in the area would probably have included the turkey vulture or buzzard (*Cathartes aura septentrionalis*), Cooper's hawk (*Accipiter cooperi*), eastern red-tailed hawk (*Buteo borealis borealis*), northern red-shouldered hawk (*B. lineatus lineatus*), broad-winged hawk (*B. platypterus platypterus*), barn owl (*Tyto alba pratincola*) eastern screech owl (*Otus asio naevius*), and great horned owl (*Bubo virginianus virginianus*) (Pearson et al. 1942:25-33, 57-68, 70-75, 81-86, 92-96, 107-10, 192-98).

Reptiles which live in the area and may have provided food sources include a variety of snakes, including poisonous varieties, such as the copperhead (*Agkistrodon mokasen*), water moccasin (*A. piscivorus*), and the banded or mountain rattlesnake (*Crotalus horridus horridus*). Snapping turtles (*Chelydra serpentina*), Muhlenberg's turtles (*Clemmys Muhlenbergii*), box turtles (*Terrapene carolina carolina*), and Cumberland turtles (*Pseudemys scripta troosti*) also inhabit the area (Brimley 1944; Carr 1952:61, 130, 139, 241).

The Yadkin River and its tributaries can be divided into four fish habitats (Tatum et al. 1963), three of which are found in Wilkes County (the fourth is the warm water environment of the coastal plain).

The first relevant habitat is the cold water section, found in the mountains between 1,200-4,000 feet elevations (this includes the survey area). Summer water temperatures run from 62°F to 76°F. The dominant fish of pre-European times was the brook trout (*Salvelinus fontinalis*) (Tatum et al. 1963:11-15) which is the only trout native to North Carolina. In aboriginal times, the range of the brook trout (also called speckled or mountain trout) probably extended at least as low as 2,000 feet and possibly lower. The brook trout now occurs above 3,000 feet, as competition from the introduced rainbow trout has eliminated the native trout from most of the lower elevations (King 1947:15).

The cool water section in the mountain foothills is a relatively narrow belt occurring between 1,500 and 900 feet. The summer temperature range rises to 62° to 78°F, and turbidity increases (especially in areas with eroding farmland), which may adversely affect modern fish populations. The bottoms change from the rock and gravel bottoms of trout habitat to gravel, sand, and boulder beds. The dominant edible fish are the smallmouth bass (*Micropterus dolomicui*) and the red-breast sunfish (*Lepomis auritus*). The overlap of habitats is considerable. Cold water species are common in the upper reaches of this section, while warm water species ranges may extend far up into the cool water belt. Cool water areas are found on the north slopes of the Brushies, in the lower parts of Mitchell, Reddies, and Fisher rivers, in the Elk, Buffalo, and Stoney Fork creeks, and in the Yadkin River between Patterson and Elkin.

The warm water section of the upper piedmont is characterized by rising summer temperature ranges (62°-88°F), turbid waters, and sand and clay bottoms. Some largemouth bass (*Micropterus salmoides*) and blue gill (*Lepomis macrochirus*) are found here, but sunfish (*Lepomis* sp.) and catfish (*Ictalurus* sp.) seem to be the fish usually caught in modern times. Success in fishing is often controlled in this section by seasonal turbidity, which may be largely modern in origin.

The South Prong of Lewis Fork Creek appears to run through both the cold and cool water habitats. The stream along the Wilkes U.S. 421 survey is a popular fishing spot classified as Public Mountain Trout Water (N.C. Division of Highways 1975:12), while the stream at the fork below Champion is slightly more turbid and classed as a smallmouth bass and red-breast sunfish habitat (Tatum et al. 1963:A-49).

On the whole, the Yadkin and its tributaries are considered to be low in fish productivity due to lack of bottom-dwelling organisms, lack of dissolved minerals, and frequent turbidity. Productivity is not evenly distributed throughout the watershed. Both number of fish and total weight of fish per surface acre are found to be smallest in the mountains. There is a steady increase in number and total weight of fish as the elevation of the streams decreases. The warm water, upper piedmont section is an exception to this trend, with a decline in productivity relative to the cool water section. This decline is probably due to very high turbidity, which may be a result of modern farming and dredging erosion. In spite of this trend in productivity, fishing practices, in modern times at least, seem to work in reverse. The cold, mountain streams are reported as most heavily fished; the cool water, small-mouth bass streams of the foothills are moderately fished, while the warm-water streams receive the least fishing. This difference may be due to the difficulties encountered with fishing in turbid, polluted warm-water streams, or to the fact that many of the larger, warm-water fish, such as the catfish, although edible, are not generally considered game fish (Tatum et al. 1963:31,35).

Stone fishing weirs were reported in the warm water section of the Yadkin River just below Ronda in Wilkes County (Rights 1929:7-8, 17-18). Some of them may have been built in aboriginal times; one of the weirs mentioned was still being maintained in 1925.

SUMMARY

Located in the Blue Ridge escarpment, the valley of the South Prong of Lewis Fork Creek would have provided its prehistoric and historic inhabitants with a number of exploitable zones. The broken terrain and the wide range of elevations within and near the valley create a mosaic of terrestrial and riverine microenvironments ranging from mountain peaks and slopes with flora and fauna characteristic of higher elevations (e.g. oak-chestnut forests, elk, and brook trout) to lowland areas with floodplains and more gradual slopes with an oak-hickory forest community and warmer rivers and streams. But perhaps the valley's most important feature is its function as a pathway between the Appalachian plateau and the piedmont with their different physiographies, resources, and cultures.

In addition to outlining these natural features available for exploitation in the past, this chapter has mentioned some of the modern alterations in the environment which can distort the archaeological record (e.g. the area's history of floods and erosion) or complicate the reconstruction of past microenvironments (e.g. the chestnut blight).

CHAPTER 13.

Archaeological Background

Thomas H. Hargrove

ARCHAEOLOGICAL RESEARCH IN THE WILKES COUNTY AREA

Archaeological research in Wilkes County has not been extensive. The Bureau of American Ethnology (BAE) sponsored mound explorations along the Yadkin River headwaters in the early 1880s. These projects represent the only known professional excavations ever to have been conducted in Wilkes County. Cyrus Thomas's *Catalogue of Primitive Works East of the Rocky Mountains* (1891:158) lists six mounds and one cemetery for Wilkes County. The cemetery, located on the second terrace of the Yadkin River, about three miles east of Wilkesboro, had been excavated by a Mr. Rogan for the BAE. The report on the excavation (Thomas 1887:71-73) described a number of graves. Diagnostic grave goods were not illustrated, but one grave was described as containing three extended skeletons, each lying on the right side and oriented slightly east of north. The left arm of one of the skeletons was resting across the skull, with a "flint chip" associated with the left hand. The right arm was extended forward and upward. Grave goods included animal bones of unidentified species, mussel shells, a "large broken pot," several broken pots in association with animal bones, and a bear skeleton (underneath the legs of the three humans). In the century which has passed since Mr. Rogan dug in the upper Yadkin Valley, three archaeological surveys (Purrington 1976; Broyles 1960; Keel 1963) have been conducted in Wilkes County, although to our knowledge none involved extensive excavations. Several other BAE excavations took place at the same time on Yadkin River sites in Caldwell County very close to Wilkes County (Thomas 1887). Several burial mounds and cemeteries were reportedly excavated, turning up some unusual features. According to the reports, two of the mounds were built over circular, steep-sided pits about 3 feet deep and 33 to 38 feet in diameter. One of these mounds was centered around a skeleton standing in a pit and enclosed by a vault of water-worn boulders. Nine other stone vaults covered squatting skeletons, but several seated skeletons were without vaults. Two prone skeletons lacked vaults. Both vaults and skeletons showed traces of fire scarring, apparently from fires built after the enclosing. The pit was eventually filled in and mounded over at a height of about 18 inches. Gravegoods included soapstone pipes and polished celts. A nearby triangular pit cemetery contained several vaulted burials, mostly seated, and a mass grave of at least ten individuals. A central individual's gravegoods included rolled, cylindrical copper beads, iron tools, shell beads, and a large, engraved shell gorget. The other individuals associated with the central figure were accompanied by copper points, mica plates, polished stone celts, and pigments (Thomas 1887:61-73).

The burial customs described by Rogan and Thomas seem to make up an association peculiar to the upper Yadkin and may, in fact, have been slightly exaggerated, or at least mildly stretched out of true proportion. The large, distinct burial pits containing individual rock cairns covering seated skeletons, scarred by fire and then covered by low mounds, do not seem to have nearby parallels. Stone burial enclosures are reported by Lewis and Kneberg (1970:144, 179) for the Dallas phase of Hiwassee Island in eastern Tennessee, but these burials consisted of stone slabs, not rounded boulders. The Dallas slabs enclosed prone, flexed bodies scattered throughout a village site, not seated and concentrated in a mound or cemetery. Webb (1938:9-10) reported stone-covered graves in the Norris Basin in eastern Tennessee, but these were free-standing mounds of stone built up from the natural land surface. The Peachtree Mound and village site (Setzler and Jennings 1941:33-34) in southwestern North Carolina contained four stone-surrounded burials, but these were intrusive placements of cubical, slab sided graves with stone floors. None of the above examples from other areas were reported with signs of fire associated with burial.

"Scorched tombs" have been reported from Hiwassee Island's Hamilton Focus (Lewis and Kneberg 1970:137), which has also been associated with the Connestee phase (late Middle Woodland) of the Appalachian summit (Dickens 1976:9-15). Keel (1976:225) dates the Connestee at A.D. 200 to A.D. 650. These burials are covered with mounds, but the tombs consist of prone, extended burials covered with fire-scarred logs. Additionally, the mounds are built up from an area scraped bare of humus but not deeply excavated. Log tombs were placed in the center of the cleared area and covered with a small soil mound. Additional burials without tombs were simply set on the surface of the ground or against an earlier mound and covered with their own small mounds. Eventually, a single, large mound was formed. Five burials of the Pisgah phase at the Warren Wilson site in western North Carolina (assigned by Dickens to the early Mississippian A.D. 1000-1450 of the Appalachian summit) had fires built over them, but these burials (four log tombs and one pit) had been placed under house floors. The fires were apparently domestic hearths and not special funeral fires (Dickens 1976: 9-15, 125). A scorched pit burial was also reported by Ayers (1965) from the New River basin in Grayson County, southwestern Virginia. A partly flexed pit burial in a rock shelter was found with a sheet of schist over the head, a bone awl in the right hand, and quartz blades near the left hand. After the burial, a fire over the head and chest area carbonized the bones from skull to sacrum. The Peachtree site contained two cases where fires were built over pit graves (Setzler and Jennings 1941:33-34).

Since the 1940s, the Research Laboratories of Anthropology of the University of North Carolina at Chapel Hill has recorded archaeological site information from Wilkes County including numerous sites reported by local residents. Five sites were reported from the valley of the South Prong of Lewis Fork Creek in the vicinity of the U.S. 421 survey. 31Wk61, located one mile east of the Wade Harris bridge on a dirt drive to the Davis cabin north of U.S. 421, consisted of a cache of ten slate blades. 31Wk3, located along a stream about 600 feet north of the proposed U.S. 421 right-of-way, yielded 3 potsherds, 3 chipped stone projectile points, 6 scrapers and miscellaneous flakes. 31Wk32, located 300 feet north of the right-of-way, is identified as a "cemetery reported on farm" with an "old Spanish coin" excavated from a mound along with 3 sherds, 7 chipped stone projectile points, and 19 pieces of chipped stone. 31Wk13, located about 1.3 miles north-northwest of the eastern end of the right-of-way, yielded numerous sherds and one rough triangular point. The fifth site--31Wk18--was identified as a stratified village site on the Yadkin River opposite the confluence of Lewis Fork Creek. This site contained both Savannah River and late Woodland components. Each of the other four sites also appear to have been associated with the late Woodland period. Broyles (1960) noted that several additional sites in the area had eroded away completely. The floods of 1916 and 1940 removed whole sites or sections of sites and redeposited them downstream. Nineteen other sites were reported by Broyles (1960) for the upper Yadkin area in Wilkes County, ranging chronologically from Morrow Mountain occupations to late Woodland village sites. She noted that late Archaic occupations were particularly extensive, while early Woodland sites were "virtually nonexistent," suggesting the survival of Archaic adaptations in the area during the development of Woodland adaptations elsewhere. The lack of early Woodland and middle Woodland sites in Wilkes County has been noted by Keel (1976:219) and Holland (1970) in neighboring North Carolina counties and in nearby southwestern Virginia. Adjoining Ashe County also seems to lack early and middle Woodland cultures (see Chapter 20, this report). However, Purrington (1974:6-7, 42) has identified some possible early and middle Woodland ceramics and points found in neighboring Watauga County. Broyles also suggested that the late Woodland and historic occupants of the upper Yadkin valley might have been Catawba Indians (1960:2-5).

No Paleoindian sites have been reported from Wilkes County, although fluted points have been reported from the neighboring mountain county of Ashe on the west and the piedmont county of Yadkin on the east (Perkinson 1973:50).

Keel (1976:223) has summed up the current state of knowledge for the prehistory of the general area:

> "Although a great deal is known about the prehistory of the eastern edge of the Carolina Piedmont, where Joffre L. Coe has carried out extensive research over the last three decades,

virtually no details are known about the western edge of the Piedmont. Several investigations made on the northwestern Piedmont indicate that the Upper Yadkin Basin, like southwestern Virginia, neither was overly influenced by events taking place in the southern Blue Ridge, nor was an influence upon Blue Ridge cultures."

PROTO-HISTORIC WILKES COUNTY

Ethnographic information on the aboriginal inhabitants of Wilkes County is almost nonexistent. The two groups which most likely lived in (or at least exploited) Wilkes County in the last years before the European invasion were the Tutelo and the Cherokee.

The Tutelo, a Siouan group, were apparently never visited by Europeans who might have left extensive records of the contact. In 1671 a group of Tutelo and related Saponi were found on the upper reaches of the Staunton River in Virginia during the course of the Fallam and Batts expedition to find the "South Seas" (Alvord, et al. 1912:197). The next known contact (or near contact) occurred in 1701, when John Lawson visited the Saponi, then living on the Yadkin near the future site of Salisbury, North Carolina (Lawson 1967). The Siouan groups of the piedmont were then under great pressure from the Iroquoian groups in the western mountains. The villages which Lawson visited, and which he implied might have numbered "not above seventeen houses," were apparently surrounded by log palisades. Although some of Lawson's statements cannot be isolated with respect to any one group's practices, in connection with the Saponi he mentioned that they occupied land covered by "chestnut-oak" forests filled with turkey and providing an abundant supply of acorns. The acorns were reportedly beaten into meal or used to make soup or thicken venison broth. Lawson was also able to meet a few Tutelo during his stay among the Saponi. At that time, five Cherokees had been captured by the Saponi, who had planned to execute them. A group of "Toteros, a neighboring nation, came down from the western mountains," possibly from the headwaters of the Yadkin, and asked the Saponi to allow the Cherokees to return to the mountains. Several Tutelo captives had recently been freed by the Cherokees rather than executed, and the Tutelos apparently felt obliged to return the favor and released the Cherokees. Lawson described the "Totero" visitors as "tall likely men, having great plenty of Buffaloes, Elks, and Bears, with some sort of Deer amongst them...." (Lawson 1967:50-53). Lawson estimated the combined population of five neighboring Siouan groups (Tutelo, Saponi, Shakori, Keyawee, Occanneechi) at 750 members (reported in Swanton 1946:201).

Information on some of the economic practices of piedmont Siouan groups can be pieced together from Lawson's observations. A seasonal pattern of exploitation was followed, involving the winter dispersal of men and some women to satellite hunting camps around the main towns, which were then occupied only by children, the elderly, and the rest of the women. Spring saw the reunion of the groups for the planting of maize, beans, and squash in the cultivated fields adjacent to or surrounding the towns. These fields, Lawson reported, were preferably not placed in timberland, which was considered too difficult to clear. Fishing was accomplished with projectiles or weirs. Fire drives were sometimes used in communal hunts, and snares were used to catch smaller mammals such as the beaver. The passenger pigeon, an important resource at the time, was reported by Lawson during his Saponi visit.

> "The Indians take a light and go among [the Passenger Pigeons] in the Night, and bring away some thousands, killing them with long Poles, as they roost in the Trees. At this time of the Year, the Flocks, as they pass by, in great measure, obstruct the Light of the day" (Lawson 1967:50).

Wild plant resources such as acorns, hickory nuts, walnuts, and various berries and fruits were also exploited and recorded in the ethnographic literature (Lewis 1951:63, 91-103).

The Cherokee are much better known than the Tutelo, both ethnographically and archaeologically. In historical times, their easternmost villages appear to have clustered along the Little Tennessee River and its tributaries. This places the Cherokee settlements far to the southwest of Wilkes County, but it is likely that Wilkes was considered part of that group's hunting and military territory (Gilbert 1943:186-187). Since the Cherokee have recently been extensively described elsewhere (e.g. Dickens 1976; Keel 1976) and probably occupied Wilkes County only intermittently, if at all, space will not be devoted here to reviewing Cherokee culture. Two comments by Keel (1976:244) in his description of Appalachian cultures, however, may be relevant to understanding both the proto-historic and aboriginal exploitation of Wilkes County:

> "There is clear evidence that, at any one time, the inhabitants of the area were not adapted to any particular topography; instead the people of all periods used all of the landscape...."

> "The seasonal variation of availability of wild food plants coupled with the movements of deer as well as their predators and likely other species may account for the rather high density of sites in the upland areas through the history of aboriginal occupation of the Appalachian summit area."

In 1752 Spangenberg and his party visited the Yadkin in Wilkes County, after emerging from the Blue Ridge by way of Lewis Fork Creek. Although the party had met with groups of Cherokee hunters in Caldwell County to the south, neither hunters nor settlements were encountered in the weeks before arrival in Wilkes County. One white settler was found living by the Yadkin near "old Indian fields, on which the Cherokee probably once lived" (Spangenberg 1922:48-49, 57-58).

By 1753 the Yadkin River Valley west of its east bend, near Moravian Bethabara, was apparently controlled solely by Cherokees (Hayes 1962:5).

SUMMARY

From this review of previous archaeological and ethnohistoric information on Wilkes County, it is obvious that the northwest section of the North Carolina piedmont has not been extensively investigated. Apart from nineteenth-century excavations, whose published reports should be accepted with some caution, knowledge of Wilkes County's prehistory rests on surveys which are largely dependent on surface remains near the Yadkin River. Lacking intensive investigations along the Blue Ridge escarpment, neither the local culture sequence nor the nature of specific cultural adaptations to the area have been adequately outlined. Some inferences have been drawn from work in the piedmont (Coe 1964; Lawson 1952) and the Appalachian Summit region (Keel 1976; Dickens 1976). The rare published references include Thomas (1891) and Keel (1976:223). Unpublished reports include those by Broyles (1960) and Purrington (1976), and Keel (1963).

Historical Overview of the U.S. 421 Project Area

CHAPTER 14.

Jerry L. Cross

INTRODUCTION

The area of the U.S. 421 lies in the eastern foothills of the Blue Ridge, a belt about seven miles wide which forms a transition zone between the western piedmont plateau and the Blue Ridge proper. The zone rises to about 2,000 feet in altitude and the topography is steep and broken. Sharp ridges flank deep, narrow valleys. Through the southwestern quadrant of Wilkes County runs U.S. 421, a portion of which extends from Champion to the Watauga County line and crosses the Blue Ridge at Deep Gap. The highway is bounded on the north by Yates Mountain and on the south by Dividing Ridge, which in turn are bounded by the North Prong of Lewis Fork Creek and Stony Creek respectively. Efforts were made to place emphasis upon the corridor thus outlined, but sparse data and apparent lack of actual settlement rendered the task virtually impossible.

More than 60% of the county still remains forested. Unlike mountain counties farther west, the mountain tops and slopes in western Wilkes were rarely cultivated or employed as pasture land. Only a few settlements seem to have existed along the creeks in the narrow valleys of the corridor; thus, any study of land use and population trends must be done in terms of the county as a whole with a few isolated facts relevant to the area of the corridor.

EXPLORATION AND SETTLEMENT

The first white men in what is now Wilkes County came as hunters seeking the game that abounded in the region. Precisely when they entered the area is uncertain, but a few hunting cabins had been built by the early 1750s. One such hunter, a Welchman named Owens, had a cabin near present day Wilkesboro when Bishop Augustus Gottlieb Spangenberg arrived in late 1752.

Bishop Spangenberg came to North Carolina in the late summer of 1752 in search of a 100,000 acre site for a Moravian settlement. He arrived in the old Albemarle District, but unhappy with the lifestyle there, he struck out for the west. By November the party of six was encamped on Wilson's Creek in Alexander County, then a part of Anson County which included all of western North Carolina west of the central piedmont. Spangerberg decided to cross the Brushy Mountains and view the land on the headwaters of the Yadkin, but his guide, a white hunter who had volunteered for the job, lost his bearings and led the party up the Blue Ridge at its most inaccessible point. A long and perilous climb in early winter found them near Blowing Rock from which they wandered northward into present day Ashe County.

The Spangenberg party left Ashe County by crossing the Blue Ridge and following Lewis Fork Creek to the Yadkin. Arriving in the area of Mulberry Fields, an old Indian settlement, Spangenberg encountered the hunter named Owens. At that time, December, 1752, Spangenberg noted in his diary that there was not another cabin within 60 miles. In the name of the Moravian Church, Spangenberg entered claims for nearly 9,000 acres adjoining Mulberry Fields, including the mouth of Lewis Fork Creek and the land upon which Wilkesboro was eventually built. The first permanent Moravian settlement, however, was not to be in Wilkes but in Forsyth County, for which Spangenberg headed in early 1753. Enroute eastward from Mulberry Fields, Spangenberg encountered a more densely populated area and commented:

> Having crossed the length and breadth of North Carolina, we have found towards the west, nearer the mountains, that many families are moving in from Virginia, Maryland, Jersey, and even New England. In this year alone [1752] more than 400 families have come with horse and wagon and cattle (Fletcher 1963:10).

Among these people, Spangenberg selected a site for the Moravian settlement.

In 1753 Rowan County was created out of Anson County; Wilkes was a part of the new county. Spangenberg's diary clearly states that permanent settlement had not then extended to the Blue Ridge foothills (Spangenberg 1922). A few years later the French and Indian War broke out and Indian hostility towards the English further delayed settlement. With the Cherokee defeat in 1761 the area was opened and among the first to reside in Wilkes County was one Christopher Gist. His home was located on the north side of the Yadkin opposite the mouth of Saw Mill Creek, about one mile west of present Wilkesboro. Gist was an agent of the Ohio Company whose accomplishments included leading George Washington to the French forts in the Ohio Valley and becoming the grandfather of Sequoyah, author of the Cherokee Syllabary. Others followed and when Wilkes County was carved from Rowan in 1778, the population stood between three and four thousand. This, however, included Alleghany, Ashe, and Watauga counties, all later cut from Wilkes. The latter was for many years the most populated area of Wilkes County.

By 1782 some activity was evident in the area of the U.S. 421 corridor. In March, John Cleveland, Sr., was given authority to establish a gristmill on Lewis Fork Creek. An unusual feature in the license declared that when built, the mill would be deemed a public mill. Captain Robert Cleveland, brother of Benjamin, had settled on the North Fork of Lewis Creek, and his cabin has long been regarded by the local people as the oldest extant structure in Wilkes County (Figure 14.1). Robert's other brothers, Absalom and the Reverend John Cleveland, built homes along the same creek. James Thompkins set up a mill on the South Fork of Lewis Creek, while down on Stony Creek James Kendall and Moses Waters each established a mill seat. The establishment of mills brought numerous settlers to the North Prong of Lewis Fork Creek, and a few built on Stony Creek. Most were of Anglo-Saxon background and arrived in Wilkes County as a result of southern (Virginia) and westward migration.

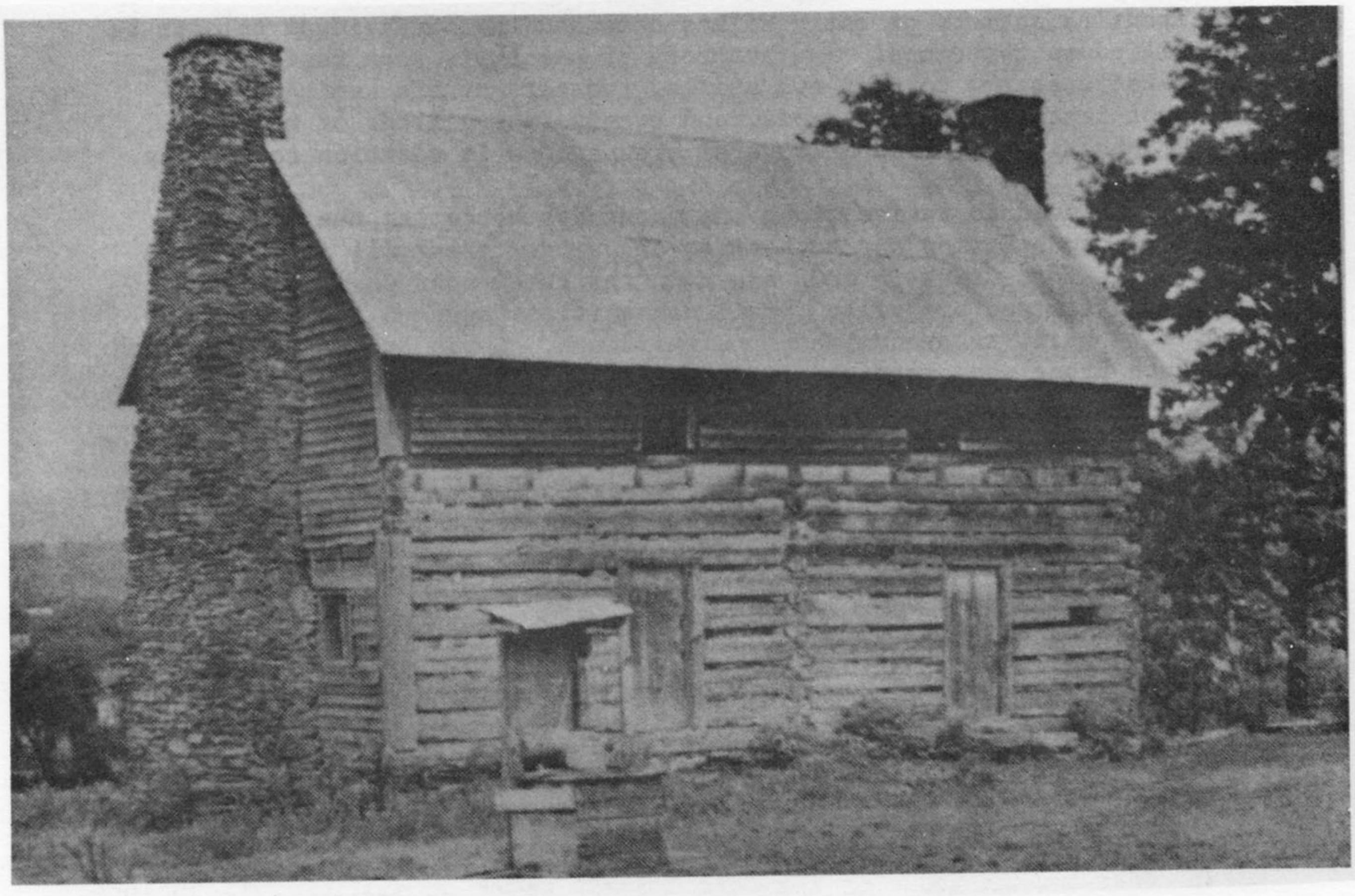

Figure 14.1. The Robert Cleveland House in Wilkes County, built ca. 1770s.

GROWTH AND DEVELOPMENT

For more than twenty years, the Wilkes County Court met in a courthouse erected near Mulberry Field Meeting House. The legislature of 1799 appointed commissioners to plan a town as the permanent county seat. By 1801 Wilkesborough (name later shortened) had been laid out around the courthouse. Almost immediately population of the county began to center around the seat of government. New roads were laid out for access to Wilkesboro and several passed along Lewis Fork Creek. In 1806 the county court ordered a review and improvement of a trail from Holman's Ford to Deep Gap. A segment of that road, from Maple Springs to Deep Gap, follows closely and is almost identical to the route of U.S. 421.

Most of the early settlers were small farmers like those of the piedmont. Nearly two thirds of taxables owned their land in 1782. There were 129 slave owners claiming an average of four slaves each, and by 1790 only two plantation owners listed as many as twenty-two slaves. Without a flourishing plantation system, no one cash crop prevailed. Cotton, flax, corn, rye, and fruits predominated. Grains and fruits were distilled and made into spirits, a time honored occupation in the county. Native wild pea vines supplied natural fodder for hogs, cattle, and sheep which became the chief items for export.

The frontier society of early Wilkes demanded that individual talents be as diversified as the crops. An inventory of one Lewis Fork resident's estate illustrates the point; two stills, two sets of blacksmith tools, ten sides of leather, cobbler tools, and twenty-four gallons of whiskey. Obviously John Eller dabbled in several occupations in addition to farming.

Mills continued to thrive along the waterways bordering the corridor under study. Amos Harmon was authorized to build a gristmill on the North Prong of Lewis Fork Creek in 1808 and down the creek near Champion John Bolerjack constructed his mill. Small communities began to spring up and churches were built to accommodate the residents. Lewis Fork Baptist Church on the South Prong was organized in 1792, and the surrounding community took the same name. Some years later (1836) Benjamin Duncan was licensed to retail spirits at his store on Stony Creek, indicating that sufficient patronage existed to support a mercantile business. Around Maple Springs, on U.S. 421, a Methodist congregation established a church in a log house, and the present community was an outgrowth, which suggests that there was indeed a previous road passing through the site.

Between 1800 and 1810 some of the larger farms developed into plantations, though none equalled their eastern counterparts. By 1815 there were 1,131 slaves in Wilkes County, but many were held in what became Watauga County in 1849 and part of Caldwell in 1841. The slave population grew very little in the antebellum period, and as late at 1850 there were only 1,142 slaves compared to 10,746 whites. The plantation system never really took hold in the county and rural life in Wilkes remained virtually the same as it was at the time of settlement.

Conflicting loyalties during the Civil War sharpened the political tensions of the local citizenry, but not until 1865 did military action come to Wilkes. In late March General George Stoneman marched his Federal troops through Deep Gap and on to Wilkesboro along the old road over which part of U.S. 421 was laid. Stoneman left Wilkes after two days at the county seat, but a Captain Wade, believed to have deserted from Stoneman's army, formed a band of outlaws and terrorized the countryside. Their headquarters was Fort Hamby, not a military establishment but a log house on a high hill on the north side of the Yadkin River. The exact site is now under the waters of W. Kerr Scott Reservoir but is noted by a highway historical marker.

Following the Civil War, agricultural production in Wilkes declined and the livestock industry almost disappeared as an income producer. Population remained virtually static in comparison with other counties. By 1900 only 15,549 people lived in Wilkes County, an increase of less than 5,000 in fifty years. Of course the creation of Alleghany County in 1859 stripped Wilkes of some of the population it had in 1850, but the increase was still extremely slow. Milling was still the chief industry, with 95 producing grain and 54 turning out lumber. In addition, there were 12 tanneries and one pottery workshop.

The coming of the railroad in the early twentieth century revived the economy of eastern Wilkes County, but for reasons still not clear, the rails stopped on the north side of the Yadkin, opposite Wilkesboro. No effort was made to extend it beyond that point. The result was the growth of North Wilkesboro around the terminus of the railroad. The effect upon the U.S. 421 corridor area was decidedly negative. Not only did the area fail to benefit from the advantages of improved transportation, but much of the population moved to homes closer to the railroad, leaving only a handful of residents along the corridor. By 1910 the railroad had helped to increase the county population to 30,282; however, there were no communities in the corridor area with more than twenty-five residents.

The railroad brought a new industry to Wilkes which also revived agriculture. Canning became big business, using apples, vegetables, dairy products, and nuts as ingredients. The rejuvenated economy suffered a serious blow in July, 1916, however, when more than 20 inches of rain fell in twenty-four hours. Swollen streams flooded the countryside. Dams, roads, and bridges were swept away as the rushing waters stripped farms of topsoil, homes, barns, and livestock. Afterwards, some returned to their farms to find a deep layer of sand deposited where their crops had once grown.

While Wilkes was recovering from the disaster, the state began a program of highway building. This helped to uplift the agriculture of the county and spurred some resettlement of the area along the U.S. 421 corridor. Most of the new settlers either owned small farms or worked in North Wilkesboro. By 1950 population of the county passed the 45,000 mark with over 300,000 acres listed as farmland. The census also revealed that 30% of the homes in Wilkes County were built between 1940 and 1950.

This would probably apply to the majority of homes in the corridor as well. Since 1900 farm tenancy in Wilkes has been declining and is now less than 6%. Two hundred years after its creation, Wilkes County is still a land of small farmers working their own soil.

U.S. 421 Research Framework

CHAPTER 15.

Thomas E. Scheitlin

INTRODUCTION

A common research design will be utilized for both the Wilkes County U.S. 421 and Ashe County U.S. 221 projects (see Part IV). The research designs were combined primarily because of geographic proximity of the two project areas; the projects are but 14 air miles apart and share many environmental qualities. The Wilkes County project follows a pass through the Blue Ridge escarpment into the Blue Ridge inner-mountain areas, which includes the Ashe County project. An examination of the flora and fauna of the areas exemplifies some of the environmental similarities between areas (see Chapters 12 and 20). The similarities and, at the same time, the dissimilarities of the areas indicated that these areas would provide an ideal laboratory to study and compare the cultural processes occurring in a mountain pass to those of an intermountain area. Given this situation, a joint research design will be presented with regard to the prehistoric resources in the project areas. The plan of research represents an elaboration of informal problem domains arrived at prior to field work. The informality of those problem domains were the result of time limitations prior to field work.

The research design incorporated in both the Wilkes and Ashe studies centers on five major components or problem domains (see also Chapters 2 and 8), including:

(1) site density estimation
(2) site chronology identification
(3) evaluation of site significance
(4) evaluation of survey methodology
(5) settlement pattern analysis

The first four problem domains will be considered on a project-by-project basis with the fifth incorporating the results of both studies.

SITE DENSITY ESTIMATION

The derivation of site density seems to be a simple problem--that of finding the sites in a given area and dividing the number of sites into the area surveyed, resulting in a density figure. Unfortunately, finding all the sites in a given area is a difficult task, as archaeological sites occur within the three dimensional space between the ground surface and the underlying culturally sterile soil. Thus, to precisely determine site density, this entire stratum of earth must be examined. Such examination would be so expensive, destructive, and time consuming, however, that it is not considered feasible. Archaeologists have become increasingly aware of site density and its problems; one need only look at the sampling literature to become aware that the prediction of site density is a complex problem (Mueller 1974; Mueller 1975; Lovis 1976; S. Plogg 1978). Four factors are considered particularly important to the derivation of accurate site densities: (1) sampling techniques; (2) stratification of the research area; (3) identification of the limitations of the methodologies employed; and (4) identification of techniques to be used to calculate the density estimates. Each of these factors will be examined below.

Variation in sampling technique is necessary primarily because of non-uniform land use. Thus, varied sampling techniques allow the archaeologist to sample areas with ground cover in a different way than he might approach a plowed field or an open area within a pasture. In the present case, shovel tests were used in areas with ground cover; plowed areas, or areas with no ground cover, were visually scanned for archaeological remains. Both techniques involve sampling the project area. With shovel tests, a stratum of soil from the ground surface to 30 to 40 centimeters in depth is sampled. Since the tests normally consist of a cylindrical-shaped hole approximately 50 centimeters in diameter, placed at 30-meter intervals, considerably less than a 1% sample of the total area is sampled. In cultivated fields the surface represents a sample of materials 10 to 15 centimeters subsurface (the depth turned up by plowing). Every tenth crop row was inspected, producing a visual sample of approximately 10% of the surface area surveyed. Visually inspected areas are assumed, in most cases, to represent only the surface, providing no depth sample. Ten percent or greater of these areas are actually inspected. All of these methods are appropriate for their specific areas, but it is obvious that the visual examination of plowed fields provides a more accurate indicator of sites, both vertically and horizontally, than the other methods.

Stratification of research areas is necessary given our bias that the environment is the major determining factor in site location--that various environmental zones were exploited differentially by prehistoric populations. If two environmental zones exploited differently by prehistoric populations are lumped together, density estimates may be artificially high or low depending on which zone(s) the sites were found in and how they are interpolated into the other zone. In the U.S. 421 case, if sites found in fields were used to estimate the number of sites in the wooded areas, which are composed of highly sloped areas walling the flat pass or stream valley (which include cultivated fields), the proposed number of sites would be artificially high. Thus, accurate density estimations require stratifying a project area and projecting site density estimates only within appropriate strata.

Whenever an area is examined archaeologically there are limitations to the study, all of which should be identified. In the Wilkes and Ashe counties instances, no soils were systematically tested below 40 centimeters in depth (augering tests were too infrequent to provide an accurate sample of deep archaeological deposits). More specifically, in the U.S. 421 case, density estimates were to be derived from the survey of the plowed areas. Thus, site densities represent the sites that occur from the surface to approximately 15 centimeters below the surface. Thus, our results are not applicable to areas below 15 centimeters in depth. Another assumption is that all or nearly all of the sites in plowed areas were identified by the survey. If this is not the case, our density estimates will be artificially low. Such limitations and assumptions occur with any archaeological study and must be stated for accurate evaluations of the survey results.

Finally there are numerous mathematical techniques that can be applied to estimate site densities. It is theoretically possible, for instance, to estimate the number of sites in an area based on the derivation of the probability of each test pit or visual transect locating one artifact. Such derivations, however interesting, are overly complex and may lead to inaccurate density estimates due to the difficulties of recording and including all relevant factors in the estimates (e.g., differential site size, variations of artifact density within a site). A simpler approach was adopted for the present projects, utilizing the results from the plowed field survey. These represent the most thoroughly sampled area, and the one in which most of the U.S. 421 sites were found. Thus, in the U.S. 421 case, density estimates from the plowed fields were interpolated to appropriate land use areas within the overall stream valley strata. These predicted site densities represent the most accurate estimates possible for the survey area.

SITE CHRONOLOGY

All sites recorded during the survey were identified according to period of occupation (i.e., early, middle, or late Archaic and/or Woodland, protohistoric, and historic). Temporal assignments were based upon point and ceramic chronologies derived in surrounding areas (Coe 1964; Keel 1976; Dickens 1976; Broyles 1971). Appendix I provides descriptions of the artifact types used in the analysis. These assignments, however, should be viewed as tenuous due to the scarcity of both ethnographic and archaeological information for both study areas (see Chapters 13 and 21). No excavations at a stratified archaeological site near either project have been reported in the literature. However, many of the point types have been identified in areas on either side of the project areas. Furthermore, such chronological assumptions do not take the ethnographic information into account. These indicate that the projects (more specifically the Ashe County study) are in a zone which is in between or geographically transitional to the known cultures of the area and in which early explorers found little indication of aboriginal occupation. If such is in fact the case, it might be expected that the introduction of specific point styles into the area might have been retarded or otherwise occurred later in time than those defined in the piedmont. Nonetheless, the sequence of these point types should remain relatively constant; thus, they are effective tools for relative dating. Presently, the firm delineation of time periods in the study areas is dependent upon the discovery, excavation, and analysis of stratified archaeological remains in the area.

Temporal assignments of historic period sites was to be undertaken on a more specific base utilizing known artifact type-sequences.

EVALUATION OF SIGNIFICANCE

The determination of archaeological significance is an important and well-discussed subject in cultural resource management; similarly, little agreement occurs within the archaeological community about the subject (Schiffer and Gummerman 1977; Raab and Klinger 1977; Talmage and Chester 1977). Several approaches to significance were taken during the U.S. 421 and U.S. 221 projects. Of primary importance in the areas of study are *in situ* remains which could be used to refine artifact chronologies for the area. For the purposes of this study, this will be deemed "archaeological significance," that is, having the ability to add greatly to our archaeological knowledge in the subject areas and/or the ability to answer specific archaeological questions about the areas. In the case of the northwestern part of North Carolina, any intact or stratified site would be considered significant, given the void of archaeological information in the area and the generally disturbed nature of the known sites in this area.

Small surface artifact scatters may also be significant (Talmage and Chester 1977). However, sites of this nature will be ruled significant only if there are few or no other sites of this type presently preserved in surrounding areas. This type of significance will be referred to as "probabilistic significance." This is based on the premise that some of all types of archaeological sites should be preserved, thus recording the full range of aboriginal behavior (i.e., the remains created by that behavior).

If it had been the case that a recorded site was of particular local or state importance, such could also be ruled significant via "public significance." Thus, sites in both study areas were evaluated for archaeological, probabilistic, and public significance (see also Chapter 2 and Chapter 10).

EVALUATING SURVEY METHODOLOGY

Any ongoing archaeological program must constantly reevaluate and refine its field methodologies to produce the greatest return of knowledge with the least expense. As such, an important part of the summary and conclusions of each of the projects will be the evaluation of field and analytical methodologies. By the same token, such evaluations should be adequate to map out a framework of methodologies and archaeological questions to be employed in future research.

SETTLEMENT PATTERN ANALYSIS

As used here settlement pattern analysis is the exploration of the relationships between site location and the environment. It will also serve as the base for the analysis of the differences between the Wilkes and Ashe counties project areas. However, the evaluation of sites within a settlement framework (as discussed in Chapter 2) is generally inappropriate, given the aforementioned problems of establishing site chronologies and, in many cases, the disturbed nature of the remains.

The examination of settlement patterns between areas appeared to be extremely promising. It was hoped that the archaeological differences between the areas would reflect the differential use of the U.S. 421 project corridor (Deep Gap pass) and the inner-mountain U.S. 221 area. The differences, it was hypothesized, would be partially observed in the types and varieties of artifacts and raw materials, presumably attributable to trade along the pass. The nature of archaeological resources in the U.S. 421 area, however, precluded the testing of the hypothesis that intensive trade occurred through the gap. The investigations did, however, point to several alternative explanations of how the area was used and its relationship to the U.S. 221 study area. Thus, no settlement pattern hypotheses were fully tested by either of the studies, although both provide pertinent information for the development of hypotheses for future work in the region.

U.S. 421 Survey Design

CHAPTER 16.

Thomas E. Scheitlin

INTRODUCTION

The Wilkes County U.S. 421 survey incorporated a number of methods to provide archaeological reconnaissance for the 165-acre corridor. These methods included pedestrian walkover, shovel testing, and augering (3-inch diameter bucket). Specifics about the general field conditions, intensity of the survey, site definition, and data collection strategies are discussed below.

FIELD CONDITIONS

As survey operations began in middle October, the vegetation was in its annual process of changing from its summer to winter expression. Pastures were still green, but grass and weed growth was somewhat retarded due to the dry summer and approaching winter. The trees began their cyclical change of color during the field work. This was most noticeable in the northern reaches of the project, at 1,800 feet above mean sea level (MSL) and less noticeable at the southeastern end of the corridor, at 1,340 feet above MSL.

Fieldwork was initiated with a drive-over/spot check of the highway corridor to familiarize the crew with the project area's features. It was noted that a good deal of the area to be surveyed was asphalt, and that in the lower reaches of the project many steep toe slopes would be transected. The center line of the proposed right-of-way was marked by DOT survey stakes and a path had been cut through the forested areas along this center line. Right-of-way boundary markers were also useful for location of the corridor in heavily wooded areas, though they proved to be much less frequent than desired. Evidence of erosion was noted throughout the project area. This has been encouraged by the extensive logging which was indicated by the numerous spoil piles, skid trails, and collection areas throughout the project area. Several areas, both in and adjacent to the right-of-way, had been affected by the moving of houses to bulldozed plots outside of the right-of-way.

Accessibility to the survey corridor generally was quite good. There were, however, two notable exceptions. One briar patch approximately 50 by 200 feet proved, after several vain attempts, impenetrable even with machetes. The second exception was the crossing of the South Prong Lewis Fork Creek without benefit of bridges. Such traverses, perhaps delightful during August, require true archaeological devotion during the frost-laden mornings of October.

Ground surface visibility varied greatly from zone to zone. The 55 acres of altered land had little or no visibility; asphalt covered most of this area. The 13 acres of pasture/lawn had zero visibility. The 11 acres of fields/gardens had visibility ranging from 20 to 100% (see definition, Chapter 9). This was due to some fields having the remnants of the previous years' corn crop. The 53 acres of woods had an average visibility of near 0, with 2 to 3 inches humus cover. The 29 acres of secondary growth had surface visibility ranging from 0 to 40%.

Previous disturbances to the survey area have been extensive, since the area is one of two passes into the Appalachian Mountains in North Carolina and has been subject to at least three roads or paths in the past. This is indicated by the massive amount of cutting and filling along the proposed corridor. The 55 acres listed as altered lands in the corridor is, if anything, a low approximation of the total amount.

SURVEY INTENSITY

The survey included a pedestrian walkover of the proposed corridor by a crew of two archaeologists. The corridor itself averages about 205 feet in width, much of which includes a 30-foot width of existing U.S. 421. The proposed corridor varies greatly in width, however. Thus, in the more narrow areas, the field crew was spaced approximately 30 meters apart and walked in a straight path along the corridor. Where the corridor was significantly wider, the crew members maintained similar spacing but zigzagged the corridor in an attempt to provide uniform coverage of all potentially undisturbed areas (see Figure 9). Shovel tests, 30 to 60 centimeters in diameter and 30 to 40 centimeters in depth (surface area equals 2 $feet^2$ or 0.18 $meters^2$) were placed at 30-meter (paced) intervals in areas with no ground visibility. In open areas, such as a pasture, the sod was removed as a unit to facilitate replacement after the subsurface examination. When cultivated areas or gardens were examined, an average of every tenth crop row was walked. This has been referred to as the "crop row" technique in Chapter 9. This approximated a 10% coverage of these open areas. Woodlands required a different survey strategy. They were treated as pasture with regard to shovel testing and examination of cleared areas, with the exception that areas with slopes greater than 30% were not shovel tested. In addition, all exposed surfaces within these areas were visually examined (see Figure 16.1).

Finally, all suggestions as to the location of archaeological sites by residents were investigated. This produced two sites (Wk67 and Wk68), as well as examination of the reported mill site. Since the field crew lacked expertise in historical remains, all locational data were recorded on historical sites and structures and artifactual remains were collected and described as well as possible during the initial October field work. All structures and sites with historic material were later examined in the field by professionals in each respective field.

SITE DEFINITION

During the U.S. 421 survey a prehistoric site was defined as any indication of past human behavior. Thus, one flake could qualify as a site. Pragmatically, only obvious culturally produced flakes and sherds were defined as sites. Therefore, criteria for distinguishing lithic sites that were composed only of quartz were more rigorous than those of chert or other cryptocrystalline stone due to the difficulty of distinguishing worked from naturally fractured quartz.

Although all historic remains were initially recorded by the survey crew in the same manner, the final definition of a site was left in the hands of the historic archaeologist. It should be noted that the designation of isolated historic artifacts as sites would be impractical for most of North Carolina (see also Chapter 9). Thus, historic artifacts were identified as sites according to their relationships to features or clusters of artifacts. Finally, historic structure sites were defined as any standing structure built prior to 1930 A.D.

DATA COLLECTION

All prehistoric sites were recorded on the North Carolina Prehistoric Archaeological Site Form (designed by the Archaeology Branch/N.C. Department of Cultural Resources). Permanent site numbers were obtained from the Research Laboratories of Anthropology at UNC-Chapel Hill. Information on historic sites and structures was recorded in field notes and on the highway blueprints. In addition, all sites were mapped on USGS 7.5 minute topographic maps, DOT aerial photographs, and DOT blueprints.

Once a site was identified, efforts were made to delimit the distribution of artifactual remains. As all sites were found in open areas, the distributional extent of surface debris was used to isolate the size of each site. Several shovel tests were also made at each site to determine if there was any depth to the sites. No artifacts or subsurface features were isolated by these tests during the survey.

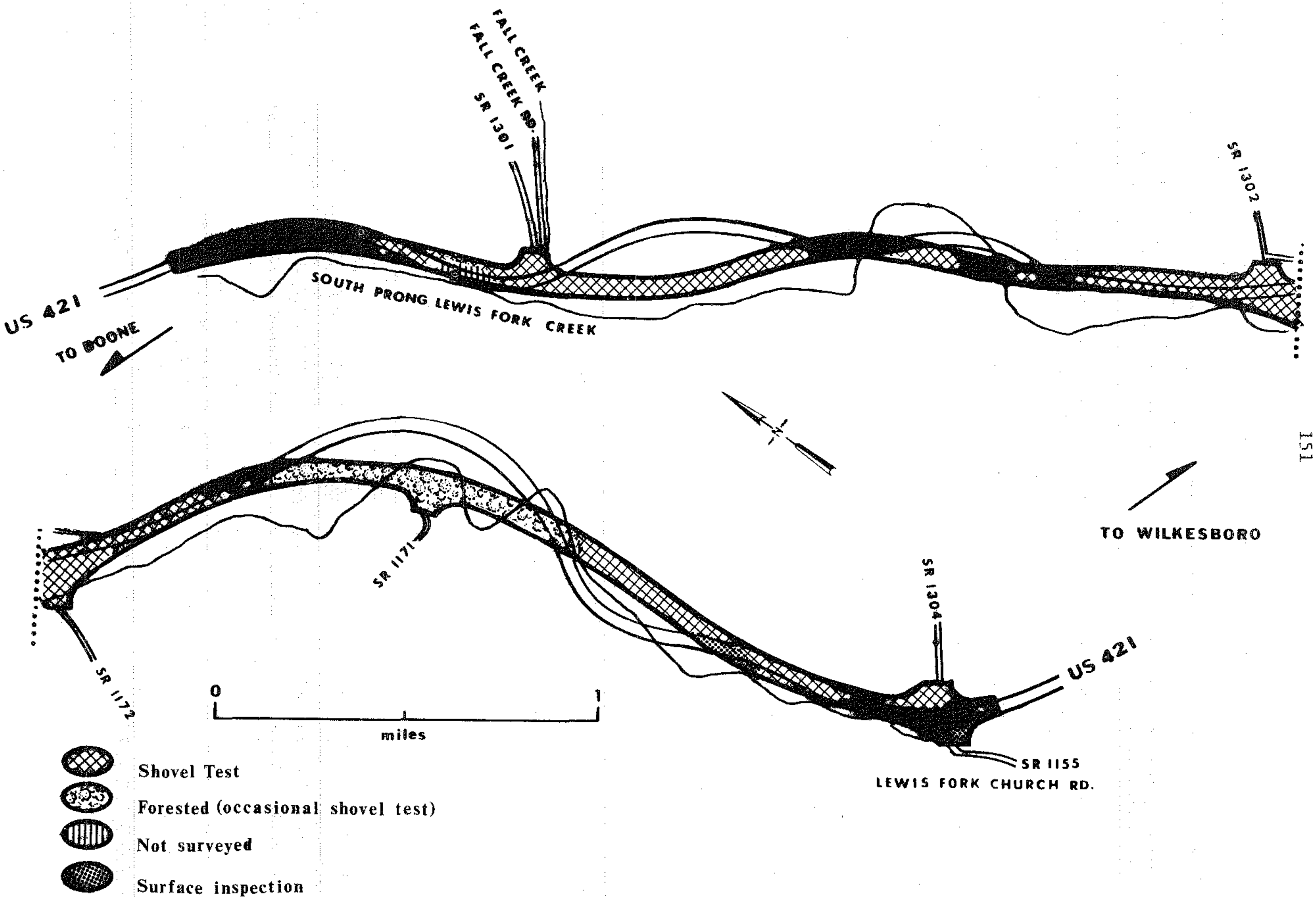

Figure 16.1. Location of surveyed areas, Wilkes County U.S. 421 survey project.

As all sites were extremely small and contained few artifacts, all materials encountered were collected. Sites in cultivated fields or gardens received visual inspection of at least every fourth crop row. Sites in open pasture or grassland were covered visually with transects at 10-meter intervals. Collected materials were washed, numbered, catalogued, analyzed, and stored at the Archaeology Branch laboratory in Raleigh.

AUGER TESTS

Information about the natural stratigraphy along the corridor was recorded by fifteen 3-inch bucket auger tests. Stylized representations of these soil profiles are presented in Figure 16.2. These augerings were placed in areas of expected maximal deposition and should not be accepted as a representative cross-section of the soils of the area (see Figure 16.3). Augering, though limited as it was, indicated that there are areas of significant erosion and deposition (in some areas greater than 2.15 meters in depth--the limit of the auger). Though the depth and rough composition of the tests indicated that there was some stratigraphic depth to several areas, no information on the age of these deposits was derived. No samples of the cored materials were collected for subsequent analysis and no artifacts were recovered.

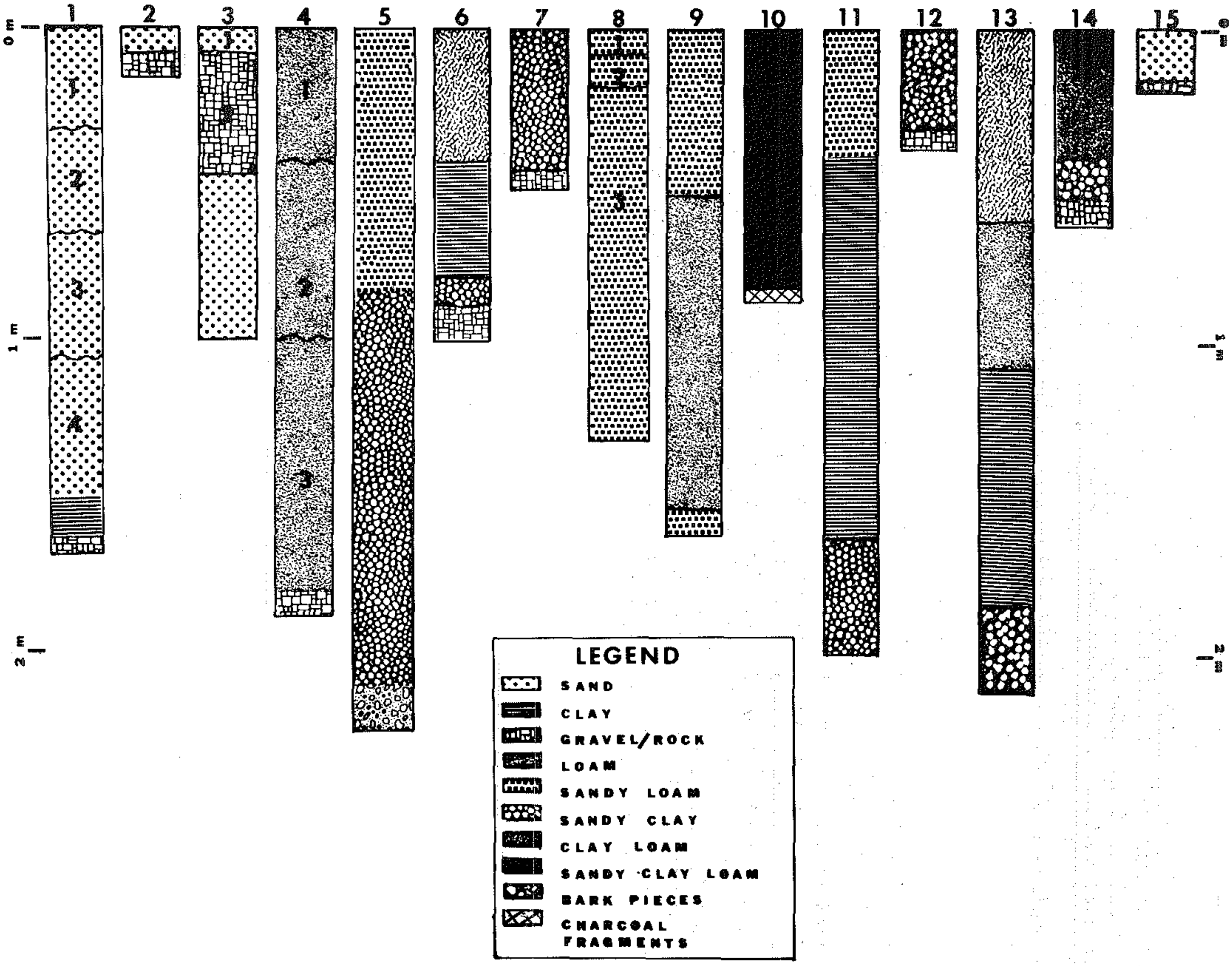

Figure 16.2. Stylized profiles of the U.S. 421 project auger tests.

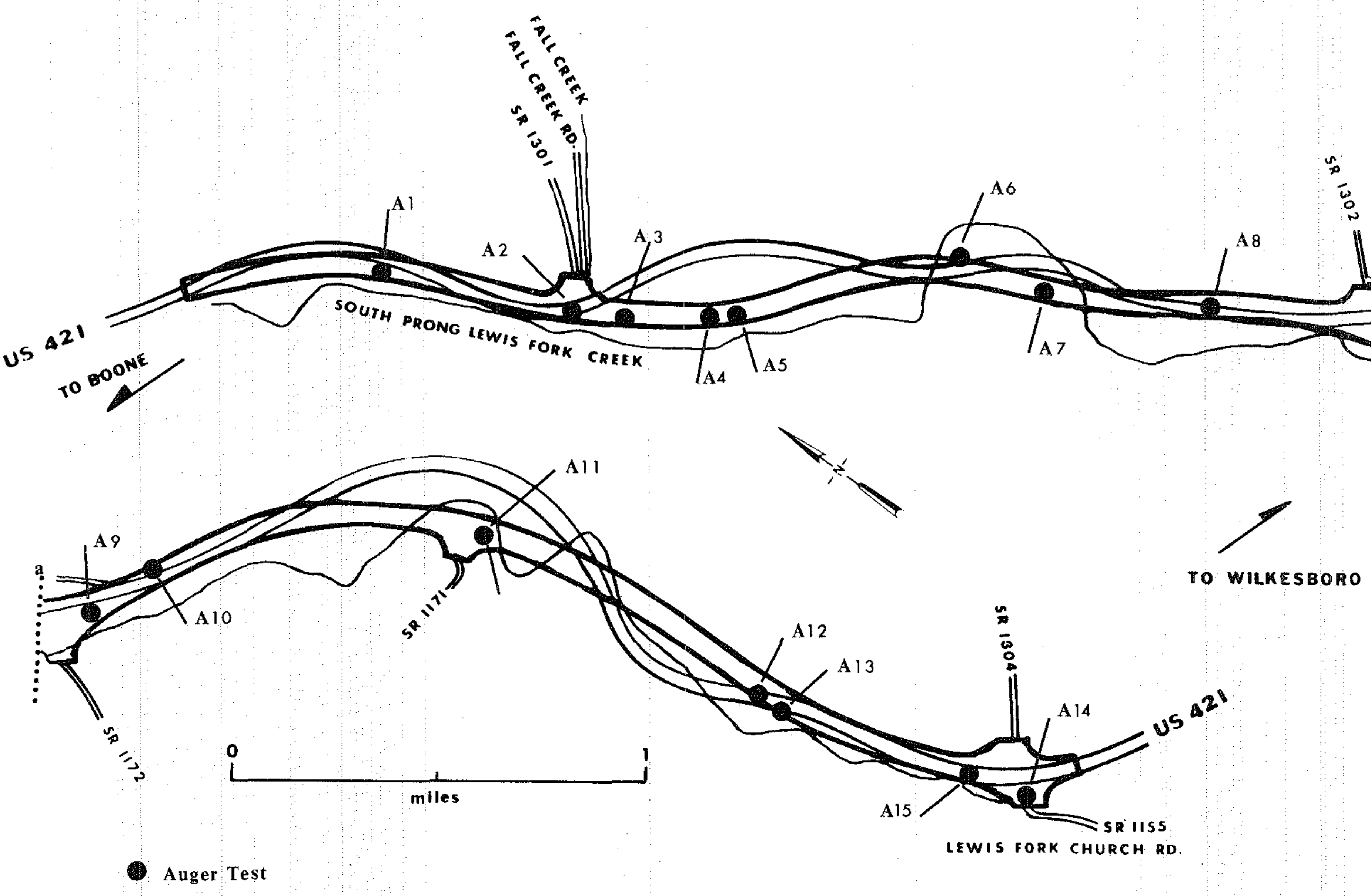

Figure 16.3. Locations of auger tests in the U.S. 421 corridor, Wilkes County.

U.S. 421 Data Analysis, Results, and Recommendations

CHAPTER 17.

Thomas E. Scheitlin

John W. Clauser, Jr.

Michael T Southern

INTRODUCTION

This section describes the results of analysis of artifactual, structural, and environmental information collected during the U.S. 421 field survey. This information is provided in three sections: prehistoric sites, historic sites, and historic structures.

A listing of the sites recorded during the survey is provided in Table 17.1, along with the cultural components identified at each and the condition of the sites at the time of the survey. Figure 17.1 shows the general locations of the sites.

Site No.	Cultural Affiliation	Current Land Status
Wk62	Middle Woodland, Historic	Cultivated[b]
Wk63	Middle Archaic, Late Archaic, Historic	Cultivated
Wk64	Lithic only	Cultivated[b]
Wk65	Early Archaic, Historic	Lawn/pasture[b]
Wk66	Lithic only, Historic	Cultivated[b]
Wk67	Lithic only, Historic	Cultivated[b]
Wk68[a]	Archaic	Altered forest
Wk69	Lithic only	Cultivated[b]
Wk70	Lithic only	Cultivated[b]

[a]outside of right-of-way
[b]probable secondary deposition

Table 17.1. List of sites recorded during the Wilkes County U.S. 421 survey by cultural affiliation and condition at time of survey.

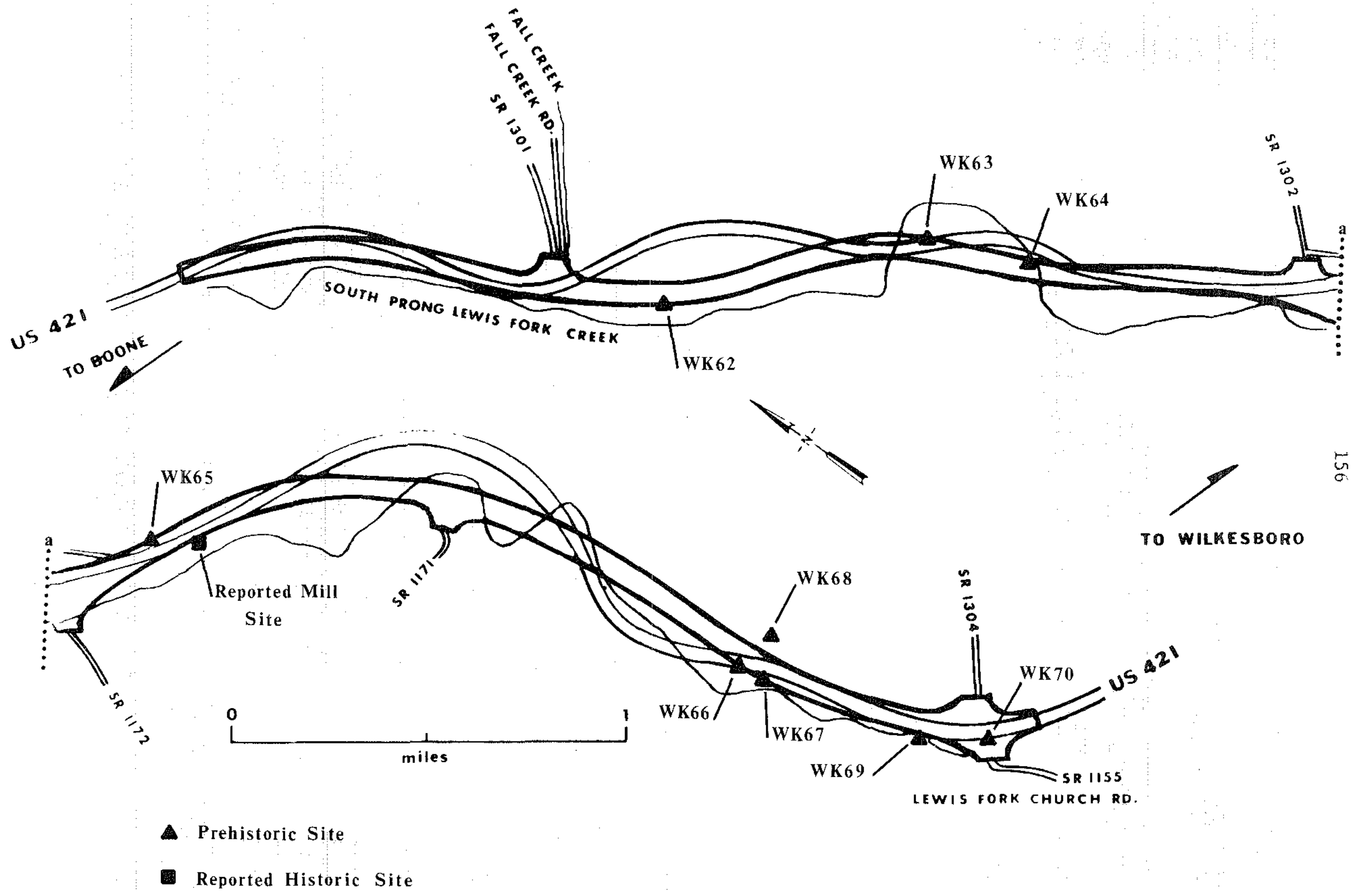

Figure 17.1. Ceneral locations of archaeological sites in the U.S. 421 project area.

PREHISTORIC SITE ANALYSIS

General

Nine sites with prehistoric components were recorded during the survey, including isolated artifact finds and larger lithic scatters. The materials collected consisted entirely of chipped stone; no ground/pecked stone or ceramics were recovered. Analysis was based on typologies derived primarily from Coe (1964), Keel (1976), Dickens (1976), and Broyles (1971). The artifact classes used in this study are described in Appendix I.

Artifact types were further sorted according to lithology, with counts and weights of each category being recorded. Summaries of the counts and weights are presented for each site in Appendix G. One artifact (from Wk66) is of particular note as it is listed in both prehistoric and historic sections. Positive identification could not be made although it was narrowed to two possibilities: a steep-edged chalcedony uniface or a historic gun flint.

Quartz was the predominant lithic raw material, accounting for about 67% of the artifacts recovered (12% andesite, 7% rhyolite, 6% slate, 5% other).

Cultural Affiliations

Four of the nine sites could be isolated chronologically via point typologies. Wk65 was assigned to early Archaic times (Figure 17.2a). Wk63 was assigned to both middle and late Archaic periods (Figure 17.2b, c and e). Wk68 was assigned to the Archaic period (Coe, personal communication) (Figure 17.2d). Wk62 contained an early-middle Woodland component, as indicated by a large triangular point falling within the Yadkin/Badin continuum (Figure 17.2f). All other sites contained nondiagnostic lithic assemblages.

Environmental Relationships

Sites were also examined with regard to their relationship to environmental factors. Sixty-seven percent (n=6) of the sites were within 60 meters or less of a water source; the remaining sites (n=3) vary from 110 to 200 meters from the nearest water source. Seventy-eight percent (n=7) of the sites had a slope of 7% or less; the remaining sites varied from 13 to 17% slope. Slope face direction provided no obvious pattern.

Perhaps the most significant factor in understanding the relationship of the sites in the area to the environment is that of landform. Eight of the nine sites were located on landforms that were directly related to the South Prong Lewis Fork Creek (i.e., floodplain, first terrace or low rise on floodplain). It is this relationship that proves to be the key in understanding the area archaeologically. As none of the sites had any discernable evidence of subsurface deposits, and active erosion, deposition, and flooding have been documented for the area, many of these sites appear to be the

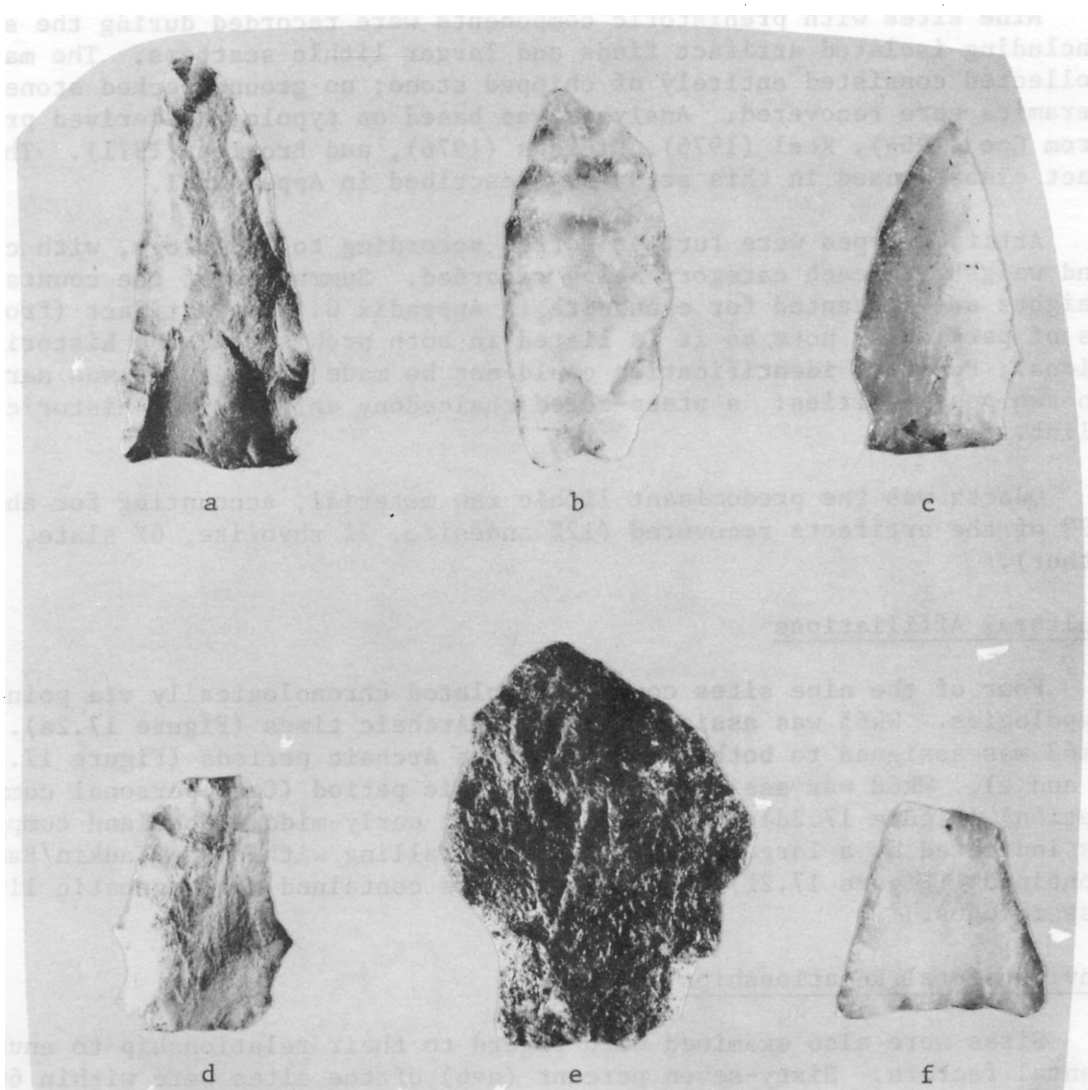

Figure 17.2. Examples of artifacts recovered during the Wilkes County U.S. 421 archaeological survey.

result of secondary deposition. In the case of seven of the eight fluvial sites, secondary deposition cannot be ruled out (Wk62, 64-67, 69-70). Wk63, located along a terrace above the floodplain of the South Prong Lewis Fork Creek, appears to have deflated in place. Wk68 is located on a saddle and is a chipping station, displaying a large number of secondary and interior reduction flakes. It also appears to have deflated primarily in place, although the disturbance may have been recently induced by the logging collection station and skid trails on the site. This site had the greatest slope of any in the area (17%), which reflects recent erosion and land altering activities in the area.

Soils information for this area is limited to a general soils map for Wilkes County. Three sites were found in Ashe-Chandler association, which is composed of silt loam and fine sandy loam soils. This association corresponds to the upper three-fifths of the project, reflecting the less developed fluvial system of the South Prong Lewis Fork Creek. Six sites were found in the Chester-Ashe-Hayesville association, composed of fine sandy loam to clay soils. This reflects a lower gradient, hence, more developed fluvial deposits. These soils appear to have been preferred above the steeper Ashe-Chandler soils by the prehistoric inhabitants of the area.

Prehistoric Site Density Estimates

Site density estimates are useful to archaeologists and planners since they provide an estimate of the number of prehistoric archaeological resources likely to occur in an area. As discussed previously (see Chapters 2 and 15), however, the nature of archaeological survey generally precludes the assumption that all archaeological sites within an area will be identified. The density estimates presented here are based on the numbers of sites identified in plowed fields and gardens. These areas are used as the predictive base for density estimates because the technique utilized in these areas (a visual pedestrian walkover) was the most efficient and recovered the highest percentage of extant sites within the survey area.

Density estimates will be presented for the entire survey area* (see Table 17.6). These estimates, however, are misleadingly high given the two contrasting physiographic zones in the survey area (i.e., mountain slopes and the floodplain of South Prong Lewis Fork Creek). The mountainous zone roughly corresponds to forested areas, whereas the floodplain zone corresponds to plowed fields/gardens, secondary growth, and pasture/lawn (see Table 11.1 for a breakdown of these areas in the highway corridor). As no sites were isolated in the forested or mountainous areas of the ROW, the accuracy of density estimates projected from floodplain sites into these areas is tenuous at best. More realistic estimates will be presented for the floodplain portion of the surveyed areas (see Table 17.2). Unfortunately, a similar estimate for mountainous areas cannot be presented given the previously-mentioned lack of identified sites in these areas, with the exception of Wk68, which was outside of the project area.

*Roads and other disturbed areas are excluded from all calculations since sites which occurred in these areas have been either destroyed or are extensively disturbed.

The derivation of these density estimates is rather simple. First, the average site density (ASD) per acre is calculated as follows:

$$ASD = N/A_p$$

where: N = number of sites identified in area A_p
A_p = acres of plowed fields and garden

The predicted number of sites (PNS) in a given surveyed area is derived by:

$$PNS = ASD \times A_s$$

where: A_s = total acres for each density prediction

Finally, an index of survey efficiency (SE) is calculated using:

$$SE = (IS/PNS) \times 100.0$$

where: IS = number of sites actually identified in each estimated area

The results of these calculations are presented in Table 17.2 for the overall project area and for the floodplain.

	Acres in Plowed Fields/Garden	Number of Sites in Plowed Fields	Average Site Density Per Acre	Total Acres	Total Number of Sites Identified	Predicted Number of Sites (approx.)	Survey Efficiency (Percent)
All Areas	11.9	7	0.59	108.5	8	64	11
Floodplain Only	11.9	7	0.59	54.1	8	32	25

Table 17.2. Prehistoric site density estimates, U.S. 421 project area.

The site density estimates indicate that 64 sites are expected to occur in the project area, and that the survey had an overall efficiency of 11%. As indicated earlier, the accuracy of these figures can be questioned given that sites found in the floodplain (approximately 50% of the area) are used to estimate the sites occurring in the mountainous area where no sites were recorded. Density estimates for the floodplain portion of the project area provide a better picture of the density in that zone, indicating that 32 sites would occur in the area with a survey efficiency of 25%. The actual site density in the project area probably rests somewhere in between these estimates. It should also be noted that the density estimates presented here are approximates and may be heavily skewed by the small sample size. Caution should be used in applying these figures outside of the project area.

Site Significance

It is in the final stages of analysis that archaeologists are required to synthesize the field data and assess the significance of each site. These decisions determine the fate of the prehistoric archaeological record in the project area. During the present investigation, each site was evaluated for significance utilizing the following criteria (see also Chapters 2 and 10): (1) was the site intact; (2) was it stratified; (3) could it provide further information about the settlement-subsistence patterns of the area; and (4) could it add to our knowledge of the culture history of the area?

These evaluations indicated that seven of the sites (Wk62, Wk64-67, Wk69, and Wk70) isolated by the survey appear to be redeposited and not *in situ*. The value of these sites lies in the information recorded during this survey indicating their location and cultural affiliations. Wk63 was deflated in place, disturbed by plowing, and had an extremely low artifact density. Wk68, which is outside of the right-of-way, was a disturbed and eroded limited activity site situated in a saddle. The importance of both of the aforementioned sites lies in the materials collected and information recorded by the survey. Thus, all of the sites isolated during the survey meet none of the criteria utilized in determining a site significant. Hence, all were categorized as "not significant" and require no further work.

HISTORIC ARCHAEOLOGICAL SITE ANALYSIS

At first glance it would appear that the corridor for U.S. 421 in Wilkes County would provide a great deal of information about early settlers in the area. This portion of the proposed road traverses one of two natural east-west passages through the mountains. The geological features would have funneled activity and accompanying settlement into a rather narrow band of land. This band corresponds directly with the proposed route of the road. With the relative small amount of usable land, it would not be unexpected that a number of early settlement sites would be present.

Historic documentation (see Chapter 14) indicated that there should have been several rather large and important sites found. There was a mill located on Lewis Fork Creek, built around 1782. Two other mills were located in the area by 1808, and several churches were present at different periods.

The presence of churches would seem to indicate a rather substantial permanent population in the area. Since the corridor represents one of only two possible routes through the mountains, there must have been regular traffic. The amount of human activity indicated in the records would have left some visible signs in the archaeological record.

When the fieldwork was begun, it was expected that at least one mill site would be located within the right-of-way, as well as several farmsteads or cabin sites. While there was also the possibility of locating one of the churches and associated graveyards or a tavern-public house, the chance was considered rather remote.

The results of the fieldwork, however, did not live up to the expectations. Few sites were located, and those that were were of limited importance at best. A check of the river failed to locate any of the mill sites. Local tradition indicated one possible location for a mill; however, a field inspection located no visible remains. Any physical evidence had apparently been obliterated by construction of the extant road. The area had also been subjected to severe scoring related to the periodic flooding of the creek. The combination of human and natural activity had obliterated all evidence of structures. This combination of events was to be the case for the entire area surveyed. Evidently there is so little usable land that it was subjected to constant use. This reuse, over an extended period of time, eliminated most evidence of prior occupation.

While the evidence was tenuous at best, there were several indications of early occupation in the area. A number of the sheds and farm outbuildings had reused lumber incorporated in their fabric. Some of the major timbers in these structures showed evidence of hand forming, i.e., broad ax and adz marks. However, the majority of the elements and the construction techniques were fairly modern, clearly indicating that the early elements were reused. Five artifact scatters were located within the right-of-way which could be placed in the historic period (see Table 17.1). However, these were extremely thin and could not be related to any patterned activity. Given the evidence, none of the historic sites within the U.S. 421 right-of-way were judged to be significant according to National Register criteria.

HISTORIC STRUCTURES ANALYSIS

A field inspection of existing structures in or near the limits of the U.S. 421 highway project revealed that while there are several buildings of interest in the area, there appear to be no structures affected by the project that warrant consideration for inclusion in the National Register of Historic Places at this time.

Two structures directly affected by the project were examined by architectural historians, including:

1) Taylor House: a two-story frame house with a one-story rear extension, a central gable above a facade, and a projecting

bay centered on the second story over a shed porch. The structure is a typical farmhouse of the early twentieth century. At the time of inspection, preparations were being made to move the house away from the proposed right-of-way into a cut on the side of a hill. The house will be saved by the short move, though the new site is less desirable and the highway will effectively destroy all the positive qualities of the setting.

2) Lewis Fork Advent Christian Church: founded in 1887, with the present building probably dating to the 1920s. A simple frame rural church with a cruciform plan, a belfry at the peak on the gable front, and a projecting entrance vestibule. The church may be directly affected by the proposed construction, and in any case will suffer a loss in quality of setting. While it is of interest as a well-preserved example of small rural churches of a vanishing type, National Register nomination does not seem appropriate at this time.

The general comment of the architectural historians was that the real effect of the project on cultural resources is not so much the impact of the road on individual buildings or sites as the aesthetic loss of the quiet, pastoral ambience of the setting by the elimination of the meadow along the creek bottom, the introduction of a four-lane high speed traffic artery, and the resulting loss in the quality of life for the inhabitants of the valley.

Several structures in the project right-of-way were moved or destroyed prior to this survey. It should be noted that such land altering projects sponsored by DOT are subject to preservation legislation and in future projects should occur *after* a cultural resource survey and assessment has occurred.

SUMMARY AND CONCLUSIONS

This report has documented a cultural resource evaluation of the proposed U.S. 421 improvements in western Wilkes County. A total of nine prehistoric archaeological sites were found; five also contained historic components. One of the recorded sites lies outside of the proposed corridor. Several houses and other structures were also recorded during the fieldwork and later examined by an architectural historian. None of the recorded sites or structures were deemed significant (as per 36 *CFR* Part 60.6), though they document 8,000 years of human behavior in the project area.

An overall view of the project area is one of recently escalated use, one that has been rather destructive to cultural resources. Destruction of cultural resources has occurred in several ways: land development, flooding, erosion, and reuse of historic materials. This active past has been rather hard on the cultural resources of the area, considerably lowering their explanatory value with regard to past human behavior. Estimates of prehistoric site density have been provided, indicating that approximately 33 sites are predicted to occur in the floodplain of the South Prong Lewis Fork Creek. No such density estimates were made for historic sites or historic structures. Two evaluations within this report remain: the evaluation of survey methodology and suggestions about the aboriginal uses of this area.

Evaluation of Survey Methodology

The survey methodology for the U.S. 421 project proved to be relatively efficient, incorporating the surface inspection of plowed fields and unstructured shovel tests in pastures and wooded areas with less than 30% slope. There are two points, however, that could have been improved upon. The first relates to small areas of high surface visibility within shovel tested areas. When these were found, surface inspection was substituted for shovel testing. It is our belief, however, that these open areas should also be shovel tested, such that the entire area is sampled equivalently. This is not to say that the open areas should not be visually examined, but that if a site is identified by visual inspection alone, rather than shovel testing, such should be noted in the field notes and on site forms. Such notation provides future researchers a better understanding of the sampling methods used and their effectiveness.

Secondly, no systematic attempt was initiated to test for deep subsurface deposits. Fifteen auger tests provided data about the stratigraphy in the area, indicating the possibility of buried sites occurring in the survey area. It is suggested that a series of 10-meter backhoe trenches be placed in areas with a meter or more of deposition for future studies in similar areas. Any indications of possible archaeological deposits would warrant further backhoe testing in a given area. Backhoe trenches would provide a better picture and sample of the deposits than augering *ad nauseam*, which is felt to be a cost ineffective method of deep subsurface testing.

Finally, the procedures followed with respect to historic sites and structures proved to be an effective means of isolating these cultural resources for a quick and efficient field evaluation by professionals in each respective field. This methodology proved to be cost effective and is highly recommended to researchers involved in cultural resource surveys and assessments.

Cultural Interpretations

Prehistorically, the Wilkes area appears to have been somewhat of a void, at least in terms of habitation. The small sites located during the survey indicate some use of the area, but of a short term specialized nature. Interestingly enough, the escarpment and the inner-mountain Blue Ridge areas are also voids in our ethographic knowledge, supporting the premise that the general project area experienced little intensive use. A study of the Ashe County U.S. 221 project results (see Chapter 25 of this volume) indicates a more extensive use of the inner-mountain areas when compared to the U.S. 421 project area. Evidence from local collectors indicates that the inner-mountain area was occupied from Paleoindian times to the present. Prehistoric access to this area may have anticipated the early historic pattern from Virginia along the New River drainage rather than through the Deep Gap Pass of the Wilkes project area. However, the disturbed nature of sites isolated during the present survey, and the limited sample of the Gap area make it impossible to test the hypothesis that Deep Gap was an important/unimportant aboriginal trade and travel route.

ASHE COUNTY U.S. 221 ARCHAEOLOGICAL PROJECT

PART IV

Management Summary

GENERAL

In September and October of 1977, an archaeological survey was conducted along the proposed U.S. 221 highway corridor in Ashe County (state project #4.49002). The purpose of the survey was to locate and evaluate the significance of any historic and archaeological site which would be affected by the highway construction process. The research and survey design employed to guide the project included the investigation of several problem domains, including site density estimation, site chronology determination, analysis of settlement patterns, evaluation of site significance (i.e., eligibility for inclusion in the National Register of Historic Places), and the evaluation of survey methodology.

The field survey provided coverage of the entire corridor, totaling approximately 348 acres. The methods employed during the survey were varied according to ground surface cover and included unstructured shovel tests, systematic visual inspection of exposed surfaces, and 3-inch bucket auger tests.

A search of the archaeological site records at the Research Laboratories of Anthropology (UNC-Chapel Hill) indicated that no sites had been previously recorded in the area.

SURVEY RESULTS

A total of 26 archaeological sites were identified during the survey, including 25 prehistoric sites and one historic site. Three of the sites, including the single historic site, were outside of the highway corridor.

Eight of the prehistoric sites contained diagnostic artifacts indicating that the area has been occupied since at least the middle Archaic period (ca. 6000 B.P.). All other prehistoric sites yielded no temporally diagnostic materials and were classified as "lithic" sites. The historic site is a late eighteenth-century homestead represented only by a standing chimney. No historic structures, however, were located within the project right-of-way.

SITE SIGNIFICANCE AND RECOMMENDATIONS

All resources were evaluated for eligibility to the National Register of Historic Places. Initial investigations indicated that all but two sites were not eligible. Two sites, Ah163 and Ah164, required further testing to evaluate their significance; both were subsequently determined not eligible for the Register. Present construction plans call for the area around Ah163 to be filled. Should these plans change and the area be cut or disturbed, an archaeologist should be present during construction. The nineteenth-century Hardin House remains are outside of the right-of-way. Should the right-of-way be moved to include them, further archaeological investigations will be necessary. Density estimates indicate that the possibility exists that archaeological sites other than those identified in this report may occur in the project area. Should any cultural remains be unearthed during highway construction, a qualified archaeologist should be contacted immediately.

Introduction to the Ashe County U.S. 221 Archaeological Project

CHAPTER 18.

Thomas E. Scheitlin

INTRODUCTION

In accordance with a July, 1977, memorandum of agreement between the North Carolina Department of Transportation (DOT) and the Archaeology Branch (then Section) of the Division of Archives and History, Department of Cultural Resources, a cultural resource inventory and evaluation survey was conducted along the proposed realignment corridor of U.S. 221 in Ashe County. The survey, conducted in conjunction with two other similar investigations, was designed to locate as many cultural resources within the proposed corridor as possible and to evaluate those resources according to the criteria for eligibility to the National Register of Historic Places (36 *CFR* 60.6; also section 4(f) of the DOT Act of 1966). This report contains discussions of the methods employed during the survey and of the survey results and recommendations.

A total of thirteen days between September 26, 1977, and October 14, 1977, were spent in the field with crews ranging in size from two to nine individuals. Fieldwork consisted of an intensive survey of the proposed highway corridor and limited test excavations at two archaeological sites. Additional fieldwork occurred on October 31, 1977, and on December 15, 1977, during which an architectural historian and a historic archaeologist respectively assessed historic structures and sites identified by the previous field survey. Fieldwork was slowed by three days of rains and one light snow. Seasonal vegetation in the area was in a post-climax state prior to its fall-winter dormancy.

PROJECT DESCRIPTION

The realignment, state project number 4.49002, incorporates a 400 feet wide, 7.56 mile long corridor between the present city limits of the towns of Baldwin and Jefferson (Figure 18.1). The project will provide a bypass around the towns of Baldwin, West Jefferson, and Jefferson. The survey area consisted of approximately 348 acres, representing several types of land use. Roads, disturbed areas, streambeds, and houses, comprising approximately 20 acres (6% of the total), were not subjected to archaeological investigation. Cultivated fields and gardens comprised approximately 3 acres (.1%), with woods comprising 47 acres (14%) and secondary growth (overgrown pastures and fallow fields) comprising 34 acres (10%). Pastures and manicured lawns covered approximately 244 acres (70% of the total project area).

REPORT CONTENT

Included in the following report are discussions of the U.S. 221 project environment (Chapter 19), prehistory and previous archaeological research (Chapter 20), and history (Chapter 21). The research framework (Chapter 22) and survey design (Chapter 23) are then discussed. The methods employed and the results of the testing at 31Ah163 and 31Ah164 are provided in Chapter 24, followed by the general survey results, conclusions, and recommendations (Chapter 25). (It should be noted that in most instances site numbers have been abbreviated by dropping the state prefix designation (i.e., the 31 in 31Ah163), such that references to specific sites will read only the county abbreviation and the individual site number, e.g., Ah163.)

ACKNOWLEDGMENTS

The implementation of an archaeological survey requires a large amount of material support and information from the project area. Much of this information was provided by several members of the Department of Transportation. Barney O'Quinn provided the corridor blueprints, contour maps, and aerial photographs of the project area. Edward Wilcock and Joe Thompson of the North Wilkesboro DOT office provided specific right-of-way information and the names of individuals in the vicinity who might provide information about the prehistory of the project area.

Toy Campbell of the Ashe County Soil Conservation Service generously provided unpublished detailed soils maps and associated information for the project area. Fred Colvard and Lee Hauck, both local collectors, shared their knowledge of site locations in Ashe County. Although all their sites proved to be outside of the project area, examination of their collections indicated that the county has been inhabited from Paleoindian times to the present.

Eleven people were involved in the fieldwork in Ashe County. These included W. Dale Reavis, Mark A. Mathis, John W. Clauser, Jr., Thomas D.

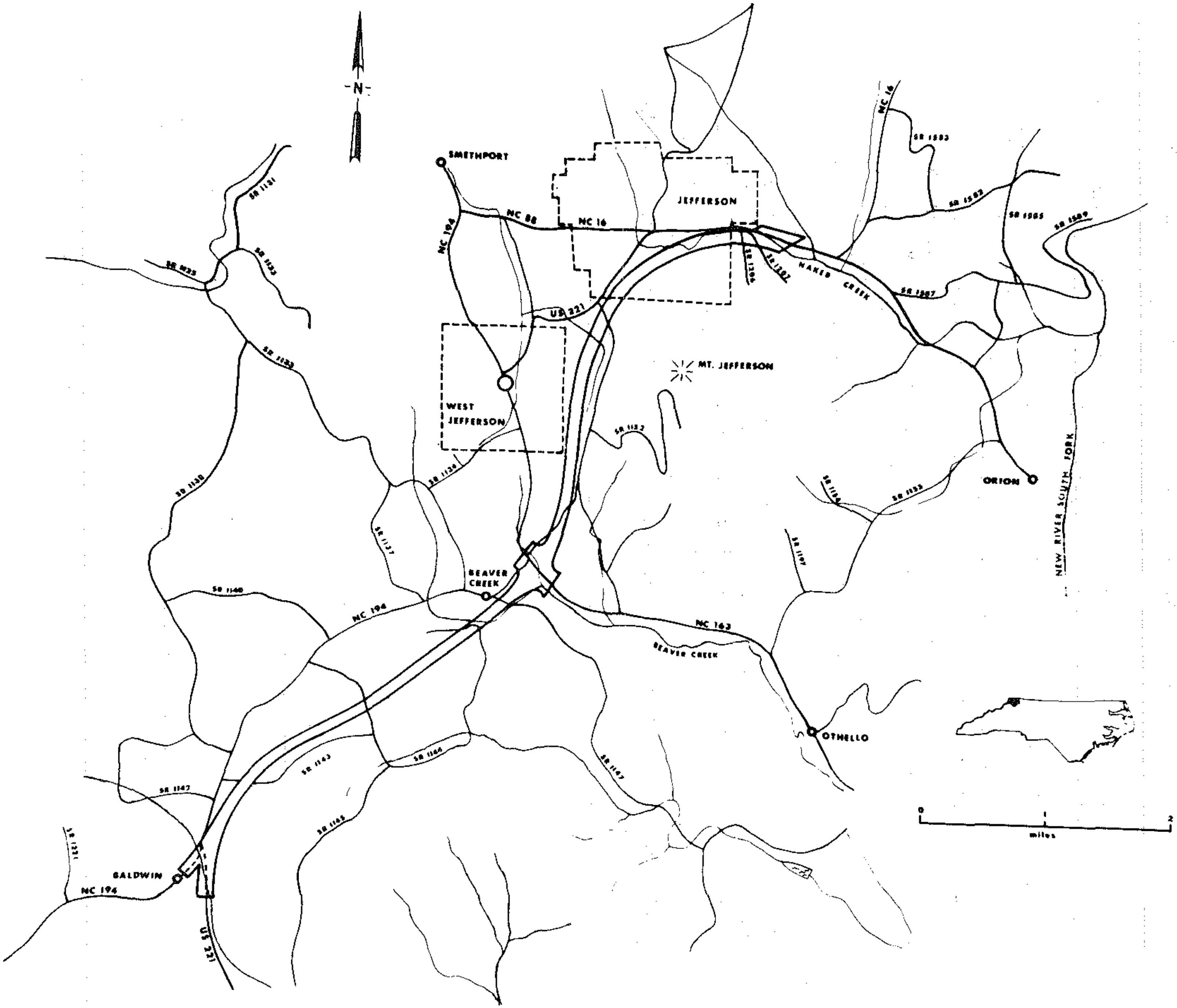

Figure 18.1. Location of the Ashe County U.S. 221 realignment corridor.

Burke, Dolores A. Hall, Linda H. Pinderton, Pamela Ashford, and Michael Southern. Edward Peters and William Radisch, both Appalachian State University students, also volunteered fieldwork time. All endured wet and cold conditions to complete the fieldwork. I thank you for your enthusiasm.

Laboratory analysis was aided by a number of people, including Thomas H. Hargrove, Thomas D. Burke, John W. Clauser, and Mark A. Mathis.

Special thanks must go to a number of archaeologists at other institutions for their help in artifact classification and interpretation. Dr. Burton L. Purrington of Appalachian State University not only provided student assistance but also shared his knowledge of the prehistory of the area. Dr. Joffre L. Coe of the Research Laboratories of Anthropology at the University of North Carolina, Chapel Hill provided access to his site files for the review of known sites in the area and aided in the classification of recovered artifacts. Dr. Richard A. Yarnell, also of UNC-Chapel Hill, classified the botanical remains collected during the project.

The preparation of the report has required the patience and help of those who have contributed in the writing of this monograph. They include Thomas H. Hargrove, W. Dale Reavis, John W. Clauser, Jr., Jerry Cross, Michael Southern, and Tom Burke. Mark A. Mathis and Jacqueline R. Fehon provided (essential) editorial assistance. Pamela Ashford and Linda Luster provided drafting and photographic support. Finally, Sandra Perry and Peggy Hopson have undauntedly typed draft and final copies of this report. Many thanks to all.

Environmental Setting

CHAPTER 19.

Thomas H. Hargrove

W. Dale Reavis

INTRODUCTION

A traveler moving north or west from Wilkes County would leave the Yadkin Valley, ascend one of the valleys, such as the one cut by Lewis Fork Creek on the steep wall of the Blue Ridge escarpment, and arrive at an elevation of about 3,000 feet on a wide plateau with scattered mountains rising another 2,000 to 3,000 feet above the rolling tableland. Twenty miles west of the escarpment top is a ridge of mountains rising above the plateau and running northeast to southwest. This ridge, called the Stone Mountains, and the Blue Ridge escarpment respectively form the western and eastern boundaries of Ashe County. As a political area rather than topographic, Ashe County is bordered on the north by Grayson County, Virginia, on the west by Johnson County, Tennessee, on the east by Alleghany and Wilkes counties, North Carolina, and on the south by Watauga County, North Carolina. Ashe County covers about 427 square miles of land dominated by the New River drainage and by a cluster of mountains in the south-central part of the county. These mountains average about 2,000 feet in height above the plateau. The tallest, Mount Jefferson, is 5,200 feet above sea level (Sharpe 1966:535-536).

CLIMATE

According to one estimate made for the Blue Ridge, elevational temperature differences average about 3.3°F per 1,000 feet (U.S. Department of the Interior 1975a:7). The Ashe County plateau is therefore usually cooler than the Wilkes County piedmont areas. The average January temperature for the county is 36°F, with a maximum of 61° and a minimum of 15° below zero. The July temperature average runs from 68° to 70°F (Fletcher 1963: 66-67), with a maximum of 80° and a minimum of 59°F (U.S. Department of the Interior 1975b:26). The growing season is also slightly shorter than on the upper piedmont. The last killing frost occurs around April 30, while the first killing frost occurs around September 30 (Fletcher 1963:66). Precipitation as measured in the New River Basin averages 52 inches per year, with a yearly snowfall of about 20 inches. Seasonal distribution of precipitation ranges from 3.83 inches in October to 6.34 inches in July (U.S. Department of the Interior 1975b:67-68).

GEOLOGY

Ashe County lies over a foundation of mica gneiss and mica schist in the southwest. Hornblende gneiss and schist form a central band running from northeast to southwest, with cranberry granite gneiss, metarhyolite, rhyolite porphyry, and porphyritic gneiss occurring in the northwest. Dunite occurs near Baldwin in southern Ashe County (North Carolina Department of Conservation and Development 1958). The Ashe Formation of associated hornblende gneiss, mica gneiss, mica schist, and amphibolite is probably pre-Cambrian, dating to at least 800 million years (U.S. Department of the Interior 1975b:93).

HYDROLOGY

Ashe County is dominated by the drainage system of the New River and its North and South Forks. The New River, which flows from North Carolina north into Virginia and empties into the Kanawha River in West Virginia, extends from the Virginia border south into North Carolina for 4 miles before it forks. The average width of this section is 200 feet (Fish 1968: 203), while the gradient is 12.5 feet per mile (Richardson et al. 1964:2). The North Fork of the New River runs 32 miles to its confluence with the South Fork from its confluence with Three Top Creek, near the North Fork's source. Its average width is fifty feet (Fish 1968:203), with a gradient of 30 feet per mile (Richardson et al. 1964:2). The South Fork from its origin to the New River is 76 miles long, with an average width of 125 feet (Fish 1968:208) and a gradient of only 8 feet per mile (Richardson et al. 1964:2).

The New River is one of the most ancient streams known. Its formation dates back to before the formation of the Appalachian mountain chain. The Teays River, the New River's forerunner, began as a meandering, flatland river which kept its meanders by gradually cutting down through the bedrock as the plain across which it ran slowly lifted up to form the Appalachian plateau. Because the New and Kanawha rivers existed as the Teays River before the formation of the mountain chain, they are the only rivers which cross the ridges from one side to the other (Janssen 1955:308-309). The New River meanders are unusual for a mountain river. One stretch of river, which is 30 air miles in length, contained 90 stream miles (Merschat 1978:12).

The valley of the New River provides the easiest access to Ashe County. Cut off from the east by the Blue Ridge escarpment, Ashe and other counties on the mountain plateau were known to the rest of North Carolina as "the Lost Provinces." Since colonial times, economic influences have come into Ashe County by way of the New River from Virginia, not from the North Carolina piedmont. Ashe County's inaccessibility from the east is illustrated by the fact that no state road was built through the escarpment into the county until after the turn of the century, when State Highway 16, a dirt highway, was constructed (Sharpe 1966:535).

Rapid swelling of the rivers after rainfall is common, with rises of 1 foot per hour often occurring. The known maximum river height occurred in the 1940 flood, when waters rose in some places to 20 feet above the median stage (U.S. Department of the Interior 1975b:68).

Most of the New River Basin streams are cold water trout streams, with cool water habitats appearing in the New River and in parts of the forks (Richardson et al. 1964:4-5).

SOILS

Tusquitee soils are found on slope bases, benches, and toe slopes in coves. Brevard soils are found on terraces with slight slopes between steep uplands and floodplains. Both soils are medium in fertility but compare very favorably with other soils in the county for farming. The Clifton soil association, made up of medium fertile, upland soils, are generally located on ridges and slopes (King, Turpin, and Bacon 1974; Campbell et al. 1976:n.p.). Soils in the area tend to be acid, which discourages the preservation of faunal remains (Goodyear 1971:147).

FLORA

The mountains and rivers of Ashe County, as in Wilkes County, provide a complicated environmental mosaic of many micro-climates created by combinations of elevation, slope gradient and direction, moisture, soil features, exposure, past use, and other variables. In general though, Ashe County has the floral communities described for the higher elevations of Wilkes County (see Chapter 12), with some additions. For instance, the higher elevations of Ashe County would have been more conducive to chestnut, which grew best at elevations between 2,500 and 4,500 feet. A survey of the forests of western North Carolina in 1913 reported that the Ashe County forests were almost 27% chestnut, as compared to 22% chestnut in Wilkes County (the 1913 survey was made after years of heavy exploitation of Ashe County's chestnut resources by Virginia-based railways and logging industries) (Buttrick 1925:7, 9). The higher elevations would also have favored the pre-European beech-maple forests of sugar maple (*Acer saccharum*), beech (*Fagus grandifolia*), and hemlock (*Tsuga canadensis*). The higher peaks, especially those with thin, rocky soils, normally are spruce (*Picea rubens*) and Fraser fir (*Abies frazeri*) habitats. Ashe County contains many rhododendron thickets, where the shrubs form an unbroken cover by streams or on ridgetops. These thickets can cause great difficulty in movement, especially along gorges or stream valleys which otherwise would be convenient for mountain travel. The impassable thickets thus earned from the early Euro-American settlers the name of "rhododendron hells" (Whittaker 1956). One prominent feature of the higher elevations is the bald, a treeless area covered either by grasses (e.g., *Danthonia compressa*) and shrubs with edible berries such as *Rubus canadensis* and *Vaccinium constablaei*, or by heaths made up of laurel (*Kalmia latifolis*) and rhododendron species. The origin of balds has been the subject of considerable controversy, with disagreement on the role which humans play in creating or maintaining balds. Some observers have stated that the treeless state is a natural result of terrain and wind conditions (Whittaker 1958); others have suggested aboriginal occupation or use as a factor (Wells 1938); and others have stated that Euro-American grazing practices caused the grassy balds (Gersmehl 1970). Whatever the cause of these treeless areas, several of them were reported by Bishop Spangenberg in 1752 when he travelled through the mountains of Ashe and Watauga counties. Although no European settlers had reached the area and no aboriginal settlements were noted during the Bishop's two weeks of wandering over the Blue Ridge mountains and along the New River, he did remark that the explorers found "plenty of grassland" and "old fields" and commented on the impressive appearance of "Meadow Mountain" (since identified as Whitetop Mountain, Virginia) (Spangenberg 1922:55-56; Whittaker 156:53-57; Komarek 1938:140-142). (For discussions of bald formations see Whittaker 1956; Gersmehl 1970; Marks 1958; Wells 1938; and Bass 1977).

Much the same floral communities described for Wilkes County would have been available, then, for the aboriginal exploitation of Ashe County, with the addition of the balds. The grassy balds with their greater number of edible herbs and berries would have been more useful than the heath balds for wild plant gatherings. At higher elevations the edible berries may ripen as much as three months after the same species ripens at lower elevations (Bass 1977:97), but whether or not the aboriginal occupants relied on this natural extension of the growing seasons, and whether these balds were naturally or artificially induced are not yet known.

FAUNA

Since there are no radical differences between the fauna of the Appalachian plateau and of its adjoining escarpment, the animal species described for Wilkes County (Chapter 12) are also characteristic of Ashe County. However, increased elevations favor the higher altitude habitats and their related species, such as deer and elk (Shelford 1974:28). The heath balds are not favorable to mammals except as refuges, but the grassy uplands can accommodate mammals normally found in the high altitude forests (Komarek 1938:141). One example is the elk, which prefers more open spaces than does the deer (Shelford 1974:28). Most of the New River Basin waters in Ashe County are cold water trout streams in which the native brook trout is still dominant. The larger streams, such as the New River and the lower reaches of its North and South Forks, are classified as cool water, small mouth bass habitats dominated by rock bass and small mouth bass, with some trout species and northern hog suckers. Catfish (*Pylodictis olivaris*) also appear in the New River and the lower reaches of the forks. One survey of the New River Basin in North Carolina estimated that each acre of water produces 31.4 pounds of fish, of which 16.7 pounds are trout. The entire New River Basin in North Carolina consists of about 2,250 acres of water. The streams closest to the 1977 survey are Naked Creek (17 acres), North Beaver Creek (6 acres), Old Field Creek (13 acres), which are all brook trout streams, and Little Buffalo Creek (6 acres) which has been classed at different times as both a brook trout stream and a sucker stream (dominated by suckers and rock bass in the lower reaches of a trout stream) (Richardson et al. 1964: 4-9; Fish 1968:203-12). Stone fish weirs of unknown age were reported in a survey of a stretch of the South Fork (Holland 1969:40) which is probably a cool-water, small mouth bass, rock bass, and crayfish section.

CONCLUSIONS

This brief survey of the Ashe County environment has been made in an attempt to outline some of the natural features which would have been available for exploitation by the prehistoric or early historic inhabitants of the area. Obviously not all of the resources on the Appalachian plateau have been listed, nor would all of the resources listed in this outline have been used in all periods by all peoples. However, it is to be hoped that this chapter has provided some background for the interpretation of the archaeological evidence discussed elsewhere in this report, as well as for future archaeologists who wish to carry out ecologically oriented work in the area.

CHAPTER 20.

Archaeological Background

Thomas H. Hargrove

W. Dale Reavis

PREVIOUS ARCHAEOLOGICAL RESEARCH

Most of the previous archaeological work in Ashe County resulted from the Appalachian Power Company's decision in the 1960s to build a hydroelectric power dam on the New River in Grayson County, Virginia. The New River has since been declared a National Wild and Scenic River. For several years it appeared that the North Carolina portion of the river valley and its North and South Forks would be inundated by the planned reservoir, with the consequent loss of vast reaches of archaeologically unexplored territory. The Appalachian Power Company (APCO), however, was required by federal legislation to have archaeological surveys conducted, which were performed in 1964, 1965, and 1969 (Holland 1969, 1975; Ayers 1965). These surveys report that the upper New River valley contains a prehistory dating back to Clovis times (Paleoindian, ca. 12000 B.P.) and that the area demonstrates considerable archaeological promise. For obvious reasons, APCO suppressed the reports. In August, 1975, however, the deception was made known to the public, and in October, 1975, the Court of Appeals ruled that the power company's dam building license was invalidated because APCO had "caused the Federal Power Commission to violate federal statutes and regulations pertaining to historical and archaeological properties" (*State of N.C. vs F.P.C. and APCO,* October, 1975). In 1976, an amended license required APCO to pay for all archaeological work needed before completing the dam project.

The Thunderbird Research Corporation received the contract for surveying two stretches of the New River in Grayson County, Virginia, adjoining Ashe County (Gardner et al. 1976:1-2, 12). Other surveys conducted in the area included one by Purrington (1974), which resulted in the discovery of two dozen sites on the South Fork of the New River in Watauga County, and a survey of the New River Basin in Ashe and Alleghany counties sponsored by the N.C. State Archaeology Section (Robertson and Robertson 1978).

CULTURAL SEQUENCE

A tentative prehistoric sequence has been extrapolated from the survey results reported by Holland (1969:8-9), Gardner et al. (1976:256-257), and Robertson and Robertson (1978). Several reasons exist for regarding the present chronology for Ashe County as a strictly provisional outline. The most pressing reason is the lack of research in the immediate area at deeply stratified sites. The Ashe County and New River surveys have relied chiefly on collections of surface finds followed by comparisons of the finds with prehistoric sequences from other areas of the southeastern United States. The comparisons generally rely on point typologies developed by Coe (1964) from excavations in the North Carolina piedmont and on Broyles's (1971) point types from excavations on the Kanawha River, as the New River is known in West Virginia. Both Coe's Uwharrie excavations and Broyles's St. Albans excavations are 100 to 120 air miles from Ashe County. At this point, there is no way of knowing how accurately the Uwharrie and St. Albans sequences reflect prehistoric events on this section of the Appalachian plateau. Some of the evidence presented in the reports on the area seems to show that developments in northwestern North Carolina did not always closely parallel the sequence of cultural developments elsewhere in southeastern North America (see also Keel 1976:223). Furthermore, the survey strategies were biased toward locating sites in low lying areas of the New River valley which were scheduled for inundations by the APCO reservoir. The range of sites thus encountered probably does not reflect the actual range of prehistoric periods or activities. However, the survey work does provide some information for a tentative study of the region's prehistory, in addition to the original, urgent purpose of planning for the management and conservation of North Carolina's archaeological resources. In the following chronology, dates from the North Carolina piedmont and from the Appalachian summit region are presented together for comparison.

Paleoindian piedmont (Hardaway) occupations: 10,000 - 8000 B.C. (Coe and Ward n.d.:11); Appalachian summit: 10,000 - 8000 B.C. (Dickens 1976:9).

There is no *in situ* evidence of occupation of Ashe County during this period, but surface finds of Clovis points have been made by collectors in the area (Perkinson 1973:46). Paleo-environmental studies of climate, flora, and fauna show that Ashe County during Paleoindian times would have been a combination of tundra in the higher elevations and open boreal woodland in the lower elevations (Carbone 1974:89-91; Gardner et al. 1976:29-30). Mammals which would have been common in the area were mastodon (*Mammut americanum*), mammoth (*Mammuthus primigenius*), moose (*Cervalces* sp.), musk ox (*Symbos* sp.) and other megafauna. An excavated Paleoindian site in the Shenandoah Valley indicated that a high altitude area such as the Appalachian plateau would probably have been inhabited by small bands of nomadic big-game hunters attracted to backswamps along river beds for game and to quarries of high quality cryptocrystalline stone for tools. An excavated Paleoindian living floor next to an extinct stream course revealed house postmolds arranged in an oval outline approximately 10 feet by 24 feet (Gardner 1974:3, 6-8). Until more Paleoindian habitation sites or butchering stations are excavated in the area, outlines of the earliest cultures in the southern highlands will remain largely speculative.

Archaic piedmont: 8000 - 500 B.C. (Coe and Ward n.d.:11-12); Appalachian summit: 8000 - 1000 B.C. (Dickens 1976:9).

Archaic sites in the upper New River Basin have been found on a wide spectrum of landforms, ranging from floodplains to upland ridges and knolls (Gardner et al. 1976:256-257). One analysis of the topographic distribution of points seems to show that although a variety of landforms were occupied throughout the Archaic, early Archaic sites were more likely to be found on floodplains and secondarily on the higher ridges (Robertson and Robertson, in press). In the middle and late Archaic subperiods, the secondary upland occupations seem to have shifted to lower elevations in hollows and on low ridges. The 1976 Grayson County survey reported Archaic sites on most landforms, with the possible exception of primary river terraces (Gardner et al. 1976:257-258). The observers suggested that this apparent preference of Archaic peoples for second terraces may actually be the result of post-Archaic depositions of river sediments over the older occupations, thus obscuring them from surface survey. Holland (1969:9) reported that the Archaic tools found in his survey tended to be made of local rhyolite and quartz, as opposed to the frequent use of chert and chalcedony during the Woodland period in the area.

Woodland piedmont: A.D. 100 to European settlement (Coe and Ward n.d.:13); Appalachian summit: 1000 B.C.-A.D. 1000 (Woodland) (Dickens 1976:11-15); A.D. 1000-1650 (Mississippian).

Signs of early and middle Woodland occupations of the upper New River are rare. Holland (1970; cited in Keel 1976:223) has not recognized any pottery in the area earlier than A.D. 1000. The Robertson and Robertson (in press) report mentions a few points described as Badin (dated by Coe (1964) at ca. 500 B.C.-A.D. 500) and Yadkin-Levanna (dated by Holland (1970) at ca. A.D. 700), which might be attributed to early or middle Woodland periods. The Thunderbird Corporation found an absence of artifacts identifiable as early or middle Woodland, although several late Woodland sites were identified by pottery found on young floodplains and in rockshelters. No pottery was found associated with other landforms, which led the survey group to suggest that early and middle Woodland occupations may also always be associated with young floodplains and rockshelters. These earlier settlements may now be buried underneath the late Woodland sites. Another explanation offered is the possibility that currently recognized typologies for the area have simply lumped early, middle, and late Woodland ceramics together (Gardner et al. 1976:256-257).

The Appalachian summit area, no more than 75 air miles southwest of Ashe County's New River Basin, has an early Woodland (Swannanoa) phase dated at 700 B.C. to 200 B.C. and a middle Woodland phase divided into the Pigeon phase (200 B.C.-A.D. 300) and the Connestee phase (A.D. 200-650). However, only around A.D. 1000 did ceramics seem to appear in the upper New River valley. These ceramics have been designated by Holland as Smyth series (soapstone tempered, ca. to A.D. 1200), Grayson series (crushed stone tempered, at least as early as A.D. 1200) and Radford series (crushed limestone tempered, at least as early as A.D. 1330 but common until the historic period). The protohistoric and historic Dan River series (sand tempered, fabric impressed, incompletely fired) seems to be the dominant recent ceramic type found so far. Complicated stamping of ceramics has not been reported for the upper New River, which may be an indication of the area's isolation from late prehistoric developments in the rest of the southeast. Holland also suggested that the upper New River Woodland occupants preferred tools of nonnative chert and chalcedony, rather than the local rhyolite and quartz commonly used in Archaic times. The apparent importing of lithic raw materials and the influence of Radford ceramic techniques suggested to Holland some contact with the Appalachian Valley and the Highland Province to the west (Holland 1969:4-9). Holland also made other suggestions about possible settlement differences in the Woodland occupations of the floodplains. He suggests that the Woodland sites seem to fall into two types; one, as a group of houses strung along a river bank, and the other as a group of small floodplain ceramic sites with no discernable pattern of internal arrangement. Holland suggests that the second group may be the remains of satellite villages or isolated farming posts (1969:8-9, 17).

Proto-historic and Historic: ca. seventeenth century to present.

The Robertsons (1978) suggested that distribution of points from protohistoric times indicated that both floodplains and upland landforms, such as hollows and low ridges, were equally occupied. A possible explanation for this arrangement could be that native populations, evicted from the eastern seaboard by European colonies, began to settle more densely in areas like Ashe County, which had only limited bottomland (Robertson and Robertson in press). However, when Spangenberg visited Ashe County in the winter of 1752, not a single settlement was seen in the two weeks of traveling along the New River and over the adjoining mountains (Spangenberg 1922). When the Fallam and Batts expedition reached the New River near the future site of Radford, Virginia, eighty-one years before Spangenberg's journey (only 70 air miles from Ashe County), the same situation was reported. "Old fields" were seen in both areas and attributed to the Cherokees, but neither settlements nor inhabitants were found (Alvord et al. 1912:73).

Euro-American settlement of Ashe County began at least as early as 1770 when hunters from Virginia explored the upper New River valley and returned to colonize in 1771 (see Historical Background, Chapter 21).

CONCLUSIONS

Surveys of Ashe County's prehistory, which has received systematic attention only since the mid-1960s, have shown that human occupation of the area reaches back to at least Clovis or Paleoindian times (Perkinson 1973:46). The intervening periods since then seem to have followed in general the chronology outlined for the piedmont by Joffre L. Coe (1964) The major gaps in the chronology occur in the early and middle Woodland periods. Sites bearing ceramics characteristic of these periods seem to be absent from the area. Explanations for this absence of Woodland ceramics before A.D. 1000 may lie in a lack of recognition of earlier ceramic types in the area or in the burial of earlier Woodland sites under late Woodland occupations (Gardner et al. 1976:256-257). Some attempts have been made to compare the subsistence strategies of different periods based on distributions of projectile point types in the New River valley, but meaningful and clear-cut settlement patterns have not yet been described (Robertson and Robertson 1978; Gardner et al. 1976:257-258).

Early literate explorers in the area met no inhabitants (Spangenberg 1922; Alvord et al. 1912:73), so we have no cultural descriptions like those left by John Lawson (1967) for the inhabitants of the piedmont. At this point then, anthropological descriptions of Ashe County's prehistoric peoples would be premature. The area shows considerable promise for archaeological research in the future, however. The archaeological resources of Ashe County have not experienced the wide-spread destruction seen among archaeological sites in the piedmont, where industrial and residential developments are wiping out sites at a rapid rate.

Historical Overview of the U.S. 221 Project Area

CHAPTER 21.

Jerry L. Cross

INTRODUCTION

The proposed U.S. 221 highway runs diagonally across an area bounded on the south and east by the South Fork of New River; on the west by Elk Ridge; and on the north by the town of Jefferson, the county seat. The New River, according to geologists, is the oldest in the state and was once the headwaters of the mighty Teays River that claimed both the Mississippi and Ohio as its tributaries. Parts of Ashe County are judged to be among the oldest land masses in America. A brief check of sources revealed that the natural history of Ashe County is far more interesting and intriguing than the history of human habitation. Once settled, Ashe remained little changed until the twentieth century as the following report will show.

EXPLORATION AND SETTLEMENT

The first white men known to have entered present day Ashe County came from Virginia about 1740. Maj. Abraham Wood led a party of surveyors into western Virginia and was probably unaware that he had crossed over into North Carolina because the colonial boundary was unclear. His party discovered a river running north, which was named Wood's River in honor of the expedition's leader. Later, for reasons unexplained, the name was changed to New River. Nothing more was recorded about any additional explorations by Maj. Wood.

The first white men to leave written descriptions of the area arrived as members of Bishop Spangenberg's expedition in 1752 (for details see Chapter 14). Spangenberg concluded that "the soil is suitable for raising corn, potatoes, etc. It is also admirably suited for cattle-raising, with an abundance of meadow land" (quoted in Fletcher 1963). The route along the South Fork of New River was praised for its groves of crab apples, abundant waterpower, frequent open fields or "balds," and the purity of the streams and springs.

Spangenberg's party must have been astonished at the contrast as they moved eastward across the Blue Ridge. The western plateau described above suddenly dropped off into a steep slope penetrable only through narrow gaps. Viewed from the Wilkes County side, the Blue Ridge presented a wall-like barrier which effectively blocked the traditional westward migration pattern. Although Ashe was carved from Wilkes in 1799, it was not merely an extension of Wilkes. The mountain barrier resulted in a different settlement pattern, and the isolation of the newer county dictated a different course of development.

No one knows for sure who built the first home in Ashe County; yet there is evidence that among the earliest settlers were David Helton, William Walling, and William McLain, all of Montgomery County, Virginia. The trio had first entered Ashe County on a hunting expedition in 1770, and, impressed with the surroundings, they returned a year later to build houses in the northern part of the county. Other settlers came into Ashe by way of the New River valley, mostly Virginians moving south and southwest. Not many attempted the difficult migration from Wilkes, but many did settle in what is now Watauga County and followed the rivers and streams northward to southern and central Ashe. Large land grants were entered even though small farms were predominant. As the area began to fill, numerous complaints were registered concerning the difficulty in getting across the Blue Ridge to the county seat at Mulberry Fields (Ashe was then a part of Wilkes). To accommodate the residents of western Wilkes, the county of Ashe was formed in 1799, even though there were barely 2,000 people in the new county. In 1803 Jefferson became the county seat for Ashe.

GROWTH AND DEVELOPMENT

Once the land in Ashe was taken up, migration into the county virtually ceased, establishing a somewhat unusual land development pattern. Sharpe (1966:539) expressed it best, "Ashe people have the instinct to buy land, not sell it." Initial large tracts were broken up and parceled out to children in successive generations. Even today the old family names are still present in the county, and descendants reside on farms carved from the tracts of their ancestors. Table 21.1 provides a listing of population statistics taken from census records. The table reveals that growth has been almost exclusively by natural means.

1800	2,783	1890	15,628
1810	3,694	1900	19,581
1820	4,335	1910	19,074
1830	6,987	1920	21,001
1840	7,467	1930	21,019
1850	8,777	1940	22,664
1860	7,956	1950	21,878
1870	9,573	1960	19,768
1880	14,437		

Table 21.1. Ashe County population statistics, 1800-1960 (from Sharpe 1966).

Ashe County has always had a relatively high birthrate, but for most of its history many members of the younger generations tended to seek more profitable careers outside of the county. The decades 1870-1880 and 1890-1900 were depression or recession eras and opportunities were less available, thus, more of the children may have stayed home, which could account for the large population growths during those years. Why this did not occur during the 1930s is unexplainable from the sources consulted for this project. Perhaps the answer lies in the numerous work programs set up by the federal government during that era. The population has always been spread fairly evenly throughout the county; therefore, without demographic shifts, there were few variations in the land use patterns of a rural economy.

The early settlers, using crude implements and outmoded techniques, grew rye, buckwheat, and some corn but depended upon livestock as a source of income. Farming was little beyond the subsistence level and no particular cash crop emerged. Ashe County's natural isolation prohibited early access to markets, limiting trade to a few markets in Virginia and Tennessee. No plantation economy ever developed though a few farms were large enough to be worked by slaves. The institution reached its height in 1850 with a total of only 595 slaves, and at that time Alleghany County was a part of Ashe.

By 1860 crude wagon roads connected Jefferson to three county seats: Dobson (Surry), Wilkesboro (Wilkes), and Morganton (Burke). But these roads were passable only in the summer months and then with great difficulty. In essence, Ashe County became a self-sustained unit isolated from the rest of the state. After the initial settlement, the people of Ashe were locked in a timeless zone, living and farming as their forefathers had, oblivious to the changes in the world around them. Not until the 1880s were there any substantial changes in agricultural methods. About that time, more farmers began using steel tip plows that turned a deep furrow and discarded the homemade implements they had been using for nearly a century. Grain drills were introduced about 1884, but scarcely any commercial fertilizer was used until after 1900.

Long standing patterns of land use were interrupted in 1914, when the Norfolk and Western Railroad pushed its Virginia-Carolina line from Abingdon, Virginia, through Ashe to the Watauga County boundary. The expressed purpose of the railroad was to carry timber from the forests of Ashe to markets in Virginia. Almost immediately hundreds of sawmills sprang up along the road bed. For a brief time the economy flourished and the mills enjoyed success. Inevitably, however, the scavenger techniques of the timber companies exhausted the good woodland, leaving the forests thin and sometimes denuded. With their job completed, the railroad pulled out, even to the point of ripping up the tracks from West Jefferson to Todd on the Watauga County line. For a while efforts were made to continue passenger service from West Jefferson to Abingdon, but even that was discontinued in the 1960s and the line abandoned. Ashe County remained isolated from the remainder of North Carolina except for the enlarged trails purporting to be roads.

During the administration of Governor Charles B. Aycock, the North Wilkesboro-Jefferson Turnpike Company was incorporated. A road connecting the towns was constructed with pick, shovel, and wheelbarrow by convict labor. It was an improvement over the old road but subject to severe damage during inclement weather. The flood of 1916, for instance, completely destroyed the turnpike. The first all weather road into Ashe County was begun during Governor Cameron Morrison's term (1921-1925), but the construction was not completed until the governorship of Clyde R. Hoey (1937-1941). The road followed almost the same course as the turnpike and was designated N.C. 16.

Ironically, the highway that was supposed to link Ashe County with the state opened the door for a migration *from* the county. Since 1950, Ashe has suffered population decreases, with most of the exodus being from the rural areas. The highway, however, did encourage a few small industries to settle in Ashe, particularly in the town of West Jefferson. Even so, the county is still nearly 90% rural despite a number of highways that link the region with other parts of the state.

CONCLUSION

In conclusion, the isolation of Ashe and the lack of settler turnover resulted in a constant pattern of land use that still continues. Yet it should not be assumed that substandard living conditions prevailed. Ashe had neither abundance of wealth nor grinding poverty. Homes were substantial if not elegant, and the squalor and deprivation often associated with a mountain society were not prevalent in Ashe. The tendency to hold on to the land reduced speculation and accumulation of huge tracts, thus a more equitable distribution of land was found in Ashe. Farms grew smaller over the years, but the vast majority of families owned a share. The pattern is still continuing, but even though per capita income is below the state average, a comfortable lifestyle is maintained.

U.S. 221 Research Framework

CHAPTER 22.

Thomas E. Scheitlin

INTRODUCTION

The research design employed during the Ashe County U.S. 221 project was previously presented in the Wilkes County U.S. 421 report (Chapter 15). This chapter will present a short summary of the design. Five problem domains are considered, including:

(1) site density derivations
(2) derivations of site chronology
(3) evaluation of site significance
(4) evaluation of survey methodology
(5) settlement pattern analysis

SITE DENSITY ESTIMATION

The derivation of site densities in the U.S. 221 project area is more complex than its Wilkes County (U.S. 421) counterpart. This stems primarily from the greater land area involved in the Ashe County project. The survey area has been divided into two areas: (1) those greater than 500 feet from water, and (2) those less than or equal to 500 feet from a water source. Each condition will have two density figures calculated, reflecting maximum and minimum estimates. The estimates will be interpolated to acreage within each category, excluding disturbed areas (primarily streams), but including roads. The high estimate will be based on the density of sites in plowed fields or gardens; the low estimate will be arrived at using the sites found in pastures, lawns, and areas of secondary growth.

SITE CHRONOLOGY DETERMINATIONS

All sites were assigned to the cultural periods of early, middle, or late Archaic and/or Woodland periods, as well as protohistoric and historic periods. Temporal assignments are based on established projectile point and ceramic typologies (i.e., Coe 1964, Dickens 1976, Keel 1976). More specific assignments will not be possible until further chronological work occurs in the general vicinity.

EVALUATION OF SIGNIFICANCE

All cultural resources identified by the survey were evaluated for significance based on the criteria of eligibility to the National Register of Historic Places (36 *CFR* 800). All sites were placed into one of two categories--not significant and potentially significant (see also Chapter 15). *Not significant* refers to resources for which locational and cultural information collected in the field preserves the important information those resources possess. *Potentially significant* resources are sites which may require further investigation to fully document eligibility (or ineligibility) to the National Register.

EVALUATION OF SURVEY METHODOLOGY

The condition and preservation of cultural resources varies from area to area, as does the appropriateness and effectiveness of various field methodologies. Similarly, the conclusion of fieldwork and analysis of materials in a given project often suggests additional or better field methodologies. The evaluation of methodological problems and the suggestion of more appropriate field methodologies initiates a feedback network for the improvement of cultural resource surveys.

SETTLEMENT PATTERN ANALYSIS

An analysis of settlement patterns, or more specifically, the study of the relationship of archaeological site locations to the environment, will be examined. The initial research design for both the Ashe (U.S. 221) and Wilkes (U.S. 421) county projects (see Chapter 15) called for an analysis of site locational variability between the projects in an attempt to test hypotheses about differential aboriginal use. Unfortunately, the nature and small sample size of the material from the Wilkes County project largely precluded such an analysis. While inter-project area analysis was rendered difficult, area-specific analysis is possible.

CHAPTER 23.

U.S. 221 Survey Design

Thomas E. Scheitlin

INTRODUCTION

The U.S. 221 survey incorporated a number of methods in locating and assessing the cultural resources in the 348 acre project corridor. These included pedestrian walkover, shovel tests, and 3-inch bucket auger tests. This chapter will detail the field conditions, field methodology, data collection at sites, and site definition.

FIELD CONDITIONS

As the survey occurred in the early fall, field conditions were moderately good; the temperature was generally cool and the vegetation was beginning its fall dormancy. Two days of the fieldwork were cut short by rain and one completely canceled. The thirteenth of October brought a light but constant "snow drizzle," which melted upon contact with the ground. The snow hampered but did not stop field operations.

The U.S. 221 corridor was well marked with stakes in the northern two thirds of the project and with permanent bench marks in the southern third. The latter proved to be more difficult to find. However, finding and following the corridor in the field proved relatively easy. It was only in a few isolated areas (in woods) that locating the exact position of the corridor proved difficult. Access to the corridor was also satisfactory, given the numerous county roads that bisected and/or paralleled the project area. Land access in the survey area was guaranteed by the Department of Transportation, and no problems were encountered with land owners. The crew did, however, ask permission to examine gardens and lawns associated with houses. Permission was granted on every occasion.

The 348 acre right-of-way was divided into several land use categories, including roads, streams, disturbed lands, and buildings (20 acres), pasture and lawn (242 acres), plowed fields and gardens (3 acres), woods (47 acres), and secondary growth (35 acres) (Table 23.1).

	>1,000 feet from water	<1,000 feet from water	>500 feet from water	<500 feet from water	all areas
Covered in roads (surface only)	-	12.25	.54	11.71	12.25
Roads (Roads, streams, disturbed land, and buildings)	-	20.25	.69	19.56	20.25
Pasture/lawn	6.13	235.93	29.88	212.18	242.06
Field/garden	-	3.31	2.31	1.00	3.31
Woods	-	47.31	.5	46.81	47.31
Secondary Growth	--	34.63	-	34.63	34.63
Total all except covered in roads	6.13	341.43	33.38	314.18	347.56

Table 23.1. Ashe County U.S. 221 acreage estimates.

Most of these areas were relatively level, with an overall elevational variation of 510 feet. This results primarily from the corridor paralleling or crossing small drainages. Elevations within the corridor begin at 3,065 feet above mean sea level (MSL) south of Baldwin and rise to 3,375 feet above MSL 2¼ miles to the northeast. At its terminous in East Jefferson, the corridor descends to a low 2,865 feet.

Surface visibility within the corridor varied considerably, ranging from 0% to nearly 100%. Visibility proved to be a key variable for the location of sites within the project area. In fact, 56% of the sites identified by the survey were found by visual surface inspection alone, usually in plowed fields or gardens with nearly 100% visibility. Areas of secondary growth frequently exhibited some degree of surface visibility, with an average of about 20% exposure. Developed areas, roads, and other disturbed areas commonly contained areas of high visibility, particularly in areas directly adjacent to roads. Woods and pastures, on the other hand, offered virtually no exposed surfaces. There were however occasional patches with increased visibility, including bare patches with 100% visibility. One area in the woods was not examined due to an impenetrable snarl of briars covering about 2¼ acres.

FIELD METHODOLOGY

The implementation of a cultural resource survey requires the identification of field methodologies to be employed in the field prior to fieldwork. However, such methods may require flexibility due to unexpected field conditions. Such was the case with the present project. This section will briefly describe the survey methods employed during the U.S. 221 project. Figure 23.1 shows the areas in which the different methods were employed.

When encountered, plowed fields and gardens were examined extensively using a standard pedestrian walkover. Plowed areas are assumed to provide a sample of archaeological remains from the surface to the depth of plowing, which in most cases extends to a minimum of 15 centimeters (see also Chapter 15). Every fourth crop row of the larger fields and every row of the smaller garden plots were surveyed. Plowed fields and gardens represented less than 1% of the project area. Other areas, with visibility above 15%, were visually inspected at a maximum 10-meter interval. When small open patches (e.g. cow paths, erosional scars) occurred in areas of otherwise low visibility, they were similarly inspected, but with a decreased interval.

Investigation of areas with little or no visibility occurred through the use of 30 by 60 centimeter oval shovel tests to approximately 30-40 centimeters depth. Depth varied in stony soils, where pits were dug until large rocks or bedrock prohibited further excavation. Shovel tests were spaced at approximately 30-meter intervals along the corridor. Spacing between shovel testers was also approximately 30 meters. The crew, depending upon size, walked down the corridor in a zigzag manner from one right-of-way boundary to the other. Shovel tests were made utilizing the following procedures: (1) cut sod in a roughly oval slope, (2) peel the sod back, (3) hand sift fill material, (4) shake out fill material in the grass/weed matrix, (5) backfill shovel tests, and (6) recap with the sod plugs. During the survey of pastures or woods, visual examination replaced shovel tests in areas with high surface visibility. As the project area was surveyed, notes were taken on land use and ground cover and written on the highway right-of-way blueprints. Small open areas within pastures, however, were not recorded.

Auger tests, using a 3-inch bucket, were placed in three selected areas along the right-of-way. These were positioned near streams which exhibited the best developed floodplains (Figure 23.1). These tests were made to collect data on the soil development along these streams and to provide insight into the possibility of buried sites. No attempt, however, was made

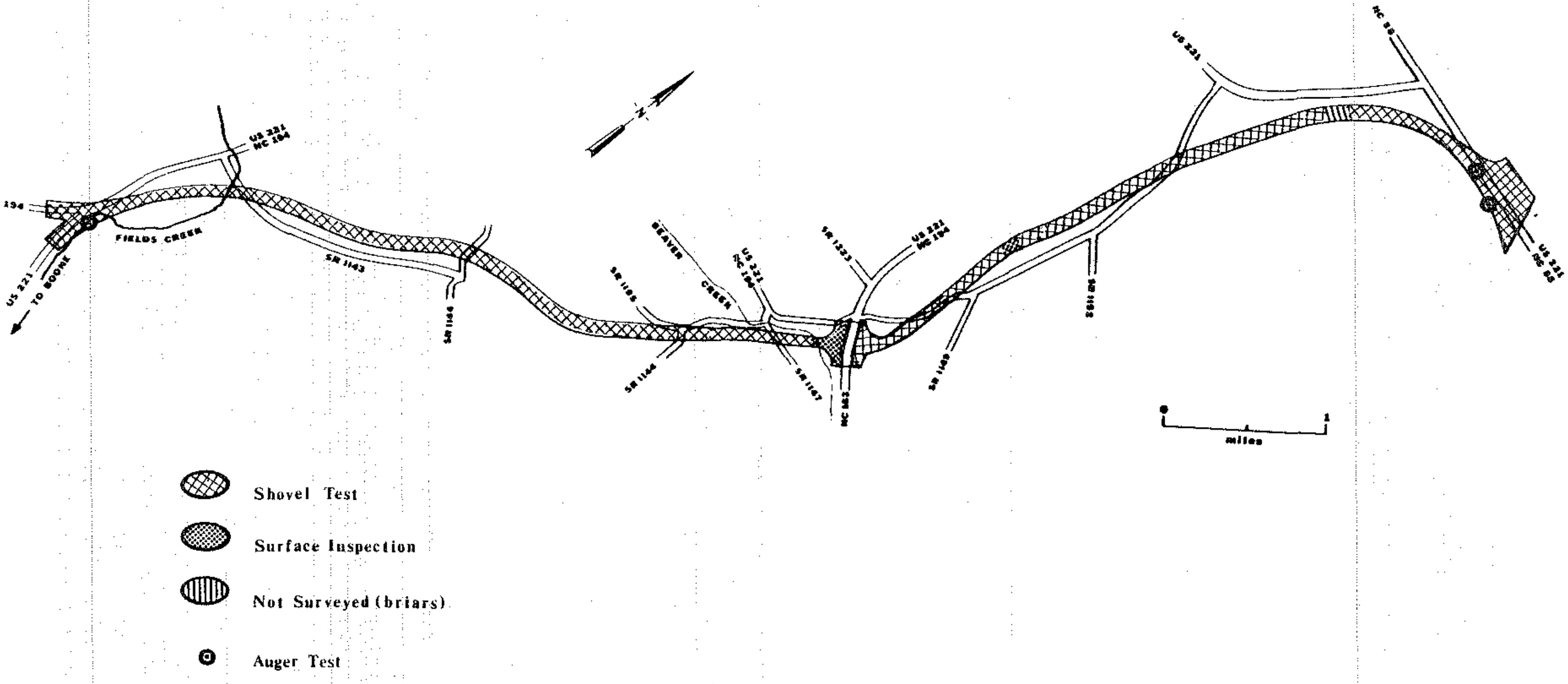

Figure 23.1. Location of surveyed areas, methods of survey, and auger tests, Ashe County U.S. 221 survey project.

to systematically locate any cultural resources occurring below the depth of shovel testing.

SITE DATA COLLECTION

Once a site was located, two techniques were employed for the collection of cultural materials and the definition of site size. In the case of open areas, sites were combed in swaths no greater than 10 meters apart; all artifacts encountered were collected. This would continue until the end of the site was determined or the exposed portion of the site ended. If the exposed area ended with artifacts still occurring, shovel tests were to be placed outside of these areas at 10-meter intervals until a shovel test produced no artifactual material. In reality, all sites in exposed areas were limited in size and smaller than the area. Test pits were also placed in the open areas to ascertain if there was any depth to the site.

The second technique was employed for sites discovered by shovel tests alone. Shovel tests were placed at 10-meter intervals in cardinal directions from the first shovel test producing artifacts, until no further artifactual materials were recovered. All cultural materials found in shovel tests were collected. More extensive testing also occurred at sites Ah163 and Ah164. Chapter 24 details the methodology employed in these operations.

All sites and material collected were recorded on the Archaeology Branch's "North Carolina Prehistoric Archaeological Site Form." Site locations were marked on USGS 7.5 minute topographic maps, DOT aerial photographs, and DOT right-of-way blueprints (both topographic and plan). Material collected during the survey was washed and accessioned into the Archaeology Branch catalogue and is stored at the branch laboratory. Permanent state site numbers were acquired through the Research Laboratories of Anthropology, UNC-Chapel Hill.

Historic sites and structures were noted on maps and recorded in the field notes. All those noted however, were adjacent to the right-of-way and were later examined by an architectural historian. Most of the structures located in the right-of-way had been moved prior to our fieldwork.

SITE DEFINITION

Three site definitions were utilized during the cultural resource survey, including one for prehistoric archaeological sites, historic archaeological sites, and historic structures. Prehistoric sites were defined by any indication of past human behavior. Thus, a single flake would qualify as a site and would be recorded. The use of such a definition however must be bracketed by "definitive evidence of human behavior." This may be difficult in many instances, as some lithic sites are easy to define by the occurrence of man-altered cryptocrystalline materials while others will be difficult to distinguish. Quartz is particularly difficult to work with due to its natural cleavage properties. As such, the criteria used in defining quartz-only lithic sites is stricter than for lithic sites containing other raw material types.

Historic sites were defined as any historic feature. Individual artifacts were not used to define historic sites because of the intensity of historic use, such that most of the project area is expected to be lightly covered by the remnants of historic human behavior. Historic structures were defined as any standing structure built prior to 1930 A.D.

Testing Operations at Ah163 and Ah164

CHAPTER 24.

Thomas E. Scheitlin

INTRODUCTION

Two sites were recorded during the field survey which warranted further testing--Ah163 and Ah164. Based on initial shovel testing, both contained a high density of artifacts and had the potential for intact cultural deposits. They were also the only sites isolated by the survey that contained prehistoric ceramics. This chapter will detail the methods used to further document the nature, extent, and conditions of the cultural deposits and to evaluate the significance of these sites with regard to the National Register of Historic Places. Discussions will focus on the specific methodologies employed at each site, a brief analysis of the collected materials, and an evaluation of the significance of each site.

Two basic methods were utilized during the test investigations at the two sites. Further shovel tests were excavated to ascertain the limits of the sites. These shovel tests were placed around the sites to isolate the extent of cultural deposits and did not follow the strict radiation in the four cardinal directions utilized with other sites in the survey. Shovel tests on these sites were placed "intuitively" with respect to the topographic features at each site.

Once site limits were defined, structured test pits were excavated. These tests were made to provide horizontal control for the recovered artifacts and to provide information on the nature and depth of the deposit. Test pit units were oriented along magnetic north-south/east-west axes and were either 1 x 1 meters or 50 x 50 centimeters on a side. All excavations were undertaken in arbitrary levels, since the presence of natural or cultural stratification was unknown.

AH164 TESTS

Background

Site Ah164 is located approximately 15 meters south of the confluence of three spring-fed streams in a wooded and grass covered area at the western edge of the highway right-of-way. The site was found when a shovel test at the base of a beech tree located a concentration of prehistoric ceramics in a very dark midden-like soil matrix. Two other shovel tests, one to the northeast and one to the southwest, did not produce any artifacts.

Testing

Further investigations at the site occurred several days later (October 4). The testing included a series of shovel tests to determine site boundaries and excavation of two 1 x 1-meter test pits to acquire data on the nature and condition of the deposits (Figure 24.1).

Shovel tests: five shovel tests were placed around the initial shovel test at 5- to 10-meter intervals and along the bank of the closest stream, 5 meters to the west. No cultural materials were recovered in these tests.

Test pits; a 1 x 1-meter test pit (TP #1) was placed to the east of the single artifact-producing shovel test (near the tree). The sod was peeled back and fill material removed from the grass/weed matrix. This produced a few extremely small ceramics. The pit was then carefully troweled in arbitrary levels. Fill material was not screened but was meticulously hand sifted. This pit produced a paucity of artifacts in a uniform lens 0-15 centimeters in depth. It did, however, yield one middle Woodland triangular projectile point. As a result, another 1 x 1-meter test pit (TP #2) was placed directly adjacent to and east of TP #1 and incorporated the initial shovel test. Again, the one artifact-bearing level was approximately 15 centimeters in depth and contained numerous tree roots. All of the ceramics recovered were in close proximity to these roots, suggesting that the roots provided some protection from erosion. An additional consideration is that the root growth has no doubt disturbed the artifactual material from its original position (c.f. Snavely 1977).

Upon completion of the testing, all shovel tests and test pits were backfilled and the sod replaced. All artifacts were bagged and taken to the Archaeology Branch lab for washing, numbering, and analysis. Artifact data are provided in Appendix H.

Results

Seven lithic artifacts were recovered from Ah164, including six flakes and one middle Woodland triangular projectile point (see Figure 24.2a). Several unmodified and probably naturally occurring pieces of stone were also collected. A total of 67 sherds was analyzed (only ceramics that did not pass through a one-half inch mesh screen were analyzed). All were quartz-tempered, with the exception of one sherd of unknown temper. Surface treatment of the wares was predominately net impressed (67%), with

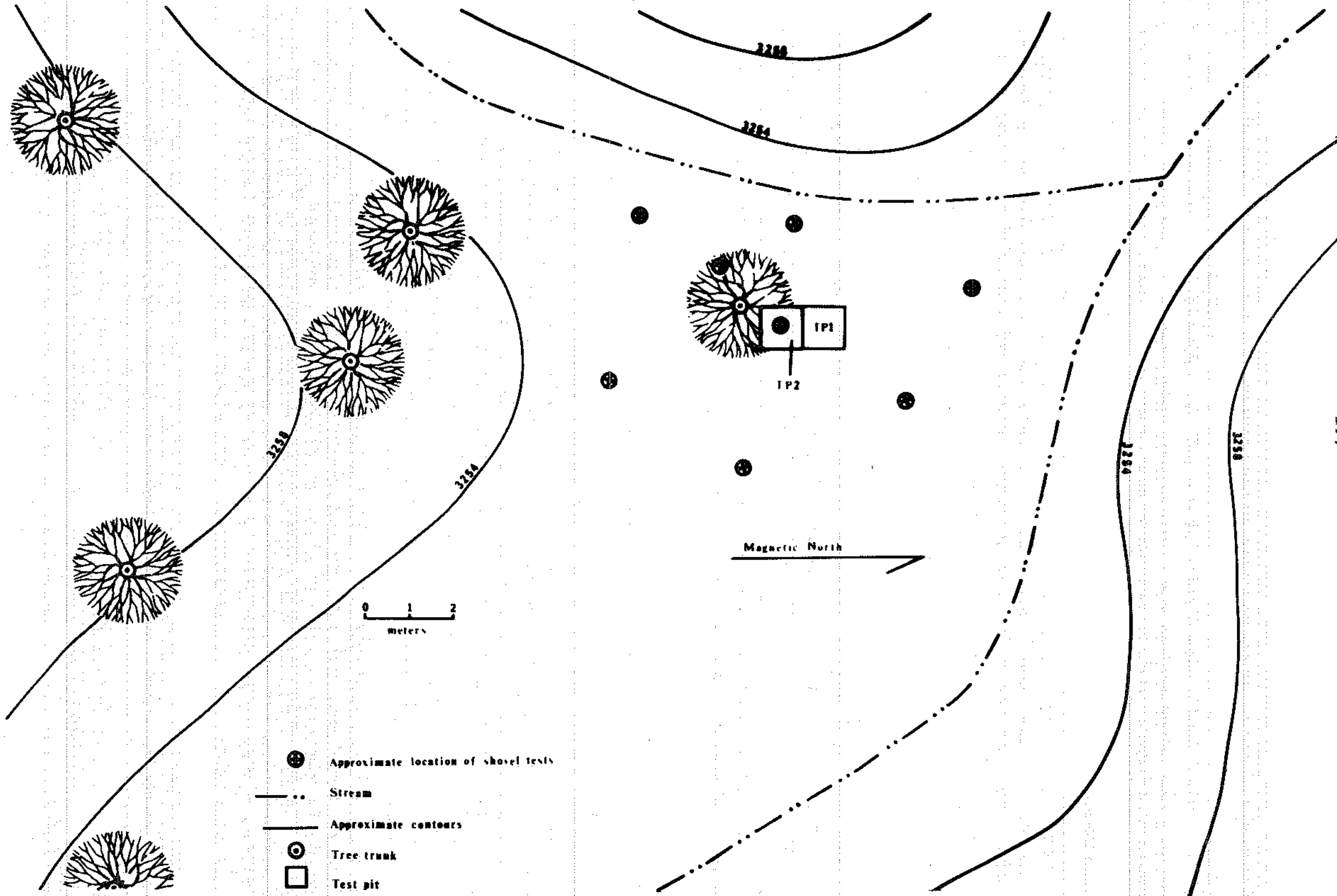

Figure 24.1. Location of test pits at Ah164.

fabric impressed (13%), plain (9%), and other (11%) treatments also occurring. The bulk of the net-impressed wares fall into Coe's (1964) Uwharrie net impressed series (66%) (see Figure 24.2b and c). However, one Dan River net-impressed rim fragment was also identified (see Figure 24.2d). Several beech tree (*Fagus grandifolia*) seeds were also collected.

Conclusions

Over 52% of the artifacts from the site were recovered from the initial shovel test. Thus, two functional interpretations for the site are possible: (1) that the site was a limited activity locus represented archaeologically by a "pot bust" (i.e., use of the locus only for ceramic-use activities, such as water collection); or (2) that the site was once larger, possibly representing a short term habitation site, but had been destroyed by sheet erosion.

All material evidence, aside from the single Dan River sherd, indicates that the site is a middle Woodland limited activity locus, perhaps disturbed by tree root growth in recent years. The testing procedures have destroyed this site but at the same time have recorded the information contained within it. As such, the site's significance lies in the information collected from the site and the site has been determined not eligible for the National Register of Historic Places.

AH163 TESTS

Background

On October 1, 1977, Ah163 was recorded in a small L-shaped pasture bounded on the southwest and east by two stream confluences (Figure 24.3). The pasture included a low area, corresponding to the floodplain of the stream, and a terrace or bench around a very low ridge toe extension. The total elevational variation in the pasture is 20 feet (from 3,245 feet to 3,265 feet above MSL). The highway corridor passes through the center of the pasture and the site. A metal highway bench mark (on the site) marks the southern boundary of the right-of-way. A heavily rusted plow disc and several piles of rocks were located along the eastern extent of the pasture, indicating that the pasture was once cleared and cultivated. The rock piles, apparently cleared from the pasture, were examined for indication of previous use; all were found to be unmodified stone. The pasture was covered in a low grass/weed mix with an occasionally protruding chunk of native quartz or amphibolite. A survey along the northern border of the field yielded a large fragment of lead-glazed stoneware.

Four shovel tests were initially placed in the field; all yielded artifacts, including a late Woodland triangular point. The artifacts were recovered from a dark brown loamy soil with a high organic content. Further tests of the site were deemed necessary to determine the nature, extent, condition, and significance of the site. Testing at the site occurred in two phases.

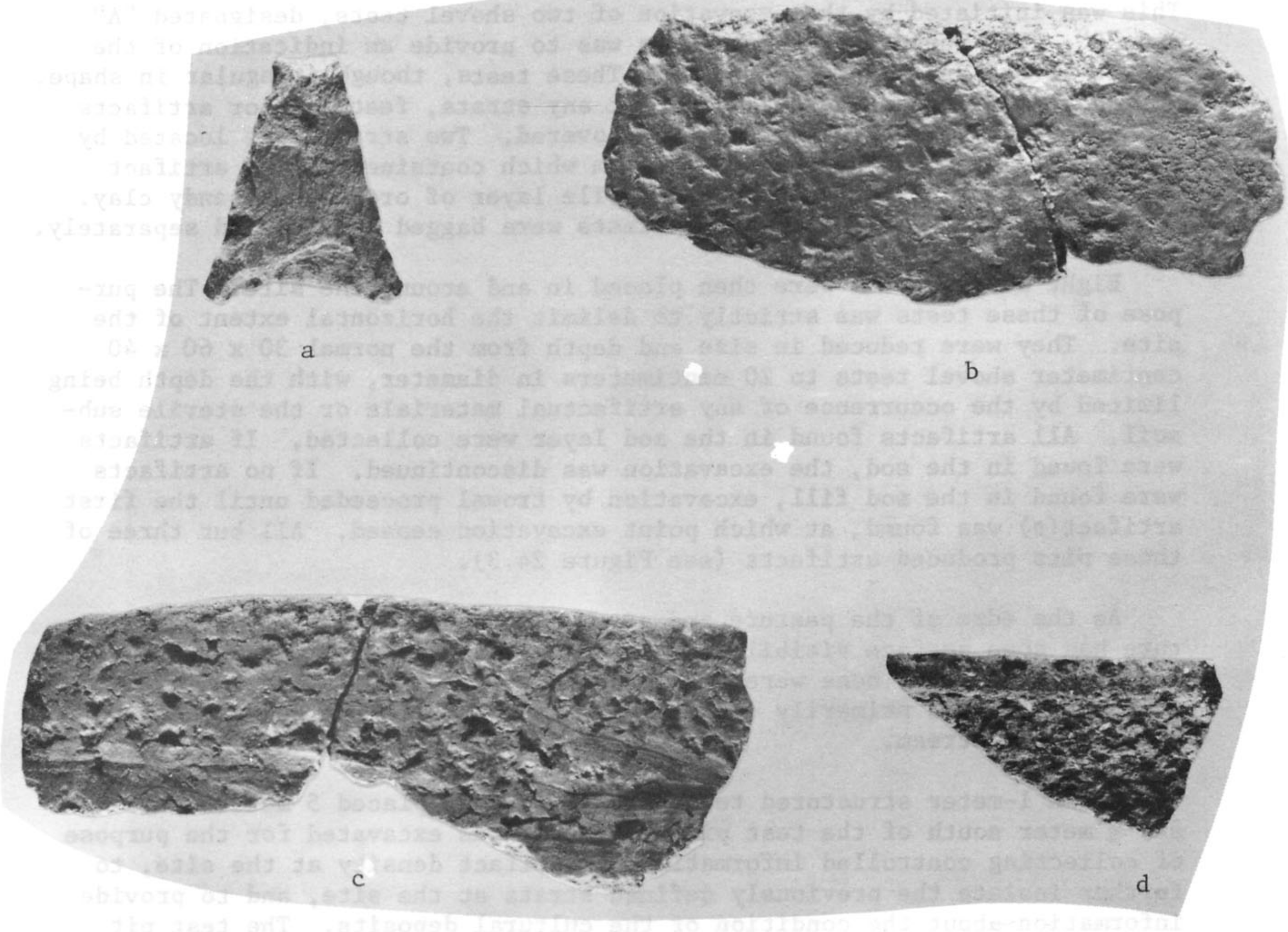

Figure 24.2. Examples of artifacts recovered from Ah164.

Testing Phase I

The first phase of testing at Ah163 occurred on October 4 and 5. This was initiated by the excavation of two shovel tests, designated "A" and "B". The purpose of these tests was to provide an indication of the nature of the deposits at the site. These tests, though irregular in shape, were partially troweled to assure that any strata, features, or artifacts in the pits would be identified or recovered. Two strata were located by these tests: a dark brown loam stratum which contained a high artifact density underlain by a culturally sterile layer of orange tan sandy clay. All artifacts recovered from these tests were bagged and labeled separately.

Eight shovel tests were then placed in and around the site. The purpose of these tests was strictly to delimit the horizontal extent of the site. They were reduced in size and depth from the normal 30 x 60 x 40 centimeter shovel tests to 20 centimeters in diameter, with the depth being limited by the occurrence of any artifactual materials or the sterile subsoil. All artifacts found in the sod layer were collected. If artifacts were found in the sod, the excavation was discontinued. If no artifacts were found in the sod fill, excavation by trowel proceeded until the first artifact(s) was found, at which point excavation ceased. All but three of these pits produced artifacts (see Figure 24.3).

As the edge of the pasture and areas immediately outside of the pasture had some surface visibility, they were visually examined for the occurrence of artifacts; none were discovered. The shovel testing indicated that the site was primarily confined to the small terrace above the floodplain of the stream.

A 1 x 1-meter structured test pit (TP #1) was placed 5 meters east and ½ meter south of the test pit. This pit was excavated for the purpose of collecting controlled information on artifact density at the site, to further isolate the previously defined strata at the site, and to provide information about the condition of the cultural deposits. The test pit was troweled in natural levels, but the fill material was not screened due to equipment limitations. Excavation of the pit went rather slowly, as it was carefully troweled and hand sifted due to the lack of a screen. A sample for water screening (using a fine mesh screen) was taken from the fill between 4 and 16 centimeters below the surface. The first stratum proved to be the only one containing artifactual material, and extended to approximately 20 centimeters in depth. No sharp break between the first dark brown loam level and the underlying sterile orange tan clay stratum was discerned. The mixing of these levels suggests that the field had been plowed at one time. However, no evidence of plow scars was found. The dark brown loam in which the artifacts were recovered contained numerous fragments of native stone (quartz and amphibolite) and some small fragments of charcoal. No archaeological features were isolated in the unit.

Testing Phase II

A second phase of testing at Ah163 occurred between October 12 and 14. Prior to undertaking this phase of test excavations a datum was

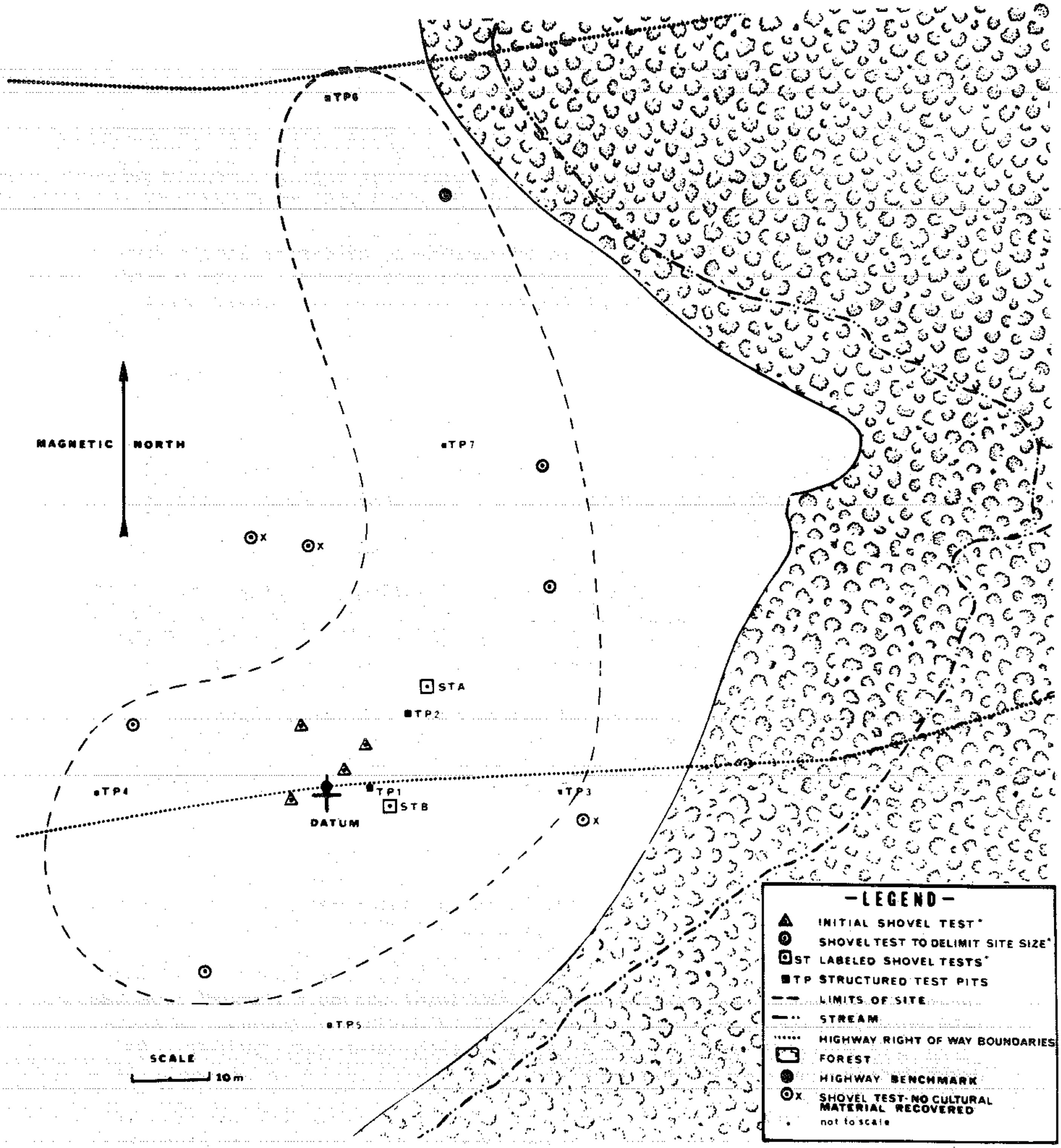

Figure 24.3. Map of Ahl63 site limits and location of shovel tests and test pits.

established 1 meter south (magnetic) of the highway bench mark. The datum was identified with the coordinate designation of NO,EO (zero meters north and zero meters east). The southwest corner of all test pits was defined as the coordinate reference point for each unit. All test pits and shovel tests were mapped from the datum using a Brunton compass, 30-meter tape, and surveying pins. Six further test pits were placed in the site labeled TP #2 through TP #7. All were dug in 10-centimeter arbitrary levels and all excavated material screened through ¼-inch mesh hardware cloth. Soil samples were taken from each level for water screening to recover ethnobotanical remains.

Test pit #2 (N10, E10), a 1 x 1 meter unit, was excavated in three 10-centimeter (cm.) levels. A fourth level, 30-40 centimeters below the surface (b.s.), was reduced in size to 50 x 50 centimeters^2. Artifacts from each level were bagged and labeled separately. Level #1 (0-10 cm. b.s.) produced numerous ceramic and lithic artifacts, flecks of charcoal, and charred nuts, native stone in a dark brown loamy soil matrix. Level #2 (10-20 cm. b.s.) yielded artifactual materials similar to those found in the previous level but also revealed the loam grading into a zone of orange tan sandy clay. Level #3 (20-30 cm. b.s.) revealed a marked decrease in artifact density, with the soils at its base becoming primarily composed of the orange sandy clay. Small dark brown areas were noted but were attributed to rodent holes and root stains. Only the northeast quarter of the unit was excavated to level #4 (30-40 cm. b.s.). Few artifacts were recovered from this level, these primarily being found in association with the rodent and/or root stains in the orange tan sandy clay. Finally, a 3-inch bucket auger pit was dug from 40 to 130 cm. b.s. The auger test revealed that the orange sandy clay continued to about 100 cm., where it changed gradually into a grayish micaceous stratum with a high moisture content.

Test pit #3 (NO, E30), 50 x 50 cm., was located just below the terrace on the stream floodplain and was excavated in three levels. Level #1 (0-10 cm. b.s.) produced very few artifacts in comparison with the test pits in the central site area (e.g., test pits #1 and #2) but did contain a few pieces of native quartz in the dark brown loam matrix. Level #2 (10-17 cm. b.s.) produced a single sherd and isolated the only plow scar located during the testing operations. At the base of the level the soil changed from the loam to a lighter sandy soil. Level #3 (17-27 cm. b.s.) produced no artifacts and the sandy soils became intermixed with water-worn pebbles. No auger test was placed in this test pit.

Test pit #4 (NO, W30), 50 x 50 cm., was placed at the western edge of the site. Level #1 (0-10 cm. b.s.) revealed a lower artifact density than found in the central portion of the site. The soil of this level was again the dark brown loam but contained small pockets of the orange tan clay. Level #2 (10-19 cm. b.s.) had a moderate artifact density and the incidence of the orange tan clay increased until it was the predominate soil at the base of the level. Fragments of naturally occurring stone occurred throughout the first two levels. Level #3 (19-29 cm. b.s.) produced no artifacts, but its clay soil matrix contained several brown rodent/root stains. An auger test was placed from 29 to 110 cm. and indicated that the orange tan clay trends into a light gray sand at approximately 95 cm.

Test pit #5 (S30, E0), 50 x 50 cm., was located in the floodplain. Two levels were excavated in 10 cm. levels, producing no artifactual material. The soil matrix of both levels was a sand and gravel mixture apparently deposited by the adjacent stream.

Test pit #6 (N90, E0), 50 x 50 cm., was located at the northern extreme of the site. Level #1 (0-10 cm. b.s.) produced but a few artifacts. Its loam soil matrix contained a higher native stone content than those in the central site area. Level #2 (10-20 cm. b.s.) produced a few artifacts but rapidly turned into the sterile orange tan clay.

Test pit #7 (N45, E15), 50 x 50 cm., was the last test pit placed in the site. It was located on the terrace to the north of the heavy artifact concentrations noted in test pits #1 and #2. Level #1 (0-10 cm. b.s.) contained a moderate artifact density, predominantly lithics. The soil composition was again the dark brown loam, with chunks of the orange tan clay. Level #2 (10-20 cm. b.s.) contained artifactual materials quite similar to level #1. They were also encased by the dark brown loam matrix which graded into the orange tan clay at the base of the level. Level #3 (20-30 cm. b.s.) produced artifacts only in its first 7 centimeters, and at approximately 27 cm. b.s., became the predominately sterile clay base with occasional darker rodent and/or root stains. An auger test was then dug from 40 to 70 cm. The orange tan clay trended into a light gray sand between 60-70 centimeters.

Results

Tests at the site indicated that cultural materials were isolated in a dark brown loam which grades into a culturally barren orange tan clay. Mixture of these strata has apparently resulted from the plowing of the site in former years. No archaeological features were delineated in any of the shovel tests or test pits.

Processing and analysis of the artifacts occurred in several stages. All collections were washed, catalogued and numbered. Water screen samples were passed through one-sixteenth-inch window screen using a water hose. Discussions of the analyses will be presented in three sections: lithics, ceramics, and ethnobotanical and other remains (see Appendix H for artifact data).

Lithics: lithic materials recovered during testing operations included 10 bifacially flaked projectile points, 7 biface fragments, 1 perforator, 13 unifaces, 704 unmodified flakes, 34 fire cracked rock fragments, 1 piece of soapstone, and 10,484 pieces of miscellaneous unmodified stone greater than one-half-inch size. The lithic raw materials noted for the artifacts included quartz (43%), andesite (28%), chert (12%), quartzite (5%), rhyolite (5%), tuffacious silts (4%), and other (3%). Five of the recovered projectile points were temporally and stylistically diagnostic. These included 1 Otarre stemmed, 1 middle Woodland triangular, 2 late Woodland triangular, and 1 Randolph stemmed point (see Figure 24.4a-d). Unifaces occurred primarily in the central portion of the site (as did the majority of the artifacts). Unmodified flakes were classified into the following categories: primary, secondary, interior, and miscellaneous flakes (see Appendix E for definitions). Seventy-two percent of these flakes were classified as interior flakes. This and the fact that no cores were found suggests that the site was not a primary lithic workshop, though some limited lithic production and/or resharpening did apparently occur.

Ceramics: ceramic analysis was limited to sherds greater than one-half inch in diameter. Each sherd was examined for surface treatment and temper. Once sorted into general groups, the sherds were counted and weighed (in grams). Interestingly, the most common temper was ground or crushed amphibolite, which occurs naturally in the area. Quartz, sand, and a type with temper that was missing (i.e., only holes are visible) were also found. From a typological viewpoint, the majority of the ceramics would fall into a Yadkin/Connestee-like type with amphibolite or quartz temper and fabric impressed or cord marked surface treatments (Dr. Joffre L. Coe, personal communication) (Figure 24.4e, f). Similarly, six sherds were classified as Dan River net impressed (Figure 24.4g); all occurred in the first level of the test pits. Ceramics were generally concentrated in the central portion of the site, to the north and east of the datum.

Other materials: the water screen samples produced numerous modern seeds, but only carbonized remains are reported here. These include hickory and acorn nut shell fragments (Dr. Richard A. Yarnell, personal communication). These samples are clustered in the central portion of the site, with the exception of the hickory shell fragment recovered in TP #5, level #1. Other remains isolated during the site testing include the one historic sherd of lead-glazed stoneware, a rusted nail casing, bone (rodent), charcoal, red pigment, muskovite fragments, and fire-hardened clay. The fire-hardened clay fragments indicate that features may have been present at the site even though none were isolated.

Conclusions

The site appears to have been occupied from late Archaic or perhaps early Woodland times. However, the bulk of the diagnostic lithic and ceramic material points to a middle to late Woodland occupation. The amount of pottery, the small amount of fire-hardened clay, and the number of unmodified flakes suggest that this site was at least a temporary habitation site, possibly associated with a microband (i.e., small group) occupation. Unfortunately, the plowing of the site has disturbed the dark brown loam lens from which all artifactual materials were recovered. This site has been determined not eligible for the National Register of Historic Places because of its disturbed nature. However, it is recommended that the site be covered by a lens of fill to protect it, which is presently proposed in the construction plans. Should these plans change and the site be cut or disturbed in any way by construction, an archaeologist should be present during these activities to record any deep or otherwise undisturbed features.

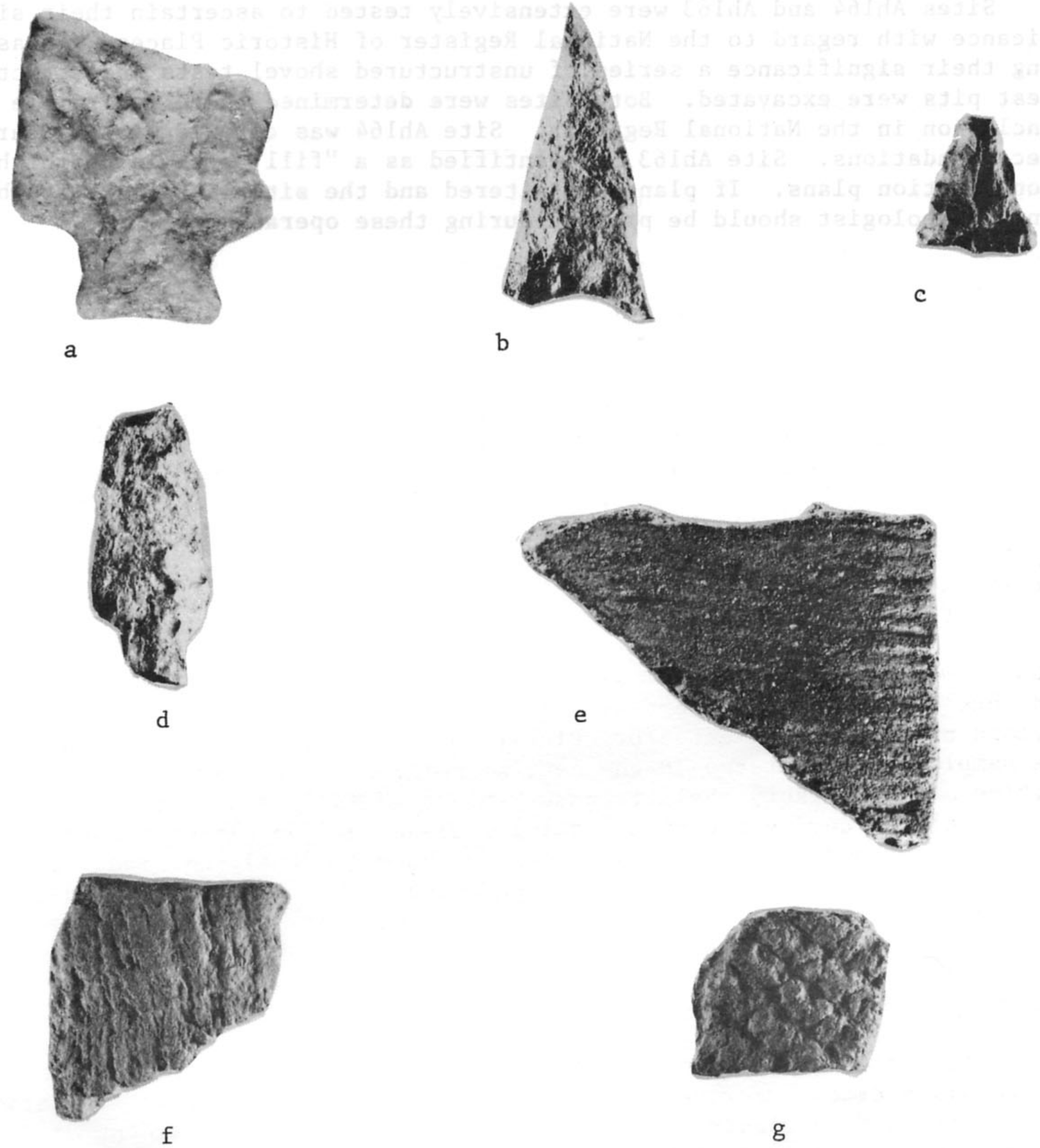

Figure 24.4. Examples of artifacts recovered from Ah163.

SUMMARY AND CONCLUSIONS

Sites Ah164 and Ah163 were extensively tested to ascertain their significance with regard to the National Register of Historic Places. In assessing their significance a series of unstructured shovel tests and structured test pits were excavated. Both sites were determined to be ineligible for inclusion in the National Register. Site Ah164 was cleared with no further recommendations. Site Ah163 is identified as a "fill" area in the highway construction plans. If plans are altered and the site is to be disturbed, an archaeologist should be present during these operations.

U.S. 221 Survey Data Analysis, Results, and Recommendations

CHAPTER 25.

Thomas E. Scheitlin

John W. Clauser

Michael T. Southern

INTRODUCTION

The Ashe County U.S. 221 cultural resource survey identified 25 prehistoric and one historic archaeological site in or adjacent to the highway right-of-way. This section will detail the analysis of the collected data and address the significance of the recorded resources. The section is divided into two major parts, one dealing with the prehistoric resources and the other with the historic resources. Figure 25.1 shows the general location of each of the recorded sites; Table 25.1 provides a list of each site by cultural affiliation and condition at the time of survey.

PREHISTORIC RESOURCES

Introduction

Twenty-five prehistoric sites were isolated by the survey. This section will present the analyses of the artifactual materials collected, the location and relationship of the sites to the natural environment, estimates of site densities within the corridor, and the evaluation of the significance of the sites. (Note: The artifact analysis discussed herein does not include sites Ah163 and Ah164, these having been previously discussed in Chapter 24.) The artifact categories and definitions utilized in this analysis are presented in Appendix I. All artifact and site data are presented in Appendixes F and G.

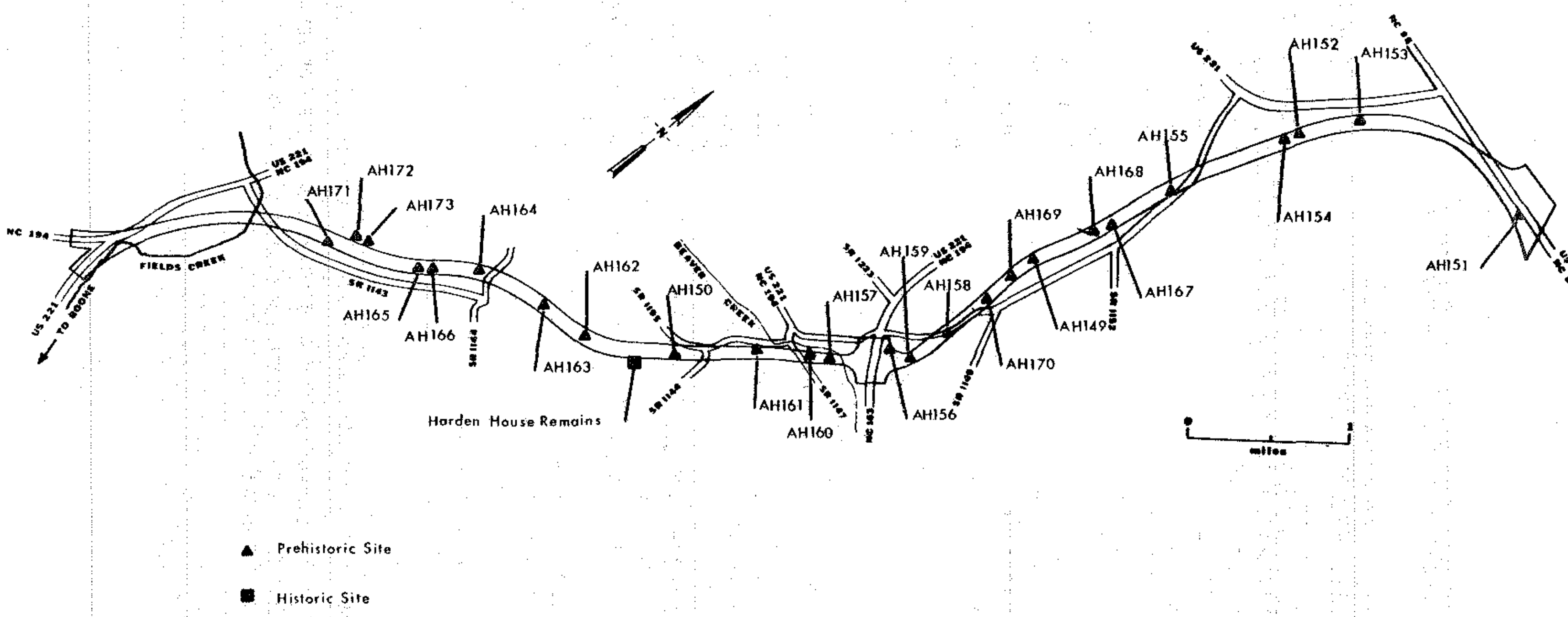

Figure 25.1. General location of historic and prehistoric sites recorded during the Ashe County U.S. 221 survey.

Site No.	Cultural Affiliation	Site Condition
Ah149	Late Woodland	Cultivated
Ah150	Late Archaic	Secondary growth
Ah151	Lithic only	Pasture
Ah152	Lithic only	Secondary growth
Ah153	Lithic only	Forest
Ah154	Lithic only	Forest
Ah155	Lithic only	Lawn
Ah156	Amerind	Cultivated
Ah157	Lithic only	Pasture
Ah158	Late Archaic	Cultivated
Ah159	Lithic only	Pasture
Ah160	Lithic only	Pasture
Ah161	Lithic only	Pasture
Ah162	Lithic only	Pasture
Ah163	Late Woodland, Middle Woodland, Late Archaic Amerind, Historic	Pasture
Ah164	Middle Woodland	Forest
Ah165	Lithic only	Pasture
Ah166	Lithic only	Pasture
Ah167	Lithic only	Pasture
Ah168	Woodland	Pasture
Ah169	Middle Archaic	Pasture
Ah170	Lithic only	Pasture
Ah171	Lithic only	Cleared area in pasture
*Ah172	Lithic only	Pasture
*Ah173	Lithic only	Pasture

*Outside ROW

Table 25.1. List of sites recorded during the Ashe County U.S. 221 survey by cultural affiliation and condition at time of survey.

Artifact Analysis

All materials collected during the survey were washed, catalogued, and sorted into function-related categories; lithics were further sorted by material type. Each category was then counted and weighed (in grams). General lithic categories included projectile points, biface fragments, unifaces (including modified, utilized, or retouched flakes), and unmodified flakes.

Four of twelve collected projectile points could be classified according to known types, including: 1 Morrow Mountain II (middle Archaic); 1 Gary (late Archaic); 1 Otarre stemmed (late Archaic); 1 late Woodland triangular; and 1 Randolph stemmed (historic Amerind) (Figure 25.2a-d). No other temporally diagnostic artifacts (except for those noted for Ah163 and Ah164) were collected during the survey. Unmodified flakes were divided into primary, secondary, interior, and miscellaneous groups. Seventy-nine percent (79%) of the unmodified flakes were categorized as interior flakes. Lithic resource materials utilized in making these artifacts were overwhelmingly quartz (68%), followed by rhyolite (7%), chert (6%), and slate (5%). All other materials were utilized for less than 5% of the artifacts (see Appendix F). The high frequency of quartz was expected given its natural occurrence in the area; prehistoric quartz quarries have been reported in the vicinity (Robertson and Robertson 1978).

Cultural Affiliations

Due to the general paucity of diagnostic artifactual materials (including Ah163 and Ah164), it is extremely difficult to place them into a period-specific culture historical context. Nonetheless, eight of the sites have been tentatively assigned the following cultural affiliations: 1 middle Archaic; 2 late Archaic; 1 middle Woodland; 1 late Woodland; 1 general Woodland; 1 Historic Amerind; and 1 late Archaic/early Woodland, middle and late Woodland and Historic Amerind site. Of these classifications, only the two tested sites (Ah163 and Ah164) can be assigned with confidence to any of these periods. The classifications of the six remaining sites (Ah149, 150, 158, 156, 168, 169) should be viewed as tentative since only one diagnostic was collected from each and all but one (Ah168) was a surface find.

Site Size and Artifact Densities

The size of each site collected in the field ranged from only 1 m^2 to 3,600 m^2, with a mean of 416 $meters^2$. This average corresponds to a site that is approximately 20.4 meters on a side. The "simple" density of artifacts at the sites varied from .003 to 318 artifacts per $meter^2$, with a mean of 14.4 artifacts per $meter^2$. The high value reflects the mean artifact density for the test pits placed in Ah163. A more realistic "simple" artifact density excludes the extensively tested sites and has a mean of .25 artifacts per $meter^2$. This value is representative of the low density of artifacts calculated for sites in the survey area (see Appendix E).

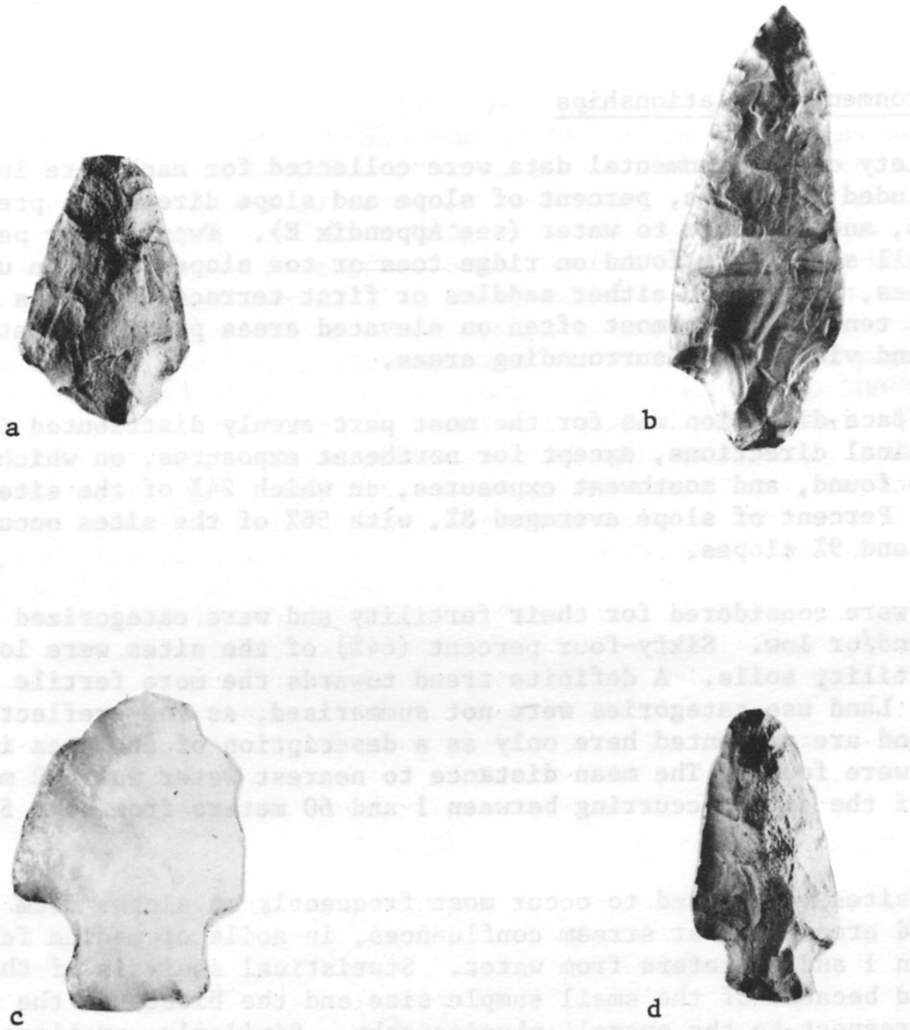

Figure 25.2. Examples of artifacts recovered during the Ashe County U.S. 221 archaeological survey.

Site-Environmental Relationships

A variety of environmental data were collected for each site location. These included landforms, percent of slope and slope direction, present land use, soils, and distance to water (see Appendix E). Twenty-four percent (24%) of all sites were found on ridge toes or toe slopes, 16% on upland/talus slopes, and 12% on either saddles or first terraces. It was noted that sites tend to occur most often on elevated areas providing better drainage and view of the surrounding areas.

Slope face direction was for the most part evenly distributed in the eight cardinal directions, except for northeast exposures, on which no sites were found, and southwest exposures, on which 24% of the sites occurred. Percent of slope averaged 8%, with 56% of the sites occurring between 5 and 9% slopes.

Soils were considered for their fertility and were categorized as medium, limited, and/or low. Sixty-four percent (64%) of the sites were located on medium fertility soils. A definite trend towards the more fertile soils was apparent. Land use categories were not summarized, as they reflect modern land use and are presented here only as a description of the area in which the sites were found. The mean distance to nearest water was 102 meters with 64% of the sites occurring between 1 and 60 meters from some form of water.

Thus, sites were noted to occur most frequently on slopes from 5-9%, on elevated areas or near stream confluences, in soils of medium fertility and between 1 and 60 meters from water. Statistical analysis of these data was limited because of the small sample size and the biases of the survey area with respect to the overall physiography. Similarly, problems with the assignment of cultural affiliations (due to the lack of diagnostic materials) would limit models of site location to general or composite models, which may or may not represent the totality of the settlement systems occurring over time. In-depth analysis of site locations as they relate to the environment of the area must therefore await future projects.

Auger tests placed in three locations near the floodplains of streams indicated the presence of stream-deposited sands and gravels. The floodplains appear shallow, tend to be damp if not wet, and do not appear to have a high probability for the occurrence of buried sites.

Site Densities

As archaeological survey cannot examine an entire project area without removing all vegetation and organic cover, all sites that occur in a project area are not usually discovered. Site density estimates provide a means to estimate the number of sites that are expected to occur in a project area. Such estimates are most useful for estimating the number of sites that occur in unsurveyed areas of the project. Since all but 24 acres of the U.S. 221 corridor was surveyed (excluding roads, disturbed land, buildings, and briars) and given the sampling methods employed, the number of sites isolated in the corridor closely reflects the expected minimum number of sites in the project right-of-way. Estimates of the maximum number of sites that might be present can be made by projecting the density of sites in plowed fields and gardens into all other land uses (pasture/lawn, woods, and secondary growth) in the right-of-way, excluding roads and disturbed areas. These predictions were arrived at using the methods and formulas presented in Chapter 17 of this volume. The results should be viewed with caution due to the extremely low percentage of the project area in fields and gardens (less than 1%) and therefore the high potential for sampling error. Estimates were calculated for areas within 500 feet of water, areas greater than 500 feet of water, and for all areas; the results are presented in Table 25.2. The estimates predict that from 289 to 298 sites occur in the project right-of-way and that the survey was 8 to 9% effective at recording prehistoric sites in the area. The number of predicted sites seems high and the survey efficiency abnormally low; both are attributed to the aforementioned sampling error.

	Acres in plowed fields/garden	Number of sites in plowed fields/garden	Average site density per acre	Total acres	Total No. of sites identified	Predicted No. of sites (approx.)	Survey efficiency (percent)
All areas	3.31	3	0.91	327.31	23	298	8
Areas 500 feet or closer to water	2.31	2	0.87	294.62	20	256	8
Areas further than 500 feet from water	1.0	1	1.00	32.69	3	33	9

Table 25.2. Prehistoric site density estimates, Ashe County U.S. 221 project area.

Evaluation of Site Significance

Each site isolated by the survey was evaluated with respect to its eligibility for inclusion in the National Register of Historic Places. Each site was determined either not significant or potentially significant (see Chapter 23). All but two sites were evaluated as "not significant". Their addition to the prehistory of the area is in the data that were recorded during this survey. Sites Ah163 and Ah164 were classified as potentially significant and required further testing. Both sites were extensively tested and determined to be not eligible to the National Register of Historic Places (see Chapter 24).

HISTORIC RESOURCES

Introduction

The mountains of western North Carolina present a natural barrier between Ashe County and the rest of the state. Early exploration and settlement came from the north (Virginia) rather than from the eastern counties of North Carolina, and even that was rather sparse. The population of the county has remained rather stable, showing neither dramatic increases or decreases. This stability has led to an unchanging pattern of land usage and a certain reluctance to change residences. Indeed, there are numerous examples of what amounts to ancestral homes scattered throughout the area, with one house serving several generations of the same family. If there is any new construction, it tends to be in close proximity to the earlier structure--often within sight of it.

Historic Archaeological Sites

The net result of the background research was the expectation of a scarcity of historic period archaeological sites not connected with standing structures. It was thought that any of the standing structures would still be in use. Field investigation verified this hypothesis. Although several structures were found in or in close proximity to the right-of-way, most were still in use as residences or had been turned into storage facilities; a very small number had been abandoned. Those that were no longer in use appeared to have major structural problems and were clearly unfit for any use without major work. It appears that structures in this area are used until the work required to repair them outruns the benefits of continued use.

One historic site of interest, the Hardin House remains, was located during the survey. This site was marked by a standing, single-shouldered chimney with a flemish bond (Figure 25.3). Surface evidence indicated the presence of a cellar hole. Preliminary inspection indicated that the site was barely within the right-of-way, and testing of the site was recommended.

The subsequent site inspection showed that the structural remains were actually outside the area to be affected by highway construction. However, it was of sufficient interest to conduct some test excavations. Local

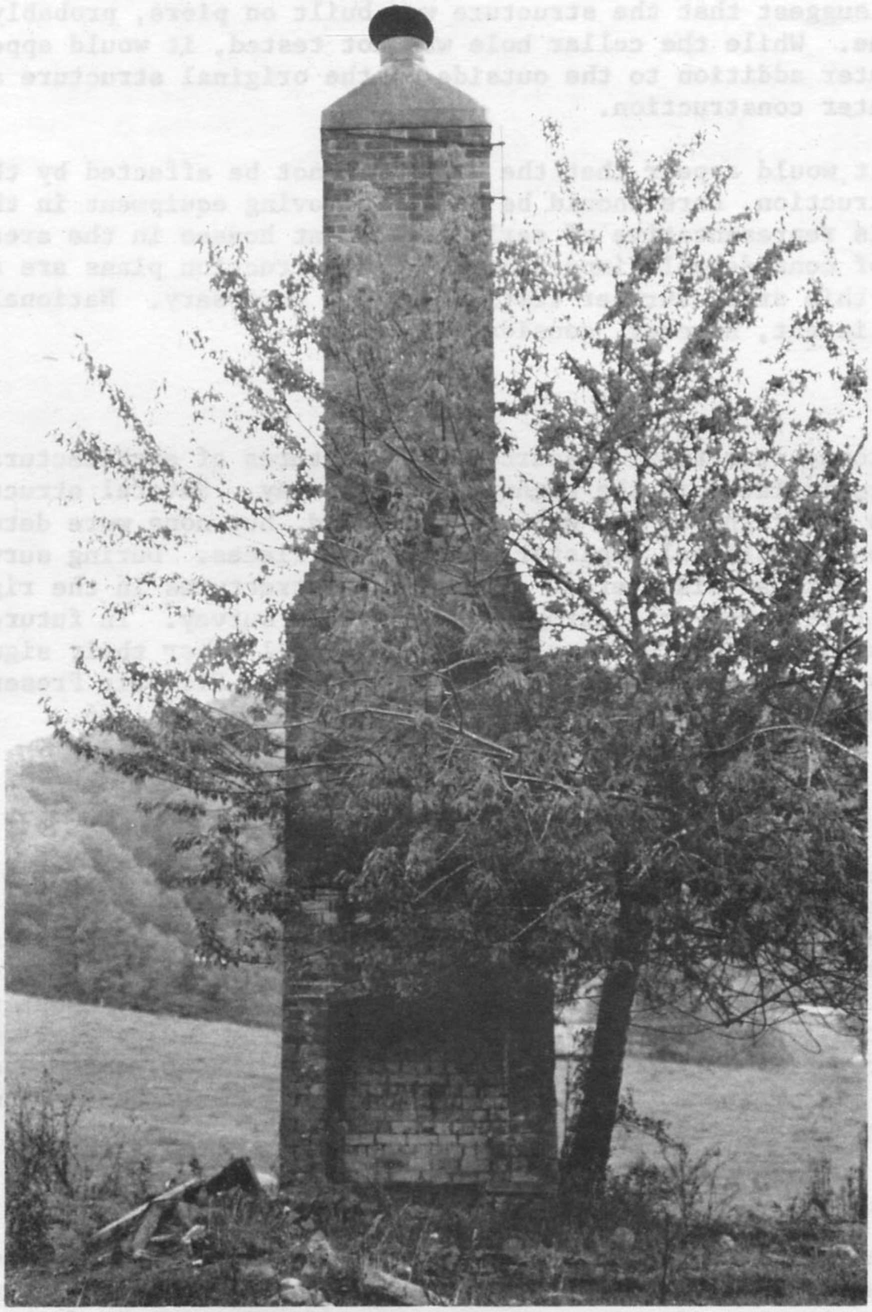

Figure 25.3. Chimney remnants, Hardin House, U.S. 221 survey.

informants indicated that the chimney was the remains of the Hardin House, a log structure which burned in the 1960s. Evidence on the remaining chimney indicated that the structure was two stories with a gable roof.

Test excavations at the base of the chimney located no foundation line. This would suggest that the structure was built on piers, probably of native stone. While the cellar hole was not tested, it would appear that it was a later addition to the outside of the original structure and related to later construction.

While it would appear that the site will not be affected by the proposed construction, care should be taken in moving equipment in the area. This site is representative of early settlement houses in the area and is therefore of considerable importance. If construction plans are altered to include this area, further testing will be necessary. National Register nomination is not, however, considered.

Structures

No historic structural resources or structures of architectural significance were isolated in the highway right-of-way. Several structures adjacent to the right-of-way were investigated, but none were determined eligible to the National Register of Historic Places. During survey, one disturbing fact was discovered. A number of structures in the right-of-way were either moved or destroyed prior to the survey. In future projects, such destruction or moving should not occur until *after* their significance has been evaluated in accordance with the National Historic Preservation Act of 1966 and the Department of Transportation Act of 1966.

SUMMARY AND DISCUSSION

An analysis of the cultural resources in the Ashe 221 right-of-way indicates that the area has been occupied by humans for an excess of 4,000 years. The project area, however, does not appear to have been intensively utilized by aboriginal populations. The entire county's population has historically been low, from less than 3,000 in the 1800s to just under 20,000 in the 1900s. The project area reflects the low population density as it is primarily composed of pasture. None of the cultural resources identified and evaluated by this survey were determined to be significant (i.e., eligible for the National Register).

Evaluation of Survey Methodology

The general methods employed during the U.S. 221 survey proved relatively effective for isolating archaeological sites. Several suggestions may be made, however, for improving survey effectiveness in future projects. For instance, open areas in pastures and forest which were not subjected to shovel testing during the present survey should have been either mapped on the highway blueprints or subjected to shovel testing, as were surrounding areas. This would provide the investigator with a uniform base from which meaningful estimates of archaeological site density could be derived.

Soil from shovel tests should also be screened (using 1/8- or 1/4-inch mesh) to at least minimize the variation between crew members using only a hand sifting method.

The techniques utilized for delimiting site size were only minimally adequate for two reasons. First, shovel tests should not just radiate in the cardinal directions from only the first shovel test to isolate cultural material. This should occur from every pit that produces artifacts, such that the tests will represent a grid completely covering the site. Second, it should not be assumed that the first shovel test to produce negative evidence (i.e., no artifacts) indicates the limit of the site. Two or even three shovel tests which produce no artifactual material should be placed before the limits of a site are defined. This is particularly important for areas having low overall artifact densities at sites.

Testing procedures at Ah163 should have incorporated two test trenches in place of some of the test pits. Trenches would have provided additional information about the nature of the deposits and would have a greater possibility of isolating any features not destroyed previously by plowing. Trenches would have also provided better documentation of the effect of plowing on the site.

The incorporation of the above suggestions into research conducted in the area would provide better insight into the prehistory of the area. These suggestions would result in improvements upon the methods employed during the U.S. 221 fieldwork.

Cultural Interpretations

The U.S. 221 findings indicate that the project area has been inhabited from at least middle Archaic times to the present. Of interest is the lack of early Woodland sites in the project and surrounding areas (Holland 1970, Robertson and Robertson 1978, and Gardner et al. 1976). Gardner et al. (1976) suggest that Holland's broad ceramic categories may lump together ceramics representing both early Woodland and middle Woodland groups. The results of the U.S. 221 survey suggest a similar simultaneous occurrence of the two subperiod materials. Further work in the area should also consider the relationship of late Archaic materials to "middle Woodland" remains. It is suggested that an early Woodland gap does not in fact exist. Information derived from the excavation of stratified remains in the area would shed light on the archaeological components of North Carolina's northwestern intermountain areas. Without such work the interpretations presented in survey reports, such as this, will continue to be only tentative in nature.

Conclusions and Recommendations

Twenty-six archaeological resources (sites) were recorded, analyzed, and evaluated during the Ashe County U.S. 221 realignment survey. Each site was evaluated for eligibility to the National Register of Historic Places. It was determined that two prehistoric sites (Ah163 and Ah164) warranted further investigation to allow full evaluation; neither of these sites, however, were determined eligible.

Present highway construction plans call for the placement of fill at site Ah163. If construction follows those plans, no further work is needed. Should the plans be changed and the site cut (and therefore destroyed), an archaeologist should be contacted and should be present during those operations.

The Hardin House remains are located just outside of the right-of-way; should the right-of-way be enlarged or moved to include the site, further testing will be necessary.

Finally, should construction uncover additional archaeological remains, an archaeologist should be consulted prior to further destruction of those resources.

PART V

APPENDIXES

APPENDIX A.
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APPENDIX B.

Memorandum of Agreement

At the request of the North Carolina Department of Transportation, the Department of Cultural Resources, Division of Archives and History, Archaeology Section, agrees to undertake an intensive archaeological survey of areas to be affected by three highway construction projects. These projects include the Baldwin to Jefferson U.S. 221 relocation in Ashe County (state project #4.49002), the U.S. 421 Wade Harris Bridge to SR 1304 in Wilkes County (state project #8.1778801), and the Ahoskie Bypass in Hertford County (state project #6.804142). The areas to be surveyed will be the average right-of-way of 400' by 7.4, 5.895, and 11 miles respectively for these projects.

Employing contemporary archaeological method and theory, the survey team will locate as many of the cultural resources present in the project areas as is possible under the temporal, financial, and environmental limitations imposed upon the investigation. Located sites will be assessed for their archaeological and historical significance, and recommendations made accordingly to the Department of Transportation for the appropriate mitigation of adverse impacts. A final report containing the survey results and recommendations will be presented to the Department of Transportation upon completion of the investigation. Precise site locational data (including maps) will be submitted under a separate cover for limited official examination and planning use only.

In the following pages, the estimated costs for undertaking the archaeological surveys are provided. For budgeting purposes, the U.S. 421 and U.S. 221 projects have been combined, as these would be treated as single project units (due to the proximity of their locations).

*Retyped copy.

The Ahoskie survey will require approximately 39 workdays to complete--three days for background research and research design development, twelve days for fieldwork, and 24 days for lab work and report writing. The U.S. 421-U.S. 221 survey will require approximately 51 days, allowing three days for background and research design, 16 days of fieldwork, and 32 days of lab and report writing.

According to this agreement, the Department of Transportation will pay for all clerical, travel, and supply expenses incurred during the surveys and for the appropriate preparation and duplication of the final report. It is also agreed that the Department of Transportation will furnish the necessary personnel, supplies, and time for the computerization of all data collected during the surveys. It is further agreed that the Department of Transportation will provide appropriate vehicles for undertaking the fieldwork phases of the project. To the extent possible and practical, such vehicles should be equipped with four-wheel drive and mechanisms for the secure storage of field equipment. Mileage estimates provided below are based on general state vehicle rates and may vary according to Department of Transportation standards.

In the following detailed cost estimates, all starred (*) line item expenses are to be assumed by the Department of Transportation, either directly or as a cost reimbursement to the Archaeology Section upon submission of the survey report.

The final page of this agreement contains the estimated total individual and combined project costs and the expenses to be assumed by the Department of Transportation and by the Archaeology Section.

BUDGET ESTIMATE

AHOSKIE BYPASS PROJECT

BACKGROUND RESEARCH AND RESEARCH DESIGN DEVELOPMENT - 3 days			
Archaeologist (@ $50.00/day)	3 days	$ 150.00	
Historian (@ $50.00/day)	1 day	50.00	
*Supplies		25.00	
			$ 225.00
FIELDWORK, LAB WORK AND REPORT WRITING - 36 days			
Archaeologist (@ $50.00/day)	12 days field, 24 days lab and report	1,800.00	
Asst. Archaeologist (@ $50.00/day)	12 days field, 20 days lab and report	1,600.00	
Lab Supervisor (@ $50.00/day)	5 days	250.00	
Historian (@ $50.00/day)	2 days field, 2 days lab and report	400.00	
Draftsperson (@ $36.25/day)	2 days	72.50	
Photographer (@ $36.25/day)	2 days	72.50	
*Typist (@ $30.00/day)	1 day	30.00	
*Keypunch operator (@ $30.00/day)	1 day	30.00	
*Computer time		50.00	
*Per diem (@ $23.00/day/person)	26 days	598.00	
*Mileage ($.11/mile)	1,400 miles	154.00	
*Supplies		150.00	
*Report preparation		150.00	
			$5,357.00
TOTAL ESTIMATE	39 days		$5,582.00

*DOT expenses

BUDGET ESTIMATE

U.S. 421 - U.S. 221 PROJECTS

BACKGROUND RESEARCH AND RESEARCH DESIGN DEVELOPMENT - 3 days			
Archaeologist (@ $50.00/day)	3 days	$ 150.00	
Historian (@ $50.00/day)	1 day	50.00	
*Supplies		25.00	
			$ 225.00
FIELDWORK, LAB WORK AND REPORT WRITING - 48 days			
Archaeologist (@ $50.00/day)	16 days field, 32 days lab and report	2,400.00	
Asst. Archaeologist (@ $50.00/day)	16 days field, 25 days lab and report	2,050.00	
Lab Supervisor (@ $50.00/day)	7 days	350.00	
Historian (@ $50.00/day)	3 days field, 2 days lab and report	250.00	
Draftsperson (@ $36.25/day)	2 days	72.50	
Photographer (@ $36.25/day)	2 days	72.50	
*Typist (@ $30.00/day)	1 day	30.00	
*Keypunch operator (@ $30.00/day)	1 day	30.00	
*Computer time		50.00	
*Per diem (@ $23.00/day/person)	35 days	805.00	
*Mileage ($.11/mile)	1,900 miles	209.00	
*Supplies		150.00	
*Report preparation		150.00	
			$6,647.25
TOTAL ESTIMATE	51 days		$6,872.25

*DOT expenses

TOTAL PROJECT BUDGET ESTIMATE
AHOSKIE U.S. 421 - U.S. 221

	Cost to DOT	Cost to Archaeology Section	TOTAL
Ahoskie Bypass	$1,187.00	$4,395.00	$ 5,582.00
U.S. 421 - U.S. 221	1,449.00	5,423.25	6,872.25
TOTAL COSTS	$2,636.00	$9,818.25	$12,454.25

TOTAL WORKDAYS - 90

APPENDIX C.
Ahoskie Bypass Site Data

The following tables contain the descriptive characteristics of each of the archaeological and historic sites recorded during the Ahoskie Bypass survey. Table C.1 provides data on the prehistoric archaeological sites. The information contained in the table was transcribed directly from the site record forms used during the project and is intended to provide the interested researcher with additional cultural and environmental data on the cultural resources of the Ahoskie Bypass area. Table C.2 contains a listing of the general characteristics of the historic sites identified during the project.

A key to the codes used in Table C.1 is provided below (see also Appendix J).

<u>Topographic Situation</u>

6 1st terrace
11 Upland (inland flats)
12 Hill or ridgetop
15 Terrace edge

<u>Nearest Water</u>

a Knee Branch
b Turkey Creek
c Ahoskie Creek (Swamp)
d Unnamed stream

Recognizable Components

B Early Archaic
C Middle Archaic
D Late Archaic
E Archaic (undetermined subperiod)
H Late Woodland
I Woodland (undetermined subperiod)
N Ceramic (undetermined subperiod)
O Historic (1585-1776)
P Historic (1777-1861)
Q Historic (1861-1900)
R Historic (1900 to present)
U Lithic (undetermined period or subperiod)

Site Size: Core and Maximum Dispersion

0 Unknown/not recorded
4 101-600m^2
5 601-5000m^2
6 5001-10000m^2
8 25001-50000m^2
9 greater than 50000m^2

Site Function

1 Limited/specialized activity
4 Isolated artifact find
5 Habitation (undetermined duration)
7 Historic cemetery
A Short term habitation

Soil Series

366B Norfolk fine sandy loam
376 Faceville clay
558A Craven sandy loam
558B Craven fine sandy loam
563A Lenoir fine sandy loam
847 Coxville fine sandy loam

Soil Composition

1 Clay
5 Sandy/loam
11 Loam

Modern Vegetation

1 Cultivated
2 Cleared (fallow)
4 Forested

Site Condition

2 Plowed
6 Roads, trails
99 Other

Collection Strategy

1 Controlled
2 Select
3 Both
4 Total site collection
5 None made

Site #	Topographic Situation	Slope (%)	Slope Face Direction	Distance to Water (m)	Nearest Water	Site Elevation	Height above Water (ft)	Recognizable Components	Site Size: Core	Site Size: Maximum	Site Function	Soil Series	Soil Composition	Modern Vegetation	Site Condition	Collection Strategy	Subsurface Tests	Collection Area	% of Site in Collection	Accession Number
Hf46	15	2	N	500	a	55	25	US	0	9	1	366B	5	1	2	5	no	0	0	–
Hf47	15	1	NW	150	a	50	20	U	0	8	1	847	5	1	2	5	no	0	0	–
Hf48	12	–	–	650	d	80	25	RB	0	4	1	376	1	2	99[a]	4	no	200	100	77-1
Hf49	11	2	W	360	b	60	15	CQ	0	4	1	558A	5	1	2	4	no	400	100	77-2
Hf50	15	1	N	100	a	55	10	NOP	4	6	1,B	558A	5	1	2	4	yes	2500	100	77-3
Hf51	6	1	N	150	a	45	10	CNH	5	0	1,B	563A	5	1	2	2	no	–	–	77-5
Hf52	6	2	W	30	a	45	10	CP	5	6	1,B	558B	5	1	2	1	no	375	10	77-6
Hf53	6	1	E	140	a	50	10	NEP C	5	0	1,B	563A	5	1	2	3	no	750	25[b]	77-7
Hf54	15	1	E	60	a	45	5	IOD CH	5	0	1,B	563A	5	1	2	1	yes	700	25	77-8
Hf55	6	1	N	140	d	40	5	U	5	0	1	558A	5	1	2	4	no	625	100	77-9
Hf56	15	1	N	25	d	35	5	N	4	0	1,B	558A	5	1	2	4	no	500	100	77-10
Hf57	6	0	0	25	d	50	10	N	4	0	1,B	558A	5	1	2	2	no	–	–	77-11

Table C.1. Descriptive characteristics of the Ahoskie Bypass prehistoric archaeological sites (see codes Appendix C introduction).

Site #	Topographic Situation	Slope (%)	Slope Face Direction	Distance to Water (m)	Nearest Water	Site Elevation	Height above Water (ft)	Recognizable Components	Site Size: Core	Site Size: Maximum	Site Function	Soil Series	Soil Composition	Modern Vegetation	Site Condition	Collection Strategy	Subsurface Tests	Collection Area	% of Site in Collection	Accession Number
Hf58	11	1	N	300	d	60	10	U	0	0	4	558A	5	1	2	4	no	-	100	77-12
Hf59	11	1	NE	400	d	60	10	N	0	0	1	558A	11	1	2	4	no	-	-	77-13
Hf60	11	0	0	400	d	65	15	PSN	4	0	1	558A	11	1	2	4	no	-	-	77-19
Hf61	11	1	N	150	d	60	10	N	0	6	1	558A	11	1	2	1	no	1250	25	77-15
Hf62	11	0	0	180	d	60	5	PN	0	0	7,1	558A	11	1	2	1	yes	2500	25	77-16
Hf63	15	3	SW	500	c	50	20	N	0	0	1,B	558B	5	2	6	4	yes	150	-	77-17
Hf64	11	1	-	220	d	55	5	U	0	0	4	558A	11	1	2	4	no	-	100	77-18
Hf65	11	1	-	50	d	50	5	NES	0	6	1,B	563A	5	1	2	1	yes	2500	50	77-21
Hf66	11	0	0	125	d	45	5	0	0	0	4	563A	5	1	2	4	no	-	-	77-20
Hf67	11	0	0	1000	d	45	5	U	0	0	4	563A	5	4	99[c]	4	no	-	-	77-14
Hf68	15	2	NE	100	a	40	5	PON DB	5	6	1,5	563A	5	1	2	3	yes	1500	25	77-4

[a]fire tower
[b]core area
[c]tree farm

Table C.1. Descriptive characteristics of the Ahoskie Bypass prehistoric archaeological sites (see codes Appendix C introduction) (concluded).

Site #	Site Function	Time Period	Site Condition	Descriptive Characteristics
AB-4	Domestic structure	Depression Era	Foundation only	Rectangular, frame, 1-story, brick pier
AB-6	Domestic structure	Depression Era	Deteriorating structure	Rectangular, frame, 1-story, clapboard siding, reused materials
AB-7	Domestic structure	Depression Era	Deteriorating structure	Rectangular, duplex, 1-story, clapboard siding, brick pier
AB-9	Domestic structure	Depression Era	Deteriorating structure	Rectangular, 1-story, clap-board siding, asphalt shingles, shotgun shack
AB-11	Domestic structure	Post WWII	Foundation only	Rectangular
AB-12	Outbuilding	Unknown	Collapsed structure	Rectangular shed, garage-type door
AB-13	Family cemetery	Late 19th century	Graves removed	4 grave depressions, family: Newsom-Biel
AB-14	Family cemetery	Late 19th century	Graves removed	5 grave depressions, family: unknown
AB-15	Family cemetery	Unknown	Graves removed	7 grave depressions, family: unknown
AB-21	Domestic structure	Depression Era	Deteriorating structure	Rectangular, frame, 1-story, flush siding, eave brackets, central flue, 1-1-1
AB-22	Domestic structure & tobacco barn	Depression Era	Deteriorating structures	Rectangular house, 1-story, frame, clapboard siding, central flue, tin roof
AB-23	Structure	20th century	Foundation only	Rectangular, modern machined brick
AB-27	Family cemetery	Unknown	Graves removed	Unknown number graves, family: unknown
AB-35	Portable sawmill	Depression Era	Overgrown sawdust pile	Bottles near pile suggest 1930's
AB-39	Mill	Late 19th century	Overgrown remnants	Hand hewn pit-sawn timbers, blind mortise tenon joints, earthwork dam

Table C.2. General characteristics of the Ahoskie Bypass historic sites.

APPENDIX D.
Wilkes County U.S.421 Site Data

Appendix D contains the descriptive data for each of the sites recorded during the Wilkes County U.S. 421 archaeological survey. The information in Table D.1 was transcribed directly from the site record forms used during the project. The key to the codes used in the table is provided below:

Topographic Situation

1 Undifferentiated floodplain
2 Terrace remnant
3 Low rise on floodplain
6 1st terrace
13 Saddle

Nearest Water

a South Prong Lewis Fork Creek
spr. Spring

Recognizable Components

B Early Archaic
C Middle Archaic
D Late Archaic
G Middle Woodland
S Historic (undetermined subperiod)
U Lithic (undetermined period or subperiod)

Site Size: Core and Maximum Dispersion

0 Unknown/not recorded
2 11-25m^2
3 26-100m^2
5 601-5000m^2
7 10001-25000m^2

Site Function

0 Unknown/not recorded
1 Limited/specialized activity
4 Isolated artifact find

Soil Series

1 Ashe-Chandler Association
2 Chester clay loam

Soil Composition

1 Loam
2 Clay loam

Modern Vegetation

1 Cultivated
6 Lawn
99 Other

Site Condition

2 Plowed
4 Residential
99 Other

Collection Strategy

2 Select
4 Total site collection

Site #	Topographic Situation	Slope (%)	Slope Face Direction	Distance to Water (m)	Nearest Water	Site Elevation	Height above Water (ft)	Recognizable Components	Site Size: Core	Site Size: Maximum	Site Function	Soil Series	Soil Composition	Modern Vegetation	Site Condition	Collection Strategy	Subsurface Tests	Collection Area	% of Site in Collection	Accession Number (77-)
Wk62	2	13	S	35	a	1445	5	GS	3	5	1	1	1	1	2	4	no	-	-	-53
Wk63	6	7	N	160	a	1415	17	CDS	5	0	1	1	1	1	2	4	yes	-	-	-54
Wk64	1	5	S	10	a	1380	7	U	3	0	4	1	1	1	2	4	yes	-	-	-55
Wk65	2	7	SE	20	spr	1340	0	BS	2	0	1	2	2	6	4	4	yes	-	-	-56
Wk66	1	3	SW	30	a	1260	12	US	5	0	0	2	2	1	2	4	no	-	20	-57
Wk67	3	5	W	60	a	1255	11	SU	5	0	0	2	2	1	2	4	no	-	25	-59
Wk68	13	17	SW	200	a	1360	114	B	5	0	1	2	2	99	99	2	yes	-	-	-60
Wk69	1	1	NE	40	a	1240	8	U	5	0	0	2	2	1	2	4	no	-	-	-61
Wk70	3	5	W	120	a	1260	34	U	7	0	1	2	2	1	2	4	no	-	20	-62

Table D.1. Descriptive characteristics of the Wilkes County U.S. 421 sites.

APPENDIX E.
Ashe County
U.S. 221 Site Data

Appendix E contains the descriptive data for the sites recorded during the Ashe County U.S. 221 archaeological survey. The data contained in Table E.1 was transcribed directly from the site record forms used during the project. The key for the codes used in the table is provided below.

Topographic Situation

1 Undifferentiated floodplain
6 1st terrace
10 Upland or talus slope
11 Upland flats
12 Hill or ridgetop
13 Saddle
14 Stream confluence
20 Fan (colluvial)
21 Toe slope/ridge toe

Nearest Water

a Beaver Creek
b Naked Creek
c Little Buffaloe Creek
d Old Field Branch
str Unnamed stream
spr Spring

Site #	Topographic Situation	Slope (%)	Slope Face Direction	Distance to Water (m)	Nearest Water	Site Elevation	Height above Water (ft)	Recognizable Components	Site Size: Core	Site Size: Maximum	Site Function	Soil Series	Soil Composition	Modern Vegetation	Site Condition	Collection Strategy	Subsurface Tests	Collection Area	% of Site in Collection	Accession Number
Ah149	21	9	SE	110	str	3110	23	H	5	0	1	24C	11	1	2	1	no	1000	25	-26
Ah150	21	5	NW	50	a	3040	7	D	0	0	0	10C	11	8	18	4	no	-	-	-27
Ah151	1	3	N	20	b	2870	2	U	1	0	4	24C	11	3	3	1	yes	-	-	-28
Ah152	11	12	W	20	str	3095	11	U	0	0	1	TSE	99	8	4	4	yes	-	-	-29
Ah153	21	10	SW	40	str	3055	25	U	0	0	1	PRF	99	4	6	2	yes	-	-	-30
Ah154	12	17	W	220	b	3100	120	U	0	0	2	TSE	99	4	6	2	yes	-	-	-31
Ah155	11	5	W	45	c	3080	5	U	0	0	0	24C	11	6	4	4	yes	-	-	-32
Ah156	10	17	SW	155	str	2980	15	T	4	0	1	27D	11	1	2	2	no	-	-	-37
Ah157	12	5	SW	160	str	3090	12	U	5	0	1	32C	11	3	3	1	yes	-	-	-35
Ah158	10	14	NW	100	str	3090	30	D	0	0	1	27C	11	1	2	4	no	-	-	-36
Ah159	21	9	S	30	spr	3040	22	U	3	0	1	27C	11	3	3	1	yes	1	2	-33
Ah160	6	7	N	83	a	2990	10	U	0	0	1	24C	11	3	3	2	yes	-	-	-38
Ah161	20	14	NW	105	a	3035	50	U	0	0	1	26D	11	3	3	2	yes	-	-	-39

Table E.1. Descriptive characteristics of the Ashe County US 221 sites.

Site #	Topographic Situation	Slope (%)	Slope Face Direction	Distance to Water (m)	Nearest Water	Site Elevation	Height above Water (ft)	Recognizable Components	Site Size: Core	Site Size: Maximum	Site Function	Soil Series	Soil Composition	Modern Vegetation	Site Condition	Collection Strategy	Subsurface Tests	Collection Area	% of Site in Collection	Accession Number
Ah162	13	5	SW	225	a	3270	55	U	5	0	1	26C	11	3	3	1	yes	1	1	-40
Ah163	14	5	N	60	spr	3250	12	HG DI	4	5	5	10C	11	3	3	1	yes	5	1	-41
Ah164	14	5	N	3	spr	3255	5	G	1	1	1	10C	11	4	11	4	yes	2	99	-42
Ah165	10	9	SW	3	d	3339	4	U	0	0	1	10C	11	3	3	2	yes	-	-	-44
Ah166	13	1	SW	60	d	3375	25	U	1	0	4	10C	11	3	3	2	yes	-	-	-43
Ah167	6	1	N	45	c	3135	5	U	4	0	2	24B	11	3	6	2	yes	-	-	-45
Ah168	10	9	E	165	c	3140	10	I	1	0	0	24B	11	3	3	1	yes	-	-	-47
Ah169	2	9	E	25	spr	3075	7	C	5	0	1	87	8	3	3	4	yes	-	-	-48
Ah170	21	7	SE	50	spr	3075	12	U	4	0	1	24C	11	3	3	4	yes	-	-	-49
Ah171	10	3	SE	45	d	3225	5	U	2	0	1	37	5	2	6	4	yes	-	-	-50
Ah172	6	9	E	8	spr	3250	2	U	1	0	4	24C	11	3	3	4	yes	-	-	-51
Ah173	21	10	S	50	d	3300	10	U	4	0	1	72F	8	3	3	4	yes	-	-	-52

Table E.1. Descriptive characteristics of the Ashe County US 221 sites (concluded).

APPENDIX F.
Ahoskie Bypass Artifact Data

Appendix F contains the artifact data collected during the Ahoskie Bypass Survey. Tables are provided for the projectile point types (Table F.1), general lithics (Table F.2), ceramics (Table F.3), and the presence/absence of historic materials (Table F.4) collected. The definitions used for the lithic materials are provided in Appendix I.

Site #	Palmer/Kirk variety	Kirk	Morrow Mountain I	Morrow Mountain II	Guilford	Halifax	Savannah River Stemmed	Gaston	Unknown	TOTAL
Hf48	1^q									1
Hf49				1^q						1
Hf51			1^q	1^s	1^r					3
Hf52					1^s					1
Hf53				1^s						1
Hf54				1^s	1^q	1^s	1^q	1^s		5
Hf64									1^s	1
Hf65				1^q	1	1^q				2
Hf68		1^q					1^r			2
TOTALS	1	1	1	5	3	2	2	1	1	17

^{q}Quartz/quartzite

^{s}Slate/shale/argillite

^{r}Rhyolite/felsite

Table F.1. Projectile points types recorded during the Ahoskie Bypass Project (only those sites at which typeable projectile points were observed are listed).

Site No.	Proj. Points (Table F.1)	Biface Fragments	Preforms, Blanks	Drills/ Perforators	Bifac. Scrap., Knives	Unifaces/ Mod. Flakes	Unmodified Flakes				Cores	Fire-cracked Rock	Ground Stone	Modified Cobbles	Other Mod. Stone	Misc. Unmod. Stone	Total Mod. Stone	Total Unmod. Stone	Total Lithic Artifacts	Type of Collection
							Primary	Secondary	Interior	Misc. Debitage										
Hf48	1	0	0	0	0	0	0	0	10	1	0	0	0	0	0	0	1	11	12	1
Hf49	1	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	2	4	6	1
Hf50	0	0	0	0	0	1	0	0	3	4	0	3	0	0	0	12	1	22	23	1
Hf51	3	0	0	0	0	0	0	0	2	1	1	0	0	0	1[b]	3	4	7	11	2
Hf52	1	1	0	0	1	0	0	0	4	6	0	2	0	0	0	0	3	12	15	1
Hf53	1	1	0	0	0	0	0	1	0	0	0	0	0	0	1[c]	2	3	3	6	2
Hf53	0	3	0	0	0	0	0	0	6	3	2	0	0	3	0	12	3	26	29	1
Hf54	5	8	0	1	1	3	1	6	36	4	1	19	0	1	0	57	18	125	143	1
Hf55	0	0	0	0	0	0	0	0	0	2	1	2	0	0	0	5	0	10	10	1
Hf56	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	1	0	5	5	1
Hf57	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	2

Table F.2. Lithic artifact counts - Ahoskie Bypass Survey.

Site No.	Proj. Points (Table F.1)	Biface Fragments	Preforms, Blanks	Drills/ Perforators	Bifac. Scrap., Knives	Unifaces/ Mod. Flakes	Unmodified Flakes				Cores	Fire-cracked Rock	Ground Stone	Modified Cobbles	Other Mod. Stone	Misc. Unmod. Stone	Total Mod. Stone	Total Unmod. Stone	Total Lithic Artifacts	Type of Collection
							Primary	Secondary	Interior	Misc. Debitage										
Hf58	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1
Hf59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2	1
Hf61	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	6	0	10	10	1
Hf62	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	4	0	6	6	1
Hf63	0	1	1	0	0	0	0	12	73	5	0	6	0	0	0	13	2	109	111	1
Hf64	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Hf65	2	0	0	0	0	0	0	0	3	0	0	0	0	0	0	15	2	18	20	1
Hf66	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Hf67	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Hf68	2	8	6	0	0	2	10	27	58	20	1	23	1[d]	4	0	85	18	229	247	3
TOTALS	17	25	7	1	2	8	11	46	202	47	6	52	1	8	2	217	61	600	661	

[a]Collection type codes: 1 = controlled
2 = select
3 = both

[b]Possible retouched gunflint

[c]Scraped steatite fragment

[d]Atlatl weight fragment

Table F.2. Lithic artifact counts - Ahoskie Bypass Survey (concluded).

Site No.	Cordmarked: Sand Temper	Cordmarked: Quartz Temper	Cordmarked: Unknown Temper	Total Cordmarked	Fabric Impressed: Sand Temper	Fabric Impressed: Quartz Temper	Fabric Impressed: Unknown Temper	Total Fabric Impressed	Net Impressed: Sand Temper	Net Impressed: Quartz Temper	Net Impressed: Unknown Temper	Total Net Impressed	Plain: Sand Temper	Plain: Quartz Temper	Plain: Unknown Temper	Total Plain	Other: Sand Temper	Other: Unknown Temper	Total Other	Total Ceramics
Hf50	6	1	2	9	1			1					35		12	47	43	13	56	113
Hf51													1			1				1
Hf53													1			1	2		2	3
Hf54	7			7									18			18		9	9	34
Hf56					2			2					32			32	10	7	17	51
Hf57													2			2				2
Hf59																	2		2	2
Hf60																		1	1	1
Hf61																	1		1	1
Hf62													2			2				2
Hf63									2			2					3		3	5
Hf65													10			10		1	1	11
Hf68	1	18		19									6			6	9	8	17	42

Table F.3. Ceramic artifact counts - Ahoskie Bypass survey.

Site #	Glass	Ironstone	Stoneware	Earthenware	Pearlware	Creamware	Miscellaneous Ceramics	Wire Nails	Miscellaneous Nails	Miscellaneous Metal	Brick	Other	Total # Artifacts
Hf48	X		X	X			X					X[a]	10
Hf49					X	X	X						6
Hf50			X		X	X					X		23
Hf52		X	X	X	X	X		X			X		10
Hf53				X	X								3
Hf54	X		X							X	X		12
Hf56										X			1
Hf60			X	X	X		X		X		X		26
Hf62		X			X		X						8
Hf65		X				X				X	X	X[b]	7
Hf68	X		X	X	X	X	X			X	X		89
TOTAL													195

X=Present

[a] gunflint

[b] kaolin pipestem and gunflint

Table F.4. Presence/absence of historic artifacts at sites recorded during the Ahoskie Bypass Project (only sites at which historic artifacts were collected or recorded are listed).

APPENDIX G.
Wilkes County
U.S.421 Artifact Data

Appendix G contains the artifact data collected during the Wilkes County U.S. 421 survey. Data is provided for the projectile points (Table G.1), the general lithics (Table G.2), the lithic raw materials (Table G.3), and the presence/absence of historic artifacts. Definitions for the lithic artifact categories are provided in Appendix I.

Site #	Kirk n	Kirk wt	Guilford n	Guilford wt	Halifax (var.) n	Halifax (var.) wt	Savannah River n	Savannah River wt	Misc. Archaic n	Misc. Archaic wt	Misc. Woodland n	Misc. Woodland wt	Other (unknown) n	Other (unknown) wt	Total n	Total wt
Wk62											1	6	1	9	2	15
Wk63			1	14	1	9	1	22					1	6	4	51
Wk64													1	8	1	8
Wk65	1	13													1	13
Wk68									1	6			4	11	5	17
TOTAL	1	13	1	14	1	9	1	22	1	6	1	6	7	34	13	104

Table G.1. Projectile point types, Wilkes County US 421 survey (weight in grams).

SITE #	WHOLE BIFACES*		BIFACE FRAGMENTS		PREFORMS, BLANKS		DRILLS, PERFORATORS		BIFACIAL SCRAPERS, KNIVES		UNIFACES, MODIFIED FLAKES		UNMODIFIED FLAKES/DEBITAGE: PRIMARY		UNMODIFIED FLAKES/DEBITAGE: SECONDARY		UNMODIFIED FLAKES/DEBITAGE: INTERIOR		UNMODIFIED FLAKES/DEBITAGE: MISC.	
	N	WT	N	WT	N	WT	N	WT	N	WT	N	WT	N	WT	N	WT	N	WT	N	WT
Wk62	2	15			1	41									1	53	5	12		
Wk63	4	51															10	40		
Wk64	1	8																		
Wk65	1	13															1	2		
Wk66											1	3					2	4		
Wk67																	1	5	1	1
Wk68	5	17	4	69											3	19	40	138		
Wk69																	5	7		
Wk70					1	37											5	11		
TOTALS	13	104	4	69	2	78	0	0	0	0	1	3	0	0	4	72	69	219	1	1

*see also Table G.1.

Table G.2. Lithic artifact data, Wilkes County US 421 survey (weight in grams).

SITE #	CORES		FIRE-CRACKED ROCK		GROUND STONE		MODIFIED COBBLES		OTHER MODIFIED STONE		MISC. UNMODIFIED STONE				TOTAL MODIFIED STONE		TOTAL UNMODIFIED STONE[a]		TOTAL LITHICS[a]	
	N	WT	N	WT	N	WT	N	WT	N	WT	N	WT	N	WT	N	WT	N	WT	N	WT
Wk62											--	3			3	56	6	65	9	121
Wk63	1	135									--	39			5	186	10	40	15	226
Wk64											--	2			1	8			1	8
Wk65	1	19													2	32	1	2	3	34
Wk66															1	3	2	4	3	7
Wk67											--	3					2	6	2	6
Wk68	1	39									--	80			10	126	43	157	53	283
Wk69																	5	7	5	7
Wk70											--	48			1	37	5	11	6	48
TOTALS	3	193	0	0	0	0	0	0	0	0	--	175			23	448	74	292	97	740

[a]does not include Misc. Unmodified Stone

Table G.2. Lithic artifact data, Wilkes County US 421 survey (concluded).

SITE #	QUARTZ/ QUARTZITE		ORTHO- QUARTZITE		RHYOLITE		ANDESITE		CHERT		CHALCEDONY		TUFFACIOUS (SLATE/ SHALE)		SILTSTONE		OTHER		TOTALS	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%		N
Wk62	5	56	2	22			1	11							1	11				9
Wk63	15	100																		15
Wk64	1	100																		1
Wk65	2	50					1	25			1	25								4
Wk66							1	50									1	50		2
Wk67	2	100																		2
Wk68	38	72			2	4	7	13	1	2			5	9						53
Wk69	1	20			3	60	1	20												5
Wk70	5	83			1	17														6
TOTALS	69	71	2	2	6	6	11	11	1	1	1	1	5	5	1	1	1	1		97

Table G.3. Lithic raw materials and percentages, Wilkes County US 421 survey.

Site #	Lead-glazed stoneware	Ironstone	Pearlware	Whiteware (hard fired)	Semi-porcelain	Milk glass (molded)	Flint glass (molded)	Metal	Brick	Other	Total # Artifacts
Wk62	X										1
Wk63	X	X				X					4
Wk65	X									X[a]	3
Wk66			X	X						X[b]	5
Wk67	X				X		X				4
TOTAL											17

X=Present

[a]glass marble

[b]Dutch gunflint

Table G.4. Presence/absence of historic artifacts, Wilkes County US 421 survey (only those sites at which historic artifacts were collected or recorded are listed).

APPENDIX H.
Ashe County
U.S. 221 Artifact Data

Appendix H contains the artifact data for the Ashe County U.S. 221 project surface collections and test excavations (at Ah163 and Ah164). Surface collected lithic data, including projectile point types, general lithics, and lithic raw materials, are provided in Tables H.1, H.2, and H.3 respectively. Artifact data from the test excavations at Ah163 and Ah164 are then provided in Tables H.4, H.5, H.6, H.7, H.8, H.9, and H.10. Surface collected historic artifact data is presented in Table H.11. The depths of the excavation units at Ah163 and Ah164 are indicated below. Shovel test pits are abbreviated in the tables as STP; structured (i.e., square) test pits are abbreviated as TP.

DEPTHS (BELOW SURFACE) OF TEST EXCAVATION LEVELS

AH163

STP A: 0-30cm

STP B: 0-30cm

TP #1

Level 1: 0-20cm

TP #2

Level 1: 0-10cm
Level 2: 10-20cm
Level 3: 20-27cm
Level 4: 27-40cm

TP #3

Level 1: 0-10cm
Level 2: 10-17cm

TP #4

Level 1: 0-10cm
Level 2: 10-19cm
Level 3: 19-29cm

TP #5

Level 1: 0-10cm

TP #6

Level 1: 0-10cm
Level 2: 10-20cm

TP #7

Level 1: 0-10cm
Level 2: 10-20cm
Level 3: 20-30cm

AH164

TP #1

Level 1:

TP #2

Level 1:

Site #	Morrow Mountain I n	Morrow Mountain I wt	Otarre n	Otarre wt	Gary n	Gary wt	Late Woodland (triangle) n	Late Woodland (triangle) wt	Randolph (stemmed) n	Randolph (stemmed) wt	Other (unknown) n	Other (unknown) wt	Total n	Total wt
Ah149							1	6			1	2	2	8
Ah150					1	16							1	16
Ah152											1	2	1	2
Ah154											1	10	1	10
Ah156									1	5			1	5
Ah158			1	13									1	13
Ah165											1	5	1	5
Ah167											3	3	3	3
Ah169	1	6											1	6
TOTAL	1	6	1	13	1	16	1	6	1	5	7	22	12	68

Table H.1. Projectile point types, Ashe County US 221 survey (excluding test excavation data from Ah163 and Ah164) (weights in grams).

SITE #	WHOLE BIFACES*		BIFACE FRAGMENTS		PREFORMS, BLANKS		DRILLS, PERFORATORS		BIFACIAL SCRAPERS, KNIVES		UNIFACES, MODIFIED FLAKES		UNMODIFIED FLAKES/DEBITAGE: PRIMARY		SECONDARY		INTERIOR		MISC. DEBITAGE	
	N	WT	N	WT	N	WT	N	WT	N	WT	N	WT	N	WT	N	WT	N	WT	N	WT
Ah149	2	8	1	32											3	11	26	51		
Ah150	1	16															1	1		
Ah151																	1	1		
Ah152	1	2															4	35		
Ah153															2	11	15	38		
Ah154	1	10													1	10	12	51		
Ah155															1	8	1	16		
Ah156	1	5															2	2	1	1
Ah157																	4	4	9	1
Ah158	1	13															11	10	2	1
Ah159																	10	17		
Ah160																	3	3		
Ah161																	3	2		

*see also Table H.1.

Table H.2. Lithic artifact data, Ashe County US 221 survey (excluding test excavation data from Ah163 and Ah164) (weight in grams).

SITE #	WHOLE BIFACES*		BIFACE FRAGMENTS		PREFORMS, BLANKS		DRILLS, PERFORATORS		BIFACIAL SCRAPERS, KNIVES		UNIFACES, MODIFIED FLAKES		UNMODIFIED FLAKES/DEBITAGE							
													PRIMARY		SECONDARY		INTERIOR		MISC. DEBITAGE	
	N	WT	N	WT	N	WT	N	WT	N	WT	N	WT	N	WT	N	WT	N	WT	N	WT
Ah162															1	4	4	5		
Ah165	1	5															1	12		
Ah166																	1	15		
Ah167	3	3	1	7							1	2	1	1	1	1	5	28	2	6
Ah168																	1	2	1	1
Ah169	1	6	1	8													7	17		
Ah170																	5	3	2	5
Ah171			1	4							1	6					3	4		
Ah172																				
Ah173															1	1	10	18	6	3
TOTALS	12	68	4	51							2	8	1	1	10	46	130	335	23	18

Table H.2. Lithic artifact data, Ashe County US 221 survey (weight in grams) (continued).

SITE #	CORES		FIRE-CRACKED ROCK		GROUND STONE		MODIFIED COBBLES		OTHER MODIFIED STONE		MISC. UNMODIFIED STONE				TOTAL MODIFIED STONE		TOTAL UNMODIFIED STONE[a]		TOTAL LITHICS[a]	
	N	WT	N	WT	N	WT	N	WT	N	WT	N	WT			N	WT	N	WT	N	WT
Ah149											–	1516			3	40	29	62	32	102
Ah150											–	21			1	16	1	1	2	17
Ah151											–	2					1	1	1	1
Ah152											–	7			1	2	4	35	5	37
Ah153											–	44					17	49	17	49
Ah154											–	139			1	10	13	61	14	71
Ah155											–	4					2	24	2	24
Ah156											–	132			1	5	3	3	4	8
Ah157											–	7					13	5	13	5
Ah158											–	252			1	13	13	11	14	24
Ah159											–	447					10	17	10	17
Ah160											–	9					3	3	3	3
Ah161											–	38					3	2	3	2

[a] does not include Misc. Unmodified Stone

Table H.2. Lithic artifact data, Ashe County US 221 survey (weight in grams) (continued).

SITE #	CORES		FIRE-CRACKED ROCK		GROUND STONE		MODIFIED COBBLES		OTHER MODIFIED STONE		MISC. UNMODIFIED STONE				TOTAL MODIFIED STONE		TOTAL UNMODIFIED STONE		TOTAL LITHICS[a]	
	N	WT	N	WT	N	WT	N	WT	N	WT	N	WT			N	WT	N	WT	N	WT
Ah162											–	19					5	9	5	9
Ah165															1	5	1	12	2	17
Ah166																	1	15	1	15
Ah167											–	1			5	12	9	36	14	48
Ah168																	2	3	2	3
Ah169															2	14	7	17	9	31
Ah170																	7	8	7	8
Ah171											–	12			2	10	3	4	5	14
Ah172	1	105									–	26			1	105			1	105
Ah173											–	122					17	22	17	22
TOTALS	1	105									–	2798			19	232	164	400	183	632

Table H.2. Lithic artifact data, Ashe County US 221 survey (weight in grams) (concluded).

SITE #	QUARTZ/ QUARTZITE		ORTHO-QUARTZITE		RHYOLITE		ANDESITE		CHERT		CHALCEDONY		TUFFACIOUS (SHALE/ SLATE)		SILTSTONE		OTHER		TOTALS	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%		N
Ah149	24	75			2	6			2	6	1	3					3	9		32
Ah150	1	50			1	50														2
Ah151	1	100																		1
Ah152	5	100																		5
Ah153	15	88											2	12						17
Ah154	14	100																		14
Ah155	2	100																		2
Ah156													1	25			3	75		4
Ah157	13	100																		13
Ah158	6	43			1	7			2	14			2	14			3	21		14
Ah159	6	60											2	20			2	20		10
Ah160	3	100																		3
Ah161	3	100																		3

Table H.3. Lithic raw materials and percentages, Ashe County US 221 survey (excluding test excavation data from Ah163 and Ah164).

SITE #	QUARTZ/ QUARTZITE		ORTHO- QUARTZITE		RHYOLITE		ANDESITE		CHERT		CHALCEDONY		TUFFACIOUS (SHALE/ SLATE)		SILTSTONE		OTHER		TOTALS	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%		N
Ah162	3	60			2	40														5
Ah165	1	50					1	50												2
Ah166					1	100														1
Ah167	3	21			1	7	1	7	5	36	1	7	2	14			1	7		14
Ah168									2	100										2
Ah169	5	56			1	11	2	22					1	11						9
Ah170	3	43			2	29	2	29												7
Ah171	5	100																		5
Ah172	1	100																		1
Ah173	16	94			1	6														17
TOTALS	130	71			12	7	6	3	11	6	2	1	10	5			12	7		183

Table H.3. Lithic raw materials and percentages, Ashe County US 221 survey (concluded).

Excavation Unit	Otarre		Middle Woodland (triangle)		Late Woodland (triangle)		Randolph		Other (unknown variety)		TOTAL	
	n	wt	n	wt	n	wt	n	wt	n	wt	n	wt
Ah163												
Shovel Tests					1	1					1	1
STP B							1	4			1	4
TP #1 Level 1	1	18			1	1			2	10	4	29
TP #2 Level 1									1	1	1	1
TP #2 Level 2			1	5					1	4	2	9
TP #2 Level 3									1	1	1	1
Ah164												
TP #1			1	6							1	6
TOTAL	1	18	2	11	2	2	1	4	5	16	11	51

Table H.4. Projectile point types, Ah163 and Ah164 test excavations (wt. in grams).

Excavation Unit[a]	Whole Bifaces[b]		Biface Fragments		Preforms, Blanks		Drills, Perforators		Bifacial Scrapers, Knives		Unifaces, Modified Flakes		Unmodified Flakes/Debitage: Primary		Secondary		Interior		Misc. Debitage	
	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt
Shovel Tests																	3	3	3	18
TP #1	1	6																		
TP #2																				
TOTAL	1	6															3	3	3	18

Excavation Unit	Cores		Fire-cracked Rock		Ground Stone		Modified Cobbles		Other Modified Stone		Misc. Unmodified Stone				Total Modified Stone		Total Unmodified Stone[c]		Total Lithic Artifacts[c]	
	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt			N	Wt	N	Wt	N	Wt
Shovel Tests											-	352					6	21	6	21
TP #1											-	16			1	6			1	6
TP #2											-	3								
TOTAL											-	371			1	6	6	21	7	27

[a] see explanation Appendix H introduction
[b] see also Table H.4
[c] does not include Misc. Unmodified Stone

Table H.5. Lithic data, Ah164 test excavations, Ashe County US 221 survey (weights in grams).

Excavation Unit[a]	Whole Bifaces[b]		Biface Fragments		Preforms, Blanks		Drills, Perforators		Bifacial Scrapers, Knives		Unifaces, Modified Flakes		Unmodified Flakes/Debitage							
													Primary		Secondary		Interior		Misc. Debitage	
	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt
Shovel Tests	1	1	2	23			1	1	1	3							29	36	9	15
STP A															2	10	7	5	4	1
STP B	1	4									2	3					4	10	3	1
TP #1 Level 1	4	29									4	149			12	31	93	87	22	9
TP #2 Level 1	1	1	1	16							3	4			9	15	66	45	38	20
TP #2 Level 2	2	9	1	12							1	1	2	14	8	6	87	204	13	6
TP #2 Level 3	1	1	1	1							1	3			8	11	76	46	26	12
TP #2 Level 4															1	2	4	3	4	2
TP #3 Level 1																	5	1	2	1
TP #3 Level 2																	2	3		
TP #4 Level 1																	24	7	11	4

Table H.6. Lithic data, Ah163 test excavations, Ashe County US 221 survey (weights in grams).

Excavation Unit[a]	Whole Bifaces[b]		Biface Fragments		Preforms, Blanks		Drills, Perforators		Bifacial Scrapers, Knives		Unifaces, Modified Flakes		Unmodified Flakes/Debitage							
													Primary		Secondary		Interior		Misc. Debitage	
	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt
TP #4 Level 2			1	20											1	2	16	7	3	3
TP #4 Level 3																	4	2	3	1
TP #5 Level 1																				
TP #6 Level 1																	2	2	1	2
TP #6 Level 2			1	1													6	4		
TP #7 Level 1															1	4	28	39	5	2
TP #7 Level 2											1	10					35	75	9	2
TP #7 Level 3																	16	35	3	2
TOTAL	10	45	7	73			1	1	1	3	12	170	2	14	42	81	504	611	156	83

Table H.6. Lithic data, Ah163 test excavations, Ashe County US 221 survey (weights in grams) (continued).

Excavation Unit[a]	Cores		Fire-cracked Rock		Ground Stone		Modified Cobbles		Other Modified Stone		Miscellaneous Unmodified Stone				Total Modified Stone		Total Unmodified Stone[c]		Total Lithic Artifacts[c]	
	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt			N	Wt	N	Wt	N	Wt
Shovel Tests											–	184			5	28	38	51	43	79
STP A											–	438					13	16	13	16
STP B											–	114			3	7	7	11	10	18
TP #1 Level 1											–	2339			8	178	127	127	135	305
TP #2 Level 1											–	1876			5	21	113	80	118	101
TP #2 Level 2			–	34					1[d]	1	–	2862			5	23	110	230	115	253
TP #2 Level 3											–	863			3	5	110	156	113	161
TP #2 Level 4											–	19					9	7	9	7
TP #3 Level 1											–	99					7	2	7	2
TP #3 Level 2											–	267					2	3	2	3
TP #4 Level 1											–	337					35	11	35	11

Table H.6. Lithic data, Ah163 test excavations, Ashe County US 221 survey (weights in grams) (continued).

Excavation Unit[a]	Cores		Fire-cracked Rock		Ground Stone		Modified Cobbles		Other Modified Stone		Miscellaneous Unmodified Stone				Total Modified Stone		Total Unmodified Stone[c]		Total Lithic Artifacts[c]	
	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt
TP #4 Level 2											–	454			1	20	20	12	21	32
TP #4 Level 3											–	5					7	3	7	3
TP #5 Level 1											–	4								
TP #6 Level 1											–	5					3	4	3	4
TP #6 Level 2											–	14			1	1	6	4	7	5
TP #7 Level 1											–	60					34	35	34	35
TP #7 Level 2											–	206			1	10	44	77	45	87
TP #7 Level 3											–	338					19	37	19	37
Total			–	34					1	1	–	10484			32	293	704	866	736	1159

[a]see explanation Appendix H introduction
[b]see also Table H.4
[c]does not include Misc. Unmodified Stone

Table H.6. Lithic data, Ah163 test excavations, Ashe County US 221 survey (weights in grams) (concluded).

Excavation Unit	Fabric Impressed				Net Impressed				Plain				Other				< ½" diameter		TOTAL[d]	
	Quartz Temper		Other Temper		Quartz Temper		Other Temper		Quartz Temper		Other Temper		Quartz Temper		Other Temper					
	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt
Shovel Tests					44[a]	550													44	550
TP #1					1	1							1	2	1	1	–	2	3	4
TP #2	9	47			1[b]	11			6	47			4[c]	14			–	4	20	119
TOTAL	9	47			46	562			6	47			5	16	1	1	–	6	67	673

[a] Uwharrie series
[b] Dan River series
[c] includes 1 fingernail punctate sherd (6 gm)
[d] does not include < ½" diameter wt.

Table H.7. Ceramic data, Ah164 test excavations, Ashe County US 221 survey (weights in grams).

Excavation Unit	Fabric Impressed				Cord Marked						Net Impressed				Plain					
	Quartz		Amphib-olite		Quartz		Amphib-olite		Unknown		Quartz		Sand		Quartz		Amphib-olite		Other	
	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt
Shovel Tests			9	45			6	17									3	16		
STP A			6	64			6	32									1	4		
STP B							6	21	1	2							8	29		
TP #1	4	13	15	57	5	18	80	395	4	4	3	18	3	17			27	218		
TP #2 Level 1	1	9	10	58			50	213	3	10			2	8	1	12	8	64	2[a]	22
TP #2 Level 2	2	18	16	126			56	317									18	65		
TP #2 Level 3			4	12			2	33												
TP #2 Level 4																				
TP #3 Level 1																				
TP #3 Level 2																				
TP #4 Level 1																				

Table H.8. Ceramic data, Ah163 test excavations, Ashe County US 221 survey (weights in grams).

Excavation Unit	Fabric Impressed				Cord Marked						Net Impressed				Plain					
	Quartz		Amphib-olite		Quartz		Amphib-olite		Unknown		Quartz		Sand		Quartz		Amphib-olite		Other	
	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt
TP #4 Level 2			1	5			1	1												
TP #4 Level 3																				
TP #5																				
TP #6 Level 1																				
TP #6 Level 2																				
TP #7 Level 1																				
TP #7 Level 2																				
TOTAL	7	40	61	367	5	18	207	1029	8	16	3	18	5	25	1	12	65	396	2	22

Table H.8. Ceramic data, Ah163 test excavations, Ashe County US 221 survey (weights in grams) (continued).

Excavation Unit	Brushed		Other (Unknown/Residual)								< ½" diameter		TOTAL Ceramics[b]	
	Amphib-olite		Sand		Quartz		Amphib-olite		Unknown					
	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt
Shovel Tests							4	16			-	20	22	94
STP A	6	22					3	9			-	12	22	135
STP B							3	11			-	9	18	63
TP #1					1	1	41	146			-	92	183	887
TP #2 Level 1			1	5			39	128	2	3	-	202	119	532
TP #2 Level 2					2	5	20	74			-	82	114	605
TP #2 Level 3											-	10	6	45
TP #2 Level 4							1	2			-	1	1	2
TP #3 Level 1			1	9							-	6	1	9
TP #3 Level 2			1	7									1	7
TP #4 Level 1							1	1			-	1	1	1

Table H.8. Ceramic data, Ah163 test excavations, Ashe County US 221 survey (weights in grams) (continued).

Excavation Unit	Brushed		Other (Unknown/Residual)								< ½" diameter		TOTAL Ceramics[b]	
	Amphib-olite		Sand		Quartz		Amphib-olite		Unknown					
	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt
TP #4 Level 2											–	3	2	6
TP #4 Level 3							1	1					1	1
TP #5														
TP #6 Level 1														
TP #6 Level 2							1	7					1	7
TP #7 Level 1			1	2									1	2
TP #7 Level 2							1	5					1	5
TOTAL	6	26	4	23	3	6	115	400	2	3	–	438	494	2401

[a] includes 1 sand tempered (20 gm)
[b] does not include < ½" diameter wt.

Table H.8. Ceramic data, Ah163 test excavations, Ashe County US 221 survey (weights in grams) (concluded).

Excavation Unit[a]	Quartz/ Quartzite		Ortho-Quartzite		Rhyolite		Andesite		Chert		Chalcedony		Tuffacious (Shale/ Slate)		Other				Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%				N
Shovel Tests	19	44			1	2	35	5	5	12			3	7						43
STP A	7	54			2	15	4	31												13
STP B	6	60					2	20	2	20										10
TP #1 Level 1	71	53			4	3	11	8	32	24	3	2	11	8	3	2				135
TP #2 Level 1	50	42			17	14	36	31	8	7	1	1	5	4	1	1				118
TP #2 Level 2	61	54			5	4	24	21	13	11			10	9	1	1				114
TP #2 Level 3	43	38			11	10	38	34	21	19										113
TP #2 Level 4	4	44					4	44					1	11						9
TP #3 Level 1	7	100																		7
TP #3 Level 2	2	100																		2
TP #4 Level 1	28	80					5	14	2	6										35

Table H.9. Lithic raw materials and percentages, Ah163 test excavations.

Excavation Unit[a]	Quartz/ Quartzite		Ortho- Quartzite		Rhyolite		Andesite		Chert		Chalcedony		Tuffacious (Shale/ Slate)		Other				Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%				N
TP #4 Level 2	13	62					7	33					1	5						21
TP #4 Level 3	7	100																		7
TP #5 Level 1																				0
TP #6 Level 1	2	67					1	33												3
TP #6 Level 2	6	86							1	14										7
TP #7 Level 1	12	35	3	9			16	47	2	6			1	3						34
TP #7 Level 2	12	27	1	2			30	67	1	2			1	2						45
TP #8 Level 3	5	26					14	74												19
Total	355	48	4	1	40	5	207	28	87	12	4	1	33	4	5	1				735

Table H.9. Lithic raw materials and percentages, Ah163 test excavations (concluded).

Excavation Unit and Level	Ceramics	Glass	Metal	Bone	Charcoal	Fired/Hardened Clay	Botanical Remains	Other
Ah163								
Surface find	X[a]							
Shovel tests						X		
Test pit 1 Level 1				X	X	X	X[b]	
Test pit 2 Level 2				X	X	X	X[c]	X[d]
Test pit 2 Level 3			X	X	X	X	X[b]	
Test pit 4 Level 3				X		X		
Test pit 5 Level 1							X[b]	
Ah164								
Test pit 1							X[e]	

[a] lead glazed stoneware
[b] hickory nut shell fragments
[c] acorn shell fragments
[d] red pigment (hematite)
[e] unidentified seed fragment

X = Present

Table H.10. Presence/absence of historic and miscellaneous other materials; Ah163 and Ah164 test excavations.

Site #	Ceramics	Glass	Metal	Bone	Charcoal	Fired/Hardened Clay	Botanical Remains	Other
Ah149				X				
Ah156			X[a]					
Ah162						X		
Ah166			X[a]					
Ah169			X[b]					

[a] slag
[b] 1950 penny

Table H.11. Presence/absence of historic and miscellaneous materials; Ashe County US 221 survey.

APPENDIX I.

Laboratory Analysis Handbook, Thomas D. Burke

INTRODUCTION

The description of lithic artifacts is included to outline specifically the minimal analytical parameters used in establishing the nature of activities at archaeological sites and the temporal occupations of the sites. The determinations of site chronologies are based largely upon the projectile point typology established by Coe (1964). The investigation of site function(s) is based upon artifact morphology and edge wear analysis.

The major categories shown below correspond to headings in the appendixes of lithic tools and artifacts at each site. In spite of their generality, these categories provide a basis for ready evaluation of both site type definition and representation of archaeological culture periods. Further categorical subdivision and specific data are provided as necessary.

WHOLE BIFACES, BIFACE FRAGMENTS

These categories include lithic specimens which correspond either to established types or are fragments (proximal or basal, medial, distal or apical) of tools often described as projectile points or knives. Divisions within these categories are limited to chronological purposes, however no functional implications are given.

Basal fragments are generally as useful as whole specimens in defining types. Medial and apical fragments, however, are less useful in this respect. In some instances, distinctive attributes of medial and apical specimens do permit identification as types. In other cases, bifacial fragments are distinguished from preforms/blanks by the more finished quality of the former. Medial and apical bifacial fragments are separated from drills/perforators by the blade width of the specimen, by apical shape, or by distinctive wear patterns (Semenov 1964). Separation of whole and fragmentary bifaces from bifacial knives/scrapers is based upon the limited (but bifacial) modification of the latter. That is, bifacial knives/scrapers are not as refined in their overall workmanship. Modification, although bifacial, is not continuous around the circumference of the artifact.

WHOLE BIFACES--MORPHOLOGICAL TYPES

In designating artifacts as members of a particular type, it is recognized that the sequence of projectile point forms in North Carolina is the result of gradual change or evolution in morphology (Coe 1964: 120-124). The use of arbitrary types often belies close similarities in morphology when imposed on such a continuum. Also, considerable overlaps in the duration of the morphological types may have occurred. However, the types named below are demonstrated to represent an accurate sequence of artifactual patterns.

Recognizing these limitations, the types listed below serve to establish the temporal period(s) of occupation at sites where diagnostic lithics occur. Types are listed by name, followed by citation for definition, archaeological affiliation, and approximate temporal placement.

Kirk Corner-Notched. (Coe 1964:69-70), Early Archaic, ca. 6000 B.C.
Comment: Broyles's (1971) excavations suggest this type may be about 900 years earlier, based on radiocarbon dates, at the St. Albans Site, West Virginia.

Morrow Mountain I Stemmed. (Coe 1964:37), Middle Archaic, ca. 4500 B.C.

Morrow Mountain II Stemmed. (Coe 1964:37, 43), Middle Archaic, ca. 4000 B.C.

Guilford. (Coe 1964:43-44), Middle Archaic, ca. 4000 B.C.

Halifax. (Coe 1964:108-110), Late Archaic, ca. 3500 B.C.

Gary. (Ford and Webb 1956:52-54), Late Archaic
Comment: Bell (1958) attributes considerable variation to this type. The Gary form is generally considered to bridge the transition from Archaic to Woodland patterns.

Savannah River Stemmed. (Coe 1964:44), Late Archaic, 2000 B.C.-A.D. 1
Comment: Keel (1976) reports radiocarbon dates of 2914-280 B.C. and 1565-140 B.C. for the Savannah River Component of the Appalachian Summit.

Otarre. (Keel 1976:194-196), Late Archaic
Comment: Keel (1976:154) states that this type may have persisted in use as late as 700 B.C. in the Appalachian Summit area. He also states that the Otarre form "...is the lineal descendant of the Savannah River Stemmed Point" (Keel 1976:196).

Badin Crude Triangular. (Coe 1964:45), Woodland, ca. A.D. 500

Yadkin Large Triangular. (Coe 1964:45, 49), Woodland, ca. A.D. 1200

Gaston. (Coe 1964:121), Woodland-Historic, ca. A.D. 1700

Randolph. (Coe 1964:49-50), Historic, ca. A.D. 1725-1800

Provisional Type.

Comment: One stemmed projectile point of a now weathered shale was recovered during the Ahoskie Bypass survey. The stem is of moderate length (25% of total length), parallel-sided, with a slightly excurvate base. The blade shoulders are oblique. The blade is triangular and is reworked along one edge giving the blade an asymmetrical form.

The specimen resembles the Swannanoa Stemmed defined by Keel (1976:196-198). If comparable in form, and presumably in time, the provisional type probably relates to the early ceramic period in North Carolina (Keel 1976:185).

BLANKS/PREFORMS

These terms are used to denote identification of bifacially modified artifacts as unfinished tools. Generally, the term "blank" is reserved for the very early stages of production, whereas "preform" denotes a more carefully modified and shaped artifact (Crabtree 1972, Muto 1971). However, given the limited nature of the surveys' collecting activities and resulting small sample sizes, separation here does not seem warranted. The distinctions between blank and preform are potentially very useful, however, in a more extensive discussion of lithic resource utilization, settlement pattern, and site activity analysis (House 1975:67).

PERFORATORS

These tools are modified either unifacially or bifacially. Their use as rotary drills, punches, or incisers is predicated upon either microscopic examination of edge wear (Semenov 1964) or upon morphology of the tip or "bit" (e.g., Coe 1964). Subsumed within the category of perforators are drills (Semenov 1964), gravers (House 1975), and micro-perforators (Ford, Phillips, and Haag 1955).

BIFACIAL SCRAPERS/KNIVES

These artifacts are bifacially modified, but such modification is restricted to less than the entire circumference of the tool. Edge modification resulting in a steep angle along a bifacially altered margin defines a scraper. Acute bifacial marginal modification defines a knife.

Bifacial scrapers/knives are distinguished from blanks/preforms on the basis of discontinuous marginal retouch and more careful refinement of the worked edge in the former.

UNIFACES/MODIFIED FLAKES

This category comprises flakes intentionally modified from one surface only or flakes used in unaltered form with microflakes being removed from the margin as a result. Intentional modification is distinguished from accidental modification on the basis of (1) the non-random occurrence of several microflakes and (2) the regularity of the chipping pattern. That is, it is assumed that clusters of microflakes along a margin (nonrandom) and consistency in width, length, and angle of removal serve as reasonably reliable evidence of human use or modification.

These are admittedly arbitrary and untested criteria. However, observations of edge damage formation (c.f. Tringham, et al. 1974, Barnes 1939, Shafer 1970) are believed to support these criteria.

Identification as unifacially modified flake tools was a two stage process. All flakes were examined visually for signs of edge damage. Those showing evidence of use or modification were then examined using either a hand-held 6X magnifying glass or a binocular microscope at powers up to 70X. Final decisions for inclusion in this category were based upon observations made under magnification.

CORE

Crabtree defines a core as a "nucleus. A mass of material often preformed by the worker to the desired shape to allow the removal of a definite type of flake or blade. Piece of isotropic material bearing negative flake scars, or scar" (1972:54).

FIRE-CRACKED ROCK

The identification of fire-cracked rock is based upon criteria established by House (1975:68). The criteria derived by experimentation (House and Smith 1975) include the absence of evidence for having been removed by a blow (i.e., no bulb of force, no striking platform, etc.), the irregular and jagged fracture surface, and discoloration. Potlid fractures were found by House to be diagnostic but of infrequent occurrence.

GROUND STONE

The generalized category of ground stone includes an array of artifacts with various possible functions (House 1975:69). This category includes all artifacts which are worn smooth as a result of use in food preparation or similar activities wherein two stones are in abrasive contact as seeds, roots, etc., were crushed, pulverized, or fragmented. Although not found during these surveys, examples would include manos, metates, pestles, mortars, mullers, etc. (House 1975:69, 71).

Other members of this class are those tools which have endured intentional abrasion as part of a manufacturing process to a specific, desired end-product. That is, objects such as celts, axes, atlatl weight, and gorgets often show evidence of having been abraded to final form. Some of these artifacts retain evidence of earlier shaping processes as well, i.e., pecking or chipping (House 1975:69).

MODIFIED COBBLES

These artifacts comprise lithic materials used as hammers, anvils, or for crushing. Hammerstones and pitted cobbles are the two categories included. The former retain distinctive peck marks on a margin or margins or on the entire surface of the rock. The latter have at least one depression, usually hemispherical, on a face of the stone. Pits may occur in multiples on one surface, or on opposing or adjacent surfaces. Hammerstones presumably reflect use in shaping hard substances such as cores, bifaces, etc. Pitted cobbles have been suggested for use in crushing hard-shelled nuts or as anvils in a process of lithic reduction (House 1975:71-72).

OTHER MODIFIED STONE

This category includes all other varieties of implements not included above. Examples are steatite bowls and pipes.

MISCELLANEOUS UNMODIFIED STONE

Stones collected during either survey or testing were returned to the lab if there was any possibility that artifactual materials were represented. Those finally determined to be unrelated to recognizable human activity are the contents of this category.

CERAMICS

Ceramics recovered during the Ahoskie Bypass survey are generally too small and weathered to permit assignment to a type. Analysis is limited to description of temper and surface treatment.

Dr. Joffre L. Coe, University of North Carolina, Chapel Hill, kindly provided identification of ceramics recovered from Ashe County. The classification of ceramics as Uwharrie and Yadkin/Connestee follow the descriptions provided by Coe (1964), Holden (1966), and Keel (1976). The inclusion of amphibolite as a major tempering material is unusual. However, other significant attributes render the probable inclusion of these sherds into the Yadkin/Connestee type.

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APPENDIX J. Archaeological Site Record Form and Handbook

INSTRUCTIONS FOR COMPLETING
NORTH CAROLINA PREHISTORIC ARCHEOLOGICAL SITE FORMS

HANDBOOK
CODE NO.

1. ARCHEOLOGY BRANCH COMPUTER RECORD. This is a code number assigned by the Archeology Branch and should be left blank. It will serve as an inhouse management aid.

2. UNC SITE NO. Site number assigned by the University of North Carolina at Chapel Hill. This may be filled in by individual archeologists as numbers are acquired or left blank. These site numbers should utilize the following format: , 3 , 1 , N , H , 1 , Ø , 9 , , which corresponds to the UNC-Chapel Hill number 31Nh109 (left justify).

3. OTHER SITE NO. Site number assigned by an individual institution other than the Archeology Branch or UNC. This number will help in eliminating the confusion that at times exists when sites have more than one number and are referred to by both numbers (left justify).

4. INSTITUTION ASSIGNING NO. This code refers to the code for the institution that assigned the Other Site No. (c.n. 3)--note the appropriate code for the institution as listed below. If the institution is presently not listed, contact the Archeology Branch to be assigned a new code number.

Ø1	Appalachian State University
Ø2	Archeology Branch (Raleigh)/Dept. of Cultural Resources
Ø3	Archeology Branch (Ft. Fisher)/Dept. of Cultural Resources
Ø4	Catawba College
Ø5	Duke University
Ø6	East Carolina University
Ø7	St. Andrews Presbyterian College
Ø8	U.S. Corps of Engineers
Ø9	University of North Carolina/Chapel Hill
1Ø	University of North Carolina/Charlotte
11	University of North Carolina/Greensboro
12	University of North Carolina/Wilmington
13	Wake Forest University
14	Western Carolina University
15	Soil Systems, Inc.
16	Coastal Zone Resources
17	Commonwealth Associates, Inc.
18	Old Salem
19	Western Office Archeology and Historic Preservation Section, Asheville/Dept. of Cultural Resources
20	Historic Sites Section/Dept. of Cultural Resources
99	Other

5. PROJECT SITE NO. Individual archeologists may wish to identify sites by a specific project or otherwise temporary numbers. Assigning specific project numbers will allow retrieval of information about a particular project area with only a knowledge of the alphanumeric prefix. Example: A site recorded during a survey of Bladen Lakes State Forest may be assigned the number BL77-142 (Bladen Lakes, 1977, site No. 142); information on all sites recorded during that survey would be retrieved by calling for BL77 data. Such use, however, will require the coder to a left justify B177 and right justify 142
(, B , L , 7 , 7 , , 1 , 4 , 2 ,).

5A. SURVEY BRANCH STRUCTURE NUMBER. If site is within 100 meters of a structure recorded by the Survey Branch, please indicate the number given to it by the Survey Branch (left justify).

6. DATE RECORDED IN FIELD. MONTH, DAY, and YEAR site was initially recorded (right justify).

7. CODING DATE. MONTH, DAY, and YEAR site was recorded or transferred onto this form (right justify).

8. ADDITIONAL VISITS. If additional visits were made to the site to more fully evaluate its significance (i.e., for subsurface tests, further collections), note month, day, and year; a one-or-two-word description of purpose may also be provided.

9. ORIGINAL RECORDER (IN FIELD). This should be the person or persons who first recorded or found the site.

10. FORM RECORDER. This should be the name of the person or persons that fill out this form.

11. SITE NAME. Name applied by recorder or previously applied name.

12. OTHER SITE NAMES. If site is known by other names--for instance, by local collectors, write this information in the space provided.

13. COUNTY. Two-letter county name abbreviation (see page 18 of Handbook for county abbreviations). NAME--for easy reference, the name of the county should be spelled out.

14. QUAD MAP USED. Record USGS Quadrangle map code, as provided on pages A1 - A10 of the Handbook. Please note QUAD NAME and the scale in the space provided (left justify).

15. UTM DATA. This information is essential. ZONE refers to the UTM zone (either 16, 17, 18). This can be found in the lower left-or-right-hand corner of most quadrangle maps. NORTHING AND EASTING refer to the North coordinate and the East coordinate for the site in the UTM grid system. Note: In some cases older quad maps do not have the UTM meter ticks but do have the North Carolina Plane Coordinates, which are in feet, (right justify).

16. OTHER COORDINATES. If your investigations encounter maps with no UTM meter ticks on them, please record the most precise (and available) coordinates in the space provided. Be sure to note the system name. These can then be transformed into UTMs by the computer. North Carolina Plane Coordinates are preferred.

17. AERIAL PHOTO NUMBER. If aerial photos are used, please record the identification number in the appropriate spaces (left justify).

18. NAME OF PHOTO AGENCY. Please list the name of the agency responsible for the aerial photographs (e.g., Dept. of Transportation, SCS Detailed Soils Sheet).

19. PROJECT NAME AND PRINCIPAL INVESTIGATOR. If the site is recorded during a specific project, note name of project and Project Director's name.

20. DIRECTIONS FOR REACHING SITE. Describe how to reach the site. Be specific and include relevant highway and county road numbers. This may refer to the Sketch Map of Site (c.m. 21).

21. DRAW A SKETCH MAP OF THE SITE ON THE BACK OF THIS SHEET OR FOLLOWING PAGE. Draw a sketch map on the graph paper provided. Be sure to indicate the approximate point from which the UTM reading (see c.n. 15) was taken. Include all pertinent (labelled) roads and landmarks that distinguish the site area.

ENVIRONMENTAL SETTING

22. TOPOGRAPHIC SITUATION. Note the topographic situation of the site as provided below. If the situation does not fit one of the categories identified below, note in OTHER space provided. Definitions of these categories have been drawn primarily from the American Geological Institute's 1972 edition of the Glossary of Geology.

ØØ Not recorded.

Ø1 Undifferentiated floodplain: A surface (expanse) or strip of relatively level land adjacent to a stream or river.

Ø2 Terrace remnant on floodplain: Section of an ancient dissected terrace now incorporated or surrounded by the present floodplain. These terrace remnants will generally have a cross-section featuring one steep face articulating in a sharp angle with the gently sloped back slope (wedge shaped).

Ø3 Low rise on floodplain: Any major projection in a floodplain which is not a terrace or levee remnant. Examples would include elevated meander scars, former islands from ancient channels, and rock outcrops.

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22. TOPOGRAPHIC SITUATION (CONT'D)

04 Natural levee: A long, broad, low ridge or embankment of sand and coarse silt, built up by a stream on its floodplain primarily along both banks of its channel. A typical cross-section would include a steep face or bank on the stream side of the levee which gently curves over to create a gentle backslope which grades into the floodplain.

05 Levee remnant: A dissected remnant of levee occurring near an existent or ancient stream channel. Such remains may or may not be in a floodplain. An example would be a former natural levee along a present stream which has been dissected by extreme flooding into numerous segments.

06 1st terrace: The first level surface in a stream valley above (if existent) the floodplain and more or less parallel to the stream channel. The first terrace may represent the only terrace or may be the lowest (in elevation) of a series of terraces in a stream valley.

07 2nd terrace: Terrace, as described above, which exists above the 1st terrace and below the third terrace.

08 3rd terrace: Terrace, as described above, which exists above both the 1st and 2nd terraces. Should there be more than three terraces (e.g., 4th terrace, 5th terrace), they should be coded as 3rd terrace and noted.

09 Sand dune: A low mound, ridge, band, or hill of loose sand piled or heaped up by the wind, commonly found along sea shores and more rarely along the borders of large lakes or river valleys.

10 Upland or talus slope: An often steep, concave slope formed by the accumulation of loose rock fragments and soil (generally) at the base of a cliff or steep slope. This may be referred to as the foot of a mountain - the integration of a mountain or hill with the surrounding topography.

11 Upland flats: Also called upland plains. These consist of a relatively level area of land lying in the inland areas of North Carolina.

12 Hill or ridgetop: A hill is defined as a natural elevation of the land surface rising rather prominently above the surrounding land, usually of limited extent and having a well-defined outline (rounded rather than peaked or rugged) and is generally considered to be <u>less</u> than 300 meters (1000 feet) from base to summit. A ridgetop refers to the top of a long, narrow elevation of the earth's surface usually with steep sides, occurring either as an independent hill or as part of a larger mountain or hill. A steep-sided upland between valleys or a valley and mountain (hill) is also defined as a ridge.

22. TOPOGRAPHIC SITUATION (CONT'D)

13 Saddle (between ridge or hilltops): A flattish ridge connecting the summits of two higher elevations. A saddle typically is a small flat area with two upslopes in opposite directions and two downslopes at right angles to the upslopes.

14 Stream confluences: A place directly adjacent to the meeting of two or more streams. Should a site be located within 200 meters (656 feet) of a stream confluence, it should be coded as such (14) <u>regardless</u> of other topographic features on which the site is located.

15 Terrace edge: The steep slope between the floodplain and terrace or between terraces. Sites once on the terrace may be found eroded onto the terrace edge, or sites buried under a terrace may be exposed by the erosion of a terrace slope.

16 Hammock: A fertile area of deep humus - rich soil - generally covered by hardwood vegetation, often rising slightly above a plain, swamp, or saltwater marsh. It may also be called a hummock.

17 Sandy beach: A gently sloping zone, typically with a concave profile of unconsolidated material (generally sand) that extends inward from the low water line to the place where there is a definite change in the material or physiography, as sand dunes or cliffs. Beaches are associated with bodies of water large enough to have waves and/or tides.

18 Rock shelter: A cave that is formed by a ledge of overhanging rock. Typically such shelters are the result of undercutting erosion of a limestone or sandstone cliff or bluff face.

19 Island: A tract of land, completely surrounded by water such as an ocean, sea, lake, or stream.

20 Fan (note whether colluvial or alluvial): A gently sloping fan-shaped mass of detritus forming a section of a very low cone commonly at a place where there is a notable decrease in gradient (e.g. the intersection of a cliff and floodplain). An alluvial fan is stream deposited, and a colluvial fan is deposited from eroding and falling rocks and soil from a narrow portion of a cliff face.

21 Toe slope/ridge toe: A toe-shaped extension from the crest or side of a hill or other highland surface. Typically a ridge toe divided two drainages, however minor. Ridge toes are also called spurs.

22 Cave: A naturally formed, subterranean open area or chamber, or series of chambers.

99 Other: Please describe the situation coded as Other in detail in the space provided.

23. DESCRIPTION OF TOPOGRAPHY. Brief written description of topography with reference to characteristic features, anomalies, etc.

24. SOIL COMPOSITION (SCS TYPOLOGY). Using the categories provided below, note the soil composition code. Refer to the U. S. Soil Conservation Service soils maps for this information. If composition does not fit one of the categories provided below, note in OTHER space.

ØØ	Not recorded	Ø9	Sandy/clay
Ø1	Clay	1Ø	Silty/clay/loam
Ø2	Clay/loam	11	Loam
Ø3	Silty/clay	12	Loamy/sand
Ø4	Sandy/clay/loam	13	Gravel
Ø5	Sandy/loam	14	Organic
Ø6	Sand	99	Other
Ø7	Silt		
Ø8	Silty/loam		

25. SOIL TYPE ABBREVIATION. Note specific soil series type abbreviation as provided in the SCS detailed county soils maps, if available. Also note the soil SERIES NAME and ASSOCIATION NAME in the space provided (left justify)

26. DESCRIPTION OF SOIL COMPOSITION. Brief description of soils at and adjacent to site. Again, refer to SCS maps for assistance as necessary.

27. MODERN VEGETATION. Note code of present vegetation characteristics at site, using list below. If vegetation does not fit the categories below, note in OTHER space provided.

Ø1	Cultivated	Ø6	Lawn (Housing development)
Ø2	Cleared (in field)	Ø7	Marsh Grass
Ø3	Pasture	Ø8	Secondary Growth
Ø4	Forested	Ø9	Disturbed/Upturned
Ø5	Scrub pine clearing (Kureb)	1Ø	No Vegetation/Cleared
		99	Other

28. ELEVATION OF SITE. As precisely as possible, using topographic maps, note the elevation of the center of the site in feet or meters above mean sea level (right justify).

29. SLOPE OF SITE. Note either the percent of slope or the degree of slope gradient; and in the space provided, HOW DETERMINED, note the method used to calculate the slope (e.g. Brunton compass, Transit, USGS map, SCS detailed soils map). This measurement should be made in the field (when possible) with instruments and should approximate the average slope at the core area of the site. Thus, a site on a knoll slope may range from 0-30% slope with major concentrations occurring between 0 and 6% slope. This would be coded as the average slope of the major concentration at the site or 3% slope (right justify).

30. SLOPE FACE DIRECTION. Using the codes below, note the direction of the major slope face. For example, a toe slope's direction of slope would be parallel to the end of the toe. If there is no slope, the direction of slope should indicate the cardinal direction which will explain the most topographic variation. This is further discussed in code number 30A (LANDFORM PROFILE). The major slope face direction refers to the area of greatest topographic variability.

Ø Unobserved
1 North
2 Northeast
3 East
4 Southeast
5 South
6 Southwest
7 West
8 Northwest

30A. LANDFORM PROFILE. This variable stores a quantified description of topography. This is done by using USGS maps and the Land Profile/UTM Template provided by the Archeology Branch. Quartered circles with a radius of 100 meters for 1:24,000 and 1:62,000 scale maps are printed on the templates. The center of the appropriate circle is to be placed on the center of the site and the direction of slope arrow aligned with the coded Slope Face Direction (e.g. northwest, south). Once the template is aligned, readings should be taken for each of the four quadrants of the circle labelled 1, 2, 3, and 4. These are coded using the codes printed on the template and are duplicated below. These codes indicate the vertical direction of slope for each quadrant. Truly these are general measures, but they will provide 81 possibilities which will be grouped by the computer into topographic groups. A special case worthy of further note are areas with no slope. If a saddle was coded as having no slope, the Slope Face Direction will be coded as the axis that explains the most topographic variability. In the case of the saddle it would be the axis that bisects the rises on either side of the saddle. Thus, the slope face direction for a saddle with rises bisected by a northwest-southeast axis would be coded either as northwest or southeast. Specific examples are provided on page B2 of this handbook. These examples illustrate graphically how the Landform Profile coding should occur.

1 = Downward Slope

2 = Flat

3 = Upward Slope

31. TYPE OF NEAREST PERMANENT WATER. Note code of type of permanent source of water nearest the site. If not covered by the categories provided below, note in the space provided under OTHER. Farm ponds, man-made lakes, canals, and other man-made bodies of water should not be coded. Code only natural water.

31. TYPE OF NEAREST PERMANENT WATER (CONT'D)

- Ø Unobserved
- 1 Spring
- 2 River, Creek, Stream
- 3 Lake
- 4 Swamp
- 5 Slough
- 6 Salt Water--Sound, Ocean, etc.
- 7 Carolina Bay
- 8 Pond
- 9 Other

32. STREAM RANK. Using chart and discussion provided on page 13 of this Handbook, estimate rank of stream (if applicable). Note SCALE OF MAP USED in space provided (map scale will affect the level of streams recorded).

- ØØ Unobserved/Not Recorded
- Ø1 1st Order Stream Rank
- Ø2 2nd Order Stream Rank
- Ø3 3rd Order Stream Rank
- Etc. to 99

33. DISTANCE TO NEAREST PERMANENT WATER FROM SITE. Approximate distance in meters of nearest permanent water to side (right justify).

34. ELEVATION OF NEAREST PERMANENT WATER. Estimated elevation of permanent water at point nearest site in either FEET or METERS above mean sea level (right justify).

35. TYPE OF 2ND NEAREST WATER. The codes for this variable are the same as those for TYPE OF NEAREST PERMANENT WATER (c.n. 31). If the type of water is not defined in this list note OTHER and write the type in the space provided marked OTHER. As in the TYPE OF NEAREST PERMANENT WATER, code only natural permanent water sources.

36. STREAM RANK. Stream rank will be coded as Stream Rank was coded (c.n. 32) above. Note the SCALE OF MAP USED in the space provided (right justify).

37. DISTANCE TO 2ND NEAREST WATER TO SITE. Approximate distance in meters of the second nearest water to the site (right justify).

38. ELEVATION OF 2ND NEAREST WATER. Estimated elevation of the second nearest water to the site, in either FEET or METERS above mean sea level (right justify).

SITE DESCRIPTION

39. SITE DEFINITION. See code below. For historic sites and structures see either the Historic Site Form or the Historic Structures Form.

39. SITE DEFINITION (CONT'D)

- Ø Unobserved/Not Recorded
- 1 Prehistoric Only
- 2 Prehistoric and Historic Components, No Above-Ground Structures
- 3 Historic Only, No Above-Ground Structures
- 4 Historic Only, Above-Ground Structures
- 5 Prehistoric and Historic, Above-Ground Structure(s) Present
- 6 Historic Amerind
- 9 Unknown

40. EXPLANATION FOR DEFINITION. Briefly cite reasons for site definition.

41. CULTURAL AFFILIATION. In order of observed intensity, use the codes below to note cultural periods of site occupation (a maximum of five periods or subperiods may be recorded per site).

- A Paleo Indian
- B Early Archaic
- C Middle Archaic
- D Late Archaic
- E Archaic (undetermined subperiod)
- F Early Woodland
- G Middle Woodland
- H Late Woodland
- I Woodland (undetermined subperiod)
- J Early Mississippian
- K Middle Mississippian
- L Late Mississippian
- M Mississippian (undetermined subperiod)
- N Ceramic (undetermined period or subperiod)
- O Historic--Colonial--1585-1776
- P Historic--post Revolutionary--1776-1861
- Q Historic--post Civil War--1861-1900
- R Historic--20th Century--1900 to present
- S Historic--(undetermined subperiod)
- T Historic--Amerind
- U Lithic (undetermined period or subperiod)
- Z Not discernable

42. EXPLANATION. Explain the reasons for classifying site into the given cultural affiliations.

43. GENERALIZED SITE FUNCTION. Based on observations, note one or two hypothesized functional assignments of site using codes below. If not covered by codes, note in OTHER space.

- Ø Not recorded
- 1 Limited activity
- 2 Lithic workshop (not directly associated with quarry site)
- 3 Lithic quarry/workshop
- 4 Isolated artifact find
- 5 Habitation (undetermined duration)

43. GENERALIZED SITE FUNCTION (CONT'D)

- 6 Shell midden
- 7 Historic cemetery
- 8 Prehistoric cemetery
- A Long-term habitation
- B Short-term habitation
- C Mound (isolated)
- 9 Other

44. EXPLANATION. Explain the assignment of the site into the functional classes under GENERALIZED SITE FUNCTION (c.n. 43).

45. ESTIMATION OF SITE SIZE. Code CORE AREA and MAXIMUM MATERIAL DISPERSION using the codes listed below. The CORE AREA is defined as the estimated area in square meters containing the densest concentration of artifacts. The MAXIMUM MATERIAL DISPERSION or site size is also coded in square meters. The minimum and maximum lengths of a side of a square fitting each size category are presented in parentheses next to each code.

- Ø Not recorded/unknown
- 1 1-10 meters^2 (1 to 3.16 meters on a side)
- 2 11-25 meters^2 (3.32 to 5 meters on a side)
- 3 26-100 meters^2 (5.1 to 10 meters on a side)
- 4 101-600 meters^2(10.05 to 24.49 meters on a side)
- 5 601-5000 meters^2 (24.52 to 70.71 meters on a side)
- 6 5001-10,000 meters^2 (70.72 to 100 meters on a side)
- 7 10,001-25,000 meters^2 (100 to 158.11 meters on a side)
- 8 25,001-50,000 meters^2 (158.12 to 223.61 meters on a side)
- 9 Greater than 50,000 meters^2 (greater than 223.61 meters on a side)

46. DESCRIPTION OF SITE SIZE, SHAPE, AND FUNCTION. Brief narrative description of site characteristics. Note actual (observed) site dimensions.

47. MIDDEN CHARACTER. In checking for midden, note the following:

- Ø Not recorded/unobserved
- 1 None apparent
- 2 Slightly lighter than surrounding soil
- 3 Slightly darker than surrounding soil
- 4 Very dark
- 5 Same color as surrounding soil
- 6 Not discernable (but possible)
- 7 Shell midden
- 8 Midden observed but not tested

48. DESCRIPTION OF MIDDEN CHARACTERISTICS. Brief narrative of midden characteristics (if any).

49. PRESERVATION POTENTIAL. Indicate preservation potential (estimated) for preservation of bone, floral remains, etc.

- Ø Not recorded
- 1 Poor
- 2 Moderate
- 3 Good
- 4 Unknown

50. PRESENCE OF FAUNAL MATERIAL. Simple yes/no indication of whether faunal materials were noted at site.

- Ø Not recorded
- 1 Yes
- 2 No

51. DESCRIPTION OF ASSOCIATED FEATURES. Brief narrative description of any features associated with the site, such as pit depression, earthworks, mounds, post molds, hearths, etc.

52. SITE CONDITION: ENVIRONMENTAL FACTORS. Using codes below, note natural environmental factors affecting site. If not covered below, note on OTHER space.

- ØØ Not recorded
- Ø1 Preserved, no disturbance noted
- Ø2 Light erosion (e.g. light sheet erosion; small gulleying)
- Ø3 Heavy erosion (e.g. gulleying; major headward erosion)
- Ø4 Wooded
- Ø5 Shifting sand dunes
- 99 Other

53. DESCRIPTION OF ENVIRONMENTAL FACTORS. Brief description of natural forces acting upon the site's condition.

54. SITE CONDITION: ARTIFICIAL FACTORS. Using codes below, note artificial factors affecting site. If not covered below, note in OTHER space.

- ØØ Not recorded
- Ø1 Unmodified
- Ø2 Cultivated
- Ø3 Pasture, grazing
- Ø4 Residential
- Ø5 Industrial
- Ø6 Roads, trails
- Ø7 Ditches, dikes, levees, borrow pits
- Ø8 Minor pot holes
- Ø9 Major pot holes
- 1Ø Modern trash dumping
- 11 Totally destroyed
- 12 Transmission line clearance
- 13 Heavy construction
- 14 Boat wake erosion
- 15 Covered with fill
- 16 Modern cemetery
- 17 Recreational area
- 18 Light construction
- 19 Fallow
- 20 Clear cutting
- 99 Other

55. DESCRIPTION OF ARTIFICIAL FACTORS. Brief description of artificial forces affecting site condition.

56. IF CULTIVATED, ESTIMATE NUMBER OF YEARS. If possible. estimate to the nearest decade the number of years of cultivation at site (right justify).

57. ESTIMATED GROUND VISIBILITY. Approximate percentage of ground surface visible to surveyor (right justify).

57A. NATURE OF SITE IDENTIFICATION. If the site was recorded during a survey, briefly describe in the space provided the survey methods employed in identifying this site. Indicate the percentage of the total project area surveyed, and whether the survey was comprehensive (i.e. accounted for all environmental variability in the area). If a particular sampling method was employed, please note.

58. COLLECTIONS MADE. Yes/no indication of whether artifact collection was made at the site.

- Ø Not recorded
- 1 Yes
- 2 No

59. COLLECTION STRATEGY. Indicate collection method used at site.

- Ø Not recorded
- 1 Controlled (specific portion of site collected)
- 2 Select (diagnostic artifacts collected)
- 3 Both
- 4 Total site collection
- 5 None
- 9 Other

60. AREA COVERED IN CONTROLLED COLLECTION. Approximate area covered in controlled collection in square meters (right justify).

61. PERCENT OF SITE COVERED IN CONTROLLED COLLECTIONS. Approximate percentage of site covered in controlled collection (right justify).

62. DESCRIPTION OF COLLECTION PROCEDURES AND POSSIBLE BIASES. Brief description of collection procedures, indicating how collections were made and factors which may have made for biases (e.g. previous collectors, pothunters, sheet erosion, transportation of surface materials, etc.)

63. SUBSURFACE TESTS. Indicate whether attempt made to determine presence of subsurface deposits.

- Ø Not recorded
- 1 Yes
- 2 No

64. METHODS EMPLOYED. Using codes below, indicate what methods were used to check for subsurface deposits at the site. If not covered below, indicate in OTHER space.

- Ø Not recorded
- 1 Probe
- 2 Auger
- 3 Shovel test (unstructured pit size, shape, depth)
- 4 Test pit (predetermined size, shape, depth)
- 5 Test trench
- 9 Other

65. DESCRIPTION OF SUBSURFACE TEST RESULTS. Brief description of subsurface tests and results with regard to the site's interpretation.

66. DESCRIPTION OF ARTIFACTS COLLECTED. Brief description of artifacts collected from surface and subsurface.

67. CHIPPED STONE. Yes/no indication of the presence or absence of chipped stone on the site; use codes below.

- Ø Not recorded
- 1 Yes
- 2 No

68. CERAMICS. Indicate the presence or absence of prehistoric ceramics by using the same codes as for CHIPPED STONE, above (c.n.67).

69. GROUND STONE. Indicate the presence or absence of ground, pecked, or carved stone by using the same codes as used for CHIPPED STONE, above (c.n. 67).

70. DAUB. Indicate the presence or absence of daub using the same codes as used for CHIPPED STONE, above (c.n. 67).

71. HISTORIC MATERIALS. Indicate the presence or absence of historic material by using the same codes as used for CHIPPED STONE, above (c.n. 67).

72. INSTITUTION AT WHICH SITE RECORDS AND ARTIFACTS ARE STORED. Input proper code as listed below for the agency at which site information is stored. If OTHER, please list in the space provided.

- Ø1 Appalachian State University
- Ø2 Archeology Branch (Raleigh)/Dept. of Cultural Resources
- Ø3 Archeology Branch (Fort Fisher)/Dept. of Cultural Resources
- Ø4 Catawba College
- Ø5 Duke University
- Ø6 East Carolina University
- Ø7 St. Andrews Presbyterian College
- Ø8 U. S. Corps of Engineers
- Ø9 University of North Carolina at Chapel Hill
- 1Ø University of North Carolina at Charlotte
- 11 University of North Carolina at Greensboro
- 12 University of North Carolina at Wilmington

72. INSTITUTION AT WHICH SITE RECORDS AND ARTIFACTS ARE STORED (CONT'D)

13. Wake Forest University
14. Western Carolina University
15. Soil Systems, Inc.
16. Coastal Zone Resources
17. Commonwealth Associates, Inc.
18. Old Salem
19. Western Office Archeology and Historic Preservation Section, Asheville/Dept. of Cultural Resources
20. Historic Sites Section/Dept. of Cultural Resources
99. Other

73. ACCESSION NUMBER. If applicable, indicate accession number given to specimens collected in the field. To indicate more than one number, use a "-" between numbers to indicate catalog numbers that are continuous and a "*" between numbers to indicate discrete numbers. Thus catalog numbers 77AHS123, 77AHS124, 77AHS125, and 77AHS126 could be indicated as 77AHS123-126. If all the accession numbers will not fit in the space provided, please indicate that they do not and list under Additional Remarks (c.n. 91) (left justify).

74. PREVIOUS INSTITUTION AT WHICH SITE RECORDS AND ARTIFACTS WERE STORED. Indicate agency (if any) which has earlier records for the site; code the proper agency by using the same code as in INSTITUTION AT WHICH SITE RECORDS AND ARTIFACTS ARE STORED (c.n. 72). If OTHER, please list in the space provided.

75. PREVIOUS COLLECTION ACCESSION NUMBER. If applicable, indicate the accession number(s) given to previous collections at the sites. Utilize the same conventions for indicating multiple numbers as described under ACCESSION NUMBER (c.n. 73).

76. ADDITIONAL COLLECTION REFERENCES. Indicate, if applicable, collection strategy of previous collections at the site, and any other information known concerning the materials collected.

77. PHOTOGRAPHS TAKEN. Indicate whether photographs were taken of the site and/or immediate surroundings.

Ø Not recorded
1 Yes
2 No

78. PHOTOGRAPH ACCESSION NUMBERS. If photos were taken, indicate for reference beginning and ending accession numbers. If more than one sequence of photographic accession numbers, please indicate them under Additional Remarks (c.n. 91) (right justify).

EVALUATION

79. RESEARCH POTENTIAL. In the space provided, and if necessary on an additional page, evaluate as succinctly as possible the research potential of the site in terms of general and specific problems of archeological and anthropological method and theory. National Register of Historic Places criteria of significance may or may not be of relevance in this matter.

80. POTENTIAL IMPACTS ON SITE: ENVIRONMENTAL. With codes below, indicate potential for natural impacts upon site (i.e., erosion).

Ø Not recorded
1 None apparent now or later
2 Slight, low
3 Moderate
4 High
5 Will be destroyed
6 Stable at present, but potential exists for future impacts

81. EXPLAIN POTENTIAL ENVIRONMENTAL IMPACTS. Briefly discuss what and how the potential impacts will affect site.

82. POTENTIAL IMPACTS ON SITE, ARTIFICIAL. With codes below, indicate potential for artificial impacts on site (i.e., from dam construction, increased area utilization, etc.).

Ø Not recorded
1 None apparent now or later
2 Slight, low
3 Moderate
4 High
5 Will be destroyed
6 Stable at present, but potential exists for future impacts
7 Flooded - underwater

83. EXPLAIN POTENTIAL ARTIFICIAL IMPACTS. Briefly discuss what the impacts will be and how they will affect site.

83A. DESTRUCTION OF SITE. Using the codes provided below, indicate the approximate PERCENT OF SITE DESTROYED. Using the standard numeric equivalents (Ø5-Ø7-78), indicate the latest date of destruction to the nearest MONTH and YEAR. Finally, indicate up to two CAUSES OF DESTRUCTION using the codes provided below. If excavations have occurred at the site, they should be listed even if other types of site destruction have destroyed a greater portion of the site.

CODE FOR THE PERCENT OF SITE DESTROYED

1 0%
2 1-25%
3 26-50%
4 51-75%
5 76-100%

CAUSES OF DESTRUCTION

Ø Unknown/not recorded
1 Heavy construction - major earth moving
2 Light construction - light trenching, pile driving, etc.
3 Land clearing
4 Flooding
5 Excavation - salvage
6 Excavation - research
7 Excavation - field school
8 Excavation - amateur (directed by professional)
9 Pot hunting

307

83B. SITE EXCAVATION. Indicate the latest date of excavation to the nearest MONTH and YEAR. Also indicate the INSTITUTION performing the excavations using the codes provided previously for INSTITUTION AT WHICH SITE RECORDS AND ARTIFACTS ARE STORED (c.n. 72). Finally, provide a verbal DESCRIPTION OF EXCAVATIONS, including their nature and purpose in the open space provided.

84. RECOMMENDATIONS. Using the codes below, indicate up to two recommendations for further action relative to the site. If not covered below, indicate OTHER and explain.

- Ø Not recorded/unknown
- 1 No further work
- 2 Test investigations should be conducted to fully evaluate
- 3 Excavation
- 4 Archeologist should be present during construction activities
- 5 Preservation of site by avoidance
- 6 Nomination to National Register
- 7 Considered to be eligible for National Register
- 9 Other

85. EXPLAIN RECOMMENDATIONS. Briefly explain recommendation reasoning, and explain if recommendations are coded as OTHER.

85A. DETERMINATION OF ELIGIBILITY. Using the codes provided below indicate if the site has been determined eligible to the National Register of Historic Places.

- 1 Turned down
- 2 Determined eligible

85B. MITIGATION VARIABLES. If the site has been determined eligible or is on the National Register and the procedures of Section 106 of the National Historic Preservation Act of 1966 were initiated, indicate using the codes below the major plan or action for mitigation of adverse effects. If OTHER or if there were additional recommendations, describe them in the space provided.

- Ø Unknown/not determined eligible
- 1 Preservation
- 2 Avoidance
- 3 Excavation
- 9 Other

86. NATIONAL REGISTER STATUS. Give the MONTH and YEAR of each of the following categories as they apply: RECOMMENDED FOR NOMINATION, PLACED ON THE STUDY LIST, APPROVED FOR NOMINATION BY STATE REVIEW BOARD, PLACED ON REGISTER, and DECERTIFIED (right justify).

86A. NATIONAL REGISTER NUMBER. Indicate the number(s) of the National Register nomination(s) as provided by the Archeology Branch in its appropriate nomination category (INDIVIDUAL, DISTRICT, MULTIPLE RESOURCE, or THEMATIC). Note that a given site may have more than one National Register Number denoting multiple nominations. For example, a site could have been nominated as an individual site, later nominated as part of an archeological district, and later as part of a thematic nomination.

87. REGISTER SIGNIFICANCE. Input proper code as listed below for significance based on National Register of Historic Places criteria.

- Ø Unassessed
- 1 Local
- 2 Regional
- 3 Statewide
- 4 National
- 9 Not presently eligible

88. EXPLAIN (register significance). Explain the reasons for this site's register significance (if any).

91. ADDITIONAL REMARKS. Use this space to make any comments, additional recommendations, or to relate ideas about this site.

92. OWNER AND/OR TENANT OF SITE AND ADDRESS. Using the codes provided below indicate if the owner of the site is known. If known, list the owner and/or tenant of the site and their addresses in the space provided.

- 1 Owner known and listed in the space provided
- 2 Owner unknown

93. LOCAL CONTACT AND ADDRESS. List amateur, collector, or interested person who informed archeologist of the site's existence.

94. PREVIOUS COLLECTION OR EXCAVATION REFERENCES. Note here, if available, references to reports, names of investigators, etc., where further information on the site may be found for collections as well as excavations.

95. BIBLIOGRAPHIC REFERENCES. Indicate appropriate code for the existence of bibliographic information on the site. LIST the bibliographic information in the space provided (if any).

References

- Ø Not recorded
- 1 Yes
- 2 No

96. FREE FIELD COMMENT. One-hundred-and-five spaces are provided for the archeologist to indicate additional information about the site that should be stored in the computer, but has not been previously covered in the computerized portion of this form. This could include verbal comments or contain further variables about the site (e.g. ceramic counts and/or weights). If you need further information about using this comment field, contact the Archeology Branch.

NORTH CAROLINA PREHISTORIC ARCHEOLOGICAL SITE FORM

ARCHEOLOGY BRANCH/N. C. ARCHIVES AND HISTORY

HANDBOOK CODE NO.

1. ARCHEOLOGY BRANCH COMPUTER RECORD |_|_|_|_|_|_|_|_|_|_| 1 10
2. UNC SITE NO. |_|_|_|_|_|_|_|_| 11 18
3. OTHER SITE NO. |_|_|_|_|_|_|_|_| 19 26 4. INSTITUTION ASSIGNING NO. |_|_| 27 28
5. PROJECT SITE NO. |_|_|_|_|_|_|_|_| 29 36
6. DATE RECORDED IN FIELD MONTH |_|_| 37 38 DAY |_|_| 39 40 YEAR |_|_| 41 42
7. CODING DATE MONTH |_|_| 43 44 DAY |_|_| 45 46 YEAR |_|_| 47 48
8. ADDITIONAL VISITS ____________
9. ORIGINAL RECORDER (IN FIELD) ____________
10. FORM RECORDER ____________
11. SITE NAME ____________
12. OTHER SITE NAME ____________
13. COUNTY |_|_| 49 50 NAME ____________
14. QUAD MAP USED |_|_|_| 51 53 QUAD NAME ____________
15. UTM DATA ZONE |_|_| 54 55 NORTHING |_|_|_|_|_|_|_| 56 62 EASTING |_|_|_|_|_|_| 63 68
16. OTHER COORDINATES ____________
17. AERIAL PHOTO NUMBER |_|_|_|_|_|_|_|_|_|_|_|_|_|_|_| 69 75 83
18. NAME OF PHOTO AGENCY ____________
19. PROJECT NAME AND PRINCIPAL INVESTIGATOR ____________

____

20. DIRECTIONS FOR REACHING SITE ____________

____

____

____

Page 2
NCPASF
SITE NO. ____________

21. DRAW A SKETCH MAP OF THE SITE - INDICATE WHERE THE UTM READING WAS TAKEN IN RELATION TO THE REST OF THE SITE.

SCALE ____________ RECORDER ____________

(PLEASE INCLUDE A NORTH ARROW)

ENVIRONMENTAL SETTING

22. TOPOGRAPHIC SITUATION |_|_| 84 85 OTHER ____________

IF STREAM CONFLUENCE, NOTE STREAM RANKS |_|_| 86 87 |_|_| 88 89

23. DESCRIPTION OF TOPOGRAPHY ____________

____

____

____

24. SOIL COMPOSITION (SCS TYPOLOGY) |_|_| 90 91 OTHER ____________
25. SOIL TYPE ABBREVIATION |_|_|_|_| 92 95 SERIES NAME ____________

ASSOCIATION NAME ____________

26. DESCRIPTION OF SOIL COMPOSITION ____________

____

Page 3
NCPASF
SITE NO. ____

27. MODERN VEGETATION |__|__| OTHER ____
96 97

28. ELEVATION OF SITE |__|__|__|__|__| FT. OR |__|__|__|__|__| METERS ABOVE MSL
98 102 103 107

29. SLOPE OF SITE |__|__| PERCENT OR |__|__| DEGREES GRAD
108 109 110 111

HOW DETERMINED? ____

30. SLOPE FACE DIRECTION |__|
112

31. TYPE OF NEAREST PERMANENT WATER |__| OTHER ____ NAME: ____
113

32. STREAM RANK |__|__| SCALE OF MAP USED 1: |__|__|__|__|__|
114 115 116 120

33. DISTANCE OF NEAREST PERMANENT WATER TO SITE |__|__|__|__|__| METERS
121 125

34. ELEVATION OF NEAREST PERMANENT WATER |__|__|__|__|__| FT. OR |__|__|__|__|__| M ABOVE MSL
126 130 131 135

35. TYPE OF 2ND NEAREST WATER |__| OTHER ____ NAME: ____
136

36. STREAM RANK |__|__| SCALE OF MAP USED 1: |__|__|__|__|__|
137 138 139 143

37. DISTANCE OF 2ND NEAREST WATER TO SITE |__|__|__|__|__| METERS
144 148

38. ELEVATION OF 2ND NEAREST WATER |__|__|__|__|__| FT. OR |__|__|__|__|__| M ABOVE MSL
149 153 154 158

SITE DESCRIPTION

39. SITE DEFINITION |__| (IF HISTORIC, USE HISTORIC SITE OR HISTORIC STRUCTURES FORM)
159

40. EXPLANATION FOR DEFINITION ____

41. CULTURAL AFFILIATION (IN ORDER OF INTENSITY) |__| |__| |__| |__| |__|
160 161 162 163 164

42. EXPLANATION ____

43. GENERALIZED SITE FUNCTION |__| |__| OTHER ____
165 166

44. EXPLANATION ____

45. ESTIMATION OF SITE SIZE: CORE AREA |__| MAXIMUM MATERIAL DISPERSION |__|
167 168

Page 4
NCPASF
SITE NO. ____

46. DESCRIPTION OF SITE SIZE, SHAPE, AND FUNCTION ____

47. MIDDEN CHARACTER |__| 48. DESCRIPTION OF MIDDEN CHARACTERISTICS ____
169

49. PRESERVATION POTENTIAL |__| 50. PRESENCE OF FAUNAL MATERIAL |__|
170 171

51. DESCRIPTION OF ASSOCIATED FEATURES ____

52. SITE CONDITION: ENVIRONMENTAL FACTORS |__|__|
172 173

OTHER ____

53. DESCRIPTION OF ENVIRONMENTAL FACTORS ____

54. SITE CONDITION: ARTIFICIAL FACTORS |__|__|
174 175

OTHER ____

55. DESCRIPTION OF ARTIFICIAL FACTORS ____

56. IF CULTIVATED, ESTIMATED NUMBER OF YEARS |__|__|__| 57. ESTIMATED GROUND VISIBILITY |__|__|__| PERCENT
176 178 179 181

58. COLLECTION MADE? |__| 59. COLLECTION STRATEGY |__|
182 183

60. AREA COVERED IN CONTROLLED COLLECTION |__|__|__|__|__| M²
184 188

61. PERCENT OF SITE COVERED IN CONTROLLED COLLECTION |__|__|__| PERCENT
189 191

62. DESCRIPTION OF COLLECTION PROCEDURES AND POSSIBLE BIASES ____

63. SUBSURFACE TESTS |__| 64. METHODS EMPLOYED |__| |__| OTHER ____
192 193 194

65. DESCRIPTION OF SUBSURFACE TEST RESULTS ____

66. DESCRIPTION OF ARTIFACTS COLLECTED ____

NCPASF
SITE NO. ______

67. CHIPPED STONE |__| 195 68. CERAMICS |__| 196 69. GROUND STONE |__| 197 70. DAUB |__| 198

71. HISTORIC MATERIALS |__| 199

72. INSTITUTION AT WHICH SITE RECORDS AND ARTIFACTS ARE STORED |__|__| 200 201

OTHER ______

73. ACCESSION NUMBER |__|__|__|__|__|__|__|__|__|__|__|__| 202 207 213

74. PREVIOUS INSTITUTION AT WHICH SITE RECORDS AND ARTIFACTS WERE STORED |__|__| 214 215

OTHER ______

75. PREVIOUS COLLECTION ACCESSION NUMBER |__|__|__|__|__|__|__|__|__|__|__|__| 216 221 227

76. ADDITIONAL COLLECTION REFERENCES ______

77. PHOTOGRAPHS TAKEN |__| 228

78. PHOTOGRAPH ACCESSION NUMBER |__|__|__|__|__|__|__|__|__|__|__|__| 229 235 240 TO

|__|__|__|__|__|__|__|__|__|__|__|__| 241 246 252

EVALUATION

79. RESEARCH POTENTIAL ______

80. POTENTIAL IMPACTS ON SITE: ENVIRONMENTAL |__| 253

81. EXPLAIN ______

82. POTENTIAL IMPACTS ON SITE: ARTIFICIAL |__| 254

83. EXPLAIN ______

84. RECOMMENDATIONS |__|__| 255 256 OTHER ______

85. EXPLAIN ______

NCPASF
SITE NO. ______

86. NATIONAL REGISTER STATUS:
SUGGESTED TO BE NOMINATED: MONTH |__|__| 257 258 DAY |__|__| 259 260 YEAR |__|__| 261 262

PLACED ON STUDY LIST: MONTH |__|__| 263 264 DAY |__|__| 265 266 YEAR |__|__| 267 268

NOMINATED TO REGISTER: MONTH |__|__| 269 270 DAY |__|__| 271 272 YEAR |__|__| 273 274

PLACED ON REGISTER: MONTH |__|__| 275 276 DAY |__|__| 277 278 YEAR |__|__| 279 280

87. REGISTER SIGNIFICANCE |__| 281 88. EXPLAIN ______

89. LOCAL HISTORIC PROPERTIES COMMISSION:
NAME OF COMMISSION ______

90. STATUS WITH LOCAL PROPERTIES COMMISSION |__| 282

91. ADDITIONAL REMARKS ______

92. OWNER AND/OR TENANT OF SITE AND ADDRESS ______

93. LOCAL CONTACT AND ADDRESS ______

94. PREVIOUS COLLECTION OR EXCAVATION REFERENCES ______

95. BIBLIOGRAPHIC REFERENCES |__| 283 LIST ______

96. FREE FIELD COMMENT |__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__| 284 290 299

|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__| 300 310 320

|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__| 322 330 340 343

|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__| 344 350 360 365

|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__| 366 370 380 388