ARCHAEOLOGICAL INQUIRY AND ARCHAEOLOGICAL PRESERVATION IN ROBBINS SWAMP, CANAAN, CONNECTICUT

MANUSCRIPT SERIES OF THE RESEARCH DEPARTMENT

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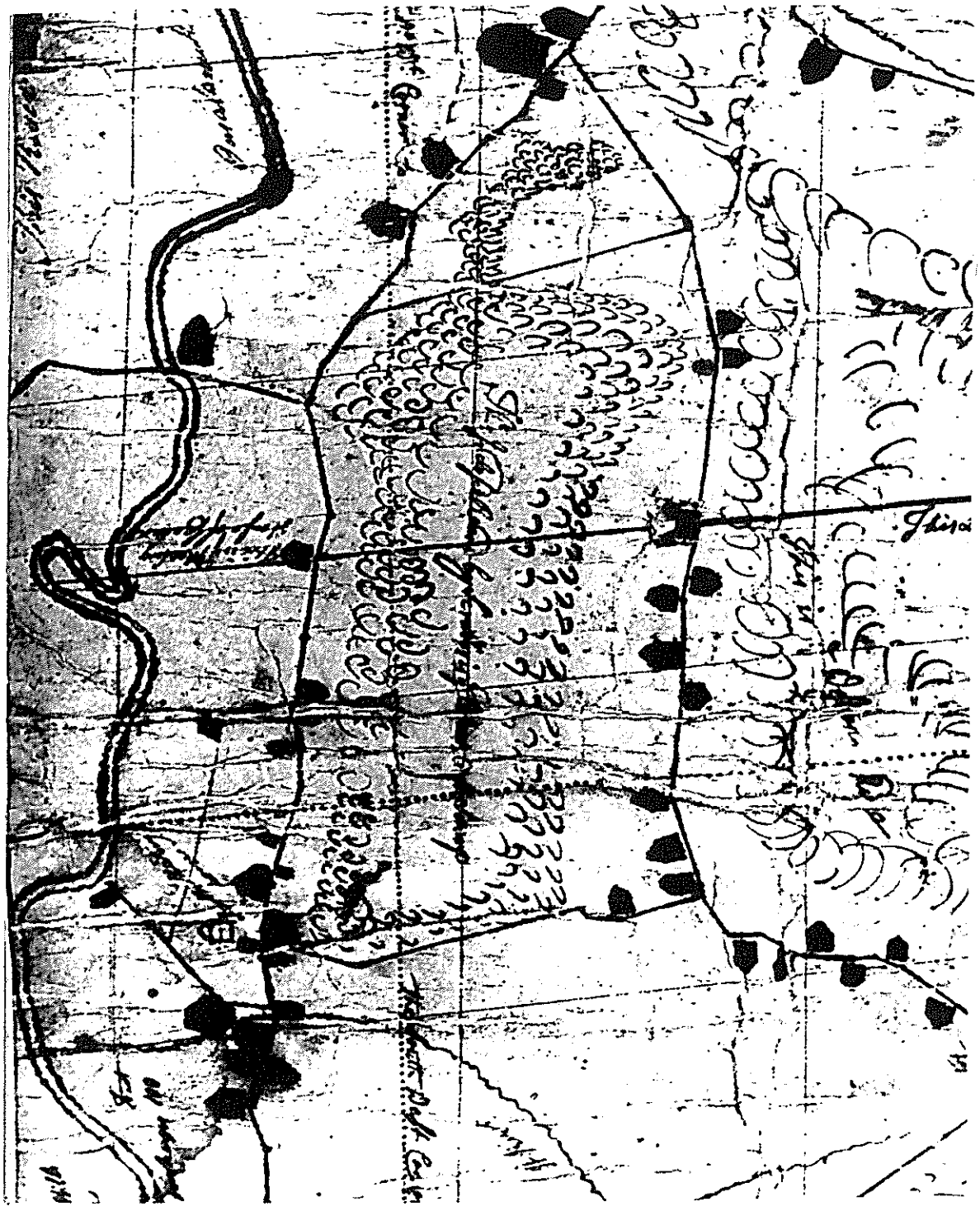

Frontispiece: Historic Map, ca. 1790 A.D., of the northern half of Robbins Swamp. Housatonic River flows at the left edge, Canaan Mountain is along the right.

I. ABSTRACT

Archaeological research in the Eastern United States is on the verge of a second theoretical revolution. Archaeologists are beginning to conceptualize and study prehistoric adaptation as they never have before. Some of this change reflects new knowledge about the climatic history of the Holocene period, the last 12,000 years. Traditionally it has been assumed that modern patterns of climate and vegetation appeared soon after 9000 B.P. However Holocene climatic history is now characterized as a complicated series of fluctuations which continue even today. Alterations in rainfall, annual temperature range, length of growing season, and other climatic variables are known to be reversible and of differing and non-repetitive durations. Such climatic variability would be represented by changing distributions of surface water, vegetation cover, and other resources.

In the distant past this history of environmental fluctuations and periods of stress would have been thought about, ignored or responded to, and either actively shaped or passively received. *All of these processes of adaptation should be reflected in regional archaeological records and can be studied by archaeologists.*

During 1982 field crews from the Institute's Research Department began a study of Holocene environmental history and adaptation in northern Litchfield County. With the support of a matching grant-in-aid from the Connecticut Historical Commission, the archaeological and paleoecological record of a large Holocene wetland, Robbins Swamp, was investigated. Data from 12 weeks of research demonstrated that the prehistoric archaeological record of Robbins Swamp is long (a 9000-year continuum), abundant (more than 24 new sites were recorded), and well preserved. Excavations within the valley of Wangum Lake Brook, a segment of the Swamp, revealed that an extensive paleoecological record also exists including buried land surfaces and swamps, preserved organic mats and bogs, and a series of lacustrine beds representing a late glacial and postglacial lake.

Both of these data sets suggest that a Holocene history of Robbins Swamp could be written and that the extent, contents, and structure of this wetland would and did vary as a response to climatic cycles. More importantly the archaeological record also exhibits both spatial and temporal variability, reflective of 10,000 years of adaptation. *Together the archaeology and paleoecology of Robbins Swamp offer us the opportunity to reinvent the discipline's interpretive models for Holocene adaptation, to redesign how problem-oriented research in southern New England can be implemented, and to understand how everyday life in the distant past was conceptualized and enacted.*

The important prehistoric archaeological record adjacent to Robbins Swamp is largely intact and well preserved. Some of the basin's northern localities have been disturbed by industrial construction, particularly near the center village of Canaan. Other sites were probably lost because of residential development along the Swamp's northwestern edge. Most of the research area is zoned for a low density, residential use so large-scale disturbance has been minimized

for the future. However some loss of prehistoric resources can be expected including sites along the high kames adjacent to Under Mountain Road and Route 7. An important complex of sites is owned by the State of Connecticut near the terminus of the Hollenbeck River; this complex should be protected from future development.

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II. INTRODUCTION

It has been more than two decades since Lewis R. Binford first published "Archaeology as Anthropology" and began to transform American archaeology into a theoretical discipline. In retrospect all of Binford's theoretics and conceptual insights were grounded upon a rather simple proposition:

> *The archaeological record is at best a static pattern of associations and covariations among things distributed in space. Giving meaning to these contemporary patterns is dependent upon an understanding of the processes which operated to bring such patterning into existence. Thus, in order to carry out the task of the archaeologist, we must have a sophisticated knowledge and understanding of the dynamics of cultural adaptations, for it is from such dynamics that the statics which we observe arise (Binford 1980:4, emphasis mine).*

This statement is probably the most elegant summary of modern archaeological inquiry which has ever been written. It provides an explicit framework for analysis, interpretation, and explanation by constructing separations between the dead and inert archaeological record, past behavioral processes which were dynamic and somehow reflected in any record, and archaeologists who were contemporary observers attempting to make sense of both these worlds. Archaeological research became a quest for meaning, organized as an explicitly scientific pursuit whose purpose was the decoding of inobvious patterns preserved in a variety of records. Out of this primal insight grew a completely different archaeology which was new, more interesting to read and do, and anthropological.

However Binford's fundamental proposition accomplished more than "simply" transforming a discipline. *It changed archaeologists themselves for it implied that archaeological inquiry was neither natural nor neutral.* The separations constructed between the record, everyday life in the past, and archaeological study forced us to realize that our observations were always reflective of the sorts of questions that we asked. As these questions changed so did our recognition of the patterns which could be isolated and interpreted. Thus there is no single set of patterns in any archaeological record which can be expected to emerge naturally with enough analysis.

Rather the patterns themselves depend upon the questions asked and their recognition and exploration suggests that archaeologists should use observations to evaluate ideas about how and why archaeological records exhibit the forms they do:

> *One does not build theory by accumulating universal facts or empirical generalizations, no matter how complex they may be. This is not to say that knowledge of such empirical relationships or forms*

> *of patterning may not be useful, but that their utility can be evaluated only with regard to (a) the degree to which they serve to inspire questions as to why the world is the way it appears to be and (b) the degree to which they may be useful in arguments of relevance attempting to relate concepts of theoretical interest to facts of the empirical world (Binford 1977:5).*

The production of archaeological knowledge was not only dependent upon an explicit differentiation of modern observations from past behavioral processes but was also ordered as a movement from processual theory through concepts and methods to the level of empirical facts isolated in the prehistoric or historic record. From this perspective archaeological inquiry was not composed or enacted as discovery but was structured as a process of scientific evaluation.

Most of the archaeological writing which has appeared since 1962 has explored this analytical system either through acceptance, understanding, and use or more often through misunderstanding and abuse. Less effort has been expended in exploring the issue of *theoretical neutrality*. Here the focus is not the connection between observations and ideas about the past but the relation between these ideas and concepts and the society which nurtures archaeology itself. Once it is realized that the archaeological record reflects behavior, it is entirely logical to think that archaeological inquiry is also a reflection. What it reflects is modern society's premises about everyday life, the past and the present, economy and work, and time, history, and wealth, among other taken-for-granteds.

These premises determine how we study the past. The ideas we would like to evaluate, the analytical tools we use to conduct our investigations, the terms employed to communicate our findings: all of these are formulated through the categories which order the present world and its relationship to the past. Often the present world (modern archaeology) creates the past in its own image, thereby homogenizing history and demonstrating that the past is just like the present. This sort of validation destroys the past by removing the comparative dimension which it might offer. More importantly the equivalence of the present and the past provides substantive support for patterns of life which are being enacted in the present, patterns which can be about domination, exploitation, and alienation (Handsman 1983a:2-5; Leone 1981, 1982:750-753; Schrire 1980). Thus the myth or contemporary belief in theoretical neutrality is now being exposed as was the earlier tenet of a "natural system" of archaeological inquiry. Both of these insights grow out of Binford's work although Binford himself has sometimes mischaracterized the latter and always ignored the former.

Archaeological Histories: A Theoretical Agenda at the Institute

The realization that archaeological knowledge was neither natural nor neutral does not mean that the past cannot or should not be studied. However it does suggest that knowledge of the past must be acquired by archaeologists who are more conscious of their world, their discipline, and their lives and the effects that each of these has upon their work. In the same way archaeologists need to be aware of how their interpretations help to determine how everyday life in the modern world is constructed and enacted. While puzzling and unfamiliar, this simultaneity can be used to organize and carry out archaeological inquiry which employs and extends the propositions first articulated by Lewis Binford.

Several of the research projects conducted at the American Indian Archaeological Institute since 1978 have begun with the idea that archaeology should be composed and written around a redefinition of the relation between the present and the past. We began with the premises that the past was not necessarily a duplicate of the present and that the past did not necessarily merge with the present even if enough time had elapsed. The point was to hold the present separate from the past in order to discover whether people's lives in the historic or prehistoric eras were completely different from our own. As these projects continued, the methods and interpretations associated with them became more familiar so we were able to recognize that a new perspective was emerging. While still young, uneven, and experimental, this simultaneous perspective is now called *the writing of archaeological histories* (Handsman 1983a).

Such an orientation means that two worlds are being examined. One is familiar, modern, and ours and is available through an inspection of things which are close and immediate (see Handsman 1980a, 1983b). The other world is more remote and organized through a cultural order which is unique and unknown. No matter what one calls them, archaeological histories are characterized by three approaches (Handsman 1983a):

1. *An exploration of the modern process of projection in which the past is made into a duplicate of the present. Often this process results in a mystification of history and the real conditions and conflicts of modern existence are hidden from view (Althusser 1971). When the past is made like the present we are fooled into thinking that our lives can be no different, that our lives will always be this way, and that our lives have always been this way (Leone 1981).*

2. *A discovery of how some premodern and prehistoric pasts were constructed as cultures and societies whose premises were not capitalist. Complete understandings of such times and places are often not possible but our work can offer sketches or glimpses of them.*

3. *An examination of the historical emergence of modern everyday life. These studies will be focused on the premises and categories characteristic of 19th century industrialization and capitalism (Handsman 1981).*

For more than half a decade my research at the AIAI has been attempting to explore each of these approaches. Some of what has been written can be identified as archaeological histories and includes studies of pre-modern kinship and settlement (Handsman 1980b), 19th century urbanization and the transformation of everyday life (Handsman 1981), the momentary emergence of a modern economy and society in the center village of Goshen (Handsman 1982a), and the separation of the individual in 19th century Litchfield County (Handsman 1983c).

This research has focused upon the recent past of northwestern Connecticut during the period between 1750 and 1930, when aspects of Litchfield County's landscape became modern, industrialized, and capitalist. Prehistory was ignored, not because we were not interested - much research was accomplished which was prehistoric in its focus and methods - but because it was thought that archaeological histories of the distant past could not be written:

> *Prehistorians have no documents to read and no one to talk with who has any real connection to the prehistoric past. The distant past is mute, it is inert, and the only way to bring it back to life is by changing it into a mirror image of ourselves (Handsman 1980b:4).*

In retrospect this assessment might have been too pessimistic, which is a nice way of saying that I was wrong. Since early 1982 we have been attempting to determine whether the distant past can be approached critically from the modern world. *Is it possible to discover glimpses of everyday life in prehistoric times which reveal how separate that world was from ours? Can we study prehistoric processes of adaptation and write histories of them without transposing ourselves into that time and place?*

What This Report Does

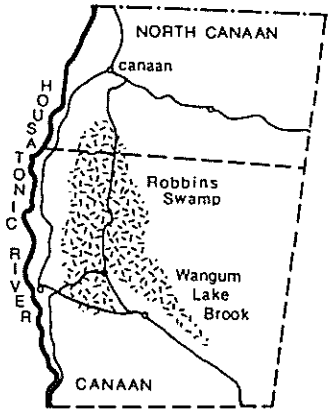
During 1982 we began to explore prehistoric, Holocene adaptation or the categories and processes of everyday life which were enacted during the last 12,000 years. Using a Survey and Planning Grant from the Connecticut Historical Commission, this work focused upon Robbins Swamp, a large freshwater wetland located in the Town of Canaan in the northern end of Litchfield County (Frontispiece, Figure 1).

One of our goals was to document the Holocene environmental record of the Swamp itself and its associated drainage basin. We know that there has been some significant climatic variability during this period and that the changes in temperature range and rainfall must have caused modifications to the extent and form of the Swamp as well as to other environmental features (Handsman 1982b, 1983a).

This complicated history of environmental fluctuations and periods of stress would have been thought about by prehistoric populations, ignored or responded to, and either actively shaped or passively received. *All of these adaptive processes should be represented in the Swamp's*

LOCATION OF

RESEARCH AREA



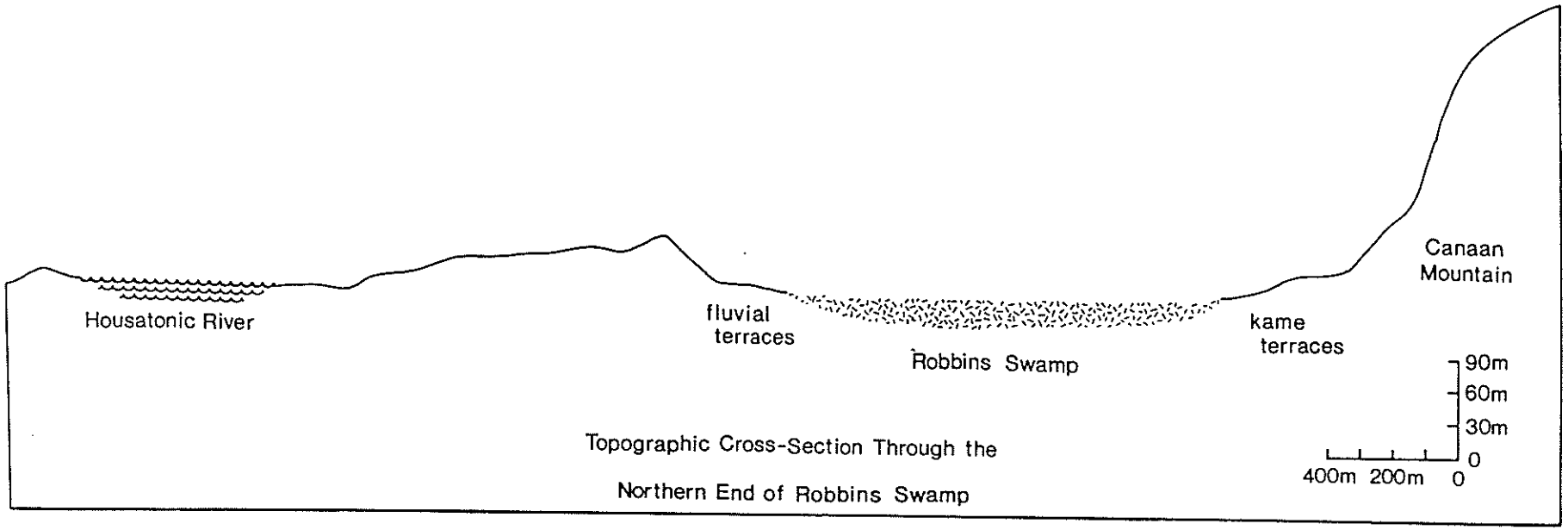


Figure 1: Location and Topographic Cross-section of Robbins Swamp. This swamp is one of the largest freshwater wetlands in southern New England and has been a focus for prehistoric occupation and use since the Early Holocene.

archaeological record and can be studied by archaeologists. Therefore part of our interest is to examine the linkages between climatic variability, environmental fluctuations, and prehistoric behavior. We are convinced that the form of any specific linkage at any moment in the distant past could vary from a strict determinism (*Behavior Varies as Environment*), to a looser possibilism (*Behavior Varies as Environment but Not Entirely*), or may even be represented by no structure at all (*Behavior Varies but Not as a Function of Environment*).

Examining this sort of linkage between behavior and nature is only one aspect of this critical study of American archaeology's theory of prehistoric adaptation. There are at least two other theoretical questions whose evaluation will produce important insights:

1. *Is everyday life in the prehistoric past always conceptualized and enacted as a rational, economic, and practical order? For two decades archaeologists have believed that the entrepreneurial logic of 20th century America is also the logic of prehistoric hunters-and-gatherers. Our analyses and interpretations of the distant past have worked through this modern premise so we have never been able to discover whether exceptions once existed or if the premise itself has anything at all to do with premodern societies.*

2. *Does a sequence of Holocene adaptations exhibit a history of behavioral strategies which are increasingly efficient or specialized or more complex? That is, will a history of prehistoric adaptation represent some sort of evolutionary path so that the past will eventually merge naturally with the present?*

Each of these is a traditional expectation and the posing of these questions suggests that the current model of prehistoric adaptation has been rejected. In its place we have substituted a theory which, as it is worked out over the next few years, will modify the structures and premises of contemporary archaeological inquiry (Carbone 1982, Handsman 1982c, Kohl 1981).

During the late spring of 1981 a proposal was prepared and submitted to the Connecticut Historical Commission which requested a grant-in-aid to help support a study of "Prehistoric Climatic Variability and Archaeological Structures in Northern Litchfield County." Notification of a grant award was received in late February of 1982; funding agreements were written and signed by late spring and fieldwork was begun in June. During the summer and fall of 1982, 12 weeks of research were undertaken on tracts within and adjacent to Robbins Swamp. Twenty-four properties were studied and excavations were conducted at 5 sites.

A preliminary report of our work was prepared in November of 1982. This report was then revised, rewritten, and illustrated and appeared in the spring of 1983 as a substantive article, "Towards Archaeological Histories of Robbins Swamp" (Handsman 1983a). The article provides an interpretive summary of our work by tracing the connections between the recent prehistoric investigations and earlier studies of the 18th and

19th centuries. The purpose of the article is to introduce the idea of archaeological histories and through it the premise that the relationship between the present and the past is neither given nor universal. Once this premise is understood and accepted then archaeological studies of prehistoric everyday life and adaptation will need to be renovated. Some of the implications of such theoretical activity are traced including the relationship between archaeology and contemporary Native Americans, the promise of a structuralist approach, and the problems associated with doing an archaeology of taken-for-granteds (Handsman 1983a).

Thoughts and ideas more closely related to our work in Robbins Swamp are woven throughout the article and the critical perspectives introduced there are used to focus and organize the interpretations. More specific discussions of our findings also appear including an initial summary of the prehistoric archaeology of Robbins Swamp and some conjectures about the area's Holocene environmental history.

The purpose of this report is to extend and clarify aspects of this substantive article, particularly those related to our research design, archaeological findings, and delineation of future problems and work. Some of this discussion duplicates material in "Towards Archaeological Histories. . . ." One section here, the last on prospects for archaeological preservation, is entirely new. The report and the article are meant to be independent pieces; together they provide the best sense of the first year's work and how this project and related ones will continue. Additional information and documentation associated with this project has already been submitted to the Connecticut Historical Commission. These data include inventory forms for the newly-discovered sites and two mylar maps.

Acknowledgements

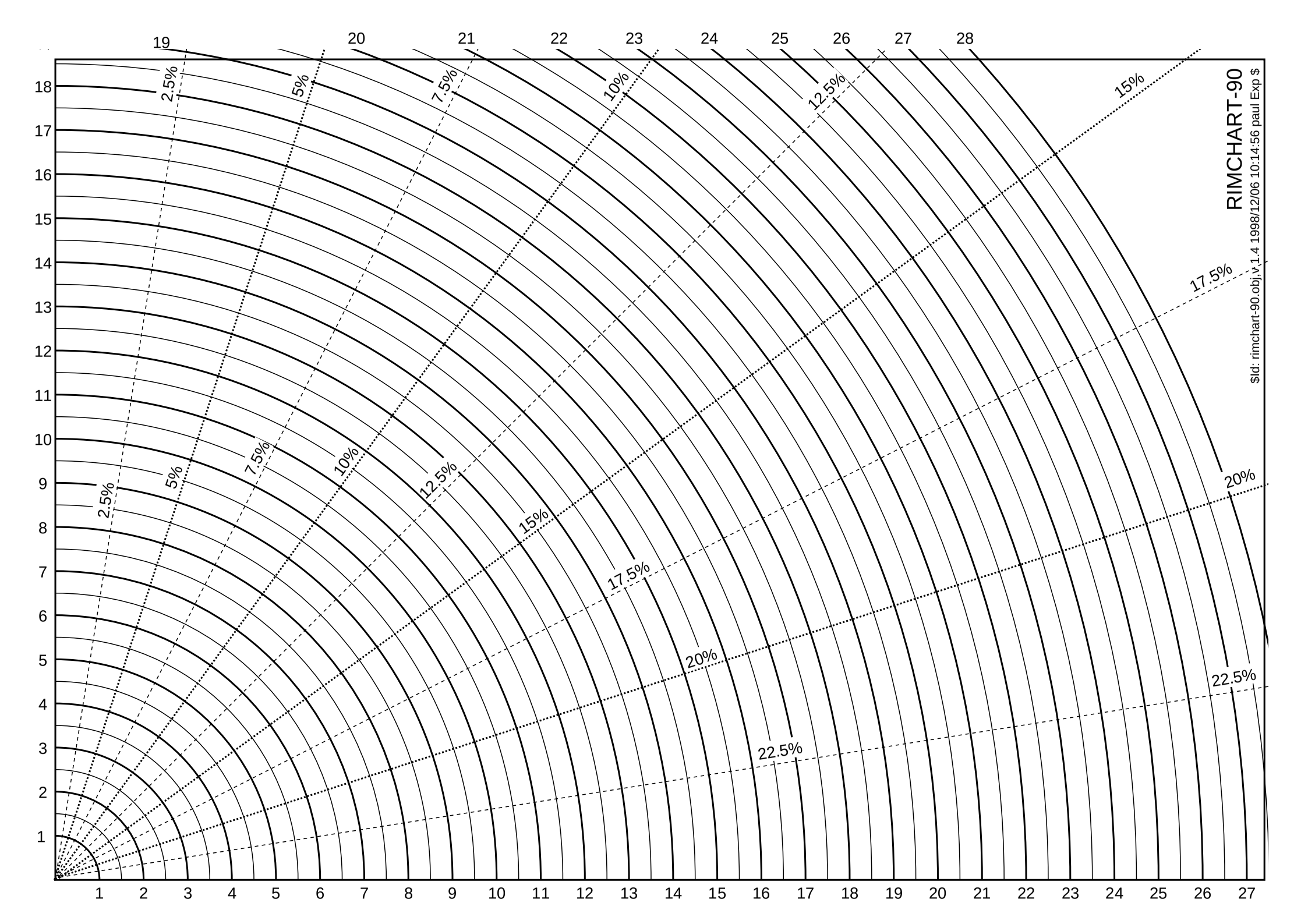
Much of the fieldwork, analysis, and interpretation contained in this report was financed by a Survey and Planning Grant of $9000 which the Institute received from the Connecticut Historical Commission. These monies were made available with the assistance of a matching grant-in-aid from the U.S. Department of the Interior through the Commission, under the provisions of the National Historic Preservation Act of 1966. Additional financial support was received from the "Friends of Research," a group of individuals who provide funds to support the studies of the AIAI's Research Department.

Several staff members of the Connecticut Historical Commission helped to administer this grant; we are grateful to Dave Poirier for his patience and interest and to Duarte Alves for his efforts.

Some of the inspiration and effort involved in this article and in the initial study of Robbins Swamp has been supplied by Roberta Hampton. She knows more than she is willing to acknowledge and has been an able colleague who has helped me to extend the original concept of archaeological histories. Roberta also drew most of the illustrations used here. Both of us enjoyed working with a competent field crew who were

sometimes interested in talking theory. Our thanks to Leslie Bennett, Mike Bowe, Adam Burnett, Jerry Geci, David Hofstatter, Bobbe Kerr, Bonnie Sheldon, Helen Starwalker, and Gordon "I'm not singing folksongs" Whitbeck. Mr. Raymond Upson of Woodbury was a dedicated volunteer who helped more than he knows.

Ann McMullen helped to organize the artifacts and other recovered materials and completed the final catalog for the Institute. Ting Moore aided my studies of property boundaries and ownership. We are grateful to the property owners who allowed us to study their land and hope we can continue to work together. Susan Payne and Peggy Dutton were patient and supportive and edited the manuscript for publication in Artifacts. Their efforts are most appreciated.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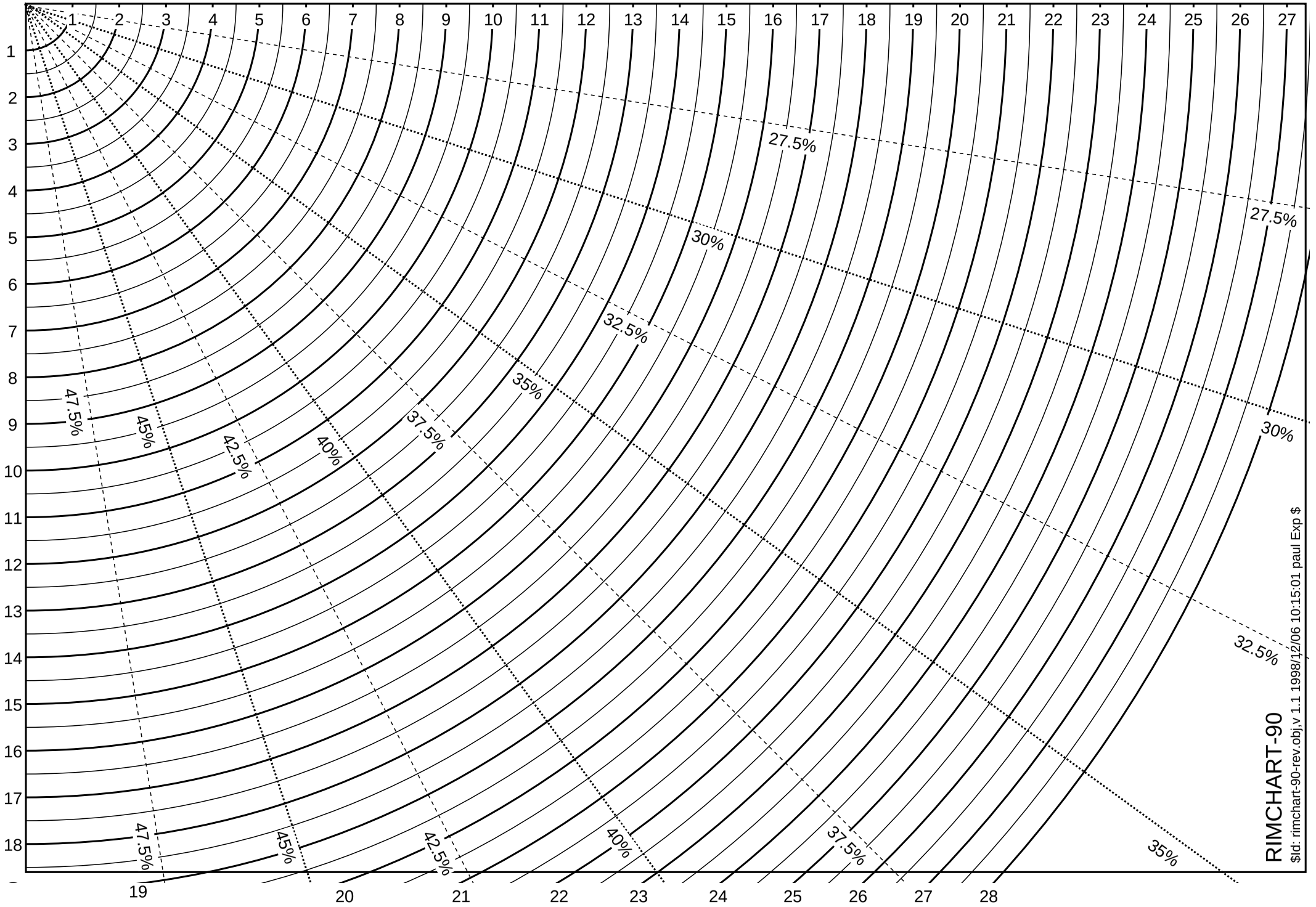
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III. REINVENTING PREHISTORIC ADAPTATION: A THEORETICAL PREMISE AND SOME RESEARCH HINTS

Unlike other areas in the New World, the northeastern United States does not have an archaeology characterized by the presence of monumental sites or the eventual appearance of complex, urban societies. For most of its 12,000-year continuum, the prehistory of southern New England is a record of hunting-and-gathering populations whose behavior was largely a matter of adaptation. In some sense the archaeological column of New England is more like the Paleolithic of the Old World and is not all that comparable to the later prehistoric sequences in either the southeastern or southwestern United States.

Given the sort of behavioral landscape which we know to have existed during the Holocene, it is perplexing that the anthropological archaeology of prehistoric adaptation has not been altered very much since William A. Ritchie's pioneering efforts in the 1950's and early 1960's. As Dean Snow's (1981) recent overview suggests, the archaeological conceptualization of prehistoric adaptation in southern New England persists in being too empirical and typically non-theoretical, remains overly dependent upon forgotten and useless ecological concepts, and continues to be more ethnographic than anything else.

The shortcomings and dilemmas are two. First is the epistemological failure to recognize the significance of constructing archaeological knowledge by encompassing activity or behavior within theory. Archaeologists have known for some time that the archaeological record was about behavior and reflective of everyday life. Yet we continue to attempt to build our ideas about past processes literally from the ground up. Even though some of the patterns which have been isolated may be about prehistoric behavior, little understanding has been achieved about how these units are reflective of or related to questions about why the world and people's lives were organized as they appear to have been (Binford 1977, 1980, 1982; Handsman 1982c).

Secondly, our theory or interpretive model for adaptation is inadequate and needs to be reinvented, particularly within the context provided by recent paleoenvironmental research as well as ecological theoretics (Carbone 1982, Dincauze 1981). The solutions to each of these dilemmas require a radical rethinking of archaeology's general theories of adaptation. From this perspective will emerge a new version of hunter-and-gatherer culture and society in the distant past and the opportunity to escape from the dilemma posed by the "singularity of prehistoric adaptation" (Handsman 1983a:5-6).

The Problem of Singularity and How It Might Be Resolved

With few exceptions prehistoric adaptation in southern New England has been thought as either a summary of recovered foods or a practical order which determined the form of specific lifeways as well as the developmental history of the Holocene period (Handsman 1982c). In the first instance adaptation becomes a matter of subsistence and is described as lists of eatens.

For example William A. Ritchie's (1969) study of the coastal economy of Martha's Vineyard identifies an increasing familiarity with and technological competence to gather new food species. The archaeological record of the Vineyard may contain such patterns but the empirical generalizations founded upon them are neither theoretical nor processual; in fact they are not even about adaptation. By the time Ritchie is finished we know what people ate but have no idea about how they organized themselves and their sense of Holocene environmental space, structure, and history to acquire what they ate. So adaptation becomes economy and economy is synonymous with food.

When the archaeological record of prehistoric adaptation was studied as settlements, behavior was conceptualized as an ordered, consistent, and systematic structure. However the reconstructions of lifeways produced by a settlement archaeology were founded upon a particular, often implicit, theory of adaptation.[1] This theory mistakenly conceived of adaptation as a singular, logical structure and process. *That is, prehistoric strategies for subsistence and economy were formulated as a modern, capitalist ideology, always rational, calculating, formalist rather than substantive, opportunistic, and constantly evolving.* It was believed that any prehistoric adaptive logic had always been practical and was never constructed as a cultural order (Sahlins 1976).

This model for adaptation (which really is no theory at all but an empirical generalization) not only reflected basic premises for everyday life but also determined how archaeologists thought about the principles and structures of prehistoric social and economic organization. Rather than acknowledging that strikingly different structural systems could be adopted by any population - Binford (1980) identifies two of these as *foraging* and *collecting* - it was believed that organizational principles were defined primarily by sex, age, and perhaps status.

Once Binford (1980, 1982) suggested that prehistoric adaptation was neither a singular process nor a unique response or pattern, archaeological studies of hunters-and-gatherers were transformed into theoretical undertakings. Thus this conscious reinvention offers archaeologists in southern New England the opportunity to escape from the dilemma of singularity through the exploration of several newly-recognized facets of prehistoric adaptation.

For example Binford's (1980, 1982) differentiation of a foraging from a collecting strategy demonstrates that specific populations could and did organize themselves, their lives, and their use of an identical environmental structure history in remarkably different ways. While no archaeologist yet has developed an adequate theory of Holocene adaptation, Binford's ethnoarchaeological studies (1980, 1982) reveal that dissimilar processes and strategies would be reflected by dissimilar, yet recognizable, patterns in the archaeological record. Some of these patterns must be explored at the analytical scale known as the site, some are more regional in size, and still others are not referrable to any sort of geographical space. Thus contemporary archaeologists are redefining the utility and applicability of rather traditional interpretive units including settlement, occupation floor, and even base camp (Binford 1982).

At the same time the reinvention of a general theory of adaptation has prompted us to reconsider how prehistoric behavior might have been conceptualized and enacted. Now it is admitted that everyday life may have been exceedingly non-redundant, that from one day to the next for some unspecified period of time, particular groups did not organize themselves and their tasks in constant forms. The archaeological record of such an adaptive pose would not be patterned, consistent, or systematic; it would not even be arranged and would look more like a heap than anything else. Recent studies suggest that such non-redundant poses might be preserved in archaeological records associated with the Transitional period, ca. 3000 B.P. (Handsman 1982d).

The realization that the structure of everyday life could be non-redundant or that adaptive strategies were varied and diverse also motivated archaeologists to rethink the longer-term perspective of Holocene adaptation. At least two generations of prehistorians in southern New England have explored the history of Holocene adaptation as if it were an irreversible, constantly developing, slowly evolving process culminating before 2000 B.P. with the appearance of what Joseph Caldwell (1958) called "primary forest efficiency."[2]

As Caldwell (and later Ritchie) suggested, the development of primary forest efficiency represented a gradual process of learning, enacted by prehistoric populations within the context of a predictable, stable, and recurrent environmental history. So the long-term or evolutionary model was founded upon a traditional perspective of environmental change and history as well as an assumption of systematic and increasingly efficient behavior. However Holocene climatic history is now being rethought as a complicated series of fluctuations which continue even today. Such fluctuations sometimes would have resulted in the appearance of different environmental structures or regional habitats characterized by changed environmental grains (Handsman 1983a). All of this variability suggests that Holocene adaptation could never have been a singular process (Carbone 1982, Handsman 1983a:5-6).

New Perspectives on the History of Holocene Environments

Some of the recent resurgence in attempting to rethink prehistoric adaptation has been provoked by epistemological conflicts and dilemmas in American archaeology (Binford 1980, Carbone 1982, Handsman 1982c). Some of this theoretical activity also reflects the realization that archaeologists (and paleoecologists) have underestimated the bewildering complexities of reconstructing and describing the history of Holocene environmental change (Dincauze 1981, Handsman 1983a:10-11).

For more than a decade paleoecologists have been re-examining the history of Holocene climates, focusing upon the widely-shared assumption that postglacial environmental change was rapid, unidirectional, and best represented by modern analogs.[3] While this new phase of inquiry is just beginning, enough information has been collected to allow us to reconstruct some of the significant episodes in the climatic history of the past 10,000 years (Table I). These tentative reconstructions demonstrate that the past 10,000 years have been characterized by significant variability in annual rainfall, annual temperature range, length of growing season,

Table I. Climatic Episodes of the Holocene Period

(after Carbone 1982, Davis et al. 1980)

Episode	*Years B.P.*	*Major Episode*	*Minor Episode*	*Climatic Variables*
Late Holocene	*2500 to Present*	*4*	*-*	*Cool and Moist*
Sub-Boreal	*5000 to 2500*	*-*	*3*	*Warm and Dry*
Atlantic	*8500 to 5000*	*-*	*4*	*Warm*
Boreal	*9300 to 8500*	*1*	*-*	*Warm and Dry*
Pre-Boreal	*10,000 to 9300*	*1*	*-*	*Cool*
Late Glacial	*13,000+ to 10,000*	*1*	*-*	*Cool and Dry*

This is a summary of climatic episodes (characterized in comparison to today) which might have occurred in Litchfield County during the Holocene. The xerothermic interval extends from 8500 to 2500 B.P. The Middle Holocene Sub-Boreal episode is of particular interest to our studies. Many of the sites located in 1982 are associated with this period and the earlier part of the Late Holocene.

and other climatic variables. These fluctuations are known to be reversible, are of differing and non-repetitive durations, and cannot be predicted, except in retrospect.

Although the relationships between the proposed models of climatic variability and environmental history in specific regions remain unspecified, two methodological implications are apparent:

1. These periods of climatic oscillations would have been reflected by changes in the distributional (spatial) patterns of critical resources including surface water, vegetation, and selected food species. While the *ecological content* of Holocene woodlands may not have varied since 12,000 B.P. (see Guilday 1982), the structure or graininess of regional environmental settings would and did vary, providing a context for a processual history of prehistoric adaptation (Handsman 1983a:8-18).

2. Data reflective of climatic shifts and environmental histories have been preserved in a variety of geomorphological settings and paleoecological records so archaeologists need not be dependent upon pollen records alone (Carbone 1982). All that is required is a well-formulated, problem-oriented research design, still a rarity in southern New England archaeology (Figure 2).

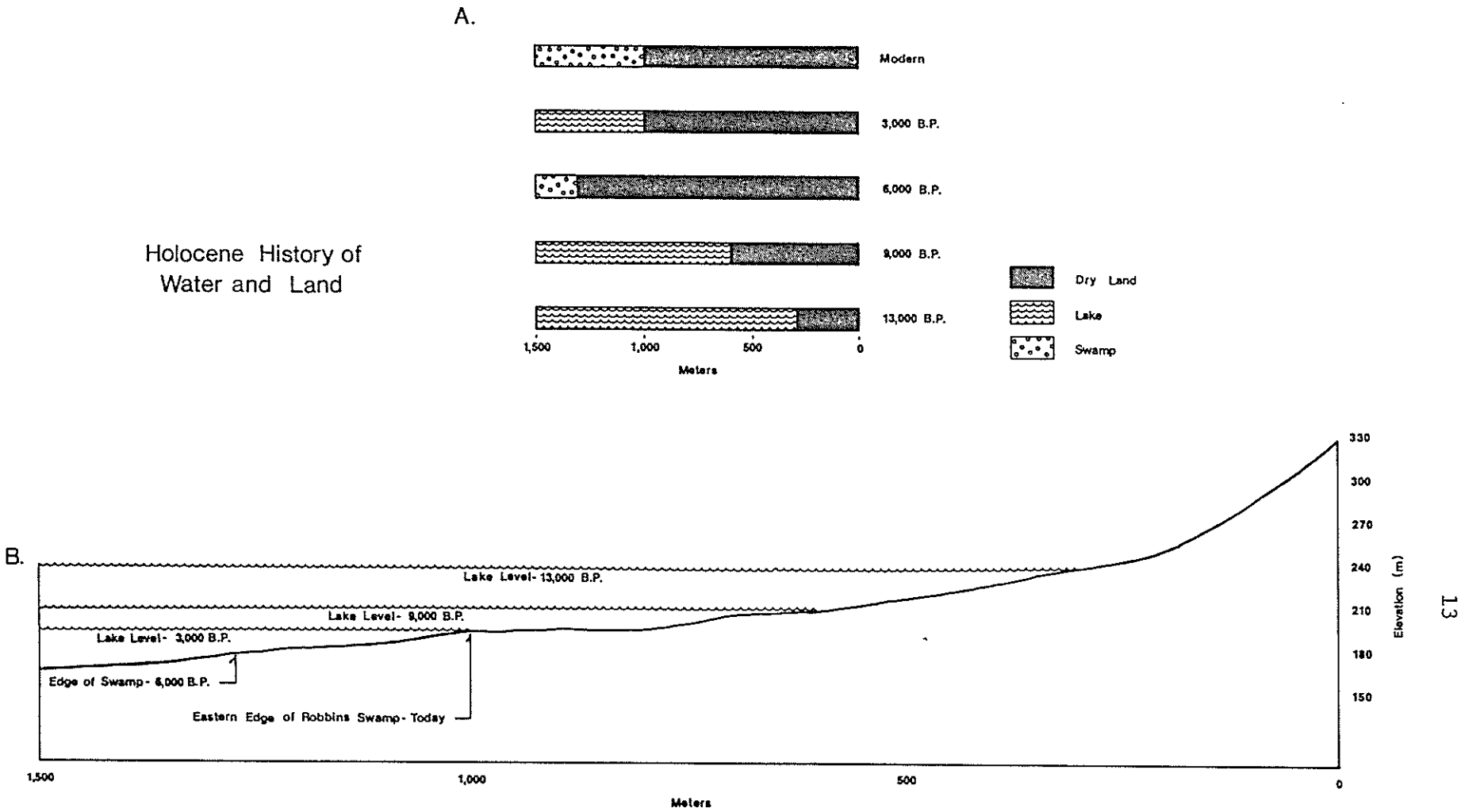

Figure 2: Holocene History of Water and Land along the Northeastern Edge of Robbins Swamp. This is a conjectural reconstruction of the hydrological history of the Swamp. The water elevations at particular moments match those shown in Figure 6. Note the amount of additional landscape which is available in this locality as the lake disappears between 13,000 and 6000 B.P. Note also that the water level at 3000 B.P. would have flooded earlier surfaces so some prehistoric sites may now be underneath the Swamp.

IV. THE 1982 FIELD SEASON IN ROBBINS SWAMP: A SYNOPSIS

During the spring and summer of 1982 field crews from the American Indian Archaeological Institute began to explore the theoretical and methodological implications explicit in the reinvention of a theory for prehistoric adaptation. The research plan was both archaeological and paleoecological in orientation and was developed in order to gather a first set of data relevant to Holocene behavioral histories. It is projected that 1982 will be the initial season of a long-term commitment to studying the prehistory of Robbins Swamp; five years will be needed to complete the project.

This preliminary study of the archaeological record of Robbins Swamp was supported by a matching grant-in-aid from the U.S. Department of the Interior, through the Connecticut Historical Commission, under the provisions of the National Historic Preservation Act of 1966. The Institute's "Friends of Research" donated additional monies required to match this grant and aid the completion of this project.

The Research Area

Robbins Swamp is an extensive, non-tidal wetland situated in the northern end of Litchfield County between the villages of Falls Village and Canaan, Connecticut (Figure 1). Its main axis extends in a northerly direction for 6.2 kilometers from Route 126, roughly parallel to the valley floor of the Housatonic River. The shorter dimension of the Swamp, along an east-west axis, varies from .70 to 1.30 kilometers in width.

The southern half of the Swamp's main stem is drained by the Hollenbeck River which flows north and west through the wetland towards the Housatonic River. Swamp Brook, a tributary of the Hollenbeck, drains the northern half of Robbins Swamp as it continues south. Near the intersection of Routes 63 and 7, adjacent to the village of South Canaan, the Swamp extends east and then south for a distance of 4.3 kilometers. This valley narrows away from South Canaan and is drained by Wangum Lake Brook, one of a series of six high gradient tributaries which flow from the western face of Canaan Mountain.

Both the main stem of Robbins Swamp and its "arm" in the valley of Wangum Lake Brook are oblong interior basins surrounded by landforms of higher elevations. For example the Swamp's western edge is defined by a set of fluvial terraces developed at the base of a limestone ridge; its eastern limit is marked by kame terraces and the wall of Canaan Mountain beyond (Figure 1). Similar sets of landforms are situated at the southern end of Robbins Swamp and include the highlands of Beebe Hill and Barrack Mountain as well as a series of Late Pleistocene ice-contact deltas near the junction of Routes 63 and 126.

Thus the entire drainage basin of Robbins Swamp is surrounded by stable formations of higher elevations whose ages range from terminal Pleistocene kames and deltas (13,000 B.P.) to much older bedrock knobs and ridges whose tops are covered by thin mantles of glacial till. Below these older landforms a series of Holocene features can be identified including fluvial terraces, floodplains, "erosional islands," alluvial fans, and

possible wind dunes constructed from fine silts deposited in glacial lakes. All of these geomorphological settings were used by prehistoric populations during the past 10,000 years. Some of these surfaces would have been affected by the postulated history of climatic variability as would the Swamp's entire drainage basin and surrounding environmental settings.

Field Activities in 1982

For more than ten weeks between mid-June and mid-October of 1982, an Institute crew explored the archaeological record associated with landforms adjacent to Robbins Swamp and its extension. During this first season field activities were organized in order to collect information related to four problems or questions:

1. *What sort of prehistoric archaeological record has been preserved around Robbins Swamp?*

2. *Do the extant archaeological resources adjacent to the Swamp exhibit different internal structures or patterns, reflective of climatic variability, environmental features, or different poses of adaptation?*

3. *What sort of paleoecological records have been preserved within the drainage basin and how might the study of such records contribute to a knowledge of Holocene environmental history?*

4. *If prehistoric sites were discovered, how is each site's archaeological record patterned and what future research problems could be studied at each site?*

The research area encompassed by Robbins Swamp is quite large so this initial survey was not expected to be extensive. Rather we attempted to gather information relevant to the four questions above by studying different types of landforms which were situated throughout the basin. Our exact coverage was determined by the availability of access; by the type of vegetation cover, which affected visibility; by the types of landforms themselves, which varied according to their histories of Holocene stability; and by the location of tracts relative to specific critical settings. Such settings upon first analysis were thought to represent localities where well-preserved archaeological and paleoecological records might be discovered. While the overall coverage was limited, the results indicate that our work isolated representative samples of the region's varied archaeological and paleoecological records (see Table II, Handsman 1983:15-17).

Twenty-four properties were examined during this first season. These tracts were distributed among five localities which were situated along the main stem of Robbins Swamp and the valley of Wangum Lake Brook:

Table I. Summary of Known Archaeological

Site #	Formation	Stability	Year	Activity	Holocene Components
100-005	Terrace?	9000 B.P.+	1979,80	STP's	Middle Holocene
21-002	Terrace?	9000 B.P.	1978	Surface	Middle Holocene
21-003	Island	9000 B.P.	1978	Surface	Middle Holocene
21-004	Floodplain	Erosion	1978	Surface	Unknown
21-005	Island	9000 B.P.	1978,82	Surface	Middle Holocene
21-006	Floodplain	Erosion	1978	Surface	Unknown
21-007	Floodplain	Erosion	1978	Surface	Unknown
21-009	Terrace?	9000 B.P.	1982	Surface	Middle Holocene
21-010	Silt Knoll	9000 B.P.	1982	Surface	Middle Holocene
21-011	Alluvial Fan	Instable	1982	Surface	Unknown
21-012	Alluvial Fan	Instable	1982	Surface	Unknown
21-013	Floodplain	9000 B.P.	1982	Surface	Unknown
21-014	Floodplain	Erosion?	1982	Surface	Unknown
21-015	Delta	11,000 B.P.	1982	Surface	Early(?), Middle
21-016	Floodplain	Erosion?	1982	Surface	Unknown
21-018	Terrace	9000 B.P.	1982	Surface	Middle Holocene
21-019	Kame	13,000 B.P.	1982	Surface	Unknown
21-020	Kame?	9000 B.P.	1982	Surface	Middle Holocene(?)
21-021	Terrace	9000 B.P.	1982	Surface	Middle Holocene
21-022	Floodplain	Erosion	1982	Surface	Unknown
21-023	Island	9000 B.P.	1982	Surface	Middle Holocene
21-024	Kame	13,000 B.P.	1982	Surface	Early, Unknown
21-025	Kame	13,000 B.P.	1982	Surface	Unknown
21-026	Kame	13,000 B.P.	1982	Surface	Lake Holocene
21-027	Kame	13,000 B.P.	1982	Surface	Unknown
21-028	Kame	13,000 B.P.	1982	Surface	Early, Unknown
21-029	Alluvial Fan	Instable	1982	Testing	Unknown
21-030	Alluvial Fan	Instable	1982	Testing	Unknown
21-031	Alluvial Fan	Instable	1982	Testing	Unknown
21-032	Alluvial Fan	Instable	1982	Testing	Middle, Late

Records adjacent to Robbins Swamp

Research Value	*Further Studies*	*AIAI Collections*
Archaeology of Place	*Block Excavations*	*79-2-50, 80-2-2*
Archaeology of Place	*Block Excavations*	*78-2-10*
Archaeology of Place	*Block Excavations*	*78-2-14*
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Archaeology of Place	*Block Excavations*	*78-2-16, 82-2-15*
Landscape History	*Coring*	--
Landscape History	*Coring*	--
Archaeology of Place	*Block Excavations*	*82-2-16*
Archaeology of Place	*Block Excavations*	*82-2-17, 82-2-33*
Environmental History	*Stratigraphic Blocks*	--
Archaeology of Place	*Stratigraphic Blocks*	--
Landscape History	*Coring*	--
Landscape History	*Coring*	--
Archaeology of Space	*Controlled Map*	*82-2-19*
Landscape History	*Coring*	--
Archaeology of Place	*Block Excavations*	*82-2-20*
Archaeology of Space	*Surface Collecting*	*82-2-21*
Archaeology of Space	*Block Excavations*	*82-2-14*
Archaeology of Place	*Block Excavations*	*82-2-22*
Landscape History	*Coring*	--
Landscape History	*Testing*	*82-2-23*
Archaeology of Space	*Surface Collecting*	*82-2-24*
Environmental History	*Testing, Cores*	*82-2-25*
Landscape History	*Testing*	*82-2-26*
Archaeology of Space	*Controlled Map*	*82-2-27*
Archaeology of Space	*Surface Collecting*	*82-2-28*
Archaeology of Place	*Stratigraphic Blocks*	*82-2-29*
Landscape History	*Stratigraphic Blocks*	*82-2-30*
Environmental History	*Testing, Cores*	*82-2-31*
Archaeology of Place	*Stratigraphic Blocks*	*82-2-32*

1. Group of four tracts towards the southern end of the valley of Wangum Lake Brook. This group of properties represented a variety of landforms including alluvial fans, problematical knolls, and recent floodplains.

2. Group of four alluvial fans at the base of Canaan Mountain in the valley of Wangum Lake Brook.

3. Five tracts near the terminus of the Hollenbeck River along the western edge of the Swamp, adjacent to Route 126 and Sand Road. All of these tracts were either Holocene terraces or islands and contain important archaeological resources.

4. Group of four fields (floodplains, terraces, deltas) near the southern end of the main stem of Robbins Swamp, north of the village of South Canaan.

5. Seven tracts associated with kames along the eastern edge of Robbins Swamp, south of the village of Canaan.

Most of these properties (N=20) were open, plowed fields planted in corn which were walked systematically and surface collected. Preliminary distribution maps of artifact scatters and concentrations were prepared for each of these fields. Such maps can then be used as one source of data to plan further studies. They are particularly useful in evaluating prospects for exploring how prehistoric populations used specific pieces of landscape. Most of the research tracts were formations which had been stable for a minimum of 5000 years so historic and recent plowing exposed at least part of the Holocene archaeological record. In some geomorphological settings the modern ground surfaces were less than one millenium old; such localities required subsurface testing to determine their research potential.

Excavations were undertaken at five sites; four of these were alluvial fans within the valley of Wangum Lake Brook and the fifth was a plowed knoll in the same valley which was tested during the fall. As a result of both of these field strategies, the Institute has been able to evaluate future prospects for intensive archaeological and paleoecological research as well as isolate several patterns in the prehistoric record which are reflective of Holocene adaptation and environmental history.

Patterns Identified in 1982

Data collected from the initial field season demonstrate that the prehistoric archaeological record of the Robbins Swamp basin is long (a 9000-year continuum), abundant (about 24 new prehistoric sites were recorded), and well preserved. Excavations within the valley of Wangum Lake Brook reveal that an extensive paleoecological record also exists including buried land surfaces and swamps, preserved organic mats and bogs, and a series of lacustrine beds representing an early postglacial lake.

Most of the evidence of the basin's well-preserved paleoecological record was identified through studies of a series of alluvial fans distributed along the eastern edge of the valley floor of Wangum Lake Brook. Each of these fan formations initially was constructed during the Early Holocene period, ca. 10,000 B.P., by high-gradient tributaries flowing across the steep valley wall defined by the resistant bedrock of Canaan Mountain (Figure 3).

During seasonal storms, some of which were associated with catastrophic weather events, these tributaries carried sediments of varying sizes in suspension and transported larger materials through rolling, sliding, and bouncing. When the water reached the valley floor and the gradient of the stream flattened, these materials were deposited as lobes, as low ridges, or as bars whose thicknesses decreased along the downstream axis.

Such geomorphological settings provide contexts where complicated stratified deposits could accumulate including buried land surfaces and other ecological features used by prehistoric populations. Four alluvial fans were tested during the summer and the fall; each contained evidence of buried deposits associated with prehistoric archaeological materials (Handsman 1983a:15-17).

For example the alluvial fan at the Nichols site began to be constructed about 12,000 B.P. and its record contains preserved B horizons representative of former land surfaces. Archaeological materials were recovered from these buried horizons including pieces of fire-cracked rock and debitage which help to emphasize the prehistoric use and research potential of such settings.

The excavations at Nichols also exposed a Late Holocene series of mud floors and coarser alluvium (sands and small gravels) which filled a late prehistoric swamp, ca. 1000 B.P. (Figure 4). Associated archaeological materials including incised ceramics suggest that this feature was used as either a settlement or more specialized activity site by prehistoric populations.

The depositional processes associated with alluvial fans in this valley also helped to preserve important signs of the region's Early Holocene environment. Perhaps the most significant discovery was excavated beneath an alluvial fan along the northern edge of Cobble Road near the southern end of the valley of Wangum Lake Brook (Figure 5). Here sediments representative of an extinct lake were uncovered beneath a contemporary pasture. Initially formed during the Early Holocene, prior to 10,000 B.P., this lake was probably one of a series of interconnected basins situated within Robbins Swamp. The extent, depth, and richness of such features would have increased during episodes of wet-and-cool climate, called pluvials. Warm-and-dry cycles, such as the one which may have existed around 6000 years ago (Table I), would have caused these lakes to become shallow ponds or even swamps. Many of these fluctuations can be reconstructed from fossil pollen and diatoms preserved in the sediments of lake beds. Thus these features can aid in resolving long-term patterns of climatic variability as well as provide a sense of Holocene environmental structure (Handsman 1982b).

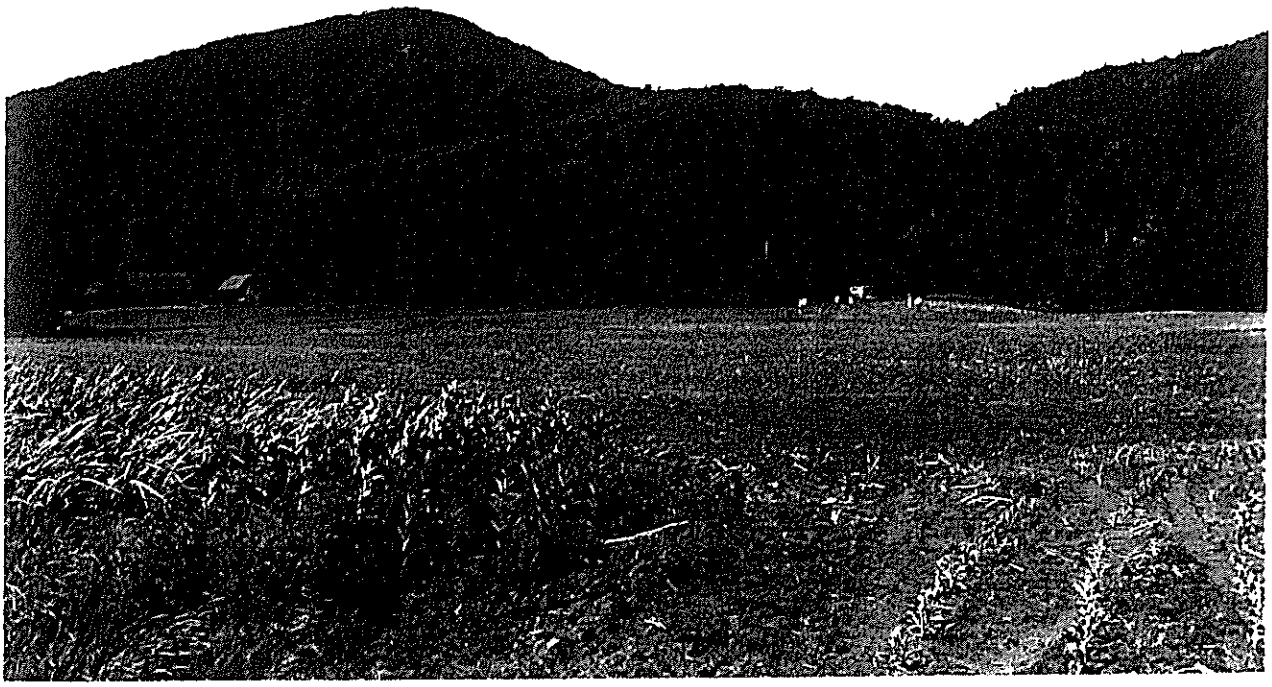
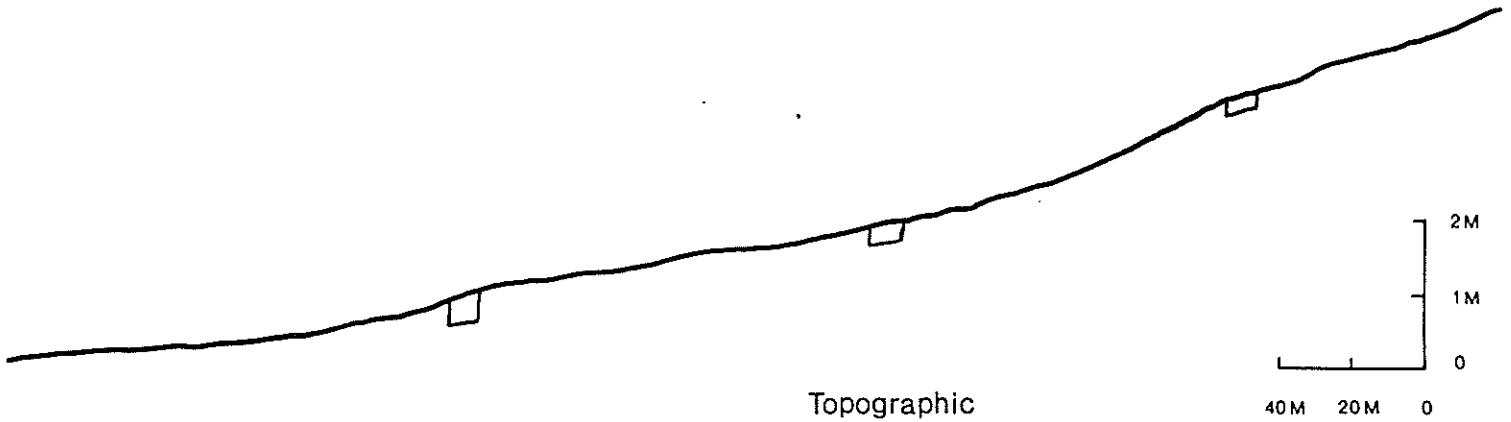
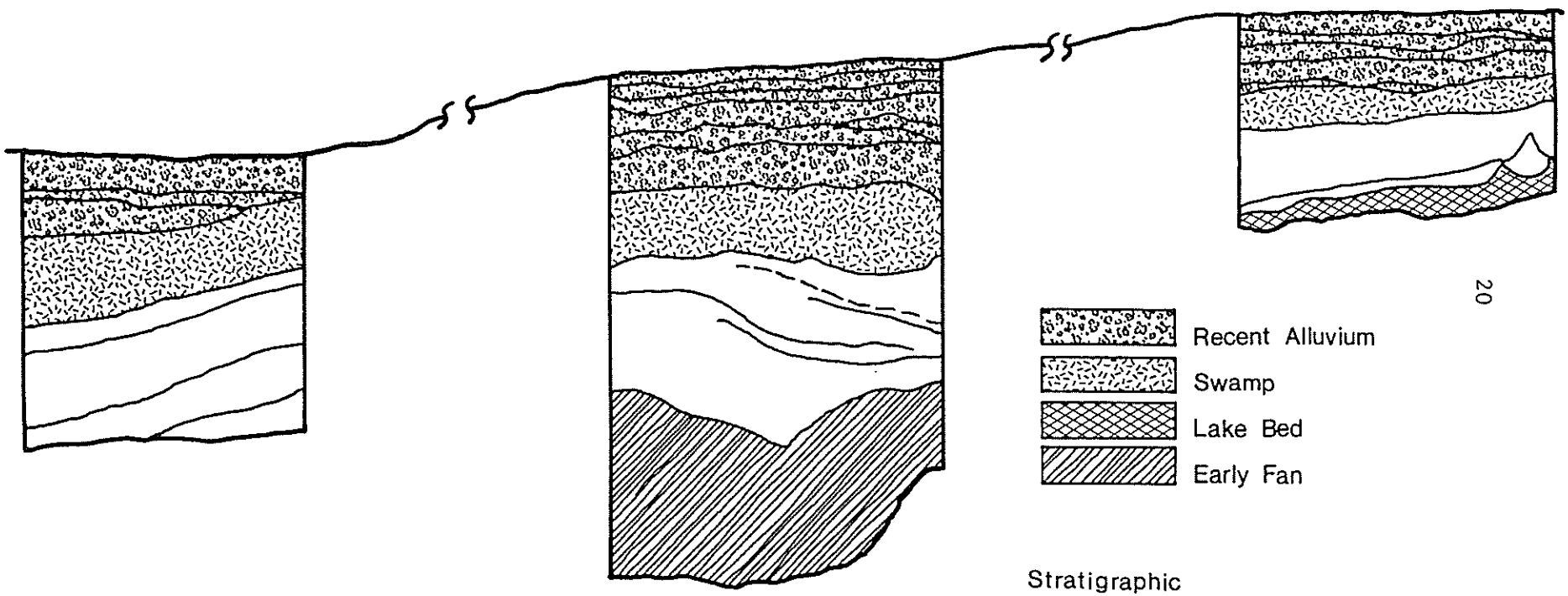


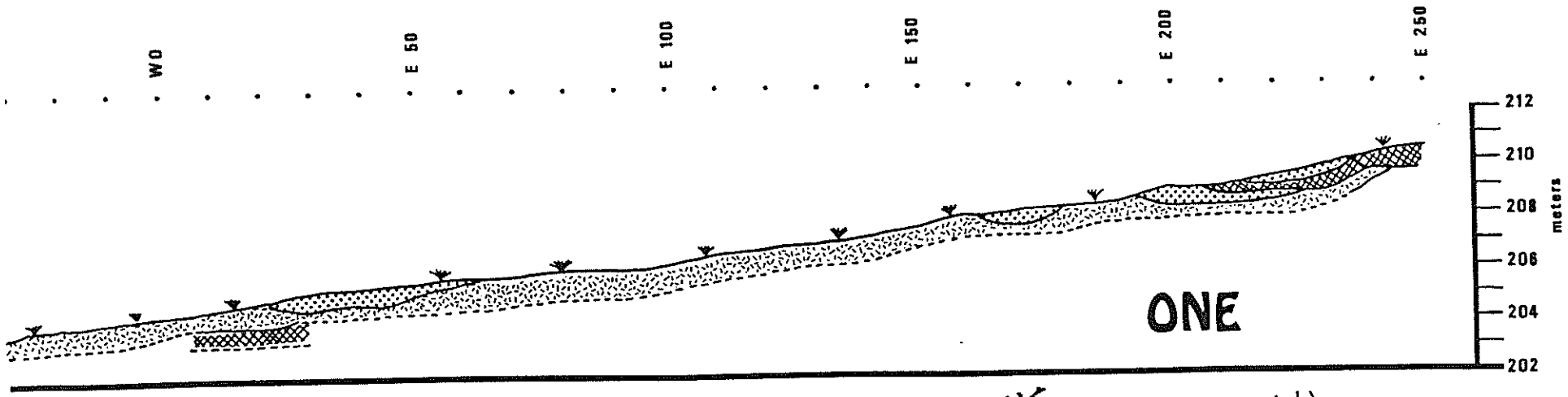
Figure 3: View of Two Alluvial Fans at the Base of Canaan Mountain, Valley of Wangum Lake Brook. The crew is standing on the one to the right. The barns at the left edge were built upon the other.

Figure 4: Topographic and Stratigraphic Cross-sections of the Nichols Site. This site is situated on one of the alluvial fans formed at the base of Canaan Mountain in the valley of Wangum Lake Brook. Several two-meter squares were excavated along the longitudinal axis of the fan. Each of these contained evidence of the existence of a late prehistoric swamp which had been buried by later alluvium including sands and silts. In the square towards the top of the fan it was possible to identify the entire series of sediments which had been deposited over the Early Holocene lakebeds.



THE NICHOLS SITE





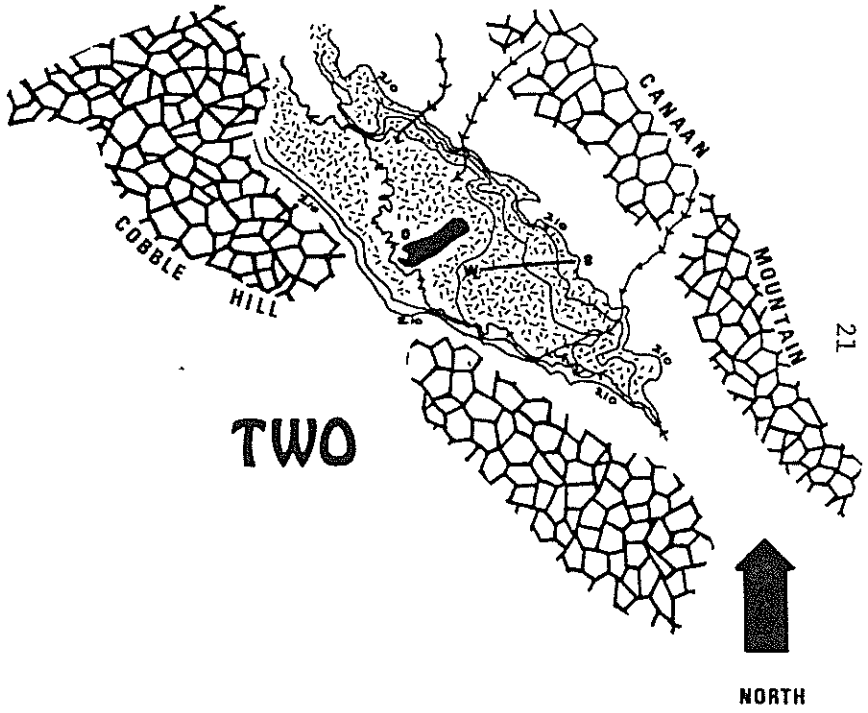


Figure 5: ONE - Stratigraphic Cross-section of Holocene Lake along Cobble Road. Holocene Lake is represented by the stippled pattern, sand deposits by dots, and gravel lenses by cross-hatching. Preserved wood and twigs, buried within and beneath these beds, will allow us to determine the age and subsequent history of the lake. Some sand and gravel materials were introduced later into the lake by streams flowing from Canaan Mountain. These alluvial fans may have provided campsites on the lake's shores.

TWO - Stippled pattern delineates the size of the early postglacial lake as it might have appeared around 8000 B.P. in the upper end of the valley of Wangum Lake Brook. The knoll "o" would have been a small or large island surrounded by water or a swamp.

Evidence of the geographical scale of the Early Holocene Lake or series of interconnected lakes was recovered from the Nichols site where a square at the apex of the fan contained similar lacustrine beds at the bottom of the stratigraphic column (Figure 4). This additional data suggests that the earliest postglacial landscape in the Robbins Swamp basin would have been dominated by an extensive lake system which covered most of the basin to an elevation around 210 meters above sea level (Figure 6).

The presence of this early hydrological feature and its subsequent history of fluctuations and eventual disappearance would have provided one set of environmental variables for prehistoric populations to have thought about, conceptualized, and perhaps used in organizing their sense of space and in selecting the location of some of their settlements. Several patterns recognized in the archaeological record of Robbins Swamp indicate that the Holocene history of hydrological fluctuations was reflected in systematic behavior:

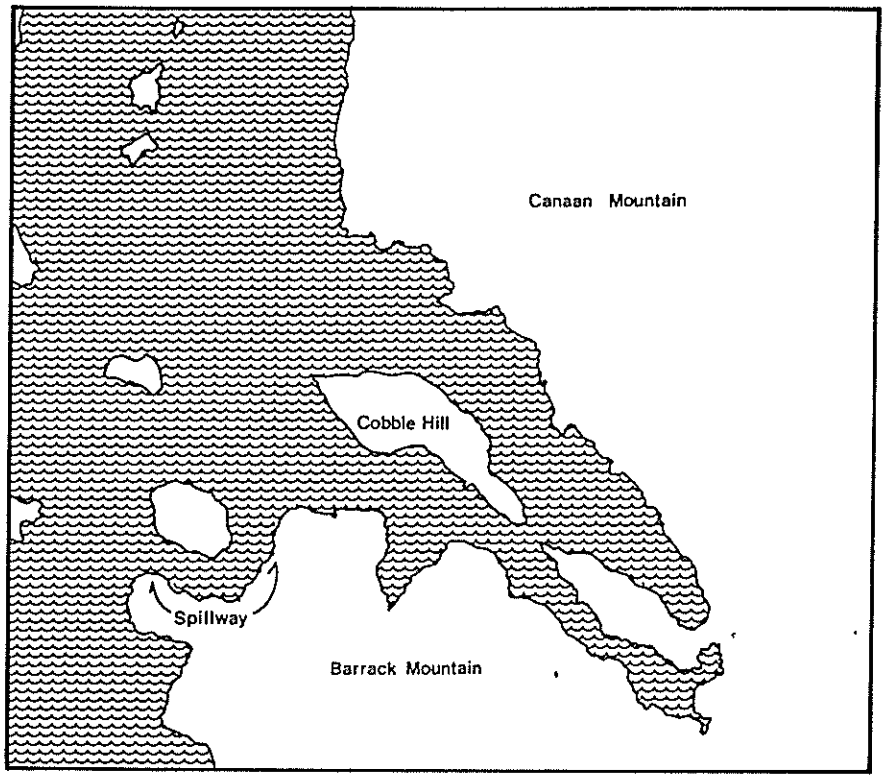
1. Although Early Holocene assemblages (9000 B.P.) were rare, those identified were situated above the 210 meter (700 foot) contour, suggesting that most of the basin continued to be under water, in the form of shallow ponds if not a continuous lake. Similar correspondences have been noted from archaeological studies of early lake systems in northern New England (Nicholas et al. 1981) and provide some parameters for locating the earliest archaeological manifestations around Robbins Swamp (Figure 2).

2. The archaeological record of the edges of the Swamp, located on terraces and other landforms below the 200 meter (670 foot) contour, includes Middle and Late Holocene sites and assemblages, associated with the Late Atlantic (6000 B.P.) and Sub-Boreal (3000 B.P.) climatic periods (Table I). This geographical pattern may support a later Holcoene history of dessication, the subsequent lowering of the lake's level, and the emergence and use of new land forms (Figure 2).

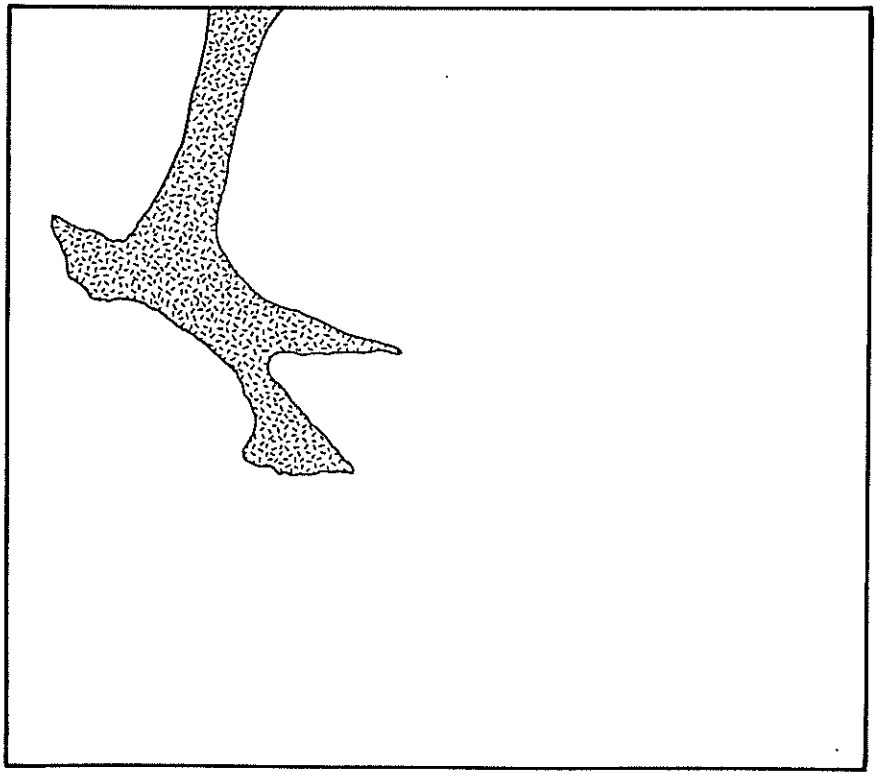
3. At least three sites were discovered at elevations below the 200 meter contour on land forms whose topography suggests that they are erosional knolls or islands, remnants of what were once more continuous surfaces. Although their origin is not well understood, these surfaces are elevated above the surrounding floodplains of Robbins Swamp. Each of them was intensively used by Middle and Late Holocene populations and is represented by extensive *and* intensive archaeological records. Such knolls would have been either connected to adjacent land forms or surrounded entirely by water depending upon the associated climatic context.

Each of these three patterns provides preliminary evidence that the archaeological record of Robbins Swamp reflects Holocene climatic variability and environmental change. These patterns are recognizable at particular geographical scales and apparently represent the systematic placement of certain sites on land surfaces whose histories are defined by fluctuations in the Swamp's hydrological regime.

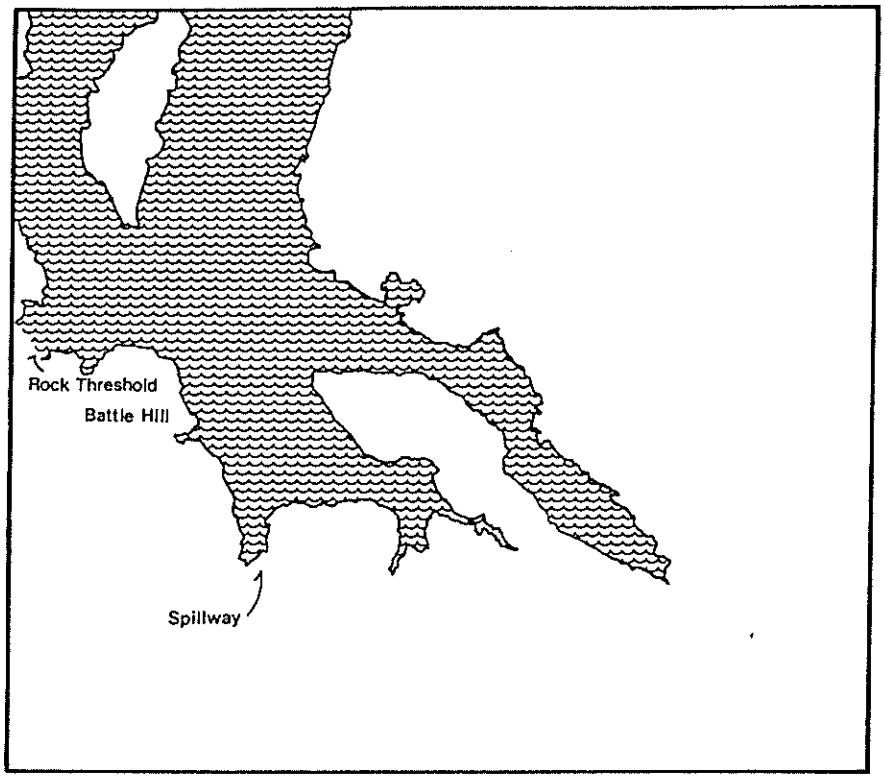
Figure 6: Conjectures about the History of the Holocene Lake, 13,000 to 3000 B.P. Each diagram depicts the relative amounts of lake and land areas exposed at specific intervals. At its maximum around 13,000 B.P., the glacial lake dominated the landscape except for Canaan Mountain, Barrack Mountain, and Cobble Hill. Between 13,000 and 9000 B.P. the size of the lake shrank and its drainage changed from the valley along Johnson Road (spillway) to the gap north of Battle Hill. The bedrock ridge at Falls Village along the Housatonic River would have served as a natural dam by 9000 B.P. A dramatic reduction of the lake's size and its mutation into a swamp would have occurred during the warm Atlantic interval (Table I). The cooler and wetter climate associated with the end of the Sub-Boreal would have produced a lake or series of connected ponds by 3000 B.P.



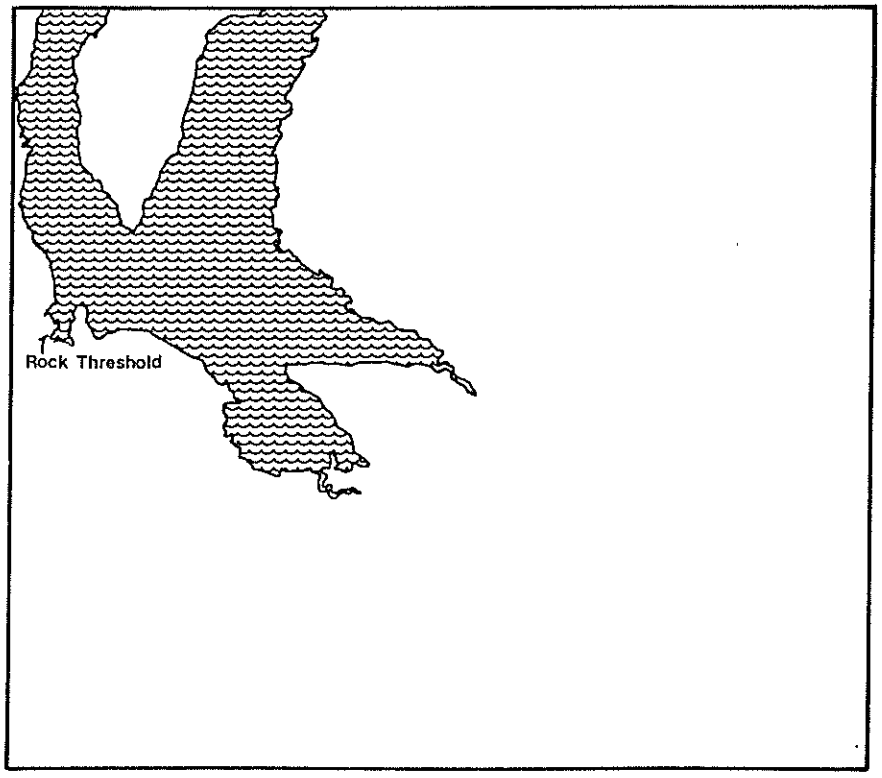
Lake at 13,000 B.P



Swamp at 6000 B P



Lake at 9000 B.P.



Lake at 3000 B.P.

One additional pattern was also recognized whose interpretive and analytical significance may be a reflection of how areas and resources were organized and used by prehistoric populations. This pattern has been isolated within the data recovered from plowed fields. Since the areas tested at the five excavated sites were necessarily limited, their information is not considered to be comparable.

Some properties contained archaeological records which were intensive and represented by patterns and inventories which were complicated and heterogeneous. The areal extent of such resources varied but distributions covering between one and three acres were recorded. Other archaeological records were neither intensive nor extensive and consisted of less than a dozen artifacts distributed over five acres or more. For purposes of management and preservation, both of these resources could be recorded as sites. However it is obvious that they represent very different sorts of behavioral processes.

The differences in size, artifact density, and patterning probably represent varying combinations of principles and premises used by prehistoric populations to organize their sense of space and place. Some of the archaeological record around and within the Swamp reflects different strategies for acquiring food; other patterns represent specific and redundant uses of particular places for hunting-and-gathering; still other records can be used to understand how prehistoric groups organized their residential places.

It is apparent that some of the Swamp's archaeological record will actually be almost non-visible. In these situations we can expect not to discover sites but non-sites, non-patterned aggregations whose extent and density will be very limited. The recognition of such archaeological constructs will allow us to understand how space was used and organized and whether these ideas have any systematic relationship to the reconstructed climatic or environmental histories. Similar explorations can be focused upon places whose form more nearly approximates the traditional concept of sites.

V. THE NEXT PHASE OF STUDY: PROBLEMS AND APPROACHES

The Institute's planned, long-term research project focused on the Holocene history of Robbins Swamp is now at a critical juncture. An initial set of data, representative of well-preserved archaeological and paleoecological records, was gathered with the aid of a grant from the Connecticut Historical Commission. However this agency's system of funding, its sense of priorities, and its procedures and rules will not allow additional support to be received by the Institute for this project.

Other funding institutions such as the National Science Foundation or the National Geographic Society *would support such a problem-oriented project once additional data were gathered to demonstrate the feasibility of the theoretical perspective, the usefulness of analytical concepts and field methods, and the presence of a well-preserved, intact prehistoric archaeological record.* During the 1983 and 1984 field seasons additional studies of Robbins Swamp will be undertaken to gather these necessary data. Financial support for these activities will be solicited from private foundations, groups, and individuals. Four problems will be of particular interest to our work over the next two years.

Problem One:

The Problem - What does the paleoecological record of Robbins Swamp itself look like? What can we learn from studying it which is relevant to Holocene environmental change?

The Setting - The Main Stem of Robbins Swamp, north of Falls Village.

The Record - Sediment columns and pollen records preserved below the modern surface.

Activities - 1. Coring the Swamp in several different localities.
2. Analysis of retrieved samples.

Goals - 1. Initial reconstruction of palynological history of Swamp.
2. Identification of categories of data which are preserved and which could be useful in documenting climatic variability as well as environmental structure and history.
3. Future research needs and locations.

Problem Two:

The Problem - What is the geomorphological history of the early postglacial lake? What were its limits, where were its shores, and were Early Holocene campsites situated along its borders?

The Setting - Robbins Swamp and the Valley of Wangum Lake Brook, the entire Swamp's basin.

The Record - Geomorphological settings and sediment columns as well as the lake beds themselves. Associated archaeological deposits.

Activities - 1. Mapping of lake beds and search for preserved beaches.
2. Recognition of major levels of lake and their chronology.
3. Identification of sediment columns and their deposition into the early lake basin.
4. Inventory of associated Early Holocene archaeological records.

Goals - 1. Reconstruction of Late Pleistocene and Early Holocene history of lake.
2. Recognition of later stages of lake's history, focusing on the transition to a series of interconnected ponds.
3. Identification of early archaeological records whose locations reflect the lake's early postglacial history and extent.

Problem Three:

The Problem - How does one excavate the archaeological and paleoecological records of alluvial fans in temperate regions? What sort of archaeological record is preserved within the sediment columns of alluvial fans?

The Setting - The alluvial fan along an old channel of Wangum Lake Brook at the east end of Cobble Road.

The Record - Holocene sedimentation and archaeology associated with the southern end of the early postglacial lake.

Activities - 1. Mechanized excavation of stratigraphic trenches following the fan's longitudinal axis.
2. Archaeological excavation of a block, controlled to retrieve stratigraphic and organizational data.

Goals - 1. To develop a procedural model for the excavation and interpretation of the archaeological and paleoecological records preserved on alluvial fans.
2. To reconstruct the Holocene history of sedimentation and environmental history in this locality.
3. To determine whether the associated archaeological records exhibit any distinctive structures or patterns reflective of strategies of adaptation.
4. To study how an alluvial fan's fluvial processes might affect associated occupation floors.

Problem Four:

The Problem - How does one do the archaeology of place and space?

The Setting - Kame surfaces along Under Mountain Road and Route 7. Terraces along the Hollenbeck River.

The Record - Archaeological deposits lying on or just below the modern ground surface.

Activities - Archaeological excavation of large sampling blocks, controlled to retrieve organizational data.

Goals - 1. To develop procedural models for the excavation of non-sites and a variety of archaeological places.
2. To understand how particular pieces of landscape were used during the Holocene period.

An Afterword

The research program at the American Indian Archaeological Institute is beginning to be transformed. Once our problems and research designs were rather traditional. Rarely did we realize that the record was reflective of prehistoric processes of adaptation. Through a more explicit differentiation of the past and ourselves or, better, the record, past processes, and our ideas about each, we have begun to reinvent the structure of archaeological inquiry in southern New England. This new framework encompasses our studies of the prehistory of Robbins Swamp and is being redefined by them. So the Swamp's records are helping us to refigure the past and our contemporary intellectual landscape.

VI. PROSPECTS FOR ARCHAEOLOGICAL PRESERVATION IN ROBBINS SWAMP

Like much of the Housatonic River basin north of New Milford and Kent, the region of Robbins Swamp has not been subjected to extensive or intensive commercial, residential, and industrial development. Our field studies isolated few obvious signs of large-scale, modern disturbance and the Swamp's archaeological record is largely intact and well-preserved.

However some evidence indicates that the integrity of some landscapes has been destroyed and the rate of loss seems to be increasing. For example a series of maps depicting land uses between 1934 and 1980 (Figures 7-9) reveals that the northernmost sections of the Swamp's basin have been developed in ways that are incompatible with the preservation of archaeological resources.[4] The construction of a golf course, multi-family dwellings, and light industrial plants south of the village of Canaan (Town of North Canaan) destroyed much of the original landscape and any associated archaeological sites. Data from surveys in 1980 indicate that this locality was used in the distant past, at least as early as 6000 B.P.

In the same way the 1965 and 1980 maps show additional incompatible uses in other localities including housing developments along Belden Street, Sand Road, and Route 7 north of its intersection with Under Mountain Road. The increase in the rate of landscape loss is obvious between 1965 and 1980 (Figures 8,9). Much of the disturbance reflects the subdivision of property for residential construction and this process is expected to continue. In the Town of Canaan the entire research basin is zoned "R" residence. Allowable uses include single-family and two-family dwellings (lot sizes vary between 1.75 and 2.75 acres); special exceptions such as municipal buildings and facilities associated with educational or charitable institutions might be permitted (Zoning Regulations of the Planning and Zoning Commission, Town of Canaan, Falls Village, December 1977). This potential threat from what is actually a low density, residential use is even greater along the Route 7 corridor in North Canaan where the town may soon extend its sewer line two kilometers to the south, opening the corridor for further residential construction.

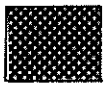
Given the recent history of land use there are some localities in the basin which have been and continue to be threatened: the northern edges of the Swamp south of the village of Canaan and the western edges of the Swamp's main stem along Sand Road in the Town of Canaan. Preliminary surveys are needed in these areas to identify archaeological properties worthy of preservation and/or intensive study. Other critical areas, not as threatened but in jeopardy, include the higher kame surfaces along Under Mountain Road, the southern end of the valley of Wangum Lake Brook, the late glacial landforms near Huntsville along the Hollenbeck, and the kames along Route 7 on the eastern side of the Swamp. None of these critical localities are protected as committed open space and they could become slowly subdivided and used for residential construction. Some of the associated landscape is known to be archaeologically sensitive; other properties are currently being evaluated.

TYPES OF LAND USE,
ROBBINS SWAMP

 Agricultural

 Wooded

 Swamp

 Incompatible

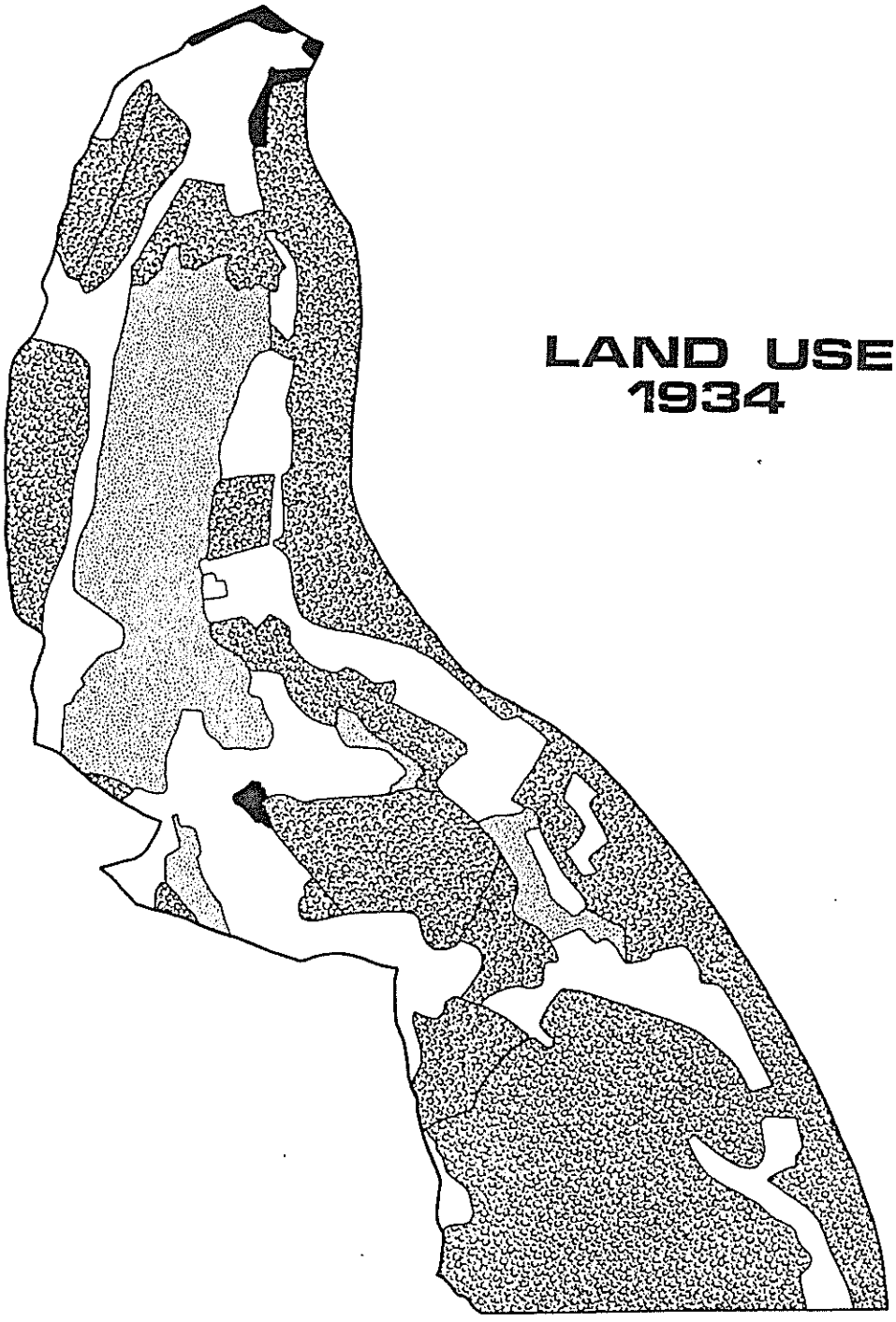


Figure 7

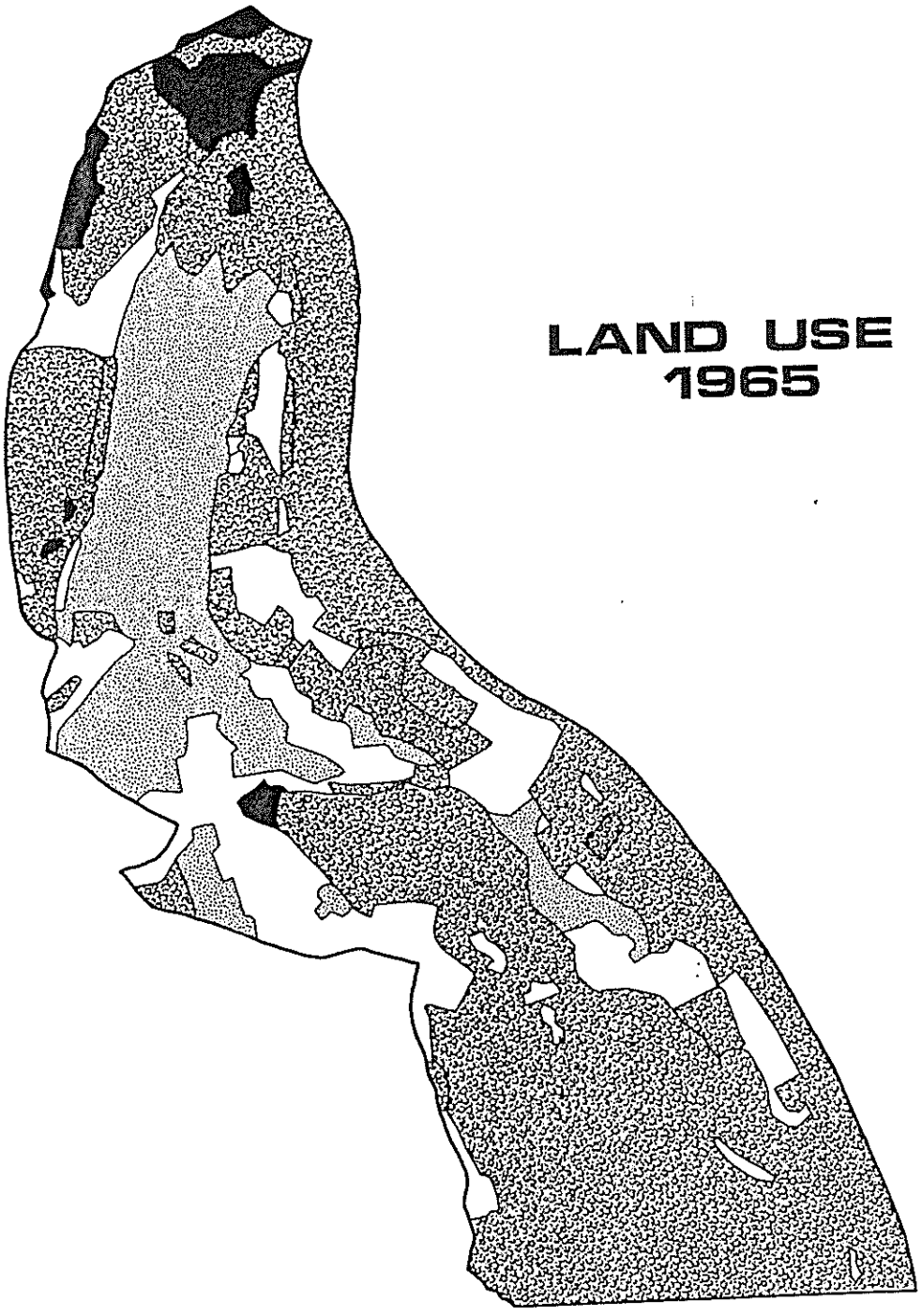


Figure 8

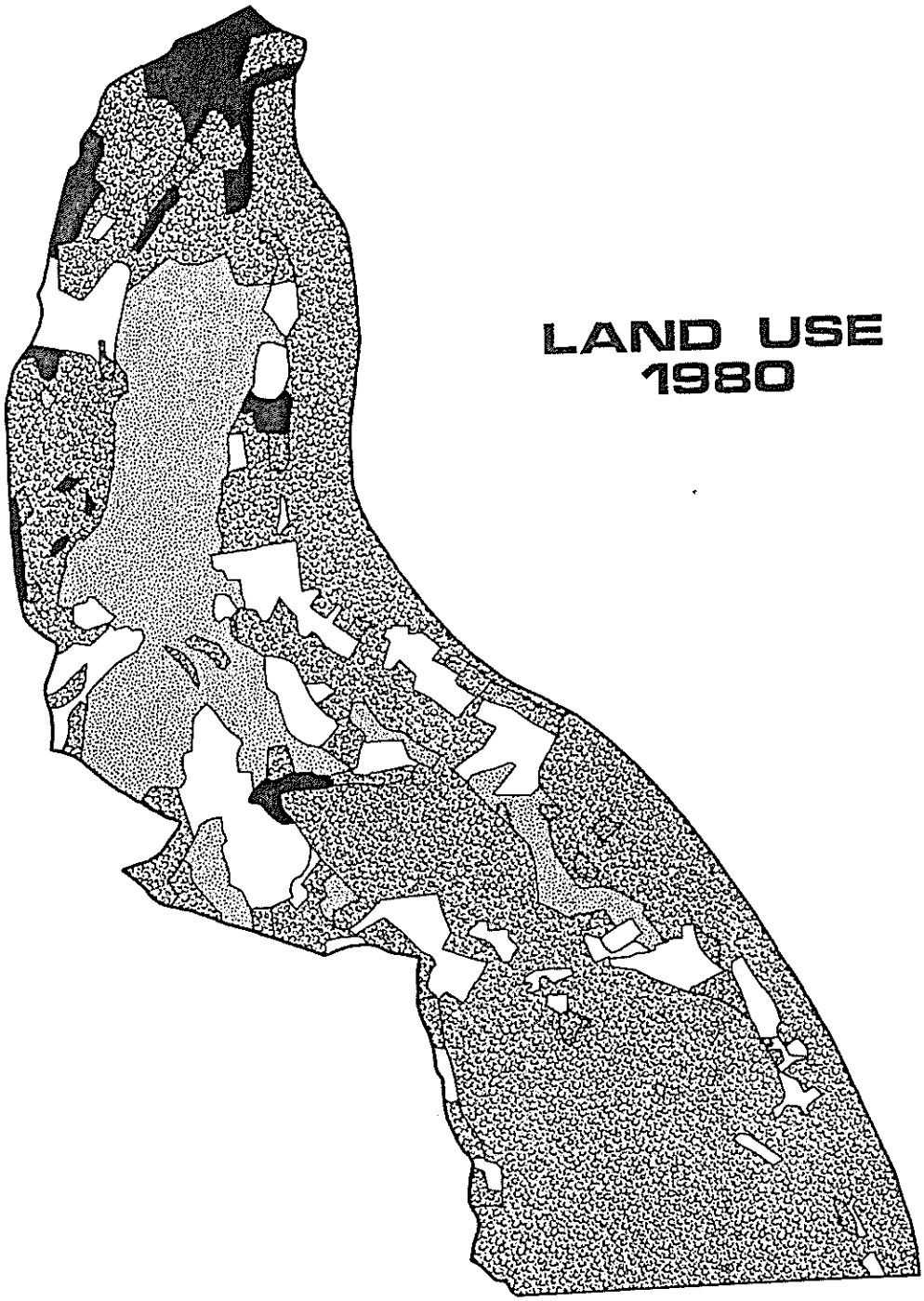


Figure 9

In some sections of Robbins Swamp particular landforms and their associated archaeological records (known and unknown) are encompassed by parcels of committed open space. Such patterns of ownership and use can protect important archaeological and paleoecological records and can be used as a focus for future preservation efforts (Handsman 1982e:79). The State of Connecticut is the major owner of open space in and around Robbins Swamp. The Nature Conservancy owns two small parcels whose research potential is limited to paleoecological studies. Among the State's holdings are several large tracts including parcels between Routes 63, 126, and 7 and a second near the intersection of Route 63 and Barnes Road. Both of these localities are important primarily for their environmental records.

The State also owns several tracts south of the intersection of Belden Street and Sand Road, near the terminus of the Hollenbeck River. Aerial photographs indicate that these parcels have been used for agriculture for more than 50 years. Most of the associated landforms are Holocene river terraces or islands which contain important archaeological records. As long as the State continues to own the property and lease it to local farmers, these sites should be protected. Some of the adjacent property is owned by individuals and farmed through similar lease agreements. *Protective easements to maintain these tracts as farmlands or open space should be sought so that the associated archaeological sites can be preserved for future study.* In this way the protection created by State ownership can be extended through the cooperation of private individuals and organizations. With such arrangements we can be assured that adequate samples of the Swamp's archaeological record will be preserved for the rest of this century.

VII. NOTES

1. The works of Cleland (1976), Dragoo (1976), Kinsey (1975), Ritchie and Funk (1973), Snow (1980), and Thomas et al. (1975) are typical of this orientation.

2. The interpretive summaries of Cleland (1976), Dragoo (1976), Kinsey (1975), Ritchie and Funk (1973), Snow (1980), and Tuck (1978) employ Caldwell's concept.

3. The research and interpretations of Brown and Cleland (1968), Bryson and Wendland (1967), Bryson et al. (1970), Carbone (1982), Curry and Custer (1982), Davis et al. (1980), Swain (1978), and Wendland and Bryson (1974) have been instrumental in the rethinking of Holocene environmental history.

4. George Malia of the Litchfield County Conservation District prepared a set of base maps depicting land uses between 1934 and 1980. The data compiled in these maps was abstracted from five sets of aerial photographs. Roberta Hampton drafted the set of final maps which appear here.

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