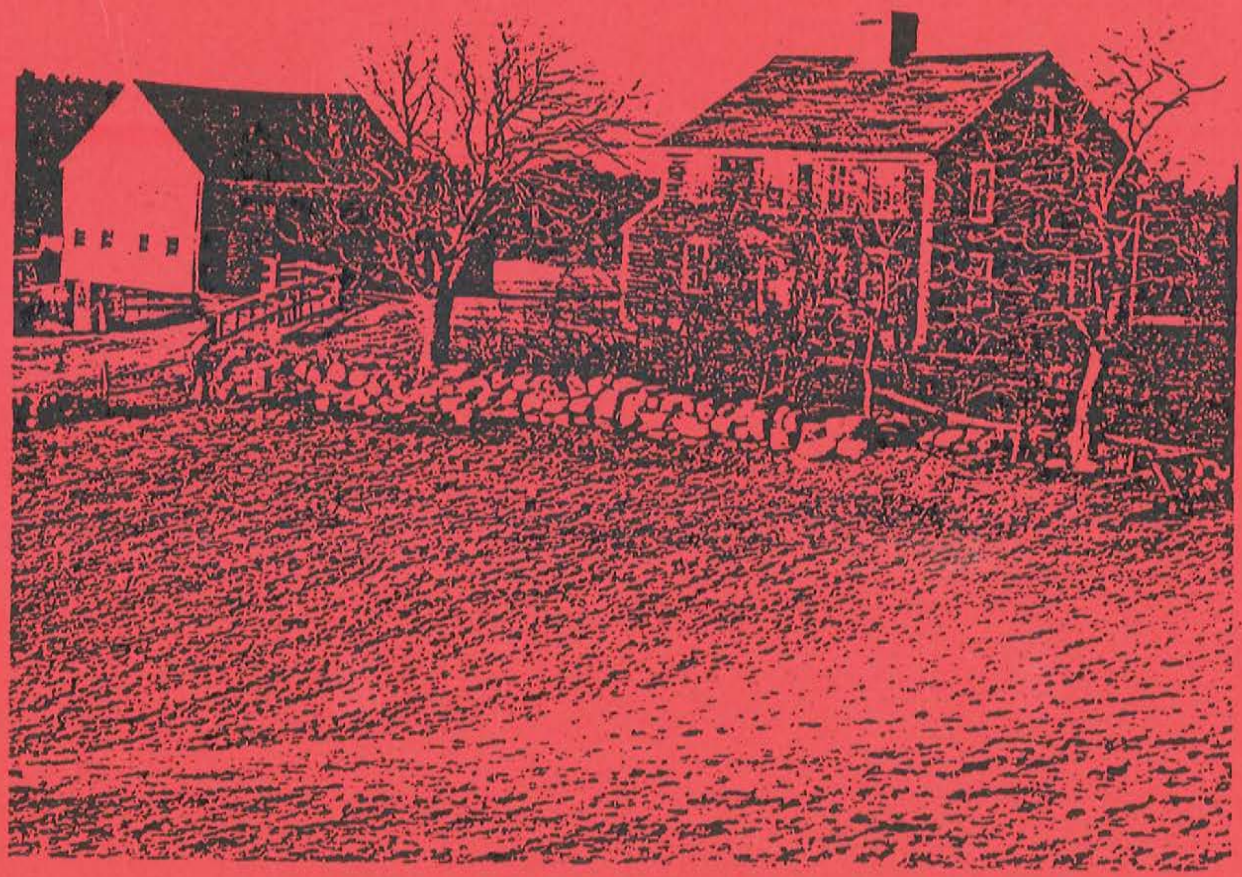
Cultural Resources in Massachusetts
A Model for Management



Massachusetts Historical Commission
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Cultural Resources in Massachusetts: A Model For Management

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MASSACHUSETTS HISTORICAL COMMISSION

This Model for Management was prepared under the direction of the Massachusetts Historical Commission and its staff.

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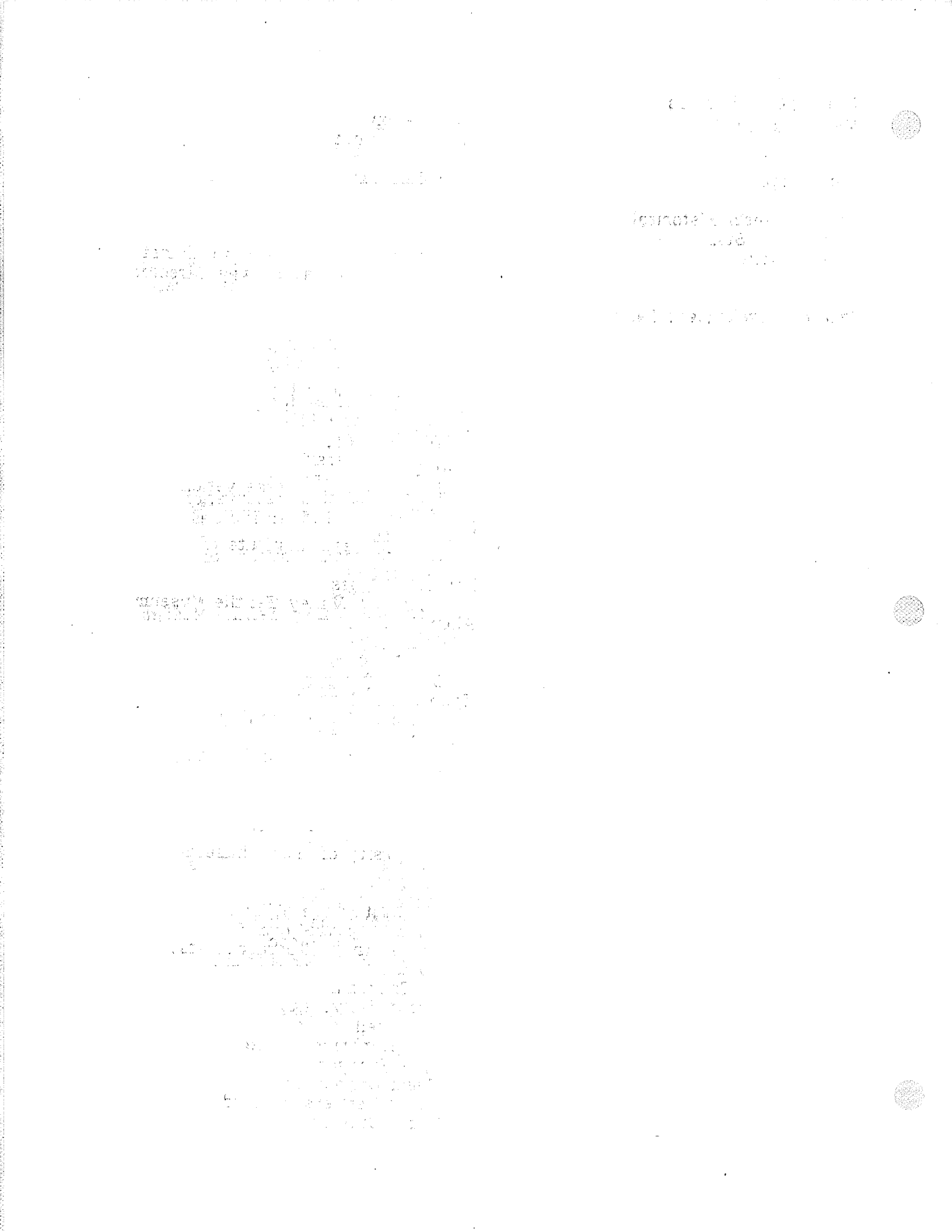

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PREFACE

This report is the result of a pilot project conducted by the Massachusetts Historical Commission in order to develop a comprehensive state management plan for cultural resources. The project, funded by the Interagency Archeological Services, (United States Department of Interior, Heritage Conservation and Recreation Service, Office of Archeology and Historic Preservation), was based on a planning model developed at the Interagency Archeological Services Harper's Ferry Conference held in West Virginia in February, 1978. This pilot project has tested the utility of the planning model. The Massachusetts Historical Commission expects to use this plan to help guide its activities, and will implement the plan in making all decisions.

Development of the project has been aided by a group of consultants from the fields of prehistoric archeology, historic archeology, industrial archeology, architectural history, cultural-historical geography, folk-life studies, and preservation planning. Formal and informal discussions with this group and other professionals have helped to form the framework presented in this report. Members of the Commission and Commission staff have also contributed significantly to the development of the plan, and representatives of the Interagency Archeological Services have provided useful comments. Although contributions from these individuals and groups have been essential to the development of this state program, the Massachusetts Historical Commission assumes full responsibility for this final draft.

Chapter I:
Cultural Resource Management in Massachusetts

INTRODUCTION

Historic preservation in Massachusetts is integral to the maintenance of community character and quality of life, and is one of a number of environmental concerns that relate to the physical, social, cultural and political environment of the state, region and local community. Historic preservation ties into broader questions of growth and the conservation of environmental quality. Within general environmental management areas, historic preservation has a distinctive domain: a consideration of the past and the physical remains that are part of the cultural heritage of Massachusetts.

Historic preservation programs seek to integrate a systematic consideration of the physical remains of the past into current management and planning decisions, to advocate the importance of maintaining historical context in local communities through the preservation of both representative and outstanding properties and districts, and to demonstrate the importance of a better understanding of the past through the study of remaining cultural resources.

Cultural resources include all artifacts or structures, either standing or their remains, which have been created by humans. The cultural landscape is a distinct association of both physical and cultural forms made up of the various products of human culture in action in a natural setting. Human groups have lived, and therefore have been agents of change, in Massachusetts for at least 11,000 years, and each stage of human activity has left a particular impression on the surface of the state.

The development or replacement of a culture creates changes in the cultural landscape. The Massachusetts cultural landscape today is the result of a succession of people living in a dynamic natural environment. Each group has left its distinctive imprint on the landscape in the form of material remains, and the current landscape is a complex mosaic of the effects of use, abandonment and reuse. 11,000 years of human occupation in Massachusetts have left an intricate patchwork of traces on the land, a wide variety of cultural features and associations.

The Massachusetts Historical Commission (MHC) is concerned with the management of the traces and signs (buildings, sites, districts, structures and objects) of the past occupants of the state. These cultural resources

are important sources of information in order to understand past ways of living and thinking, and they are important representations of the cultural heritage of Massachusetts. Cultural resources can be considered as buildings or structures of artistic or stylistic merit, as properties or artifacts with historical associations, or as research data, and can be valued as much for their commonplace character (as representative of past periods) as for their unique qualities.

CURRENT MANAGEMENT FRAMEWORK

The state legislature, recognizing the importance of preserving the state's rich historical and cultural tradition, established the Massachusetts Historical Commission in 1963. During the early 1970's in response to the loss of irretrivable resources, both natural and cultural, the state made further commitments to environmental protection by establishing a wide body of protective legislation. These laws and programs are outlined in Appendix C.

The federal government strengthened its commitment to the preservation of the nation's cultural heritage in 1966 with passage of the National Historic Preservation Act. This Act defined and expanded the federal policy of taking all possible efforts to preserve important historic and archeological resources which might be harmed by federal actions. This Act also directed the Secretary of the Interior to expand and maintain a National Register of Historic Places, containing resources of local and state significance as well as those of national importance. This same legislation further established the framework for implementation of the federal preservation policy by directing each state to appoint a State Historic Preservation Officer (SHPO) to administer the Act on the state level and to act as liason between local, state and federal preservation programs. In Massachusetts the Office of the SHPO is the Massachusetts Historical Commission.

The Massachusetts Historical Commission has developed a number of programs in response to federal and state mandates to preserve and manage cultural resources. The primary programs include: (1) the compilation and analysis of an inventory of historic, architectural and archeological resources, and the nomination of eligible properties to the National Register of Historic Places; (2) implementation of the environmental review programs

designed to protect historic properties; (3) administration of a grants-in-aid program for the acquisition and development of properties listed in the National Register; (4) provision of technical assistance to preservation constituencies; and (5) the development of public education and information programs.

All of these programs in Massachusetts are based on strong local involvement and support. When the Commission was first established it recognized the need for broadly based local participation in preservation activities. The State passed enabling legislation in 1963 to allow communities to establish local historical commissions. The local commissions, which are established voluntarily by a vote of the Council in each city or at a town meeting, are responsible for ensuring that preservation concerns are considered in all local planning and management decisions. The Massachusetts Historical Commission depends on the local commissions for assistance in all of their programs.

MASSACHUSETTS HISTORICAL COMMISSION PROGRAMS

Inventory and National Register Nomination

The first step in the Massachusetts Historical Commission's management process is the identification and evaluation of cultural resources. For the past ten years the Commission has been compiling the Inventory of the Historic Assets of the Commonwealth. In order to do this, the Commission has relied primarily on information submitted by local historical commissions. The Commission established a basic survey methodology, developed inventory forms and provided technical assistance to local preservation groups.

The Massachusetts Historical Commission uses the information gathered in the survey and inventory process to nominate properties to the National Register of Historic Places. The National Register is a federally maintained list of cultural resources which have been evaluated as significant and worthy of protection. To be eligible for the National Register, resources must meet the following criteria:

> Areas sites, buildings, structures or objects that possess the quality of significance in American history, architecture, archeology and culture, and have integrity of location, design, setting, materials, workmanship, feeling and association: and that are (A) associated

with events that have made a significant contribution to the broad patterns of our history; or (B) are associated with the lives of persons significant in our past; or (C) embody the distinctive characteristics of a type, period, or method of construction, or represent a significant and distinguishable entity whose components may lack individual distinction; or (D) have yielded, or are likely to yield, information important in prehistory or history.

In addition to receiving recognition for their historical importance, properties listed on the National Register may qualify for loans for preservation, rehabilitation or restoration; grants for acquisition, preservation, rehabilitation or restoration; protection from unfavorable consequences because of any federally financed, licensed or assisted project; and federal tax incentives to rehabilitate commercial or business related structures. Owners of listed income-producing properties may suffer tax disincentives should they decide to alter or demolish the structure.

Environmental Review

MHC, as the State Historic Preservation Office, has the responsibility under Section 106 of the National Historic Preservation Act to review any federally funded or licensed undertaking in order to determine its impact on cultural resources listed, or eligible for listing, in the National Register. The MHC also reviews the impact of state programs to cultural resources through commenting to the Massachusetts Environmental Policy Act unit. Working with public agencies, their consultants and the public, the Massachusetts Historical Commission assists in developing plans that will minimize potentially adverse impacts to cultural resources. This planning and management process is one of the key ways the Commission protects important cultural resources. Although official environmental review mechanisms exist, the Massachusetts Historical Commisssion relies on local preservation organizations to alert the state of potential or existing publicly funded threats to cultural resources and on the cooperation of agencies in contacting the MHC early in the planning process.

Grants-in-Aid

The Commission is responsible for administering the Historic Preservation Fund grants program. Most National Register property owners are

eligible to apply for these 50% matching grants. Although the program is small these grants often stimulate a large private investment of funds in important preservation projects. The conditions attached to the grants ensure that all rehabilitation/restoration work performed on the project will conform to high preservation standards.

Technical Assistance

In addition to the programs mentioned above, the Massachusetts Historical Commission provides technical assistance to preservation constituencies throughout the state. This includes information on preservation technology, the use of planning mechanisms such as the formation of local historic districts and preservation restrictions, and information on ways to incorporate preservation concerns into local public decision making.

Public Education and Information

The Commission serves as the major preservation advocacy agency in state government. In this capacity the Commission conducts a broad program of public information and education about the importance of cultural resources. Coordination with the numerous preservation constituencies in Massachusetts is central to the Commission's activities.

In addition to the programs conducted by the Massachusetts Historical Commission, there is a wide range of federal and state programs and legislation managed by other agencies which affect cultural resource management. Although the Massachusetts Historical Commission does not always have a strong voice in the management decisions made by other agencies, these other programs affect to varying degrees the ability and the need of the Massachusetts Historical Commission to act. These programs are another element in the operating framework of the Massachusetts Historic Commission and constitute "real world" constraints that must be considered in planning. Some of the major programs and legislation are outlined in Appendix C.

NEED FOR A COMPREHENSIVE STATE PLAN

The Massachusetts Historical Commission remains convinced of the need and importance of a strong locally based network of local historical commissions to act as the "first line of defense" in the identification, protection and preservation of cultural resources. However, after almost a decade of growth and development as the State Historic Preservation Office, the Massachusetts Historical Commission has recognized problems caused by this orientation of the program.

Despite years of intensive survey effort on the part of the cities and towns in the state, the inventory of cultural resources is still incomplete, unevaluated and inadequate. The quality of information varies from town to town. In general, communities with no local historical commissions have little or no inventory recorded and communities with the most active local historical commissions have the best inventory. Knowledge is also considerably varied for different types of resources. Seventeenth, eighteenth and early nineteenth century buildings are more fully recorded than late nineteenth or early twentieth century structures. Residential areas and civic buildings are more fully documented than are commercial and industrial structures. The built environment is better recorded than are archeological resources. Survey knowledge is far more complete for history than for prehistory.

A program based on the cooperation of 351 incorporated cities and towns in the state, 292 of which have local historical commissions, causes problems for effective management. It is difficult for the Massachusetts Historical Commission, with limited staff and funding, to provide technical assistance and current program information to all the local preservation organizations on a one-to-one basis. The Massachusetts Historical Commission's annual conference, bi-monthly newsletter, and frequent memoranda to local historical commissions are attempts to alleviate communication strains. However, these efforts do not provide either the Massachusetts Historical Commission or local preservation constituencies with a mechanism to evaluate cultural resources, and do not provide a general management framework which can be applied to specific cultural resource problems.

The absence of a comprehensive management framework has often resulted in "crisis management". The Massachusetts Historical Commission

becomes aware of cultural resources which are threatened, and decides in what is often an ad hoc manner whether or not the property appears eligible for National Register nomination (and therefore subject to the environmental review process), or eligible to receive a grant-in-aid. The result is a fragmentary approach to preservation. An extremely important resource may be lost because the Commission does not have sufficient information to evaluate it. In other cases, the Commission may spend valuable staff time fighting to save a resource which, if placed in a broader historical context, is not important enough to justify the effort.

Many professionals working in preservation have suggested that the solution to crisis management is to complete the survey. However, the Massachusetts Historical Commission has found that, although a comprehensive survey is vital for making rational decisions, a survey alone does not constitute a management plan. The survey itself does not provide a framework for evaluating significance, nor does the survey establish priorities for the management of cultural resources. Decisions on specific resource significance must be made within a more systematic management context.

Although the Massachusetts Historical Commission continues to be committed to locally based historic preservation programs and plans to continue its strong support of local survey efforts, the Commission also recognizes the pressing need for a comprehensive statewide management plan. This plan must allow the Massachusetts Historical Commission to be more explicit, systematic and rational in its consideration of the entire range of cultural resources, and to establish a set of priorities for the identification, preservation and protection of the Commonwealth's rich cultural heritage.

Explicit, analytical frameworks for understanding cultural resources generally have not been present in the state and federal management process. Systematic evaluative models exist only for small segments at opposite ends of the wide spectrum of cultural resources. Until recently, professional contributions to cultural resource management have come primarily from the fields of architectural history and prehistoric archeology, both of which have limited applications for planning. Architectural history provides a frame of reference which is often limited in scope and effectiveness to high-style, outstanding, or early historical structures. Prehistoric archeologists have developed broader behavioral models which have been

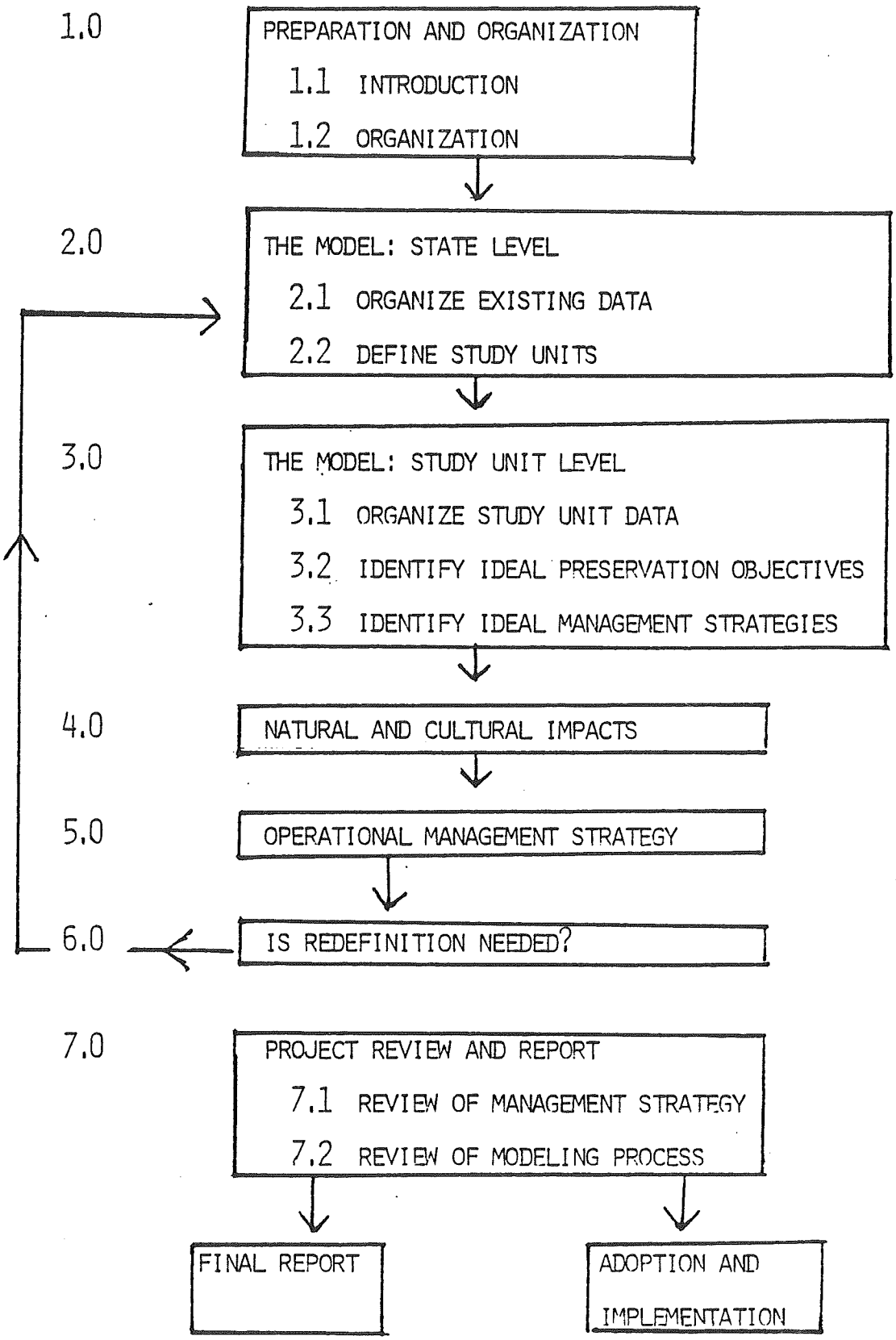
framed only in reference to a very specific range of resources. Cultural resource management programs have not been well-equipped to deal with other types of resources.

INTERAGENCY ARCHEOLOGICAL SERVICES MODEL

The Massachusetts Historical Commission received a contract in September 1978 to test and implement a planning model designed to assist management agencies to develop comprehensive cultural resource management plans. The planning model calls for the organization of all existing state survey data, and the definition of smaller geographical "study units" within the state, based on prehistoric and historic developmental patterns. The model assumes that all existing data for each study unit will be organized, providing a developmental context to assist in determining significance.

Given the historical context, idealized preservation objectives and management strategies are identified for cultural resources within each study unit. The "real world constraints", (including both natural and cultural causes of loss and attrition of resources, the diverse constituencies concerned with resources, and the limitations caused by existing legislation and programs), are then identified and an operational management plan, identifying specific preservation goals and management strategies, is developed. Inherent in the model is constant feedback into the system. A plan produced by this method is not a static document, but is dynamic and constantly changing. Priorities and management strategies change when the information about cultural resources, the threats to cultural resources, and the constituencies concerned with the resources change.

The specifics of the Interagency Archeological Services procedures for the plan are outlined in the flow chart, below:


1.0
PREPARATION AND ORGANIZATION
1.1 INTRODUCTION
1.2 ORGANIZATION
2.0
THE MODEL: STATE LEVEL
2.1 ORGANIZE EXISTING DATA
2.2 DEFINE STUDY UNITS
3.0
THE MODEL: STUDY UNIT LEVEL
3.1 ORGANIZE STUDY UNIT DATA
3.2 IDENTIFY IDEAL PRESERVATION OBJECTIVES
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NATURAL AND CULTURAL IMPACTS
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IS REDEFINITION NEEDED?
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PROJECT REVIEW AND REPORT
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FINAL REPORT
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Chapter II:
Framework for the Management Plan

TOWARD A RESEARCH ORIENTATION

The general problem in establishing a cultural resources management plan is devising a framework which will ensure the preservation of the material remains (the buildings, sites, objects and artifacts) important to the interpretation and explication of the cultural past in Massachusetts. Material culture is an important data base that helps in understanding human behavior. The material remains of the diverse human groups who have lived in Massachusetts reflect varying systems of social organization and cultural adaptation. These groups can be studied separately, but a more effective approach is to develop a research framework which encompasses the universality of cultural behavior.

The general questions posed in material culture research are universal, and can be asked of any human group, anywhere, anytime. All human groups must deal with problems such as food procurement, shelter, organizing social relations, and providing a place for the individual in society. Social science research is structured around two sets of universal questions: (1) the relationships of humans to the natural landscape, and (2) the relationships of humans to each other. These two sets of questions are not independent; in fact, the study of the dynamics of cultural development is the study of the relationships and tensions between the two.

A variety of academic disciplines are active in material culture studies in Massachusetts. Each discipline brings to bear its theoretical concepts in studies of material culture, and each is concerned with the preservation of a specific data base. At a minimum, these disciplines include anthropology, archeology, folklore, social history, technological history, industrial archeology, architectural history, fine arts, and geography. The selection of a unified and comprehensive theoretical framework for interpreting material culture is a critical step in developing a research design and management strategies for cultural resources.

Geography provides a set of theoretical concepts which are interdisciplinary in nature and which incorporate a broad spectrum of social science research problem areas. Since cultural resources often defy disciplinary categorization, their study requires a synthetic approach. The concepts of time and space cut across disciplinary boundaries and are basic to any study of cultural history. A geographical approach combines formal recog-

nition of time and space concepts with the capacity to integrate perspectives from many disciplines.

The geographical framework focuses attention on the operation of past cultural systems in the environment, the areal expression of these systems in the cultural landscape, and the material expression of past cultural systems in its forms and associations. Geography provides a framework of analysis that is equally appropriate for prehistoric and historic resources, and thus circumvents the division imposed by other disciplines in the study of these two time periods. Because geography is inherently interdisciplinary, the research goals of other disciplines can be adopted into the framework proposed in this plan after disciplinary communications problems are overcome. A more detailed explanation of the geographical framework for this plan is provided in Appendix A.

Through a cultural/historical geography approach, an evaluative framework and preliminary research design for cultural resource management in the state has emerged. Important elements in this framework include the following:

(1) A concern for process, the ways in which cultures develop in time and space;

(2) A need to understand function and functional organization by looking at systems and communities; (Greater emphasis and consideration must be given to larger, systematically related clusters of cultural resources. The clusters will vary in scale, but will certainly include drainage basins, farmsteads, neighborhoods, towns, cities, and regions.)

(3) A recognition of the importance of context and the need to understand cultural resources in terms of the changing socio-economic patterns from which they emerged; (Specific cultural resources cannot be considered in isolation, but must be regarded as parts of larger, dynamic, contextual wholes. Resources are elements that are important in the context of local and regional patterns.)

(4) An emphasis on understanding the everyday event, the commonplace pattern and the vernacular form. (The commonplace, functional and representative manifestations of past cultures are integral parts of the ways that the vast majority of

people have lived in the past and for this reason they must be integrated into cultural resource management programs. Vernacular, popular, and folk material artifacts and functional elements of communities and landscapes are at least as important as high style structures, if only in terms of research potential. Cultural resources that presently have low visibility (both above and below ground) may hold the greatest potential for answering basic questions about past human behavior in Massachusetts. Guidelines for identification and evaluative frameworks must be developed for these elements of the cultural landscape, and these resources must be better integrated into the cultural resource management process.)

The emphasis on process, function, context and the vernacular represents a marked shift from previous (often implicit) evaluative parameters which have tended to emphasize properties of outstanding merit or association.

Discussions between the Commission and the interdisciplinary consulting team which participated in this project have highlighted a diversity of research orientations important for understanding the cultural resources of Massachusetts. Each field varies greatly in the scope, intensity, orientation, volume and history of work done. Specific research questions current in academic disciplines can be combined into a number of broad interdisciplinary research problem orientations. These orientations, outlined briefly below, are incorporated into the geographical framework.

Almost all researchers agree that the focus in material culture studies must turn to an analysis of human cultural systems and a concern for understanding the ways in which communities functioned in the past. Cultural resources contain information that can lead to a better understanding of the ways in which human behavior was structured on a variety of scales, from local to regional and national systems. Material remains are often our only means of understanding groups (both in the near and the remote past) for whom written records are scanty or non-existent.

Human cultures operate in natural settings. The ecological relationship between human and natural systems must be more clearly understood. This relationship is characterized by distinctive ways of living which have material expression in the form of distinctive settlements, and living and

working spaces within settlements. The scale of man-environment interaction varies from local microenvironments to larger physical-ecological regions.

Past research in the state has tended to parallel and reinforce previous preservation priorities, concentrating on particular outstanding or unusual sites and structures. However, more recently a growing number of researchers dealing with material culture have adopted approaches that are more problem-oriented, and often use hypothesis-testing and model building frameworks. Scales of concern, however, remain extremely varied, and the focus of research disparate. Some university departments, research organizations and individuals, and a few local governments, are progressing toward local and regional research strategies.

The geographical framework synthesizes disparate research orientations into a wholistic approach to understanding cultural resources in terms of the processes by which they were created. Incorporation of a wider range of conceptual frameworks, models and research orientations dealing with cultural resources into a single framework will lead to better guidelines for the identification of resources which otherwise would have little or no visibility. The Commission will be better able to evaluate the resources that it has already identified. The framework will provide a basis for making systematic and consistent management decisions, treating all cultural resources within a single conceptual design.

STUDY UNITS

The division of the state into smaller geographical units ("study units") provides an initial organizational framework for the identification and management of cultural resources. The study unit serves a number of purposes:

(1) It allows the consideration of clusters of cultural resources in their spatial and environmental context, rather than as isolated, individual sites;

(2) It facilitates the comparative consideration of this context at a number of scales:

(a) regional (study units),

(b) interregional (between study units),

(c) subregional (within study units),

This represents a more flexible framework of analysis than the present local (town)/state dichotomy;

(3) It permits the establishment of different sets of regional priorities through a consideration of regional variations in cultural resources themselves, our knowledge of the resources and the developmental pressures on those resources.

In order to divide up the state and define study units, broad physiographic regions as well as patterns of human occupation were considered. Massachusetts is not made up of easily identified, large-scale, culturally or physically homogeneous regions. Small-scale heterogeneity is an essential quality of its natural landscapes, physical-ecological zones, and topographical surfaces. Natural region boundaries, though they generally have been stable over time, are subject to varying interpretations. For example in various studies 300, 400 and 500 foot contour lines have been used to distinguish upland from lowland areas (Klimm 1933; Wright 1933).

The state is notable for the variety of its patterns of human occupation. Adaptation to the small-scale natural heterogeneity of the state can be seen in a variety of ways. The subsistence patterns of aboriginal peoples involved seasonal rounds which included summer lowland camps, spring fishing settlements clustered around river falls and inland winter hunting territories. The later European political organization of the state institutionalized the small-scale patterning on the land. Large seventeenth and eighteenth century land grants were divided up into smaller units; for example, the original Cambridge land grant was divided into seven towns by the nineteenth century (Billerica, Bedford, Lexington, Arlington, Cambridge, Brighton and Newton). This shifting and rearranging of local political boundaries continued through the nineteenth century. Today the Massachusetts landscape is incorporated into 351 autonomous towns and cities (see Figure 1). A town in Massachusetts is not a single settlement. It is an incorporated geographical area with legally authorized boundaries that may include one or more centers or villages; it is roughly analagous to "townships" in other parts of the United States.

The Natural Environment

The topography of Massachusetts is the result of thousand of years of

glacial activity. A series of invading and retreating ice sheets, prior to human occupation, created hills and moraines, lakes and ponds, rivers and basins. Glaciation resulted in a complex pattern of soil types, with great variation occuring within limited areas. Glacial action on the ancient rock structure left an extremely diverse smallscale topography. Although the basic configuration of Massachusetts is the result of glacial action, natural landscapes, physicoecological zones and topographic surfaces have not remained constant since then. The environment has been subject to climatic variations, changing sea levels, and hydrographic development, as well as massive modifications by human groups.

The Massachusetts natural landscape is a patchwork, composed of many small, highly diverse regions. These range from rocky shores, sandy beaches and salt marshes through rolling hills and fertile valleys to the western hills. However, some larger scale generalizations can be made about types of physical areas within the Commonwealth (See Figures 2, 3, 4).

Coastal Lowlands:

The most distinct features of the coastal lowlands are the two basin shaped depressions of less than 200' altitude: the Boston and the Narragansett basins. Cape Cod and the Islands represent another distinct region within the coastal lowlands. In the north, the Merrimack River Valley, generally recognized as part of the coastal lowlands, originates in the uplands.

While no natural feature distinguishes the coastal lowland from the central uplands, its lower altitude and more gentle relief profile set it apart. Climatically, the difference is more marked, with the ocean having a definite moderating effect on the lowland area. The growing season (almost 200 days in southeastern Massachusetts) averages about a month longer on the shore than fifty miles inland on the uplands.

Interior Lowlands:

The two interior lowland areas of Massachusetts are the Connecticut River Valley and the smaller Housatonic Valley (in the Berkshires). These are long, narrow north/south valleys, enclosed on nearly all sides by uplands. As in the coastal lowlands, the climate in the Connecticut Valley is milder than that of the surrounding uplands; the growing season is over a month longer than thirty miles to the east or west. The Conn-

ecticut Valley, with its rich soils and level surface, is the only region in the state where commercial farming has been able to approach a large scale of operation. The narrower Housatonic Valley in the Berkshires cuts between the Berkshire Plateau to the east and the Taconics to the west.

The Uplands:

The central uplands lie between the Connecticut River Valley and the coastal lowlands. From the eastern and western margins of this region, the topography rises to a series of longitudinal crest lines, above which rise isolated mountains (monadnocks), such as Mt. Wachuset. The central uplands gradually increase in elevation toward the northern border.

The most rugged topography in the state is found in the western uplands, in the Berkshire region. This upland forms a plateau that falls off abruptly into the Housatonic and Hoosic Valleys. The plateau is deeply cut by streams flowing southeast to the Connecticut River -- the Deerfield, Westfield and Farmington rivers and their branches.

Patterns of Human Occupation

Several broad periods of human occupation were examined in the search for appropriate study units.

Prehistoric:

Subsistence strategies varied from large scale hunting, to hunting and gathering, and finally to horticulture. Seasonal exploitation of limited territories included both upland and lowland environments. River basins may have been focal areas in these seasonal movements. As marine estuarine resources became more intensively exploited, population in the eastern part of the state may have concentrated along the coast. With the introduction of agriculture, lowland areas were favored for settlement.

European settlement and agricultural expansion:

Seventeenth and eighteenth century agricultural occupation spread inland from the initially settled coastal areas, leapfrogging into the fertile Connecticut Valley. Settlement selectively spread across the lowlands, eventually filling the upland areas as well (See Figure 6). Lowland areas and intervales in the uplands were favored for settlement. Dispersed manufacturing activities, using small-scale mill power technology, were located on small streams and rivers.

Commerical, industrial and urban intensification:

Nineteenth and early twentieth century technological innovations led to industrial and urban development in the larger river valleys along the coast and along major transportation corridors. Massachusetts became part of a national economy and developed a complex regional settlement pattern.

Study Units:

The definition of study units proved a difficult conceptual and operational problem. Project participants generally agreed that units of analysis smaller then the state are helpful, but there was little agreement either on appropriate parameters for defining spatial units, or even on the relevance and desirability of spatial analysis and the development of a theoretical framework for doing so. Despite these problems, and the problems of the small scale and the complexity of cultural development in the state, overlapping physical and developmental macro-regions can be delineated. Since the focus of this study concerns similarities and differences both within and between study units, the exact bounds for the study units are less critical than is an understanding of the dynamic processes and activities involved in the creation of the cultural landscape in Massachusetts. In most cases, border areas of macro-regions are transition zones between the regions, and communities on either side of a boundary often share more similarities than differences.

In Massachusetts physical and cultural macro-regions can be approximated by modifications to county lines. Although post-contact political lines may seem inappropriate for considering prehistoric resources, study units based on combinations of counties are large enough to comprehend the major activity zones of aboriginal peoples. Within each of these large study units, sub-regions can be identified. The Connecticut River Valley study unit, for example, could legitimately be divided into one narrow river sub-region and two upland sub-regions on either side; however,in this case, to have established these smaller divisions as study units in of themselves would have hidden the dynamics of operating uplands-lowlands cultural systems. The use of combinations of counties as study unit divisions has the added advantage that most area or regional literature is organized by county location. The study units as defined (see Figure 5)

are an initial division and will be modified as concepts and knowledge change.

FRAMEWORK FOR THE MANAGEMENT PLAN

The framework for this plan consists primarily of an evaluation of four elements identified as major considertations in management strategies. Management decisions must be based on consideration of:

(1) the history of past research and current levels of survey knowledge;
(2) the historical/developmental context from which cultural resources emerge;
(3) the processes and agents that lead to destruction and attrition of cultural resources;
(4) the constituencies which act to protect cultural resources.

Since none of these elements are uniform over the state, specific management strategies will also vary over the state. The plan recognizes and incorporates regional variation through the "study unit"concept.

Current Levels of Knowledge:

Analysis of existing levels of cultural resurces data, as represented by the Massachusett Historical Commission inventory and survey files, helps to pinpoint gaps in current knowledge. This can provide one basis for establishing management priorities and also suggests areas of need for future research.

Development Patterns:

If statements of historical context are to be used to explain broad patterns of cultural resources in the state, they must concern historical processes, not isolated events. A comprehensive state plan for cultural resource management cannot be based solely on evaluations of outstanding historical events or architectural styles, but must also take into account broad patterns of economic development, community formation and growth, and cultural and technological change. Evaluation must take place in terms of the processes important to the creation of cultural resource patterns, rather than only in reference to moments in history associated

with particular places or structures. Isolated aesthetic judgements and the "hero in history" approach have had a seminal role in historic preservation, and will continue to be important. However, this plan emphasizes the need for a more consistent and balanced view of history and consideration of broader historical context in cultural resources management programs.

Destruction and Attrition:

A major element in establishing priorities for cultural resource management is the identification of factors that cause or contribute to the loss and destruction of resources. Destruction can be the result of either natural events and processes or of human impacts. Erosion, storms and general weathering are examples of natural events. Human impacts range from active destruction to loss from neglect. Actively destructive factors include major focused events, such as community development projects and highway construction, more diffuse processes such as strip development, suburban sprawl and general private construction, as well as individual acts of vandalism, arson and demolition. Processes of neglect include urban disinvestment and rural abandonment. The identification of these patterns is one way the planning model is used to evaulate pressures on resources and constraints in preservation planning.

Through environmental review, the Massachusetts Historical Commission monitors specific projects which are publicly funded or licensed. By identifying a broader range of agents of loss and destruction, and identifying patterns of loss and destruction in this plan, the Commission will also monitor broader trends (e.g., "suburbanization") and can anticipate problem areas in the state, leading to long-range planning rather than reacting to immediate crises.

Constituencies:

The Massachusetts Historical Commission cannot protect cultural resources without public support. MHC has a policy of working closely with public constituencies, principally through local historical commissions. The Commission recognizes the importance of integrating cultural resource management into local planning efforts. The local historical commissions must act as the "first line of defense" for the preservation and protection of cultural resources; local community involvment has a major effect on the success of preservation planning. An important consideration in the

development and implementation of this plan is that "in the real world" the basic management unit in Massachusetts is the town or city.

Management Plan:

The consideration of these four factors (levels of knowledge, development patterns, destruction and loss, constituencies) as the basis for the comprehensive state plan provides a framework for making systematic cultural resource management decisions and for establishing consistent management priorities. The strength of the approach taken in this model is that it considers all parts of the state, and treats the full range of cultural resources within a single decision-making approach. Moreover, the model is flexible; it incorporates research needs and constituency needs, and the establishment of priorities, but also allows for the modification of all of these.

This plan reaffirms the commitment of the Massachusetts Historical Commission to local constituencies. The primary concern of the Commission is management; those of the academic community are research and education. The development of this plan provides a means through which these concerns can complement each other and better serve the ultimate constituencies to which both government agencies and academics are responsible--the public in Massachusetts.

Chapter III:
Elements in the Plan — Massachusetts Information

LEVELS OF KNOWLEDGE: MASSACHUSETTS OVERVIEW

Until recently archeological and architectural research in the state was carried out separately. Resources not generally recognized by prehistoric archeologists or architectural historians, such as industrial structures, historical archeological sites, and structures of engineering significance (bridges, dams, roads), were neglected and not included in survey efforts. Since 1975, the Massachusetts Historical Commission has advocated a comprehensive survey methodology to identify all types of cultural resources, but few communities have been able to complete comprehensive surveys for historic and prehistoric properties above and below ground.

Research and survey efforts in prehistory and architectural history have been conducted by both amateurs and professionals. Although the quality and level of intensity of research varies across the state, and is in general patchy, some generalizations about statewide research can be made.

Prehistoric Research:

Initial research into Massachusetts prehistory began in the nineteenth century with an antiquarian interest in artifacts coupled with popular interest occasioned by sites, usually richly furnished burials, that were uncovered by construction activities, farming or natural erosion. By the turn of the century, many individuals were serious antiquarians who were developing major artifact collections.

The first major compilation of prehistoric information was C. C. Willoughby's Antiquities of the New England Indians published by Harvard in 1935. Willoughby was familiar with most of the collections of his day, and his book is largely a description of sites known to collectors.

The Massachusetts Archaeological Society (MAS) was founded in 1939 as the only statewide organization interested in Massachusetts prehistory. The primary tasks of the Society were not only to provide a forum for exchange of information and ideas about prehistory, but to compile information on archeological sites in order to start a statewide record and survey. Ripley Bullen of the R. S. Peabody Foundation of Andover was the major organizer of the survey effort. The prehistoric site inventory now on file at the Massachusetts Historical Commission office is largely comprised of

this MAS survey information from the 1940's. The Massachusetts Archaeological Society was the major sponsor of archeological investigations in Massachusetts until the late 1960's. Most survey information in the state and almost all information from excavations came from the work of the avocational archeologists of the Society. Several chapters of the MAS remain active today, although the general thrust of interest has shifted from site survey to site excavation.

Professional research in Massachusetts prehistory was only sporadically supported by institutions, notably the Peabody Museum at Harvard and the R. S. Peabody Foundation at Andover. However, professional interest was anchored in the late 1960's with Dena Dincauze's surveys of the Charles River and the Greater Boston Area, William Ritchie's excavations in Martha's Vineyard and, at a more general level, Bert Salwen's reconnaisance of Connecticut Valley sites.

Since 1970 academic research has maintained a high level of professionalism and has been supported by a formal commitment to preservation. Concomitant with the reawakening of professional research has been the development of a Cultural Resource Management program in the State. The Office of the State Archeologist was established in 1971 under the Massachusetts Historical Commission and Secretary of State, followed in 1973 with the "Antiquities Act" which outlined the duties of the State Archeologist and established both a permit system and a process for landmark designation. The State Archeologist acted as the archeological advisor to the Massachusetts Historical Commission until 1976 when an archeologist was added to the staff of the Commission.

Since 1976 the Massachusetts Historical Commission has sponsored survey and planning activities in archeology, as well as overseeing environmental review and compliance activities. In addition, the Commission continues to compile bibliographic information (originally sponsored under a contract with the Interagency Archeological Services) on prehistoric cultural resource management work in the State; the bibliographic information is distributed to archeologists active in Massachusetts in order to provide a forum for communication.

Historical Research

As was the case with prehistory, initial interest in the architectural history of Massachusetts was antiquarian in approach and concerned with the "romantic" qualities of early houses. The first treatise specifically on the subject was "A Paper on New England Architecture" delivered to the New England Historical Geneological Society on September 4, 1858 by the Reverend Nathan Henry Chamberlain. This antiquarian interest was supported and expanded upon by more general forms of historical research. Much of what was recorded about historic properties during the nineteenth century was a by-product of research for town and county histories. Although these histories focused on major historical events and figures, houses, public buildings and churches were often mentioned. In a similar fashion, geneological research often uncovered information about ancestral homes.

By 1900 the approach to Massachusetts architectural history, while still concentrated on first period buildings, was becoming more scholarly and analytical. Early attempts to analyze architectural developments led both to publications and actual restoration work. Early Connecticut Houses, written by Norman Isham and Albert Brown in 1900, provides a detailed structural analysis of first period houses in Connecticut. It was the first systematic approach to document regional variations in architecture and to trace development patterns, thereby establishing a framework within which individual houses could be understood. This was followed in the 1920's by Isham's Early American Houses, a work concentrating almost exclusively on structural analysis of first period houses in Massachusetts, and a more general book by Fiske Kimball concentrating on the stylistic developments of major houses: Domestic Architecture of the American Colonies and the Early Republic. Both works made major contributions to understanding the development of American architecture both as a cultural expression and as an art form.

In 1910 the Society for the Preservation of New England Antiquities (SPNEA) was founded by William Sumner Appleton. The Society not only acquired and restored early buildings but became a major repository for historical and photographic documents and, through its publication, Old Time New England, has provided a forum for scholarly papers on all phases of material culture in New England.

Since the mid-twentieth century academic architectural historians have shifted their focus from European architectural history to the analysis of American architectural history. While much of this work is general in scope, a number of researchers have focused on the rich architectural heritage of Massachusetts. Henry Russell Hitchcock's book, Henry Hobson Richardson and His Times, examines the interaction of a major nineteenth century architect and his culture; Bainbridge Bunting's Houses of Boston's Back Bay considers the development of a nineteenth century residential neighborhood both as a work of art and as an expression of contemporary Boston society; Abbott Lowell Cumming's The Framed Houses of Massachusetts Bay 1625-1725 provides a full analysis of the English derivations for first-period houses and of the "Americanization" of European styles and forms.

Major research questions asked by most architectural historians concern the building's function, construction, formal qualities, and relation to the environment; its historical position as an expression of contemporary culture, as related to major movements, in terms of the intent of its designer; and its distinct American qualities.

Architectural history, traditionally associated with the fine arts rather than the social sciences, has tended to concentrate on buildings of high artistic merit, representations of major stylistic trends or unique or unusual structures. However, with increasing pressure to recognize all aspects of the built environment, recent research has begun to consider the more commonplace structures associated with folkways and vernacular culture. While a high degree of professionalism has been associated with identification and interpretation of the architectural resources of Massachusetts since the beginning of the century, much remains unknown, and architectural history is not yet consistently integrated with the survey data of the MHC. Unlike archeological/prehistoric research, much of which is now initiated in compliance with federal environmental review legislation, little architectural history research is incorporated into MHC inventory files as a matter of review procedures.

The earliest MHC surveys were windshield surveys, conducted in the late 1960's and early 1970's. These surveys concentrated on identifying historic resources which possessed outstanding architectural significance. Several state-wide thematic surveys were simultaneously undertaken,

including a survey of mill buildings, a canal survey and, although not as inclusive, a survey of historic roadways and paths.

Beginning in 1975, the MHC considerably broadened its survey scope by defining criteria to guide local volunteers conducting survey work. These criteria assert that property identification must consider the full range of resources, in terms of period, theme, property type and geographical distribution.

In 1976 the MHC established a survey and planning grant program to fund local historical commissions to contract for professional assistance in survey work. In addition to these professional surveys, the Comprehensive Education and Training Act (CETA) has provided valuable semi-professional assistance to local historical commissions.

LEVELS OF KNOWLEDGE: STUDY UNITS

The level of knowledge of cultural resources varies widely across the state. In general, we know more about the cultural resources in lowland areas than in upland areas, more about the resources in areas immediately surrounding academic and research institutions, and more about urban areas than rural areas. Knowledge of prehistoric resources in the state derives primarily from academic research in specific areas; knowledge of historic resources more generally reflects the current state of the Massachusetts Historical Commission's survey efforts.

Berkshires

(1) Prehistoric: Until recent cultural resource management activity started in the Berkshires, no formal and few informal research efforts in archeology had been sponsored in the area. Approximately fifty prehistoric sites are reported for the area.

Cultural resource management studies recently have stimulated interest in Berkshire prehistory. The Mount Washington Brook Survey, the Rte 7 By-Pass study and the TENNECO Reconnaissance study have all initiated research in the area.

The lack of prehistoric research is probably because of the absence of university supported archeological activity in the area. Williams College does not have a local archeological program, nor do the local community colleges. The Berkshires have been neglected by other academic institutions in favor of more readily accessible areas of study.

(2) Historic: Professional architectural/historical surveys have been completed for two of the major population centers, North Adams and Pittsfield. Volunteer surveys have been completed in Becket, Stockbridge and Williamstown, although these are being continually updated and revised. The rest of the communities, primarily small hill towns, are not actively conducting surveys.

The MHC has coordinated efforts with the Berkshire County Regional Planning Commission to hire a regional preservation planner. In addition to providing direct assistance to local historical commissions, the planner is undertaking historic/architectural surveys of the many small Berkshire communities. Survey forms have been completed for New Ashford. A

publication was also prepared summarizing the development patterns of each Berkshire County community, identifying potential historic districts and individual structures outside districts, and providing status reports on local preservation activity.

Connecticut River Valley

(1) Prehistoric: Archeological research in the Connecticut River Valley moved from antiquarianism with the work of H. A. Wright in the late nineteenth century. Wright was a student of Indian language and a careful historical researcher who employed archeological field techniques in an attempt to understand aboriginal lifeways. Connecticut River Valley archeology remained largely interested in the impressive mortuary sites uncovered during the first decades of the twentieth century. C. C. Willoughby (1935) discusses a number of Connecticut River Valley finds in his work on New England Antiquities.

Surveys in conjunction with the MAS statewide inventory effort of the 1940's succeeded in mapping a number prehistoric of sites in the Valley. Most of this site information was recorded for the area between Hadley and Springfield. In general, little is known about upland areas in contrast to the Valley floor; less is known about sites on the tributaries than sites on the main river stem. Several hundred prehistoric sites are recorded in the study unit area, largely the result of the efforts of MAS recording. Serious MAS efforts to understand Valley prehistory were initiated by W. J. Howes who mapped a number of sites, and by W. S. Fowler, who knew the location and configuration of many Valley sites. A number of MAS sponsored excavations at Valley sites were conducted during the 1940's through the 1960's.

From 1967 to 1969, Bert Salwen (NYU) completed a broad brush reconnaissance survey of the Connecticut River from Canada to Long Island Sound. Because of the active MAS efforts, Salwen found the Massachusetts section of the river the best explored archeologically. Salwen's overview summarized in a general way existing site data and suggested general management strategies, ranging from survey to excavation. Salwen was distressed by the few competently excavated sites in the Valley and the equally poor record of site reporting.

Since 1969, the University of Massachusetts, Amherst, has been active in Valley prehistory and, under the sponsorship of Dena Dincauze, has developed a graduate program in Northeastern prehistory. Dincauze has directed three area field schools aimed at intensive and systematic survey and site discovery, one in Hadley, and two in Northfield. Students have aimed their research efforts toward of understanding regional settlement systems and patterns of resource utilization. Research has also evolved toward studies of predictive models of site encounter probabilities based on landscape analyses.

(2) Historic: Professional survey efforts are presently underway in the major population areas. Chicopee, Springfield, Holyoke and Northampton have all compiled at least partial cultural resource inventories and their efforts are all ongoing. With the help of CETA, Belchertown has completed its survey and Orange is near completion. Active local historical commissions in Northfield, New Salem, East Longmeadow, Hawley, Whately, Westhampton, Longmeadow and Amherst have produced extensive survey work in these communities. Other communities in both the hill towns, such as Chester and Worthington, and in the river towns, such as South Hadley and Hatfield, are conducting surveys.

A year long CETA funded project (1978) in Franklin County has produced initial survey information for approximately two-thirds of the county's towns. This program has generated active local survey work in four communities. The other towns are not participating in survey work at this time.

In Hampshire and Hampden counties, the MHC has contracted with the Lower Pioneer Valley Regional Planning Commission to hire a full time preservation planner.

Central Massachusetts

(1) Prehistoric: The Central Massachusetts area has been one of the neglected regions of the state in prehistoric research. No long-term, formally supported prehistoric archeological study has been undertaken, although at various times the R. S. Peabody Foundation, Harvard University, and Clark University have had a hand in local archeology. The dominant figure in Central Massachusetts archeology is undoubtedly C. C. Ferguson, a MAS member. Ferguson was not only responsible for compiling

most of the site inventory now known for the area, but apparently trained or influenced almost everyone else who has played a role in Worcester area archeology. The Ekblaw Chapter of the MAS remains the primary sponsor of study in the area.

In 1977, David Anthony (Harvard) completed a survey, funded in part by the MHC, designed to provide the first management overview of Worcester County. This work is supplemented by several small scale cultural resource management surveys which have been conducted prior to construction and road widening projects.

(2) Historic: Professional architectural/historical surveys have been completed in two major cities in the area: Worcester and Fitchburg. The state's first multiple resource listing is in process in Worcester. A volunteer survey has been completed in Gardner, and a CETA group is near completion of Webster's survey.

Volunteer surveys are underway in the other cities in the study unit, including Leominster, Westborough and Athol. Many of the more rural communities in the region have extremely active local historical commissions and they have produced excellent survey data. These include Lancaster, Westminster, Holden, Athol, Templeton, Leominster, Sterling, Westborough, Southbridge, Charlton, Princeton, Petersham, Barre, Oakham, West Brookfield, Sturbridge, and Berlin. The northern towns, which fall within the Montachusett Regional Planning Commission, have had town center studies completed by an MHC funded regional preservation planner. The southeastern part of the region, which is more economically depressed, has fewer active commissions, and there is less survey being generated in this area.

Eastern Massachusetts

(1) Prehistoric: The intensity of prehistoric research in the Eastern Massachusetts study unit varies greatly, and this area has largely figured as the fringe of other prehistoric research areas. Approximately 350 prehistoric sites are recorded for this region, mostly located in Concord, Maynard, Wayland, Sudbury, Lincoln and the Canton/Randolph/ Braintree area.

The South Shore Chapter of the MAS has long been active in the Canton/ Randolph/Milton/Quincy areas, especially in the Blue Hills reserva-

tion. In addition, individual efforts by MAS members in Weymouth and Hingham have resulted in substantial survey information in those towns. The Needham/ Wellesley/Dover area was included in Dincauze's overview of the archeological resources of the Charles River. The Concord River Valley was well studied and surveyed in the 1940's by Ben Smith, an active MAS member. Smith's analysis of site locations vis-a-vis the landscape provides useful information about settlement patterns in the study unit.

Smith's work in the Concord River drainage basin has recently been supplemented by Duncan Ritchie's informal survey efforts in the Sudbury and Assabet drainages. Ritchie cautions that collector bias may be responsible for the neglect of small upland sites in favor of more easily discovered river and stream associated sites. L. Casjens (Harvard) recently completed a catch-basin analysis of sites in the Concord River Valley, largely using Smith's information, although data was supplemented by limited field testing. This was funded in part by the MHC.

A small corps of avocational archaeologists are conducting salvage operations at threatened sites in the Wayland/Lincoln area for which no state or federal means of protection is available.

Research in the Lowell, Chelmsford, Tewksbury and Billerica area is overlapped both by Smith's Concord River work as well as the R. S. Peabody (Andover) sphere of research. This section of the study unit has been relatively well surveyed although no prehistoric investigations are active at present.

The remaining sections of the study unit, the northwestern and southwestern areas, have never been surveyed for prehistoric resources, even at a superficial level. However, specific sites have been the subject of some scrutiny and study, notably the search for the praying villages in Natick.

(2) Historic: Although there is considerable volunteer survey activity in Eastern Massachusetts, few of the region's historical commissions, particularly in the larger communities, have been able to finish their survey work. There are completed surveys in Groton, Billerica, Concord, Bedford, Wilmington, Westford, Weymouth, Braintree, Weston, Norfolk, and Sharon. Active survey work at varying levels of comprehensiveness are being conducted in twenty-five communities, two of those (Framingham and

Lowell) with professional assistance. Many of the small industrial/suburban communities in this region are not currently involved in survey activity. Town centers surveys have been completed for all the northern communities by an MHC funded regional preservation planner.

Essex

(1) Prehistoric: Jeffries Wyman's (Harvard) investigation of shell heaps in the Merrimack Valley was the first move away from antiquarianism for the archeology of the region. Subsequent research in the Essex study unit has largely been sponsored by the R. S. Peabody Foundation in Andover. Warren K. Moorehead, who worked at the Foundation in the first decades of the twentieth century, apparently compiled lists of collectors and sites in the Merrimack Valley. Unfortunately, the published preliminary results of this survey were very poor and the field records, if ever kept, have been lost.

Ripley Bullen followed Moorehead at the Peabody Foundation. During World War II, Bullen worked intensively in the Andover area and performed survey and excavation work in the Shawsheen Valley. Under Bullen, the newly formed MAS was guided into compiling statewide survey information which forms the basis of the current archeological inventory of the state. Bullen's information on Essex County appears to be a compilation of Moorehead's data with more detailed information on the sites.

Archeological studies in coastal sections of Essex have been largely asystematic. Willoughby notes a number of sites in the Salem/Beverly area. The Peabody Museum in Salem has had both a light and sporadic interest in local archeology. A number of amateur archeologists have been active in collection and excavation. The discovery of the Bull Brook site, a Paleoindian occupation site in Ipswich, served to stimulate local (and statewide) interest in archeology.

Recent work in the Essex area includes the excavation of several sites in the estuarine zone of the Merrimack by Russell Barber (Harvard). Barber also completed an evaluation of the adequacy of site files in the lower Merrimack Valley. Boston University has conducted a comprehensive survey of both prehistoric and historic archeological sites in the town of Ipswich. Both efforts were partly funded by the MHC.

(2) Historic: Comprehensive, professional surveys have been completed in Methuen, Andover, Ipswich and Lynn and are underway in Haverhill, Newburyport and Gloucester. Ipswich has produced the state's second multiple resource nomination for the town's center. Active local historical commissions in Lynnfield and Rockport have finished surveys, and commissions in all but three communities in the unit are actively working on surveys.

Several years ago, in conjunction with the Merrimack Valley Textile Museum, a HAER survey team recorded the major industrial and technological above-ground resources found in the Merrimack River Valley (which extends into the Eastern Massachusetts study unit).

Boston Area

(1) Prehistoric: The prehistoric resources in the Boston area are in the unique position of being among the best known in the state, while at the same time being the most fragmentary and disturbed by 300 years of intensive development.

Prehistoric research in the Boston area began with some sophistication with the work of J. Wyman and Frederick Putnam, both of the Peabody Museum of Harvard University, in the late nineteenth century. Most of the subsequent work in the area was also sponsored by Harvard, although Massachusetts prehistory has never been a central program to the University.

An intensive and multi-disciplinary study of the prehistoric remains of the Boylston Street Fish Wier was sponsored by Frederick Johnson of the R. S. Peabody Foundation of Andover. The discovery and salvage of this site during the construction of the subway and subsequent construction activities through the Back Bay is a landmark example of the potential survival of prehistoric sites in an urban context, and of the cooperation of construction efforts and archeologists in saving irreplaceable information.

Harvard University's interest in local archeology continued with the short-lived Excavators Club of Harvard. After the Club's excavations at the Blue Hill River site in Braintree ended in 1940, formal and professional archeological interest in the Boston area waned.

However, between 1967 and 1971, interest in the archeological potential of the area was revived by Dincauze's surveys of first the Charles River

Basin and then of the Greater Boston area in general. As a result of these two survey efforts the Greater Boston area has one of the better inventories of prehistoric sites in the state.

Cultural resource management studies in the area began in 1975 when B. Luedtke of the University of Massachusetts (Boston) evaluated the archeological resources of several of the Boston Harbor islands. The study represented the first intensive evaluation of changing prehistoric adaptations in the harbor area, as well as providing information necessary to the Department of Environmental Management to manage the archeological resources of the islands.

Several cultural resource management projects of small scale have since occurred in the Boston area, notably at the Charlestown Navy Yard, in Medford and in the Blue Hills Reservation.

(2) Historic: The City of Boston is working on a phased professional survey of the city, of which approximately one-third is completed. Cambridge has completed one of the most intensive surveys ever attempted in the country; inventory forms for over 10,000 buildings were completed and detailed books published on growth patterns, historic themes, and significant and representative architecture throughout the city. Work has begun on a multiple resource listing for the entire city. Arlington, Newton, Medford, Waltham, Winchester, Quincy, Malden and Revere have completed comprehensive surveys. Partial and ongoing professional surveys are being undertaken in Stoneham, Newton, Brookline, Chelsea and Milton. Only four communities in the study unit have no survey activity. With funding assistance from the MHC, a regional survey of public buildings has been completed.

Southeast Massachusetts

(1) Prehistoric: MAS chapters have been particularly active in the Southeast Massachusetts study unit, and the vast majority of both survey and excavation information on Southeast sites is due to their efforts. The Bulletin of the MAS contains a wealth of information on Southeast Massachusetts sites which have been excavated by avocational archeologists. The Cohannet Chapter has long been active in the Taunton River basin. In particular, under the leadership of Maurice Robbins, the Chapter has sponsored twenty seasons of excavation at Wapanucket sites in Middleboro,

sites with associations from the Paleoindian through Woodland periods. The discovery of a late Paleoindian level under Archaic deposits established the second recorded Paleoindian site in the state.

MAS members have been active in the Plymouth area as well, although most of the information in that area derives from individual rather than group effort. Survey data from surface and plow zone collections comprises the bulk of information from the Plymouth area.

Non-coastal or non-riverine sections of the study unit are understudied. Large sites, often with complex ceremonial features, situated at estuary heads and falls have been the focus of interest.

Professional interest in the Southeast Massachusetts area was very small until recent cultural resource management work in the area. The construction of the last fourteen mile segment of I-495 has stimulated substantial field research across the study unit, and the first large scale intensive professional interest (the Public Archeology Laboratory at Brown University) in the area.

(2) Historic: Professional surveys have been completed in Fall River, New Bedford, and Fairhaven. Volunteer surveys are completed in Rehoboth, Norton, Easton, Abington, Norwell, Dighton and Plymouth. A professional survey is currently underway in Taunton. There are several other active volunteer surveys nearing completion in this region, including efforts in Swansea, North Attleborough, Attleborough, Carver and Dartmouth. Over the past year, an MHC funded preservation planner worked with local historical commissions in the region.

Cape Cod and the Islands

(1) Prehistoric: Most of the site information available about Cape Cod derives from the work of Ross Moffet, an MAS member, who actively surveyed, excavated and reported on Cape Cod sites during the 1950's and 1960's. His studies concentrated on the Lower Cape, and inventory information today on Cape Cod remains less complete than for the Upper region.

Until recently, Cape Cod was not an area studied by professionals. In 1978, the National Park Service Boston Regional Office initiated a survey of the Cape Cod National Seashore, a study which will continue through 1979. In addition, the Cape was included in Brown University's 1979 study of site densities and distributions in Southeast Massachusetts, funded by the MHC.

In 1915, a preliminary archeological survey on Martha's Vineyard was conducted by S. J. Guernsey under the directorship of F. W. Putnam of Harvard; this survey, which concentrated on Menemsha Pond, produced only meager results. Douglas S. Byers and Frederick Johnson (R. S. Peabody Foundation, Andover) excavated two sites near Squibnocket Pond on the Island in 1936. Byers and Johnson's investigations were undertaken primarily to analyze the content and nature of shell heaps which were recorded in R. S. Peabody files.

No further professional or formal MAS archeological survey or excavation followed Byers and Johnson until William A. Ritchie spent field seasons on Martha's Vineyard in 1962, and 1964-67. A total of six sites were intensively excavated. Little additional survey, excavation or re-analysis has been supported on Martha's Vineyard since Ritchie's survey.

Archeology on Nantucket Island reflects a less sporadic interest than that of the Vineyard. The MAS Shawkemo Chapter was active from the late 1930's and 40's, and the MAS connection with collectors on the Island was maintained through the 1950's. In 1977, the Nantucket Historical Association sponsored an excavation at the Quidnet site. Elizabeth Little of the NHA recently completed with funding assistance from the MHC the first year of a data improvement project aimed at analyzing existing collections, recording site information and raising the level of public awareness and responsibility on the Island. As a result, existing site information on Nantucket is among the most detailed and accurate in the state.

(2) Historic: Although there is only one semi-professional survey completed on the Cape or Islands (Oak Bluffs), some outstanding volunteer efforts have been undertaken in Provincetown, Edgartown, Chatham, Sandwich and Dennis. Volunteer surveys are now being done in Barnstable, Harwich and Tisbury, and a CETA funded team will complete Yarmouth's survey in the next few months. The MHC has a regional preservation planner working with local commissions on both Cape Cod and Martha's Vineyard.

DEVELOPMENT PATTERNS:GENERALIZATIONS

Lowlands/Uplands

Massachusetts has never been uniformly settled. There has always been a varying density of population and economic activity, and, therefore, of cultural resources over the state. The most densely populated areas within the state have persistently been the three lowland regions: the coastal lowlands, the Connecticut River Valley, and the Housatonic Valley. The central and western uplands have been less densely settled over all time periods.

While this difference in settlement patterns is well documented for the European period, the concentration of populations in the lowlands may also hold true for the earliest human occupants of Massachusetts. The earliest aboriginal peoples (Paleoindian and Early Archaic, 11,000-7,700 B.P.) apparently ranged nomadically over the state. In the Middle and Late Archaic periods (7,700-3,000 B.P.), higher population densities occurred in the major lowland river basins and coastal lowlands. By the Early to Middle Woodland period (3,000-1,000 B.P.) there appears to have been a shift in settlement orientation out of the uplands. On the coast, estuarine resources, particularly shellfish, were being more intensively exploited. Little is known of upland, interior locations. In the late Woodland period (1,000-400 B.P.), people in Massachusetts adopted horticulture, an activity which involved larger and more permanent settlements. The largest sites and highest population densities were concentrated in the lowlands.

The Europeans who came to Massachusetts did not encounter a "wilderness". The landscape they entered was one that had been modified by a succession of human groups living in the state for 11,000 years. Trails crossed the land, areas of land had been cleared and, perhaps most importantly, the lowlands (where the Europeans first arrived) were already major centers of agricultural activity.

The first European settlements were established in the coastal lowlands and the Connecticut River Valley. By the time settlement entered the uplands, the lowlands were already densely occupied. Population in the uplands was initially thinly scattered, dispersed in character and agricultural in function. From the beginning, settlement in the lowlands was more urban in nature, concentrated rather than dispersed, and commercial

in function. As the settlement process continued, the uplands became more densely occupied and exploited, but so did the lowlands, and the pattern of a differential lowland/upland settlement gradient persisted. This differential is still true today, as reflected in urban development: of the thirty-nine incorporated cities in the state, twenty eight are in the coastal lowlands, and of the remaining eleven, seven are in the interior lowlands.

Core/Fringe Relationship

The lowland areas of Massachusetts have been evaluated as favorable to settlement by a long succession of different peoples. The advantages of the lowlands include a milder climate, easier accessibility and travel, and a combination of special marine, riverine, and agricultural resources. The uplands are characterized by a harsher winter climate, shorter growing season, rough terrain, rocky soil and more difficult access. As a result, the uplands have been evaluated less favorably by past settlers of Massachusetts and have been less densely occupied.

The nature of the functional relationship between the lowlands and the uplands has been that of a core/fringe association. This concept reflects the premise that local ways of life are parts of regional and state-wide systems of social organization, economic activity and cultural interaction, in which there are areas of greater and lesser activity. The lowlands have persistently been the areas of greater activity and denser settlement. They are the core regions of Massachusetts. The differences between "cores" and "fringes" are, to varying degrees, reflected in material culture. In general, the density and range of cultural resources is greater in the core areas, corresponding to the wider range and greater density of core activities.

Core areas of high intensity are typically linked across less developed areas by connecting corridors (such as the Mohawk Trail or Massachusetts Turnpike). On a state-wide scale, the lowlands have operated as cultural and economic cores, the uplands as fringe areas. This dichotomy is also apparent on smaller scales. High intensity core areas and less developed fringes, linked together by transportation corridors, have developed within regions, both upland and lowland. Even on a local scale, activity has usually been characterized by the development of uneven distributions, of

clusters and spaces between the clusters, of centers of more intensive occupation and peripheries of lower intensity.

The core/fringe relationship within any region is not static. With shifting settlement systems and economic changes, new centers emerge while others decline. Within a region, communities do not always grow uniformly, and development is scarcely ever spread over the whole extent of a given region, but rather centralizes at certain points or along certain lines at particular times--producing a mosaic of places at different levels of activity.

In some periods of time, certain communities may have experienced a "take-off" into a period of economic prosperity. In a few communities, this development may have been sustained over a long period, with cycles of greater and lesser activity. Boston has exhibited a sustained growth, a continued series of "take-offs", that have resulted in the expansion of the city into the major core of the state and a leading center of national prominence. However, most other communities in Massachusetts have had shorter or fewer periods of growth. In consequence, certain places have remained "frozen" in time, with landscapes dominated by the buildings and structures of their last period of growth. This situation is striking in communities such as Royalston, Rehoboth or Nantucket that retain much of their late eighteenth and early nineteenth century character almost entirely intact.

The result of this differential growth is a complex pattern of different types and intensities of settlement, with different types and densities of cultural resources, existing within a single region. An understanding of the regional patterns of growth and development can lead to a better understanding of the nature of these variable densities, and ultimately to a better evaluation of cultural resources themselves.

Hierarchies:

In successive periods of development, selective communities grow while others decline or stagnate. The effect of this growth pattern over time is cumulative. Regions in Massachusetts today are not internally uniform, but are made up of a variety of communities and sub-regions, ranging from agricultural and manufacturing towns to larger commercial and industrial towns, to regional cities and metropolitan areas. This is a

hierarchical regional landscape--the result of changing evaluations of local resources, locating within changing regional transportation systems, and centralizing tendencies of economic development. Ideas, styles and technology tend to diffuse down through hierarchies and are selectively adopted at each level in the regional network.

Changes in regional networks and orientations have resulted in a succession of changes within local communities. The physical manifestations of these past communities--buildings, structures, objects, sites--are the material result of activities in local communities which evolved in a physical setting subject to changing cultural evaluations. Major changes in technology, transportation, and ways of life are reflected in changes in types and distributions of cultural resources. Each successive period of development and change in regional networks has destroyed and altered, or bypassed and preserved the cultural resources of preceding periods. Patterns and densities of surviving resources from any time period will show considerable variability over a region--depending on the patterns of centralizing activities and the destruction of previous resources by new development or absence of development. On a local scale, towns are not internally uniform in the patterns of their development and distribution of their cultural resources. A town in Massachusetts may typically include dispersed eighteenth century hilltop farmsteads, commercial villages from the early nineteenth century, a mid-nineteenth century factory village in the river valley, and a late nineteenth century downtown block and residential area. Both the surviving prehistoric and early historic cultural resources, and the nineteenth and early twentieth century imprint superimposed upon them, are affected by the later twentieth century urban and suburban growth.

DEVELOPMENT PATTERNS: MASSACHUSETTS OVERVIEW

The nature and distribution of present cultural resources can be better understood by evaluating the dominant processes and patterns of cultural development that produced them. A study of isolated historical events explains only isolated features; through the study of historical/ development process, however, the patterns in material culture emerge. Activities and their material forms can be understood locally, but can often be more comprehensively understood when placed in a larger regional framework, and examined in relation to surrounding localities both similar and different. Local activities and features are, in part, the result of larger processes and patterns. Cultural resources in a community can be better understood as local expressions of processes involving whole regions or even the whole state.

The discussion which follows emphasizes three elements: (1) the succession of people who have lived in what is now Massachusetts; (2) the changing structures of circulation--transportation and communications networks, trade flows--that have linked places at different periods of time; and (3) the evolution of landscapes characteristic of certain stages of development, particularly in terms of core-corridor-fringe relationships. Admittedly, this is a limited perspective and is an incomplete examination of the complexity of 11,000 years of human occupation in Massachusetts. The discussion which follows does not purport to be a complete history of the state. The discussion does highlight some of the major processes responsible for the present-day patterns of cultural resources in the state and, therefore, is of immediate value to the Massachusetts Historical Commission in evaluating both existing and new cultural resources data in terms of broad regional patterns. This plan is not designed to analyze features at a local level; rather, the following summary of historical context suggests a framework for future research and survey efforts which will be conducted locally.

Prehistory

Although located on the fringe of the major population concentrations and the areas traditionally considered to be centers of aboriginal innovation

(the Mississippi Valley, the American Southwest, and Mesoamerica), Massachusetts saw a full and distinctive succession of human occupation after the retreat of the glaciers. While Massachusetts does not contain the large-scale visually impressive prehistoric sites of the more densely occupied centers of aboriginal cultural development, prehistoric occupation did undergo a sequence of cultural changes that are evident in the archeological record.

Archeologists generally recognize three major cultural periods when interpreting Northeastern prehistory:

Paleoindian/Early Archaic	(c. 11,000-8,000 B.P.)
Archaic	(c. 8,000-3,000 B.P.)
Woodland	(c. 3,000-400 B.P.)

Changes within and between these broad subdivisions reflect changes in modes of cultural adaptation to fluctuating post-glacial environments and to population densities and structure.

Paleoindian and Early Archaic:

Paleoindian remains in Massachusetts indicate that the human occupants of the region were part of a widespread North American cultural system, which developed following the final glacial retreat. The lithic technological systems of all cultural groups of this period (including the Northeast) are remarkably similar in form. They are characterized in particular by one class of artifacts: the "fluted" projectile point. While few sites have been discovered, Paleoindian remains in Massachusetts clearly tie these people into a broader North American system. Many artifacts are made of lithic materials from outside the state, an indication of direct cultural contact with regions as distant as Ohio; indirect contact with regard to technological systems seems even more widespread. The apparent dependence on large game hunting, supplemented by smaller game and wild foodstuffs, is characteristic of a general North American subsistence strategy for this period.

Very little is known about these earliest human occupants of Massachusetts; the main evidence consists of projectile points. The distribution of these points, combined with environmental reconstructions, indicates that Paleoindians combined a lifestyle of hunting large herd game (caribou and mammoth), supported by small game as well as gathering activities.

Little evidence exists for Early Archaic peoples, although the characteristic bifurcate-base points are found near large bodies of water. These early inhabitants probably lived in small, mobile hunting and gathering groups. They ranged widely following a shifting animal and vegetable resource base that itself changed with post-glacial climatic warming. The post-glacial rise in sea levels has submerged any evidence of coastal sites from this period.

Middle and Late Archaic:

With post-glacial environmental and ecological changes the widespread networks characteristic of Paleoindian broke down, and these were replaced by various subsistence strategies geared toward the peculiarities of different regional resource mixes. In general, the new adaptations relied on hunting, gathering and fishing strategies. Seasonal movement patterns ("seasonal rounds") tied together resources and exploitation techniques in a coherent local livelihood system.

Late Archaic sites are the most numerous in Massachusetts and, for certain areas, permit reconstruction of the seasonality of occupation, resource specialization, activity patterns and occupational intensity. The Archaic period coincided with an environmental warming trend toward a climatic optimum. The improved environmental conditions correlate with higher site densities and the development of river basin territoriality in hunting and gathering strategies. Sites are widespread and occur in many environmental settings, including: estuaries, coastal shore sites, lake and pond shores, springs, brook and river shores, and quarries.

Woodland:

The Woodland period was marked by widespread cultural contact. The spread of innovations, notably the introduction of pottery and the adoption of agriculture as an integral part of the subsistence system indicate this contact. In the Early and Middle Woodland periods, climatic cooling was followed by lower population densities, and a shift in settlement orientation to lowland areas where people undertook more intensive exploitation of estuarine and/or riverine resources. While there are extremely few known Early Woodland sites in Massachusetts, the Middle Woodland period is represented by larger numbers and more widely distributed sites. Little is known of upland, interior locations.

During the Late Woodland period, horticulture spread into the region and was integrated into seasonal rounds. Massachusetts was near the northern climatic limits for successful corn cultivation, and while the spread of horticulture into the region has not been documented, it did occur significantly later in Massachusetts than in areas to the west. Large villages, either at estuary heads in coastal areas, or at spawning sites in interior lowland sections, were the focus of seasonal rounds, which included summer farmsteads and sheltered inland camps in the winter. Few sites from this relatively recent period are known.

History

European Settlement:

Immediately prior to permanent European settlement, a widespread plague, combined with a major drought destroyed much of the Indian population in eastern Massachusetts and had a particularly severe impact on the coastal tribes. The coming of the Europeans further disrupted and destroyed aboriginal living patterns, but continued the sequence of human occupation. In the past 350 years, the Massachusetts landscape has undergone a series of major transformations resulting from the impact of a succession of different cultural, socio-economic and technological systems.

The first areas of the state to be settled by the Europeans were the coastal lowlands (the Plymouth and Massachusetts Bay colonies) and the Connecticut River Valley. The coastal settlements were commercial outposts for the European mercantile system. They were engaged in fishing, in coastal and overseas trade, and served as collection points for interior produce. Settlers in the Connecticut River Valley were engaged in trade and commercial agriculture from a very early period. A third area for colonial development was Taunton, in the southeast.

Shortly after settlement, political and economic necessity encouraged the establishment of overland communication links between the centers in the coastal lowlands and those in the Connecticut Valley, as well as to centers outside the state (Albany, Hartford and New York City). The major transportation and communications link to the southeast was coastal.

The infra-structure for overland travel already existed (see Figure 7): the Indian trails, notably the Bay Path and the Mohawk Trail,

served immediately as major transportation corridors for European settlement. The east-west colonial road network based on these trails was a rudimentary access network which served as an adjunct to the more important river/coastal system. The major flows of commerce, trade and economic activity were along the large river valleys (such as the Merrimack, the Connecticut and the Taunton River, and their tributaries) and along the coast. Correspondingly, the major settlements of the colonial period, measured in terms of population density, population size, economic activity, and prosperity, were located on the coast and along these valleys.

Agricultural settlement spread out from these cores into the uplands, gradually filling in the state. Settlement in the central uplands was primarily dispersed in farmsteads. There were a few clustered settlements which were trading centers, established on the road network for channeling interior products to the coast and for redistributing imported goods to the interior. These settlements were also transportation sites that provided support services for the transportation network, such as inns and taverns, wheelwright shops, iron forges and stables. In the southeast, dispersed agricultural settlement spread out from Taunton, and to a lesser extent from Plymouth, into the interior; small fishing villages were established along the coast, but the pattern of urban core-trail/corridor-agricultural fringe settlement was very similar to that in the central uplands. The last area of the state to be settled was the Berkshires.

Until the late eighteenth century the road system in Massachusetts changed very little. There was no discernable change or growth in the major routes. The only growth was local intensification of the network around settled areas. The densest network developed in the coastal lowlands, where the greatest density of population was concentrated, and also among the Connecticut River Valley towns which developed dense network of roads feeding in to the river. Roads through Central Massachusetts, which connected the coast to the Connecticut River towns, were more dense and probably more heavily travelled than were those in the Berkshires which were established to link the Connecticut River Valley with Albany and upstate New York.

The rudimentary nature of this internal transportation system contributed to the cultural isolation of the upland rural areas. The coastal cities such as Boston, Salem and Newburyport, housed the emerging prosperous

merchant class, religious and political leaders and a social elite. The only rural equivalent to urban "high culture" was found in the shire towns which were the local administrative centers. Taunton, Plymouth, New Bedford, Lenox, Barnstable, Northampton, Springfield, Greenfield, Ipswich, Salem, Concord, and Worcester were all shire towns.

Two cultural systems were operating in Massachusetts colonial architecture and material culture. High style traditions and architectural forms were adopted from English high style and first appeared in the mercantile port cities along the coast. In rural areas a regionalized folk-vernacular architectural and material culture tradition evolved from an English medieval (yeoman) tradition. High style spread slowly from urban areas into the rural hinterland and was often integrated into the existing vernacular tradition.

Similar processes may have been involved in early industrial technology. Most early rural grist, saw or fulling mills came out of a vernacular building tradition. The late eighteenth and early nineteenth century introduction of Arkwright mills, power looms, and other innovations represented the diffusion of English inventions through the mercantile port cities. The adoption of technological innovation into the vernacular in this case might be seen in the introduction of turbine technology into the small rural mills.

The dominant character of manufacturing during this early "proto-industrial" period was artisan and domestic. Primary processing of agricultural products (spinning, weaving), saw-mills and grist mills occurred in most towns; tide and wind mills provided power for early industry on the coast. Localized industries included ship-building along the coast, iron-ore manufacturing and maritime related industries (viz. rope and cord manufacturing, food packing enterprises).

In summary, the dominant settlement landscape during the colonial era was a dispersed and agricultural one. There were three forms of urban settlement within this landscape: (1) agricultural market towns, located on the road network, strategically placed as links in long-distance trade; (2) the shire towns; and (3) the commercial cities on the coast. The cultural resources from this period reflect this range of settlement types and activity patterns. Architectural styles indicate the polarity between the high-style forms found in the urban centers and the vernacular forms

evolving in the rural areas. The nature of industry indicates a variety of activities and forms from highly dispersed rural industries of nearly ubiquitous distribution, through localized village manufacturing (tanneries, transportation services, iron works) to centralized urban industries (primarily associated with shipping).

Commercial Prosperity:

In the late eighteenth and early nineteenth century the economic development of Massachusetts was dependent on international trade and shipping. Mercantile activities became increasingly concentrated in the coastal cities, and the ports, especially Boston, grew rapidly. Economic prosperity was expressed in Boston in the virtual rebuilding of the city. Shipbuilding, shipfitting and whaling were major industries which promoted urban growth along the coast. Distinct centers of economic activity emerged, such as Boston, Salem, Newburyport and Nantucket. The increased demand for food for the growing urban population, and for natural resources to supply the industries and overseas trade, resulted in marked improvements in the transportation network.

The turnpikes and canals which were built between 1780 and 1820 mark the first deliberate attempts to use overland travel to direct flows of commerce. In the colonial transportation system, roads were of equal importance: the river and coastal systems were the major transportation and communication corridors. In the commerical transportation system, a distinction emerged between major and minor roads (see Figure 8). The turnpikes and canals, oriented to large markets, became corridors of development and prosperity. The importance of Boston as a major center is evident in the distinct radial pattern of turnpikes which fanned out from the city. Major centers outside the state also influenced the economic development and settlement pattern in Massachusetts. Most of the north/south turnpikes in the Connecticut River Valley and in the central uplands were built with Connecticut capital to direct flows of goods into Hartford and Norwich (see Figure 8).

Accompanying the emerging hierarchy in the transportation network was a hierarchy of settlements, based on locational advantage. Villages and towns along major turnpike routes became trade centers for local hinterlands, as well as continuing to provide transportation-related services. Towns at junction points and at transfer points in the transportation

system (such as Greenfield, Northampton and Worcester) became regionally important. As agricultural activity became increasingly commerical and market-oriented, the number of towns and villages in the agricultural hinterlands increased dramatically. The years at the turn of the nineteenth century were ones of prosperity, fostering the growth of inland commercial agricultural villages: with the characteristic New England village-on-the-green settlement type.

The emergence of major inland regional centers and the appearance of the village landscape can be directly related to the growth of the road, canal, and turnpike network. Specific functional structures associated with the turnpikes and canals characterized the towns and villages along their routes: bridges, the roads and canals themselves, taverns, inns and smith shops. Corridors of development, the turnpikes and canals, were also corridors of prosperity. High-style architectural forms of this period are more typical along the turnpike routes and in the turnpike-generated village centers than in the smaller communities and regions by-passed by this commerical network.

Industrialization and Urban Growth:

The Embargo Acts prior to the War of 1812 helped promote reinvestment of mercantile capital into manufacturing. Major investments in infra-structure in the preceding era provided a base for industrial development. Improvements in roads and turnpikes already connected ports to the interior. Banking, port facilities and warehouses were well developed in the coastal towns. Manufacturers spread throughout the state, locating at hundreds of water-power sites at the intersections of the road and drainage networks.

While previous manufacturing had served local markets, industrialization involved manufacturing for regional and national markets. The Industrial Revolution in Massachusetts introduced new systems of economic organization, as well as new landscapes. A variety and diversity of industrial areas appeared, transforming both urban and rural areas. Mill villages appeared in the valleys of the smaller tributaries and streams. Larger industrial towns and cities, associated with later factories using more powerful and sophisticated power technology, were located on the major rivers. Most towns with some available water power made attempts at manufacturing.

Two distinct cores of industrial development are recognized, each with a unique factory system (Vance 1966). The industrialization of the Worcester region and Southeast Massachusetts was generated by technological developments and capital from Rhode Island. Capital from Boston promoted industrial development in Boston itself, as well as creating a major core in the Merrimack River Valley. Industrialization dispersed from these two cores throughout the state. Two later cores emerged, one in the Connecticut River Valley and the other in the Housatonic River Valley.

Developments in the cotton textile industry, located both in areas of intensive capital investment (such as the city of Lowell), and in the more widespread smaller scale mill villages and towns, stimulated the development of complementary industry. Particularly important were the machine shops, which not only manufactured textile machinery, but also expanded to produce other metal products. The woolen industry paralleled developments in the cotton industry, while the boot and shoe industry lagged somewhat behind textiles in the development of a factory system. In these three major industries, Massachusetts led the country in production through the nineteenth century. While textile, and boot and shoe were the key industries in the industrial development of the state, paper, furniture, metal processing and other industries were critical to the growth of different regions of Massachusetts.

Industrial development created a landscape of mill villages, mill towns, and both specialized and diversified manufacturing cities. Industrial development particularly stimulated the growth of Boston, the financial and commercial center of the state. The eastern part of Massachusetts changed from an area of coastal ports and inland farming communities to one of the more urbanized areas of the country. In all places, industry created more than factories and work places; industry also developed associated housing units, such as mill-owned row houses, tenements and boarding houses.

Industrial growth, together with the development of the railroad after 1835, transformed the Massachusetts landscape (see Figures 9-12). Railroad network development reinforced growth in previously existing centers, created new centers, and bypassed other places, which afterwards grew only slowly or declined. Concentration of commercial and industrial activities along the rail lines intensified with the widespread adoption of coal-fueled steam power after 1850. Cities and towns at focal points of transportation tended to attract manufacturing, financial institutions and professional services.

As towns and cities became more closely integrated into national and regional economic systems, places became more specialized. Commerical agricultural towns with rail connections turned to specialized forms of agriculture to supply the growing cities. Many of the uplands towns became dairying or orchard producing areas. Tobacco became a major cash crop in the Connecticut River Valley. In Eastern Massachusetts market gardening became the dominant agricultural activity, and in Southeast Massachusetts, it was cranberry production.

Specialized industrial towns (e.g. "boots and shoes" towns, "paper" towns) emerged. Residential suburbs developed along the major rail lines out of Boston. Within cities, urban growth led to the development of industrial, retail and residential districts.

In the second half of the nineteenth century, industrial growth, major influxes of foreign immigrants and rural Americans, and the development of intra-urban transportation systems led to a patterned expansion of Massachusetts cities. The introduction of horse-drawn streetcars in the 1850's and the electric street rail systems in the 1890's led to the development of a variety of high, middle and low income suburban residential neighborhoods. Urban residential forms ranged from the rooming houses, tenements and distinctive immigrant neighborhoods of the city core, to the modest single and multiple family houses (notably,the characteristic three-deckers) of the inner suburban ring to the large single family high style houses of the more affluent outer suburbs.

Expansion of the electric railway system continued through the early 1900's and created an intricate web of lines among the urban centers of Eastern Massachusetts and the Connecticut Valley (see Figure 13). At the same time, urban prosperity and the mass production of the automobile brought a pattern of dispersed activity across the state. The automobile encouraged the development of resort areas such as Cape Cod and the Berkshires as scenic attractions for the urban middle class, while more immediate effects were evident in strip development along the new superhighways built in the 1930's.

DEVELOPMENT PATTERNS: STUDY UNITS

Berkshires

The Berkshire area has traditionally served as the crossroads of culture between New England and New York. The principal features of the physical geography of this area are two parallel ranges of mountains: the Berkshires, forming the western wall of the Connecticut River Valley, and the Taconic Range, forming the eastern wall of the Hudson Valley. Between the two ranges the Housatonic River flows southward through Connecticut, and the Hoosic River northward through the southern corner of Vermont and then westward into the Hudson River. Both of these river valleys have functioned as the settlement cores of the region.

There is limited data about the cultural characteristics of aboriginal occupation in the Berkshires. Sites are generally assumed to exhibit both Hudson Valley and Connecticut Valley influences, and to be small and dispersed. Hypotheses regarding the character of upland sites and the dynamics of mountain/valley relationships have yet to be articulated and tested. Prehistoric settlement patterns appear to have favored the valley bottoms; numerous trail networks were established along the river divides. Native occupation in the Berkshires persisted until the Revolutionary War when European settlement was established in a series of frontier forts, such as those at Stockbridge and Pittsfield.

European settlement spread into this region through the river valleys. The first settlers (c. 1730) migrated largely from Connecticut, entering the area via the Housatonic Valley; the Dutch migrated to the Berkshires through the Hoosic Valley in the 1760's.

The Berkshires were not easily entered from the east. The valleys of the Farmington, Westfield and Deerfield Rivers, which drain the eastern slope of the Berkshires, are gorge-like near the crest, and the height of land is reached only with difficulty. Moreover, the slopes and many of the summits of the Berkshires were heavily wooded and had to be cleared with much labor. The broad summits could be more easily occupied than the steep gorges, but settlement on the summits meant complete isolation in a region controlled by Indians and the French until 1763. For these reasons the occupation of the eastern slope of the Berkshires was long delayed.

The origins of the settling populations of western Massachusetts are complex. In nearly every town settlers originated from the older parts of southern New England; in most of the towns one area of origin predominated. Using the rather scanty historical evidence that has been assembled, the following tentative generalizations can be made (Kurath 1939). Southern Berkshire County was occupied between 1730 and 1760 by immigrants from Connecticut. Most of northern Berkshire County was settled by groups from eastern Massachusetts after the end of the French and Indian Wars. A preliminary survey suggests that most of these settlers came from the Plymouth area, Norfolk County and the older parts of Worcester County. Rhode Islanders were scattered through most of the towns in the northern Berkshires, and in the towns of Adams and Cheshire they appear to have been rather numerous. It is noteworthy that there were eight or nine Baptist churches in the northern Berkshires in 1775, reflecting this Rhode Island background. In some of the towns along the New York boundary (especially in Egremont and Great Barrington) Dutch settlers had established themselves before the arrival of the English.

A singular feature of the settlement of the Berkshires was the emigration which began almost as soon as the colonization was complete, about 1790, and continued for two or three decades. The population soon stabilized and an agricultural prosperity followed which lasted into the mid-nineteenth century.

The largest population concentrations were in the valleys, and the major transportation corridors were north-south, but the uplands were fairly uniformly settled with hill-top farms and villages. Lenox was the shire town, but at least two other settlements were growth poles in the early nineteenth century: the educational center at Williamstown and the Shaker settlement in Hancock.

The railroad entered the Berkshires in the 1840's, following the difficult corridors across the upland, meeting at Pittsfield, which became the primary urban center for the area. A number of important water power sites were developed during the industrial period, such as those at Great Barrington and North Adams, but the limited capacity of the streams dampened large scale urban growth in the Berkshires. Extensive mining operations of marble and limestone developed along the New York border area and lumbering was also a profitable enterprise. Dalton became a

major center for the timbering industry. While agriculture generally declined, industrial development proceeded slowly throughout the nineteenth century. Pittsfield and North Adams became the industrial/urban cores of the region.

By the late nineteenth century, the railroads had made the Berkshires a highly accessible area to both Boston and New York, a cultural overlap which continued to flourish into the twentieth century. Many towns in the central Berkshire area became major elite resort towns, particularly Lenox, Lee and Stockbridge, while towns on both the western and eastern fringes declined to low population levels.

Connecticut River Valley

The Connecticut River Valley is a distinctive area of the state, a broad flood plain defined on either side by the uplands of Central Massachusetts and the Berkshire Hills. The valley narrows in the north, tapering to a width of only two miles at Bernardston. The valley has long served as an important focus of human culture and has been tied to both the east and the west by linking corridors along the Deerfield and Miller rivers in the north, and the Westfield and Chicopee rivers in the south. Agriculture has been practiced on the fertile valley soils since the Late Woodland Period. In general the southern portion of the valley has proven the most attractive for settlement.

Paleoindian sites are known for two locations: Hadley and Deerfield. Neither site has been extensively tested, although Deerfield is under some degree of protective status. Scattered Paleoindian artifacts are also known from other locations in the area. Early Archaic sites are characteristically scarce and have rarely been found in context. A recent construction project in Gill has uncovered what may be an undisturbed Terminal Paleoindian/Early Archaic site, although data recovery has been limited to the area of immediate construction.

Middle Archaic sites are reasonably well represented and late Archaic remains are plentiful although few sites have been excavated or evaluated. Woodland remains are better known in the Connecticut River Valley area than elsewhere in the state. Most Woodland associations come from the spectacular mortuary remains which have been found in this region. Limited information is available on occupation sites, and the dynamics of

the introduction of horticulture into the area are poorly understood. Proposed data recovery at the Indian Crossing site, which spans the period of horticultural introduction, should provide substantial information on this subsistence change.

Initial European settlement occurred at Springfield in 1636, at the junction point of a number of Indian trails. Springfield was primarily established as a fur trading outpost, and expansion from this center was slow. Hadley, Hatfield and Westfield were early agricultural settlements and were important centers for settlement expansion northward and west. In general, the valley floor was occupied first, with settlement eventually spreading up the rivers to the upland areas. By 1700 an uninterrupted string of settlements extended to Northampton and Hadley; further up the valley was the detached frontier town of Deerfield (including Greenfield).

The river towns, characterized by long street villages, were oriented toward large scale commercial agriculture; prosperous commercial centers grew at the junctions of the tributary valleys and the main valley, where east-west and northsouth transportation routes met. The initial growth of Springfield, Northampton and Greenfield was in part due to their locations at these junctions points. The designation of these three towns as county seats made them early administrative, as well as commercial, centers.

Agricultural prosperity continued into the nineteenth century. The turnpikes connected with roads coming out of the valley and provided access to both the central uplands and the hill towns of the Berkshires; the Northampton canal linked the southern valley towns to Hartford and New Haven, fostering the growth of local centers such as Eastfield and Westfield (see Figure 26). By the early nineteenth century, the Connecticut River Valley landscape was divided into prosperous valley towns and less populated hill towns, all of them oriented to the north/south commercial trade along the river.

In the early nineteenth century merchant capital from river commerce was invested in industry and manufacturing. Water power was developed for factories first along the tributaries of the Connecticut River, and mill villages appeared in both valley and upland towns. Mills were established along the Chicopee and its tributaries, the Westfield and its branches, and the Miller and Deerfield Rivers. The Connecticut Valley also offered a number of sites for large-scale manufacturing, and large factory complexes

were built at Chicopee and Turner's Falls. In 1849 a dam was successfully completed across the Connecticut River at South Hadley Falls; large scale water power was made available through a series of canals, and the industrial city of Holyoke was created. After limited success with textile manufacturing, Holyoke developed a major concentration of paper mills. Manufacturing in the Connecticut Valley was diversified, and included armaments, textiles, paper and metal working.

By 1845, the Connecticut River Valley was linked by railroad to Boston, Albany and New York (see Figure 27). Railroad development stimulated manufacturing and commerical agriculture both in the larger centers and in the smaller towns. The railroads followed the major east-west drainage lines and provided better connections for small manufacturing towns (e.g. Westfield, Ware and Palmer) to the river communities. Springfield became a major center with north, south, east and west rail connections.

The Civil War initiated long-term economic growth in the region, and an increasing concentration of manufacturing developed in the Springfield area. Diversified industries, commercial development and a housing boom were all part of its urban growth as Springfield became the financial, wholesaling and manufacturing center for the region.

Farther north, agricultural towns in the valley became highly specialized in the production of tobacco and onions. Agricultural prosperity was very evident in many of the older river towns, and several emerged as important educational and cultural centers, notably Amherst and South Hadley. The upland towns, particularly those that had not developed an industrial base, suffered a declining population, and several (e.g. Pelham and Chester) were all but abandoned. In the early twentieth century, many of the abandoned farms were reclaimed by immigrants who had originally come to the region as industrial workers.

Development of the Connecticut Valley continued into the twentieth century with expansion defined by the trolley lines which crossed the valley and climbed the summits. Specialization in tobacco on the rich valley bottom and manufactured goods at the waterfalls provided a productive economic base as late as the 1930's. Certain upland valleys proved attractive for electric power, such as at Shelburne Falls and Leeds, while other areas served as sites for urban reservoirs, most impressively on the Swift River for the Boston water system (Quabbin Reservoir).

The result of nineteenth and early twentieth century development has been a landscape composed of a number of settlement types in the region. The Springfield-Holyoke-Chicopee commercial/industrial area clearly emerged as the region's dominant urban core. Smaller, commercial manufacturing centers continued to develop in Greenfield and Northampton, along the Connecticut River. A number of manufacturing towns still exist in the tributary valleys. While agricultural towns in the valley continued with commercial farming, the upland agricultural communities declined and remain today as "backwaters" in the state.

Central Massachusetts

Central Massachusetts is a well defined upland region of the old Appalachian mountain system. The topography at times rises to impressive heights, such as at Mt. Wachusetts. Acces to this upland area is from a number of drainage systems. On the west the Miller's River, the Chicopee River and their branches lead inland from the Connecticut River; on the east the Nashua River and its many tributaries, the Blackstone River and its headwaters, and (to a smaller extent) the upper branches of the Concord and the Charles provided natural routes inland. However, these valleys grow narrow, and the meadows skirting the streams are few and small.

The topography of this region was a barrier to population movement without making the region actually impenetrable. Located midway between the Boston Basin and the Connecticut River Valley, the area served as a transportation corridor between these two cores. A major Indian trail (known both as the Connecticut Path and the Bay Path) was an important overland communications link and served as the basis for European penetration into this region.

While Paleoindian and Archaic groups probably explored or settled the region, little evidence exists of the occupation of Central Massachusetts by these peoples. Paleoindian remains are known from points in collections from Barre, Hopedale and Lancaster, among others. No occupation sites are known.

Approximately forty-five sites with Archaic associations are known in the area. Examination of site location characteristics demonstrate a preference for settling at the edges of ponds; this pattern is in contrast to an

analysis of Concord area sites which show a preference for stream edge settlements. This pattern may be a result of collector bias, or may indicate a differing upland settlement system, reflecting distinct resource distributions and utilization strategies.

Upland sites are generally considered to be smaller and less complex than those in lowland regions. Upland sites not located next to ponds appear to be special-use sites: for example, soapstone mining was an important activity in the southeastern section of the study unit. No excavations have been performed which shed light on subsistence strategies and the dynamics of upland/lowland relationships.

Central Massachusetts was less well suited than lowland areas for widespread Woodland agriculture, for which large, level, well-watered areas were preferred. Where such areas did exist, as in Brookfield, agriculture was practiced. Forty sites with Woodland associations are known in the area. By the time of European contact, a major trail network had been established, and land cleared. Small, loosely associated, local groups were settled in the area.

In general, the southern sections of the study unit, especially the Douglas-Sutton-Millbury area, have higher prehistoric site densities than the north. Whether or not this is the result of collector bias remains to be tested.

For the most part, Central Massachusetts was by-passed in the early expansion of European settlement from the coastal regions to the interior. The uneven, timbered surface of the uplands were less attractive to settlers than the fertile plains of the Connecticut Valley. In addition the area lacked navigable rivers. Nevertheless, by the late seventeenth century three outposts had been established along the eastern edge of this area. Lancaster, located on the intersection of the Nashua River and the east-west path, was a major trading center and agricultural outpost on the frontier of the Massachusetts Bay colony. Marlborough was founded on the upper tributaries of the Sudbury River. Mendon was settled at the headwaters of the Charles and Blackstone Rivers.

Within the uplands intervale areas, where Indian cultivation had cleared the land, attracted early settlers. Such an area drew inhabitants to the western part of the region to establish Brookfield on the Connecticut

Path. Settlers were similarly attracted to Worcester and Oxford. However, all of these settlements were abandoned or destroyed with the outbreak of King Phillip's War in 1675.

Settlement was renewed after 1713, and advanced rapidly after the 1720's. The earliest settlement took place in the southern half of the region and along the eastern edge, with the hillier northwestern section last to be settled. Population dispersed from the three original centers in the east, and from Brookfield in the west.

During the eighteenth century agricultural activity dispersed throughout the region, and the larger original township grants gradually subdivided into smaller, more densely populated towns. The major transportation routes were the east-west Indian trails, improved as roadways. With the establishment of Worcester as the shire town in 1731, Worcester took on administrative and commercial functions, and began to emerge as a growth center in the region. The region came to agricultural maturity quickly, although with variations in local soils and topography, some towns prospered more than others. By the early nineteenth century, eighty to eighty-five percent of the land in central Massachusetts was cleared for agriculture.

In the nineteenth century the settlement patterns of Central Massachusetts were reoriented. Whereas previous agricultural settlement had been dispersed with small clusters of population at cross-roads, mill sites or around meeting houses, distinctive village centers emerged between 1790 and 1820, housing prosperous local merchants, artisans and professionals. These commercial villages developed along the major transportation lines of the period, the major roads and the newly constructed turnpikes that connected the region to the coastal and interior lowlands.

The many small upland streams were used to power local grist and saw mills, and early industries included the processing of wool, leather, wood and metals in homes and in small workshops. In the early nineteenth century small mills began to give way to factories; specialized mill villages began to appear along the streams and rivers in the region, with water-powered textile processing factories and company-owned housing for workers in the valleys. This pattern was given added impetus by the construction of the railroads.

Although widely dispersed, cotton and woolen industries concentrated in the southern part of the area where transportation facilities (roads,

turnpikes, and the Blackstone Canal) were developed, stimulated by investment from Rhode Island. The Blackstone Valley became a major textile industry region.

The manufacture of boots and shoes was also important in many towns in the southern part of the region, although the transition from home and workshop production to a centralized factory system occurred later than in the textile industries. Manufacture of furniture, particularly chairs, became a significant activity in many towns in the northern part of the region.

By the mid-nineteenth century towns in Central Massachusetts produced woolen and cotton textiles, boots and shoes, furniture, textile machinery, and a variety of other products. Manufacturing was an important part of most local economies. The establishment of the railraod network had by this time linked many of these towns more closely to regional and national markets. In general in Central Massachusetts, the major rail lines followed the established east-west transportation corridors of the region. The Fitchburg Railroad crossed the northern part of the region, and the Boston-Albany Railroad traversed the southern section. Major north-south lines extended from Worcester to Norwich, Providence, and Fitchburg. Worcester and Fitchburg, near the mid-points of the major east-west lines, developed into major diversified manufacturing cities in the second half of the nineteenth century, with large industrial areas, commercial districts, and high, middle and low income residential areas. In manufacturing towns such as Southbridge, Webster, Millbury and Gardner, downtowns and commercial centers emerged among clusters of mills and villages. Tenement districts and suburban landscapes, equalling those of Boston, had developed in the major industrial cities of central Massachusetts by the late nineteenth century. Agricultural specialization paralleled industrial specialization: dairy and horticulture districts emerged to supply the growing urban markets. Some of the uplands towns, such as Princeton, were bypassed by industrial takeoff became summer vacation resorts.

The Central Massachusetts landscape is composed of a number of settlement types. Hill towns are often still characterized by the dispersed farmsteads, with barns, outbuildings, folk architecture and workshops of the early nineteenth century. In many town centers meeting houses, greens, and federal and classical revival houses have survived. In the

valleys nineteenth century mill villages with factories and workers houses remain.

Eastern Massachusetts

The Eastern Massachusetts region consists of a band around the Boston Area. In the north the Nashua River, the Concord River with its tributaries (the Assabet and the Sudbury), and other streams drain into the Merrimack. The Charles River drains most of the southern section of the region. The area is characterized by rolling hills that gradually rise to the north and west, merging into the central uplands. The Merrimack Valley cuts through the northern section of the region. Eastern Massachusetts has always acted primarily as an intermediate area between the core of the Boston basin and the central uplands.

The cultural sequence of prehistoric settlement in Eastern Massachusetts is not clearly understood. However, the dense trail system which established the basic framework of later transportation corridors across the area is an indicator of intensive prehistoric settlement.

No Paleoindian finds are reported for the Eastern Massachusetts region, although this may be due to reporting bias and does not necessarily indicate the lack of Paleoindian presence. Early Archaic finds are present at Ponkapoag in Braintree and in other scattered collections.

Middle Archaic remains are ubiquitous, although present in less quantity than Late Archaic materials. Middle Archaic sites have been found in the Concord/Sudbury, the Blue Hills and the Shawsheen areas. Late Archaic remains are by far the most numerous site type, and most recorded sites seem to have at least one Late Archaic component. Few Woodland sites are known, perhaps reflecting the poor quality of collection analysis, or perhaps indicating a shift in Woodland occupation nearer to the coast.

Various settlement pattern studies allow some generalizations to be made about site location associations. Smith (1944) found that sixty percent of the sites in the Concord River Valley were located on streams, only a handful were near ponds and thirty-five percent were not associated with water. Ritchie (1977) notes that although riverine sites in the Sudbury and Assabet drainages exhibit a range in size and complexity from large multi-component sites to small special activity sites, sites in the upland

farther than one-half mile from a river are not only less common, but are small, single-component sites. Casjens' (1978) catch basin analysis indicates that all known sites in Concord are within 200 meters of a water source, have slopes of less than fifteen percent, are within 100 meters of arable soil and are located on floodplains, flat uplands, knolls, ridges or islands. More specifically, most sites are in fact associated with higher rank streams, have slopes of less than three percent and are located on arable soils on floodplains.

When the first great European immigration to the Massachusetts Bay Colony ended in the 1640's, expansion into the interior became a slow process dependent upon the natural growth of population. The settlement advance was not a westward movement along a definite frontier line, but was rather a site by site occupation of desirable locations. Concord and Sudbury were settled as the result of European inland agricultural expansion and can be considered "original settlements". Groton, in the northwestern part of the region, was another early settlement, established in 1660.

In general settlement started in the fertile meadows, along the rivers and established Indian trails, and later expanded into the hills. With population increases, the larger original townships were subdivided into smaller, more densely occupied towns. Towns in Norfolk County were subdivided primarily from the large original Dorchester and Dedham grants. By the mid-eighteenth century, dispersed agricultural settlement had filled the region. Small home-craft and workshop industries served local markets, and grist, saw and fulling mills and forges were established at water power sites. Settlement had begun to cluster around meeting houses, mill sites, and taverns along the major roads.

With the commercial prosperity of the early nineteenth century, Eastern Massachusetts became more closely linked to the Boston core by the turnpike system which radiated from Boston to New Hampshire, Central Massachusetts and Rhode Island. The success of local commercial agriculture was reflected in the growth of prosperous commercial, Federal-style villages near and along the major transportation routes, such as Sudbury, Hopkinton and Dover.

A marked increase in manufacturing activity followed closely upon commercial development. The most dramatic transformation in the region was the establishment of the industrial city of Lowell by Boston capitalists in 1826. Utilizing the major water power source at the Pawtucket Falls of the Merrimack River, the developers used a power canal system to run a series of large textile factories, which was modeled on a smaller scale factory system previously established in Waltham. In addition to the factories the industrialists built worker housing, primarily boarding houses, in close proximity to the mills. Lowell served as a center of innovation for industrial production, technology and social organization. By 1840 Lowell had over 20,000 inhabitants, and was the second largest city in New England.

Manufacturing in Eastern Massachusetts was not confined to Lowell. Smaller factory villages appeared along the many power sites of the rivers of the region, each with its mills and company owned tenement houses. While textile manufacturing was a major activity, paper and metal processing were also locally important. Many towns in the region were engaged in the production of boots and shoes in homes and workshops, and later centralized into factories. Since boot and shoe manufacturing did not use water power, this industry was particularly important to the growth of many towns in the southern and western parts of the region which did not have good local water power sites.

The establishment of three major railroad lines from Boston through the study unit to Lowell, Worcester, and Providence in 1835 marked the beginning of an intensification and specialization of activities in the area. A web of secondary rail connections linked the major lines in the region. Industrial centers became more closely linked to Boston and other regional and national markets. Agricultural towns turned to specialized agriculture and milk production for the urban markets.

By the early twentieth century Eastern Massachusetts had emerged as a complex set of suburban towns on the fringe of metropolitan Boston tied together by an intricate network of trolley lines that connected to Worcester, Providence and New Hampshire. The scale of development was so localized that rapid changes of landscape occurred between neighboring towns, such as Hingham and Weymouth, Wellesley and Natick, Hudson and Stow, Reading and Wakefield. In some towns great wealth preserved the

agricultural landscape, while in others urban tenements were crowded among factories. Between was a modest suburban environment.

Eastern Massachusetts continued to develop into the twentieth century and by the 1930's expansion from Boston had produced a web of superhighways cutting across the region, following the traditional corridors to Lowell, Fitchburg, Worcester, Providence, and Plymouth. This region contains a wealth of sites and structures from the colonial and industrial periods, most of them obscured in a maze of roads and derelict railways.

Essex

The Essex study unit is comprised of three distinct subregions: the coast, the Merrimack River Valley, and the interior. The extensive salt marshes along the coast provided a rich subsistence base for settlement of all periods, as did the Merrimack River Valley. The interior is well-watered. The Saugus River flows to the south, the Ipswich and Parker Rivers northward through the central part. The surface is rolling and hilly in parts. The soil, while not particularly fertile and stony in parts is capable of supporting agriculture.

Prehistoric sites in the Essex area are best known along the major drainages and along the coast. Approximately 250 prehistoric sites are recorded in Massachusetts Historical Commission site files for this area.

Bull Brook, a Paleoindian occupation site, was undoubtedly one of the most valuable sites in the state; it has since been destroyed by gravel operations. This site provided the first firm evidence of Paleoindian occupation in the Northeast, although several Paleoindian sites have since been located and excavated elsewhere in the state. Early Archaic remains are characteristically rare, marked by an occasional bifurcate base point. The Middle Archaic is well represented, and Late Archaic remains seem ubiquitous in collections from this area.

Early Woodland remains are poorly understood and seem to lack the complex mortuary practices characteristic of the Connecticut River Valley. Recent investigations (Barber, 1977) at Middle Woodland sites in the Merrimack have indicated a seasonal round activity pattern, comprised of fall camping in estuarine areas, winter movement into the interior, spring fishing at falls and summer camps on the coast. The interruption of this

pattern by the Late Woodland adoption of horticulture is apparent, but poorly understood.

European settlement was initiated in two regions. Salem and Gloucester were early coastal ports and settlement expanded to the north and west from these two centers. A tier of prosperous coastal towns was quickly established, all of which were engaged in fishing and trade, supported by a small agricultural hinterland. Salem soon rose to prominence and rivalled Boston as a port and shipbuilding center. North of these coastal settlements were three inland centers: Ipswich, Rowley and Newbury. These settlements had been initiated early, each in the center of an extensive area which it took almost a hundred years to populate. This slow rate of expansion was the result of emigrations to other towns. Settlements were small and compact. The farms were comparatively small, but since there were marshes to provide hay, it was possible to cultivate them more fully than elsewhere. Shipbuilding was an important occupation; shoemaking and nail-making became household industries. Settlement in the interior formed the basis of a successful agricultural economy during the colonial period, a landscape which has remained remarkably intact.

Growth of the Essex area continued after the Revolution until the War of 1812, especially in the coastal ports of Salem, Marblehead and Newburyport, which achieved a high level of urban culture and sophistication. Shipbuilding was a major industry in the northern regions. Turnpikes connected Salem to the north and west in the nineteenth century, following the colonial corridors along the tidewater and to the Merrimack falls at Andover. The failure of the coastal ports in the mid-nineteenth century helped preserve entire districts of Federal era urban architecture, especially in Newburyport and Marblehead, and now form the basis of a modern tourist economy. Throughout the commercial period, the Essex region was a major traverse area for connections between New Hampshire and the ports of Boston and Salem.

Industrial development in the nineteenth century was concentrated on available waterpower sites along the Merrimack. Amesbury, Haverhill, and especially Lawrence emerged as centers of textile manufacturing with large scale factory complexes and associated worker's housing. A similar effect was seen in Salem, Beverly and Lynn. Thus, the Essex area emerged in

the industrial period as a focus of two urban cores linked by a network of railroads across an interior fringe.

At the same time the scenic attractions of the rocky coast had begun to draw urban affluence from Boston up the North Shore, first to Nahant and then to Cape Ann. By the 1920's a resort culture flourished along the shoreline, transforming the colonial fishing towns into artist colonies such as Rockport and tourist centers such as Ipswich.

The Essex region today is one of contrasts, reflecting the development of three sub-regions. The effects of nineteenth century industrialization dominate the Merrimack River Valley landscape. Small fishing villages and resort towns characterize the coast. Agricultural towns and larger country estates are still found in the interior.

Boston Area

The Boston area is defined naturally by a lowland depression of the Boston Basin. This basin was flooded in post-glacial times by rising sea levels, forming at the same time the tidal estuaries of the Charles, Mystic and Neponset Rivers. The area is surrounded by a series of granite uplands, such as the Blue Hills, but modern definition is formed by the circumferential Route 128. Historically the Boston area has served as the primary core of Massachusetts, and at least since the Archaic period has been a center for cultural innovation and development. Throughout prehistory and history transportation corridors have radiated out from settlements in the Boston Basin linking the coast to the interior.

No Paleoindian artifacts from the Boston area have been found in any collections. Their absence may be the result of the destruction of likely camp sites, either by rising sea levels or by historic development rather than to the lack of Paleoindian presence in the Boston area. Early Archaic remains are scarce although present as occassional finds in multi-component sites. The Middle Archaic is well represented in the Boston area, identified at approximately thirty sites.

The most numerous prehistoric remains are the Late Archaic small-stemmed point associations. Late Archaic sites are present in a diversity of ecological zones. Rich burial features have been found in Watertown.

During the Woodland period, sites exhibit a shift towards intensive occupation of the coastal zone with a major reliance on shellfish exploitation.

This shift may coincide with the adoption of horticulture as a subsistence strategy. Eleven sites of the Early Woodland period have been recognized in the Boston area. Nearly twenty sites with Middle Woodland associations have been recorded. Late Woodland remains are even more frequent, suggesting an increase in population size. Estuarine heads were likely areas for the location of large villages, but most of these sites were destroyed in the nineteenth century. The size of the Late Woodland population seems generally equivalent to the Late Archaic population, but Late Woodland remains have been found only in the coastal zone.

The Boston area presented some evident advantages for European settlement. The area lies at the mouth of the Charles River, a stream which was navigable for several miles inland for the ocean-going vessels of the seventeenth century. The river provided easy access into the interior from which the settlers expected to draw a trade that would yield an immediate profit. In addition, in 1616-1617 a plague had decimated native groups who originally occupied the area. There were few natives left to dispute the ownership of the first European settlers.

The first location in the Boston area settled was Charlestown, but almost immediately the settlers moved across the bay, founding the towns of Boston, Roxbury, and Dorchester. Settlement expansion on the Charles River resulted in the founding of Cambridge, Watertown, Waltham and Newton by the 1630's. Cambridge was the original capital (and college seat) of the Massachusetts Bay Colony, but Boston soon came to prominence as the leading merchant seaport in the colony and a major trading center for New England. During the colonial period these two towns (Cambridge and Boston) became the centers for cultural innovation in New England and a sequence of "high-style" fashions diffused inland from the Boston area. The importance of the Revolutionary War, and Boston's focal role in this conflict, has helped to preserve some elements of the colonial landscape which have been lost in other towns in the state. These include both elite and vernacular examples, in addition to entire eighteenth century landscapes such as the Brattle Road in Lexington.

The commercial prosperity of the post-revolutionary period fostered the continuing dominance of Boston as a trading center into the nineteenth century. Boston became the focus of a canal and turnpike network which

radiated north to the Merrimack Valley, west to Worcester (and beyond), and south to Providence (See Figures 8, 28). The years before the War of 1812, as well as the War itself, interrupted European trade but had a more lasting effect on spurring the development of manufacturing activities in the Boston area.

Industrialization was begun in large part by gains from long-standing commercial success. Industrial investment made Boston a powerful financial source for development in the entire state. Boston itself remained substantially a trading port, while its rural environs industrialized, until the middle of the nineteenth century.

Industrial development on colonial mill sites was realized in large scale factories, such as those in Waltham on the Charles River, mining quarries such as those in Quincy, and shipyards such as those in Medford. Boston was an early center of railroad activity. The lines followed the historic corridors inland, generating an early suburban landscape of dispersed activity throughout the lowland basin.

By the mid-nineteenth century the convergence of increased manufacturing activity and mass immigration produced rapid industrialization in Boston. Improved transportation and increased interest in cultural activities combined with economic changes to give Boston a truly metropolitan function within the state.

This metropolitan function was evident in the emerging downtown district of the city, which evolved from a core of commercial wharves, public buildings and elite residences into a multipurpose central business district with distinct wholesale, financial, retail, governmental, and recreational sectors (Ward 1971). Beyond the business district lay the inner residential areas of the North, West and South Ends, becoming more densely populated. Beyond these areas, Boston's expanding population competed with growing industry to create a new confusion of suburbs, urban fringe land uses, and industrial zones, pushing the city far beyond the old peninsulas. By 1880, Boston had become an urban focus of regional and national significance.

Urban growth in the late nineteenth century set the dominant characteristic of much of the central city and its inner suburbs. The urban area grew outward by absorbing new land on its fringe, often linking formerly isolated villages to the continuous built-up area. Older parts of

the city became crowded with infill housing and backyard development. The inner city in particular experienced widespread replacement of single family homes by tenements and apartment blocks. While nearly all parts of the city exhibit buildings of more than one age, the imprint of these three nineteenth century processes on Boston is particularly marked.

Southeast Massachusetts

Southeast Massachusetts is surrounded by the coastal waters of Massachusetts and Buzzards Bays with numerous small inlets and harbors such as those at Plymouth and New Bedford. The eastern half is comprised of glacial moraine with small lakes and swamps, while the western portion is a lowland formed by the Narragansett Basin and marked by the Ten Mile River, a tidal estuary between Fall River and Taunton. The coastal ports have served as core areas, with several corridor links to the interior, but throughout most of its history Southeast Massachusetts has been regarded as a fringe of Boston and Providence.

Approximately 400 prehistoric sites have been reported for this study unit. The full chronological range of prehistoric remains, from Paleoindian at Wapanucket to the contact period at Titicut, have been discovered in Southeast Massachusetts. However, reliable stratigraphic sequences are lacking, and the cultural sequence of occupation in the Southeast is poorly understood.

Early Archaic associations are present but scattered, and Middle Archaic occupation sites are scarce. More Middle Archaic sites would probably be identified in re-evaluation of existing site collections. The Late Archaic associations in the Southeast are generally known from large ceremonial sites with spectacular mortuary remains. Few of the less impressive Late Archaic sites have been excavated or reported.

Woodland components are, surprisingly, more than twice as frequent as Archaic remains. This frequency stands in contrast to interior and northern areas of Massachusetts where Late Archaic components constitute the majority of recorded sites.

The historic core of this region is Plymouth. Seventeenth century expansion beyond Plymouth Colony was never very substantial because the agricultural base of the area was meager. Because the land behind Plymouth was not suited for extensive agriculture, settlement did not spread

immediately inland, but first spread north along the coast. Many of the interior towns in the region were not founded until the late 1600's or early 1700's, and then, settlement came from Taunton and not from Plymouth. Taunton was established early (1639) by settlers from the Massachusetts Bay Colony to the Plymouth Colony. They were seeking a commercial outlet to the Narragansett Basin. By the 1650's Taunton was a thriving village, with active shipbuilding and iron-ore industries.

With the exception of Taunton, there were few large-scale settlements in the Southeast for at least the first one hundred years. Small fishing villages developed along the coast, and population in the interior was widely dispersed on farmsteads. Apart from the usual industries found in all the early settlements in colonial Massachusetts (e.g. grist mills, saw mills), extraction of iron ore from the bogs and swamps was an important industry in this area; until the 1750's Southeast Massachusetts led New England in primary iron manufacturing.

For the duration of the eighteenth century, Southeast Massachusetts was a stable and slow-growing region. The fishing industry expanded steadily. Ship-building activities increased, particularly in the northern towns on the Massachusetts Bay such as Scituate and Duxbury. Whaling became a major source of prosperity for the towns on Narragansett Bay and New Bedford became a major whaling center. Taunton continued to grow as a maritime commercial center. Attleborough emerged in the late 1700's as a major jewelry manufacturing center, as a result of its loaction on the Boston-Providence transportation corridor. The Southeast was becoming increasingly linked to centers of commercial prosperity (such as Boston and Providence) and had, by the early nineteenth century, at least three prosperous centers of its own. But even in this period, the South-east can be charaterized as a "backwater". The major flows of capital and economic expansion in the state were east-west from Boston. The declining role and secondary position of the Plymouth Colony in relation to Boston and the removed, southerly position of the region kept the majority of the population out of the mainstream of economic events and changes of the colonial and commercial eras.

The early 1800's saw the introduction of the textile industry into the Southeast and the start of a major shift in settlement patterns and economy. Fall River was the site of cotton mills in 1811, a good decade before the

establishment of Lowell. By the 1850's textile manufacturing was ubiquitous, even in marginal areas. Whaling, ship-building and fishing industries experienced a period of great prosperity; specialized maritime activities (oyster cultivation, salt works) flourished on the southern coast. When maritime activities started to decline in the 1860's and 1870's, some of the coastal towns became exclusive seaside resorts (e.g.,Marion and Dartmouth), while others converted their maritime capital into manufacturing. Fall River and New Bedford grew from flourishing commercial and maritime villages into prosperous industrial cities; in particular, Fall River became a major center, and by the 1880's led the nation in cotton manufacturing. While towns in the south were becoming textile centers, towns in the north, spurred by rail connections to the Boston market, were developing non-textile heavy industries. Shoes, tacks and nails, and shovel manufacturing, which had for two or three generations been conducted in households, expanded into factory scale industries in Mansfield, Easton, Norton, Brockton and other towns in the north.

The industrialization of the Southeast had a major impact on agricultural activity, causing a large-scale displacement of the rural population. The attraction of the industrial centers, not loss of markets or depletion of the soil, led to the abandonment of the farms in the interior. During the last quarter of the nineteenth century, the agricultural regions were the scene of almost complete desolation. The late 1800's saw the influx not only of rural Americans but of large numbers of foreign immigrants into the industrial cities.

The immigrants, initially drawn to the Southeast to work in the factories, later reclaimed the abandoned farmland. At the turn of the twentieth century the Southeast once again became a major agricultural region. The swamps that had been unused for almost three centuries became cranberry bogs; drier lands were converted to cultivation of strawberries. This region became, and still is, a major market gardening center, the hinterland for Boston.

Southeast Massachusetts today is a region of multiple cores, which developed at different periods. Taunton and Plymouth are the oldest centers in the region, followed by the emergence of Attleborough in the late 1700's. New Bedford became a major whaling center in the early nineteenth century and later, with Fall River, became an industrial core.

The towns in the north, dominated by Brockton, became an industrial fringe for Boston in the mid-nineteenth century. Each of these centers became surrounded by suburbs. Many interior towns survived as agricultural enclaves, passing through many cycles of prosperity and decline. The coast remains characterized by fishing villages, small urban centers and attractive resorts.

Cape Cod & Islands

Cape Cod and the Islands comprise the most distinctive study unity in Massachusetts. This region, by virtue of its exposed coastal position, has been an isolated fringe to developments on the mainland of Massachusetts, but has still produced a number of important local cores of national significance.

Most of the prehistoric sites known for this study unit are shell heaps which are located near ponds or areas that were once fresh water. More than 400 sites are recorded within the Cape and the offshore Islands.

No Paleoindian components have yet been reported in this area. The Early Archaic is little better represented. A few Middle Archaic sites have been noted and more sites would probably be identified through collection analysis. Late Archaic remains are plentiful, although there are fewer Late Archaic sites relative to Woodland sites in this region than in other parts of Massachusetts.

Woodland remains are well known from the Cape and Islands. Shell heaps with associations of pottery and Woodland lithics are common. In contrast to other parts of Massachusetts, remains from the Middle Woodland period are the most common in this region. Late Woodland sites are also represented, although information is inadequate to formulate detailed descriptions of the culture of this period.

Knowledge of the Cape and Islands had been gained by European seamen during the sixteenth century, but European settlement of the area did not take place until after the founding of the Plymouth colony. By 1640, settlements were established in most of the desirable locations on the inner side of the Cape. These settlements were all oriented towards Plymouth. The major communications link between Plymouth and the Cape and on to the Islands was by sea; the road network was poorly developed

and remained so until the nineteenth century. Barnstable was the shire town but was rivalled in importance by Sandwich which was the terminus of the poorly developed road system.

During the seventeenth and eighteenth centuries population growth on the Cape and Islands was steady. The climate was moderate and local agriculture was quite successful. The mainstay of the economy was fishing. Local industries associated with fishing developed in most towns, including barrel-making, shipbuilding and assorted home manufactures. By the end of the eighteenth century the Cape was a relatively prosperous region. This region was an outlier of the mainland culture and developed its own vernacular forms, one of which was the "Cape Cod" house.

With no natural water power sites, the Cape and Islands were by-passed by major industrialization of the nineteenth century. Salt-making had become an important industry during the Revolutionary War and remained so until the 1840's. In 1837 there were 668 salt works, most of which were powered by wind mills, on the Cape. Glass making became a major industry in Sandwich and, to a lesser extent, in Falmouth. Other towns did make attempts at large-scale manufacturing, but these failed. Fishing, ship-building and whaling remained the major industries. Provincetown and Wood's Hole had large whaling fleets, but Nantucket was the capital of whaling, rivalled only by New Bedford. By the mid-nineteenth century, a commercial prosperity based on these maritime industries had developed; prosperity was perhaps most evident in Nantucket which had become a center of great sophistication. After the Civil War the fishing industry declined in general, and many of the small coastal villages gradually deteriorated as the fishing industry became concentrated in Provincetown.

In the late nineteenth century the Cape and Islands became favored as a resort area. Resort communities were established on the lower Cape at Falmouth and at Oak Bluffs on Martha's Vineyard, close to the railroad connections from the urban mainland. During the early twentieth century, the tourist economy had extended to Hyannis and Chatham, with a significant artist colony from New York established at Provincetown. Thus, by the 1930's the Cape and the Islands had developed its fringe location as a major resource for the crowded cities of the Northeast seaboard, and in the process preserved much of the early architecture in old seaports like Edgartown and inland towns such as Barnstable.

DESTRUCTION AND ATTRITION OF RESOURCES: MASSACHUSETTS OVERVIEW

One of the aims of this project is to identify factors which cause or contribute to the loss of cultural resources. The nature and rate of attrition and destruction is a key element in determining preservation priorities and management strategies. A major distinction can be made between natural processes and human impacts although, under certain circumstances, these two act in concert.

Natural Processes and Events

The destruction of cultural resources through natural processes can seldom be controlled; at best natural events can be monitored and anticipated. Flood plains and seashores, areas that have traditionally attracted human occupation, are also the areas most susceptible to extreme natural events.

Erosion: Erosion is one of the most predictable of the natural processes. Erosion is localized, rates of erosion can be measured, and expected intensities can be plotted with reasonable accuracy. Most forms of erosion are localized in certain sections of the state: coastal erosion on the seashore, wind erosion on steep slopes, and bank erosion along river courses. Flooding and resultant erosion is a widespread problem in low-lying areas of the state. Since the archeological remains of prehistoric settlements appear to be concentrated in riverine and coastal environments, erosion is a major threat to these resources. Rates of loss due to erosion have not been documented, but have certainly been high in the past.

Storms: Storms are a major cause of both erosion and flooding and their greatest damage occurs in coastal and riverine environments. Whereas erosion and flooding affect all resources in the impact area, above and below ground, the wind damage done by most storms typically affects only standing structures. Within coastal towns, the greatest wind damage resulting from storms is often restricted to those structures on the immediate shore line (the warehouses, docks, light industries and marine resources), while structures further inland are spared. A notable exception are church and meeting house steeples which have fallen victim to storms across the eastern part of the state for three centuries.

County and town histories document the persistent destruction and rebuilding of certain sections of towns, and even of whole towns, on the coast. The repetition of storm damage on the coast, in combination with ongoing erosion, may have resulted in the loss of a considerable portion of the oldest cultural resources in the Commonwealth, since many of the prehistoric and earliest historic settlements were coastal. On the other hand, the effect of differential destruction and selective rebuilding, repeated over time, has resulted in an overlay of 'townscapes' and a mosaic of surviving structures from different time periods existing within single (coastal) communities.

Human Impacts

Current growth patterns: Urban sprawl and suburbanization pose a major problem for cultural resource management. These processes are not only highly destructive, they are also difficult to manage. Suburbanization is not bounded by any distinct areal limits, nor is it the responsibility of any single planning agency or town government. State and local historical commissions have limited control over privately financed activities, or over larger economic patterns of economic disinvestment, residential 'red-lining' or industrial relocation.

Between 1950 and 1970, the character of Massachusetts was transformed by urbanization. While population increased in this period by twenty-one percent, the amount of urbanized land increased by eighty-five percent. The urbanization of Massachusetts increased over four times as fast as population (Massachusetts Office of State Planning 1977). In 1950, only eight percent of the state's area was urbanized; by 1970, urbanization had consumed more than fifteen percent of the state. Over half the towns in Massachusetts today are incorporated into Standard Metropolitan Statistical Areas, an indicator of close economic affiliation with central cities.

The most active sprawl patterns are generally found on the fringes of urban centers. By monitoring and predicting economic growth patterns in the state or within a region, it is possible to identify areas where cultural resources will be most endangered by uncontrolled sprawl.

The rural regions of the state provide a valuable opportunity to combine the common goals of historic preservation and open space conservation. Rural areas are under increasing development pressures (National

Trust 1979). Rural areas close to cities are threatened particularly by urban sprawl. Those areas remote from cities are not immune from land-use problems, as major construction projects, second-home developments and natural resource extraction increase. Farms and farmland need protection, as does the whole range of rural structures (including barns, root cellars, sheds, silos, fences). Over 1.3 million acres of farmland have been lost in Massachusetts since World War II, and the number of farms has fallen from 35,000 to 6,000 in this period (Massachusetts Office of State Planning 1977). The farming landscape, once so typical in Massachusetts, is critically endangered.

The small towns and villages that are the economic, political and cultural centers of rural areas are under increasing pressures. Small mill villages and manufacturing towns, characteristic elements in the Massachusetts rural landscape, are equally threatened. The key to protecting a rural town or village is to identify its current role and to assure that these roles continue to be viable ones. Preservation of historic structures in the community is an important element in maintaining the integrity and vitality of these small rural communities.

New highways or major roads often become corridors of growth. The highways play a major role in shaping land use patterns, and suburbanization is typically aligned along major roads. Areas close to cities or along major highway corridors have become dotted with industrial parks, shopping centers and residential subdivisions. This type of growth threatens the integrity of cultural resources in the path of transportation corridors; even those communities that are bypassed experience problems of stagnation and decline.

Direct effects of highway projects themselves are generally among the easiest to monitor. The immediate impact area of a highway is a well defined linear path that easily can be mapped. Furthermore, the National Historic Preservation Act requires review of any publicly funded or licensed project in terms of its impact on cultural resources; since highways are publicly funded, they are subject to review. However, because highways act as major facilitators in suburban/urban sprawl, they create wide corridors of vulnerability, and affect communities even at a distance from the actual roadway. Indirect effects are difficult to monitor.

Suburban expansion is often a major cause of urban decline. Suburban shopping centers have a major impact on the vitality of downtown commercial districts. Economic deterioration of central city shopping districts in the face of suburban mall competition leads to structural deterioration of urban downtowns.

Abandonment and Decay

Standing structures are often lost through abandonment and neglect. Abandonment is a major problem in rural areas. Unused farm buildings are often allowed to fall into ruin, unless they are highly assessed for property tax purposes in which case they are usually quickly demolished. New uses for farmhouses in isolated locations are difficult to find, and even more difficult for such structures as silos and sheds.

The stagnation of Massachusetts' existing industrial base is a major cause of urban abandonment. Entire inner city industrial districts have been abandoned as industries shut down or relocate. The lack of industrial growth, or in some cases the loss of industries, has a negative effect on the vitality of the entire community. Between 1950 and 1970 the population of twelve of the state's largest cities fell by 280,000 and employment was reduced by 102,000 (Massachusetts Office of State Planning 1977). While decline in the industrial base of central cities is a serious problem, it is even more serious in the smaller manufacturing cities and towns surrounding the core cities. If the major local industry in these smaller communities leaves, the whole fabric of the town--cultural, economic and physical--is threatened.

Industrial relocation from the centers of cities to suburban sites presents a double-edged problem. It causes decay and abandonment in the city center, while also contributing to suburban sprawl. New industrial construction in non-urban areas consumes more land than urban industries. Suburban industries are generally housed in one-story structures, spread over many acres--as opposed to the older multi-story industrial buildings built on small lots in the cities.

Many of Massachusetts' growth and development problems stem from a systematic neglect of town and city centers. Public and private disinvestment in central cities and the relocation of facilities in outlying areas fosters inefficient patterns of development which consume valuable open

space, threaten urban fringe and rural communities and undermine the ability of the older cities and towns to retain private investment. Public support and recognition of typical inner-city structures, including industrial and commercial buildings, and worker's housing, is extremely variable. These resources generally do not have a strong protective constituency and are extremely vulnerable to complete destruction by arson and vandalism once abandoned.

Fires

Arson is a major problem today in the abandoned inner-city cores and economically depressed neighborhoods of the older cities in Massachusetts. Building by building, whole sections of towns and cities are destroyed. In many cities, this has reached crisis proportions.

Fires have always been a problem in cities. In the colonial era, the cores of mercantile ports were razed repeatedly by fires. More recently, major fires of the late nineteenth and twentieth centuries destroyed the downtown centers in many of Massachusetts' cities. Industrial districts, with a volatile mixture of wooden dwellings and heavy industry are, and have been in the past, most prone to extensive destruction through fire: the "Great Fire" of Boston (1872), the fires in Haverhill (1882), Lynn (1889), Salem (1914) and Chelsea (1973) illustrate this point.

Fire danger in cities today is less of a problem in districts and buildings of recent construction--but, of course, these are the areas where the previous cultural resources have been destroyed by that construction. Destruction by fire (today, primarily by arson) is a major threat in the old sections of towns and cities, where structures (often wooden) are crowded together, and where the building stock may be abandoned or decaying.

Sanitized Environments

At the other extreme, there are problems of "over preservation" in prosperous communities. In the high-income towns and neighborhoods of Massachusetts, where preservation efforts often have local political as well as financial support, the types of resources preserved tend to be very selective. These communities are preserving an "image", and that image generally does not include resources such as industrial structures, commer-

cial structures or rural out-buildings which resources are either destroyed or ignored. The "gentrification" of rural communities and urban neighborhoods often destroys the integrity of the area, through selective preservation of certain elements of the whole area and through piecemeal rehabilitation. Rehabilitation that is not sensitive to the original function and design of structures and sites may inadvertently destroy valuable information.

The selective preservation of "sanitized environments" is not a new phenomenon, nor one entirely restricted to high-income communities. Tourism promotes selective preservation. When many of the small rural Berkshire towns in the nineteenth century became resort towns their rural, agrarian structures were often destroyed; the barns, silos, smokehouses and sheds were considered to be undesirable elements in a resort town. Tourist landscapes today are often misrepresentative and contrived to present an idealized image of the past.

In areas of the state that are heavily dependent on tourism, there is a need to protect the environmental amenities, including the cultural resources, that attract the tourists. However, the tourist industry itself puts special pressures on these resources by promoting rapid growth, commercial strip development and construction of second-home tract suburbs.

Persistence of Occupation

Almost all aspects of human activity build upon previous knowledge and prior activity patterns. Therefore to varying degrees the persistence and development of any human occupation destroys the past. In terms of broad settlement patterns, locations considered favorable to one culture or activity are often also evaluated as favorable to future development. On a state level this has resulted in the persistence of a higher density of activity in the lowlands than in the uplands over all time periods. Later industrial sites were built on earlier industrial sites, and since much of Massachusetts industry has been water-powered, it has exploited the same riverine environments previously occupied by aboriginal groups. Successive transportation lines have been built along earlier corridors; many of today's highways are within the same corridors as the early Indian trails. Even within the boundaries of towns and communities, there are particular environments that have been repeatedly built upon. Sunny, well drained

slopes, for example, have been favored both for aboriginal occupation, agricultural activities and suburban development. Because of the continued occupation of favored locations, inventory efforts must be sensitive to the possible presence of earlier components in every site.

The greatest density and intensity of human activity has, over time, been concentrated in fewer and fewer places. There are a few areas in the state where nearly continuous development over time has resulted in the almost complete obliteration of past patterns (i.e. the most heavily urbanized centers). In contrast a wide range of places have been by-passed by successive development. This differential destruction and survival has produced a "gradient of destruction" and resulted in the mosaic of places referred to earlier. Such communities and regions represent "frozen time" situations, where the dominant landscape dates from a particular era and has been minimally affected by subsequent growth.

Growth Policy

MHC is concerned with the recognition of local history (as it evolved in a regional and state-wide context) and the maintenance of the integrity of community character through an appreciation and preservation of the features both natural and man-made, that reflect this history--the landscapes and townscapes that characterize communities, reflect their cultural heritage, and distinguish one from another. Management of culture resource involves broader issues of growth management. Communities in Massachusetts cannot realistically choose between "growth" and "no growth"; the choice is where and in what manner growth should be accommodated. The issue is not the overall quantity of growth, but its quality--the distribution, the design and the character of growth. Cultural resource management agencies on the state and local level play an important part in helping the communities of Massachusetts make these growth decisions.

The goals of cultural resource management must be integrated into local planning efforts and community growth policies. The only comprehensive survey of community growth policies and "desired futures" is the 1977 report City and Town Centers,Program for Growth produced by the Massachusetts Office of State Planning. The desire to protect and preserve the distinctive character of communities and regions is expressed

consistently in these growth policy statements. The preservation of community character is the foremost concern of the cities and towns in Massachusetts.

Although "community character" is difficult to define the local growth policy statements clearly state that preservation of the built environment is considered to be a major part of the preservation of a community's special character. Cultural resource management can play an important role in local planning. Understanding of the past, and preservation of past environments are critical elements in local growth policies and community goals.

The concerns of cultural resource management include the stabilization and revitalization of community and urban centers, the preservation of residential neighborhoods within communities, and the conservation of open space and farmland. Local historical commissions should take an active role in advocating these goals in the local planning process.

Many of the growth management problems facing communities today are related to investment and development policies, in both the public and private sectors, which for years have favored suburban growth. These policies have resulted in the decay of city and town centers and the disruption or destruction of rural and urban fringe communities. By far, the greatest loss and destruction of cultural resources is because of private developement. While private development is difficult to regulate, towns in Massachusetts can have considerable control over development in their community through careful planning and land use control. Many of the inefficient and destructive growth trends of the past twenty years can be slowed, if not reversed. The major tool of land use control in Massachusetts today is local zoning. Innovative zoning includes far mor than regulating the size and type of activity on a parcel of land. Many communities in Massachusetts have enacted land use controls which include cluster and planned unit development zoning (to protect open space by concentrating new growth in small clusters) and performance zoning which regulates land use based on the expected impacts of new development.

DESTRUCTION AND ATTRITION: STUDY UNITS

The nature of land use control over the state is extremely variable because each city and town is responsible for its own land use controls. However, development pressures can be generalized regionally. The MHC and local historical commissions need to monitor these patterns and assess their impact in terms of the loss and destruction of cultural resources.

None of the differences among the outlying regions in Massachusetts is as striking as the difference between all of them and metropolitan Boston. Metropolitan Boston houses over sixty percent of the state's population, and is the most intensely developed region in the state. Since 1950, the edge of rapid growth has travelled from Boston to Route 128 to Route 495, enveloping not only a core of dense, urban communities and a wide band of outer suburbs, but several satellite areas which themselves combine a central city or town and a number of suburbs.

Metropolitan Boston differs from other regions not only in scale, but in the degree of pressure inherent in its growth policy choices. While other regions may still have choices, the stakes riding on most growth decisions in Boston appear uniformly high -- land is scarce and expensive, service demands already intense and property taxes already burdensome.

At the other end of the development scale are regions--the Berkshires, parts of the Connecticut River Valley and parts of the Cape and Islands--in which the regional quality of life is still relatively unspoiled, but which are in great danger of over-development. In between are those regions which exhibit more "typical" development patterns--a central core or cores, a ring of suburbs and some rural towns.

Berkshire

In many ways, the Berkshires have avoided suburban tract sprawl by avoiding growth. No major highways are planned in this region, and the population projections indicate little or no growth for the next ten years (see Figure 46). The major growth pressures come from the flourishing tourist industry and the associated demand for second-home developments. "Gentrification" and over-preservation is a major threat to the preservation of authentic landscapes, particularly in the elite core areas of Williamstown and the Stockbridge-Tanglewood-Lenox cluster. The Berkshire towns seem concerned to preserve their isolated, rural image and village character,

and are responding to these growth demands through stringent zoning. Nine Berkshire communities had imposed cluster or planned unit zoning laws as of 1975 (all town zoning figures from Peskin 1976): Cheshire, Dalton, Florida, Great Barrington, Lanesborough, Lee, Mt. Washington, North Adams and Pittsfield. In addition, nine communities also have flood plain zoning restrictions: Dalton, Great Barrington, Hancock, Lanesborough, Lee, North Adams, Pittsfield, Stockbridge, and Williamstown.

The preservation problems in this area are primarily neglect of rural structures and decay in the older cities. Inner-city abandonment and decline is a major problem in the older industrial--Pittsfield, North Adams and Adams. The other pressing preservation problem involves the agricultural landscape itself, particularly the barns and outbuildings. For the most part, rural preservation efforts have focused on the farmhouses themselves, ignoring other structures. The result has been a nearly complete loss of the functional agricultural architecture of the nineteenth century. A similar loss has undoubtedly taken place among the early mill buildings and roadside structures. Because of the relatively small scale historic exploitation and development of this region, the Berkshires may well be a valuable area for extensive prehistoric research--and an area about which little is known.

Connecticut River Valley

The northern part of the Connecticut River Valley region is an area of active agricultural production and is still predominantly rural. However, it is under increasing pressure from suburbanization which is rapidly expanding northward up the valley.

The southern part of the Connecticut River Valley is extremely diverse. The Springfield-Holyoke-Chicopee metropolitan core is the state's second largest urban area. These cities are experiencing the same inner-core decline problems common to all the older industrial centers in Massachusetts. Surrounding this core is a rapidly growing cluster of suburban towns. Tract development has been aggravated by the expanding University of Massachusetts/Amherst community. Agricultural land and fairly isolated rural communities are still found on the eastern and western fringes of this growth cluster, but this is one of the fastest growing areas

in the state, and the farmland--the Commonwealth's most fertile--is extremely threatened by suburban/urban sprawl. The expansion of Route 57 in the south could be a major factor in promoting even more rapid sprawl.

Because this is the major floodplain region in the state, floodplain zoning could be an important management growth tool in the Connecticut River Valley. As of 1975, Agawam, Amherst, Buckland, Chicopee, Colrain, Granby, Hadley, Hampden, Hatfield, Heath, Holland, Holyoke, Northampton, Palmer, South Hadley, Southampton, Springfield and West Springfield had floodplain zoning. Cluster or planned unit development zoning laws have been adopted by Agawam, Amherst, Chicopee, Greenfield, Heath, Holland, Holyoke, Monson, Northampton, Shelburne, South Hadley, Southampton, Springfield, West Springfield and Wilbraham.

Central Massachusetts

This region contains a diversity of settlement types, each of which are experiencing different growth problems. The older industrial cores, Worcester and Fitchburg, are suffering from inner-city decline and urban blight. Central Massachusetts has many small mill villages, with a concentration in the Blackstone Valley, many of which have been bypassed by recent economic developments and which may still be intact examples of dispersed nineteenth century industrial communities. However, these towns are threatened by neglect and economic stagnation, particularly of the mill structures. Much of the northern half of the region is predominantly rural, but under increasing pressures from suburbanization; it is still possible to find intact commercial era "villages-on-the-green" in northern central Massachusetts. The proposed highway from Worcester to Leominster (Route 191) may have a major impact on the previously isolated towns in the north. The extreme western fringe of this region has also retained its agricultural/rural landscape, and may be one of the few remaining areas in the state to be bypassed by major suburban/urban growth. The southern part of Central Massachusetts is dissected by several major highways (Route 290, 90, 146, 84, 9) which have acted as major corridors of suburban residential growth and industrial park development. The proposed expansion of Route 146 (Worcester to Providence) will further aggravate this sprawl. This region is slowly being absorbed into the Eastern Massachusetts megalopolitan complex.

Relatively few communities in Central Massachusetts have adopted innovative zoning growth management tools. As of 1975, only fourteen of the sixty towns in the Worcester Study Unit had cluster or planned unit zoning laws: Ashburnham, Auburn, Blackstone, Clinton, Dudley, Fitchburg, Harvard, Holden, Milford, Millbury, Northborough, Uxbridge, Westminster and Worcester. Fifteen had floodplain zoning: Auburn, Berlin, Clinton, Dudley, East Brookfield, Gardner, Harvard, Holden, Millbury, Northborough, Uxbridge, Webster, West Brookfield, Westminster and Worcester.

Eastern Massachusetts

This region has been almost entirely absorbed as an outer suburban ring for Boston, with the exception of a few enclaves (Lincoln, Wellesley, Weston, Dover, Hingham, Cohasset, Concord) which have avoided rapid growth through stringent zoning. While much of the growth is residential, industrial park development has also been extensive. Lowell, in particular, is likely to experience rapid industrial growth, but faces the familiar problem of inner-city decay. Historic regional cores (such as Natick) have lost their integrity and identity as distinct centers. The towns on the northwest fringe of this region have remained relatively isolated, but all areas in Eastern Massachusetts are threatened by suburban expansion.

Towns with cluster or planned unit zoning as of 1975 include: Ashland, Avon, Bellingham, Chelmsford, Concord, Hingham, Holliston, Lincoln, Medfield, Millis, Natick, Norfolk, North Reading, Norwood, Pepperell, Sharon, Shirley, Stoughton, Stow, Townsend, Wayland and Wellesley. Floodplain zoning laws are used in Avon, Bellingham, Billerica, Boxborough, Canton, Carlisle, Chelmsford, Dover, Franklin, Hingham, Lincoln, Littleton, Lowell, Medfield, Millis, Natick, Needham, Norfolk, North Reading, Pepperell, Randolph, Sherborn, Sudbury, Tewksbury, Townsend, Wakefield, Walpole, Wayland, and Wilmington.

Essex

Essex is a region of rapid growth. Suburbanization pressures come both from Boston and from the older Merrimack Valley industrial cities. While these nineteenth century industrial cities are experiencing general growth, inner-city decay is also a major problem. Several clearly defined

regional core cities of historic significance in southern Essex (for example, Lynn and Salem) have now been enveloped by Boston growth; the proposed extension of Boston's rapid transit system (the Blue Line) into this area will result in further deterioration of the integrity and separate identity of these centers. Other transportation improvement projects which are planned for this region will facilitate even more rapid suburban sprawl: the highway 95-128 connector, the Salem-Peabody connector, the Haverhill-Lawrence connector.

While some of the interior towns have retained a rural character, this is a rapidly disappearing landscape. The Cape Ann towns (Essex, Gloucester, Hamilton) have remained relatively isolated from suburban growth pressures, but are threatened by growth related to tourism and second-home developments. Erosion, though not as severe as in the Cape Cod and Islands region, does pose a threat to coastal resources.

Cluster and planned unit zoning laws have been adopted in Amesbury, Andover, Beverly, Georgetown, Gloucester, Groveland, Haverhill, Lynnfield, Methuen, Newburyport, Peabody, Saugus and Topsfield. Floodplain zoning laws are in effect in Andover, Danvers, Georgetown, Groveland, Hamilton, Haverhill, Lynnfield, Middleton, Peabody, Saugus, Topsfield and Wenham.

Boston Area

The Boston Area is the most densely populated and most intensively developed region in Massachusetts. One of the greatest problems is neighborhood decay, especially in Roxbury, Dorchester, Chelsea and Everett. Gentrification of other inner-city neighborhoods, if not monitored carefully, could threaten the integrity of historic residential districts. The older coastal recreation areas (Winthrop, Revere and Hull) are suffering from economic decay, and also coastal erosion. The historic fabric of early industrial sites in Quincy, Waltham and Milton are threatened by neglect. The Victorian suburban environment in Newton, Brookline and Winchester is relatively stable. New commercial, retail and office growth is a major threat to the fabric of downtown Boston and Cambridge.

Southeast Massachusetts

Southeast Massachusetts is a region of projected rapid growth, again from Boston area expansion. The interior towns, which are predominantly rural/agricultural are expected to experience rapid residential growth, particularly with the completion of Route 495. The older industrial cities are suffering core decline, but Brockton and Attleborough are generally in a high-growth area; Fall River and New Bedford are projected to lose population (see Figure 52). Suburban growth, combined with increasing tourism will put particular pressures on the resort and fishing towns along the coast; Plymouth is particularly threatened. Since this region appears to have been heavily populated in prehistory, archeological resources in this area may be plentiful, but extremely threatened.

Towns with cluster or planned unit zoning in the area are: Attleborough, Bridgewater, Brockton, Easton, Freetown, Kingston, Mansfield, Marshfield, Marion, North Attleborough, Plymouth, Rockland, and Taunton. Floodplain zoning has been adopted by Abington, Attleborough, Brockton, Dartmouth, East Bridgewater, Easton, Fairhaven, Kingston, Mansfield, Marion, Marshfield, New Bedford, Norwell, Pembroke, Plymouth, Plympton, Taunton, Wareham and Whitman.

Cape Cod and Islands

Cape Cod and the Islands is one of the fastest growing regions in Massachusetts. This growth is primarily the result of tourism, second-home, and retirement home development. Within this region, the Upper Cape will grow the most rapidly from suburban development, but pressure is intense in all areas. Even in those areas protected by historic districting and National Park designation (such as the north side of the Lower Cape and Nantucket), historic authenticity is on the verge of being overwhelmed by the tourist economy. The only substantial "natural" area remaining in this region is the Elizabeth Islands. Almost all of the growth is residential and commercial; there is little industry on the Cape and Islands, and none projected.

Coastal erosion is a major threat to the Cape and Islands. Recent reports from the Army Corps of Engineers indicate that little can be done to stop this process.

Eleven towns have cluster zoning: Barnstable, Bourne, Brewster, Dennis, Edgartown, Falmouth, Mashpee, Nantucket, Oak Bluffs, Sandwich and Tisbury. Floodplain zoning exists in seven towns: Bourne, Harwich, Nantucket, Oak Bluffs, Orleans, Tisbury and Wellfleet.

PRESERVATION CONSTITUENCIES: MASSACHUSETTS

Any governmental cultural resource management agency must take into account its constituents or those who look to it to act in their behalf. Just as there is no single "public interest", there is no single constituency for cultural resources. To the contrary, a great variety of both general and special interest groups and organizations exist in Massachusetts, all of which expect responsiveness from the Massachusetts Historical Commission. Important to the proper consideration of constituent's interest is their identification and definition. Constituents for cultural resources defy exact definition because of their changing nature; well-established organizations have changed goals over time and new organizations appear overnight in response to particular events or crises. Some of the fledgling efforts take hold long after the catalytic events when more general needs are perceived to exist. Others disappear when the crisis ends. Those that survive usually set goals directed at influencing public policy on their behalf.

The longer an organization has existed, the better it influences long range policy-setting. A well-established private non-profit organization is often afforded formal participation in governmental decision-making. The ad hoc specific-event groups may have more immediate impact on the issue at hand, but very little influence over broader issues or on agency policy. As some of these ad hoc groups mature into formal organizations their ability to influence increases.

With the myriad of constituents which exist in any state, it is not surprising to find conflicting interests. This point is readily illustrated by the differing views of those interested in archeology on the question of proper cultural resource management: within the professional archaeological community active in historic preservation, the preferred treatment for a threatened site is avoidance and conservation of the resource; the amateur archeologist would rather excavate. Similar conflicts exist in and among the other disciplines. One major cause of conflict among constituents is competition for the allocation of scarce resources. Departments within the governmental structure must compete with priorities and other agencies; private, non-profit organizations must compete with each other for memberships and donations. Most constituent organizations concerned with cultur-

al resources inevitably look to the government for support both in terms of funding and in terms of policies. The government in turn usually increases conflict through haphazard allocation of funds to these competing interests. The Massachusetts Historical Commission recognizes the conflicts among individual organizations concerned with cultural resources, and by implementing this comprehensive state plan hopes to alleviate some of these conflicts through a rational decision-making process for the development of priorities and allocation of funds.

In Massachusetts at least six classes of constituent interests may be identified: (1) the academic community; (2) local historical commissions; (3) private non-profit organizations of local, state, and national scope; (4) ad hoc groups formed in response to special events or crises; (5) conservation organizations; and (6) the private development community.

Academic Community

The academic community stands as a prime constituent of the Commission's programs. The diverse and intense commitments within the major disciplines who study material culture have spawned numerous formal organizations devoted to special interests. Because academic concerns cut across political boundaries, most of these organizations emerged from national forums with local chapters later established. These groups take their own momentum and often move away from their original organizations and away from strictly academic pursuits (see #3 below). Exceptions are organizations such as the Society of Professional Archeologists which certifies professional archeologists, the American Institute of Architects which registers architects, and the American Institute of Planners which does the same for professional planners. The impact of these groups on the Commission's program rests principally in establishing professional standards and credentials.

The academic community, beyond spawning formal organizations which become constituents in and of themselves, remains as the major source of research talent and credibility for the state preservation program. Participation in cultural resource management by experts from a wide range of disciplines is critical to the success of the Commission's programs. The academic community should take an active interest in the policy setting directions taken by the Commission in policy setting since these policies

will affect the ability to attract funding for research activities. In Massachusetts, the formal academic community has had its greatest impact in the area of archeology.

Through the interdisciplinary approach to survey suggested by the Cultural Resource Management Plan for Massachusetts, the Massachusetts Historical Commission plans to attract the best available researchers from a range of academic disciplines and to encourage academic research which complements the interests of the Commission. The academic community has a constituent interest in both the identification and the protection of research data.

Local Historical Commissions

The principal constituent group served by the Commission during the past decade consists of the local historical commissions and their individual members. Enabling legislation for the creation of local historical commissions passed in 1963, the same year in which the Commission was established, providing the opportunity to build local interest in the Commission's programs.

The Commission aggressively encouraged the establishment of lcoal historical commissions and local historic district commissions by making involvement in the National Register program contingent upon local survey and preservation planning activities. The Commission made clear its interest to allocate its limited time to those communities which demonstrated a commitment to historic preservation through the appointment of a local historical commission. As a result, 292 of the Commonwealth's 351 cities and towns have established local historical commissions. In addition, forty-eight historic district commissions have been established. The district commissions do not act as historical commissions but as review bodies for specific historic districts. In total, there are 338 local public agencies concerned with historic preservation in Massachusetts.

Since the Commission has acted as the catalyst for these many public commissions (excepting the early historic district commissions) it assumes the primary responsibility for servicing their concerns. However, the success in creating these commissions has placed serious pressures on the MHC to support their work, specifically in the area of National Register

recognition and protection. Local historical commission demands for services have provided the impetus for increased staffing of the Commission.

The local historical commissions act as the focal point within the communities for local constituents concerned with cultural resources. On behalf of the community, they look to the Commission and the federal government for support for their programs, and as such have a significant interest in the policies of the Commission. In turn, the Commission looks to the local historical commissions for assistance in the identification of historic properties and in the identification of threats to recognized historic properties. This mutually beneficial relationship will endure as long as the Commission maintains its ability to service these commissions. A list of communities with local historical commissions and separate historic district commissions, arranged by study unit, appears in Appendix "B".

It is important to note that the effectiveness of the historical commissions as a group in influencing public policy suffers from the lack of a state-wide association. In the absence of proper association, the Commission must continue to provide direction to these commissions.

The local commissions have been joined recently by a new group of quasi-public revolving-fund organizations. The first statewide revolving fund (Architectural Conservation Trust for Massachusetts) appeared in Massachusetts in 1975 in response to the need to make effective use of limited preservation dollars for property acquisition and development. A revolving fund simply recycles the money invested in one property to a fund for use in other properties. In Massachusetts, non-profit local revolving funds have been created in Boston, New Bedford, Salem and Springfield within the last few years. These organizations compete with the other constituencies for the services of the Commission. At the same time they provide the necessary development expertise to local groups which the Commission is not properly staffed to do. The exact role of the revolving funds vis-a-vis local preservation organizations still needs definition.

Private non-profit organizations

Massachusetts and New England has a rich heritage long recognized by many of it citizens. The existence of state-wide antiquarian and historical organizations throughout the Commonwealth's history attest to this

heritage. Massachusetts has the oldest historical society in the United States (the Massachusetts Historical Society) formed in 1791 through the efforts of Reverend Jeremy Belknap, as well as the third oldest historical society, (the American Antiquarian Society), established in 1812 in Worcester. In 1845 the New England Historic Genealogical Society incorporated in the City of Boston. These organizations reflected a keen awareness of the history of the Commonwealth and the nation, and have maintained their historical and antiquarian thrust.

In 1891 another private organization was formed which has had a significant influence on the preservation movement well beyond the borders of Massachusetts. The Trustees of Reservations, created through the efforts of landscape architect Charles Eliot, has as its primary concern the conservation of scenic open spaces for public benefit with a particular focus on the cultural aspects of the landscape. The Trustees of Reservations has served as the model for numerous other organizations, perhaps the most important of which include Britains's National Trust for Places of Historic Interest and Natural Beauty which, in turn, inspired the formation of the National Trust for Historic Preservation in the United States. By the beginning of 1978 the Trustees of Reservations owned and maintained sixty-four "beautiful and historic places and tracts of land" in forty-six communities from Berkshire County to Cape Cod totalling more than 14,286 acres. In addition to direct holdings the Trustees of Reservations holds conservation restrictions on 4,374 acres. Because of its concerns with both the cultural and natural heritage of the state and the nation, the Trustees of Reservations expects governmental agencies responsible for these programs to coordinate policies to ensure a set of nonconflicting public policies designed to protect and preserve the nation's heritage.

In response to the proliferation of local historical societies, the Bay State Historical League formed in 1903. Through its quarterly meetings and bulletin the League encourages cooperation among its more than 400 member organizations and services them with information on both legal and technical aspects of historic preservation, with a primary focus on museum programs and the curation of memorabelia.

In 1910 a new organization emerged, the Society For the Preservation of New England Antiquities (SPNEA) which provided new directions for the preservation movement. In the words of the Society's founder, William

Sumner Appleton, its purpose was "to save for future generations structures of the seventeenth and eighteenth centuries, and the early years of the nineteenth, which are architecturally beautiful or unique, or have special historical significance." Further, the Society proposed "to preserve the most interesting of these buildings by obtaining control of them through gift, purchase or otherwise, and then to restore them, and finally, to let them to tenants under wise restrictions, unless local conditions suggest some other treatment." The phrases underlined illustrate the major characteristics of a new concept of preservation: the validity of architectural quality or uniqueness, unrelated to historical association, as a criterion for preservation, and the idea of maintaining buildings, with adequate safeguards against damaging change, for continued current use rather than for exhibition.

Appleton began the Society with a membership of eighteen, and few resources beyond his own time, energy and modest income. In the subsequent sixty-four years, the organization has grown to a membership of more than 2,500 and has acquired through gift or purchase some sixty properties in five of the New England states, thirty of them in Massachusetts. Some of these properties are opened regularly to the public, others are maintained through private occupancy, but all are preserved for the future. Some of the buildings have significant historical associations, but all of them have a strong claim to survival on the basis of their architectural merit.

SPNEA has experienced difficulty in securing proper funding for the maintenence and restoration of their properties. At the recent annual meeting in June 1979 the Society voted to sell fourteen of the unendowed properties. This action underscores the scarcity of preservation dollars within the private sector and suggests a real need for 100 percent preservation grants from both state and federal governments.

Until the formation of the Massachusetts Archaeological Society (MAS) in 1939, little or no attention had been given to the preservation of prehistoric sites and artifacts in the Commonwealth. Since that time, the Society has grown to be an important force in the study of archeology both in Massachusetts and throughout the New England region. Through the efforts of its members, who include both professionals and knowledgeable amateurs, some 1500 sites have been identified and their significance

documented. Of these, over sixty have been excavated under the direction of the Society's chapters.

Each of these state-wide preservation organizations have formal representation on the Massachusetts Historical Commission. The concerns of these constituencies lie at the foundation of the Commission's programs.

Non-Profit Organizations

Over the past several decades a large number of national non-profit preservation organizations have appeared in response to both federal public policies and special interests within the public policy framework.

The National Trust for Historic Preservation, chartered by Congress in 1939, remains the only private, non-profit organization with a congressional charter specifically mandated to encourage public participation in the protection of buildings, districts and sites significant in the history of the United States.

In addition to the National Trust, numerous other private nonprofit organizations exist which act to recognize and protect cultural resources, including:

American Association for State and Local History
American Institute of Architects, Historical Resources Committee
The Association for Preservation Technology 1968
Friends of Cast Iron Architecture
Historic House Association of America
National Conference of State Historic Preservation Officers
Coordination Council of National Archeological Societies
Partners for Livable Places
Preservation Action
Society for American Archaeology
Society of Architectural Historians, with local chapters
Society for Commercial Archaeology
Society for Historical Archaeology
Society for Industrial Archaeology
Victorian Society in America

Each of these national organizations has a specific interest as constituents in the Commission's programs and a number of the organizations have local chapters. The sheer numbers of these organizations put considerable pressures on the Commission to develop understandable priorities management at times of conflicting interests.

Ad hoc groups

Ad hoc groups which fight for the protection and preservation of specific structures or sites have been influential in Massachusetts preservation since the 1800's. The Old South Meeting House and the Old State House in Boston were saved from destruction in the 1800's only through the efforts of small groups of concerned citizens. Similarly the Turner House in Salem and the Fruitlands House in Harvard were saved by the concern and support of a single individual in the late nineteenth century. Family associations have played an important role in the preservation of significant seventeenth century buildings in Massachusetts. The Fairbanks Family Association in America, the Alden Kindred, and the Pilgrim John Howland Society, among others, have restored and continue to maintain their ancestral homes.

By far the largest number of private preservation projects in Massachusetts have been the work of local historical societies, which exist in more than half of the Commonwealth's 351 cities and towns. Many of these organizations are responsible for the maintenance and museum operation of one or more buildings associated with the history of their particular community. Though local societies are sometimes criticized for limiting their interests to the preservation of a single building and related artifacts, without their continued efforts these buildings would have been lost.

The formation of local historical organizations to deal with specific districts and buildings continues today and include:

Plimoth Plantation (Plymouth)
Old Sturbridge Village (Sturbridge)
Historic Deerfield (Deerfield)
Pioneer Valley Associates of Connecticut Valley
Hancock Shaker Village (Hancock)
Fruitlands Museum (Harvard).

Although the Commission does not always agree with the preservation philosophy reflected in these outdoor museums and museum houses, the custodians of these properties must be considered an important constituent of the Commission's programs both in terms of public policy and funding.

The existence of other ad hoc groups (some of which later evolve into more general purpose organizations) has significant ramifications for the Commission's programs. These groups include:

Architectural Heritage Foundation
City Conservation League (Boston)
Friends of the Waterfront (Newburyport)
Friends of North Street (Pittsfield)
Historic Salem, Inc. (Salem)
Preservation Alliance (Boston)
Preserve our Symphony Hall (Springfield)
Springfield Historical Trust (Springfield)
Waterfront Historic Area League (New Bedford)

Because the concerns of these groups are specific both in locale and in the types of resources they protect, they have limited long-range influence on public policy. However, because of their specific interest they often generate the most intense publicity for their issue and often receive immediate action from public agencies. Public agencies tend to resent politicial pressures applied by these ad hoc groups and often work consciously to exclude them from formal participation in programs. These groups can be disruptive to the ongoing programs of a public agency. At the same time they provide vocal support for preservation decisions to protect resources from destruction by private development. The impact of these constituent ad hoc groups in Massachusetts has been mixed.

Conservation Organizations

The interests of conservation organizations often parallel and support the interests of preservation organizations. Coordination of their activities will enhance the efforts of both. The Heritage Conservation and Recreation Service was formed in 1977 to facilitate such coordination. Numerous conservation organizations operate in Massachusetts today, including:

Massachusetts Association of Conservation Commissions
Massachusetts Audubon Society
New England Forestry Foundation
New England Rivers Center
Sierra Club
The Conservation Law Foundation
The Nature Conservancy
Trust for Public Lands

Development community

The forces which act to foster economic progress in the nation have typically worked against the interests of both preservationists and conservationists. Only in the 1970's have the issues of scarcity and energy

conservation served to focus attention on the economic opportunities inherent in the rehabilitation of buildings and neighborhoods.

The Tax Reform Act of 1976 provided a major stimulus for the emergence of a preservation constituency within the business community, albeit a subordinate interest to the realization of federal tax incentives. (A definition of these provisions may be found in Appendix C.)

Development interests respond to public policy and pursue the course of least resistance and maximum return. In the case of historic preservation developers, realizing the opportunity for investment encouraged by the tax incentives, want broad and liberal interpretation of cultural resource significance. At the same time, they want strict interpretations of significance when it suits their economic interest to destroy historic property. These conflicting attitudes place considerable pressure on the Commission and obviously require consistent interpretation of significance by the Commission.

The development community does not have the luxury of waiting several years for the Commission to process National Register nomination forms. Therefore the Massachusetts Historical Commission has adopted a policy of giving preferential treatment to properties whose listing will result in rehabilitation meeting the Secretary of the Interior's Standards. This policy places the need of the business community over the continuing programs of the local historical commissions even though the inability of the Commission to respond immediately to local historical commission requests could jeopardize the existence of local preservation programs.

In summary, constituents play an important role in the cultural resource management plans and programs of the Commission. Constituents take on many faces, from general purpose academically oriented organizations to ad hoc single issue groups. Individual constituent groups may have conflicting interests, particularly in resource allocation decisions. Organizations established by legislative authority may have greater long range impacts on public policy but the limelight often goes to more crisis oriented ad hoc groups who can effect immediate solutions to single issues. The key constituent groups for the Commission over the past decade and a half have been the local historical commissions and, to a lesser extent, the state-wide organizations formally represented within the Commission member-

ship. Through the Cultural Resource Management Plan for Massachusetts the Commission hopes to provide better access to the decision making process to the academic community and to better interpret the concern of conservation organizations whose efforts often parallel ours. Clearly the Massachusetts Historical Commission will be most effective and successful in protection and preservation efforts in localities which have informed and articulate constituents helping the preservation process. It is highly likely that the ad hoc single events groups will remain outside formal institutional relationships.

Chapter IV:
Management Strategies

GOALS AND CONSTRAINTS

The Massachusetts Historical Commission's goal and mandate is to minimize the loss of significant cultural resources in the state. Ideally, MHC would identify, preserve and protect all the significant historic and archeological properties that still exist. However, many factors limit and constrain MHC's ability to reach this objective. In the real world cultural resource management requires decisions of selection. MHC must decide how and when to allocate its limited resources of preservation funding and staff time.

On a daily basis MHC must make management decisions: when, where and how to survey cultural properties; when and what properties should be nominated or determined eligible for the National Register; when and what properties should be protected under the existing state and federal legislation; and, what properties should be preserved through the grant-in-aid program. The extent to which the MHC is able to allocate efficiently resources within these decision-making contexts will directly determine how effective Massachusetts will be in reaching the goal of minimizing loss of significant resources.

MANAGEMENT POLICY NEEDS

The study is based on the fact that daily decisions on survey, registration, protection and preservation must be made by the MHC within the constraints of an incomplete survey, conflicting constituency demands, incomplete knowledge of historical context and varying degrees of threat to cultural resources. MHC's management policy demands that the decisions that the Commission makes within these constraints be arrived at in a rational manner. The Commission needs a single conceptual framework for making management decisions that will decide the fate of the full range of cultural resources in the state: prehistoric and historic resources, above and below ground properties. The framework should allow the Commission to make rational and pragmatic decisions which will be defendable to the entire range of both puble and private constituencies who are concerned with preservation issues.

THE MHC PLANNING MODEL

The planning model adopted by MHC reflects policies which form the basis of MHC's decisions. MHC will consider four elements in all its decision contexts:

(1) the history of past research and current levels of survey knowledge;

(2) the historical/development context from which cultural resources emerge;

(3) the processes and agents that lead to destruction and attrition of cultural resources;

(4) the constituencies which act to protect cultural resources.

As the text of this plan has demonstrated, none of these four elements is constant across the state; consequently, MHC management decisions will vary according to the different status of each of these four elements across the state.

This plan provides information on the status of each of the four elements within a Study Unit framework. The Study Units divide the state into manageable areas. Analysis of state trends by study unit allows MHC to have a better-tuned grasp on regional needs than does examination of the needs of the state as a whole. Examination of management needs and developing strategies by study unit allows MHC to make decisions which are consistent statewide, and which do not vary with each of the 351 cities and towns in the state. Cultural resources can be considered within their spatial and environmental contexts rather than as isolated sites. The study unit analysis permits the establishment of different sets of regional management strategies through a consideration of the regional variations in the levels of knowledge about the resources, the cultural resources themselves, the pressures on those resources and the constituencies who will act on behalf of those resources.

Decision Context: Inventory and Significance Assessment

MHC will make decisions on allocation of its resources to the survey and inventory process, and will evaluate the significance of resources and the timing of National Register nomination, by considering the first two of the four elements of the planning model. An analysis of (1) the history of

past research and current levels of survey knowledge, and (2) the historical/development context from which cultural resources emerged will govern MHC's decisions in survey and registration. Priorities for determining which areas will be surveyed will be based on also considering the second two elements of the plan. In accepting this framework as MHC policy, the Commission realizes that we are adopting what many might consider a "paradigmatic" change in preservation philosophy. MHC is committed to assessing inventory and registration priorities within a social science framework.

This MHC policy marks a shift from previous (implicit) parameters which tended to emphasize properties of outstanding merit or association. In the past MHC has been more usually concerned with particular properties of unusual or unique style or type. The evaluative framework within which MHC will now operate will explicitly reflect a concern for how material remains reflect: (1) process, the ways in which cultures developed in time and space; (2) function, the ways in which cultures operated as systems and communities; (3) context, the ways in which the resources reflect the changing socio-economic patterns from which they emerged; and (4) vernacular forms, the ways in which resources reflect commonplace and representative manifestations of past cultures. MHC will emphasize evaluation of the cultural landscape rather than evaluation of individual properties.

Comprehensive Survey:

It is imperative that future surveys, whether local, regional, or statewide, be comprehensive in their approach to identifying and evaluating cultural resources. This does not mean simply increasing the number of resources identified, but rather requires that surveys be conducted within a framework that explains the presence and form of those resources. With the exception of occasional eccentricities, resources within a community are the result of broader historical patterns and processes. Singular historical events can explain isolated and singular features, but the cultural landscape (of which single features are a part) is the result of a succession of people establishing local ways of life in local environments within regional networks of social, political, and economic organization. The discussion of the Massachusetts development patterns included with this report (Chapter

III) is based on this type of explanation and provides preliminary information on cultural landscape formation on a state and study unit level.

In terms of the hierarchy of places in Massachusetts, three broad settlement landscape types can be identified: cores, fringe areas, and the changing corridors between them. This provides a preliminary evaluative framework, but more than this, may suggest a strategy for "predictive" surveys designed to identify expected concentrations of types of resources.

A predictive survey sets out to identify the types of properties expected to be present in a study area. From observations of the natural environment and of regional patterns of activity (as evidenced by easily identifiable features such as transportation routes), it is possible to suggest, with some degree of accuracy, where different types of settlements will occur, and within the region, where different types and numbers of cultural resources will be found. For planning purposes, these predictions can be used as much as can absolute data on specific resources. These predictions can serve as a basis for identifying preservation opportunities and as a way of recognizing potential conflicts between preservation needs and modern land-use requirements even before actual conflicts arise.

When complete survey in all parts of the regions or state is not possible, predictive surveys can be used to suggest where more intensive survey efforts are most needed. Settlement types and expected intensities of resource types can be identified. Threats and rates of resource loss can be generalized for the region. Management needs can be identified and priorities can be set.

Decision Context: Protection and Preservation

MHC will make decisions on the allocation of grants-in-aid and involvement in the environmental review process in order to protect and preserve resources identified as significant by considering the second two of the four elements of the planning model. An analysis of (3) the processes and agents that lead to destruction and attrition of cultural resources and (4) the constituencies which act to protect cultural resources will govern MHC's decisions regarding environmental review and grants allocation.

The study unit framework has identified general patterns of economic growth and associated patterns of new construction and private development which correspond to the greatest trends of loss and destruction of

cultural resources. MHC preservation planning will consider these trends as they vary across the state, and allocation of grant-in-aid monies and review efforts will be directed to areas in which our involvement will have the greatest effect in fostering a preservation ethic.

In areas of economic growth, two settings seem most threatened: the urban core areas and the rural fringe areas. Suburbanization and uban sprawl threaten the integrity (and even the existence) of the cultural resources in both of these areas.

Urban Core Areas:

Massachusetts has a large number of cities with extremely high rates of threats to cultural resources. The deterioration of nineteenth century urban housing stock, commercial districts, and industrial areas is a major problem. Revitalization of urban commercial cores and inner city residential neighborhoods is a pressng need. The Commission supports local efforts to revitalize downtown shopping districts, rehabilitate decaying housing stock, encourage adaptive re-use of buildings and preserve the integrity of built environments.

Rural Fringe Areas:

Growth pressures from suburbanization are high in many agricultural communities. Development not only threatens eighteenth and early nineteenth century agricultural landscapes, but also can destroy prehistoric, historic ad industrial archeological sites. Because of their low visibility, archeological sites are particularly subject to loss. The deterioration of standing structures, such as barns, outbuildings, and rural industrial complexes is a major problem, particularly since these resources are often not considered "historic".

Dispersed rural areas that have little or no current economic growth may contain a wealth of undisturbed (but, as of yet, "undiscovered") resources, which are deteriorating and disappearing at an unknown rate. Research that focuses on these threatened areas promises to yield important information about past ways of life. Unfortunately, it is often these rural areas that do not have an organized preservation constituency, and which have not been surveyed. Identification of resources in these regions, and the development of appropriate management programs is necessary.

MHC Actions:

In order to implement decisions which have been made as a result of analysis through the planning process, MHC has a number of tools at its disposal. Programs such as the grants program, the tax incentive program and the environmental review program bring the Commission's activities directly in the light of the public eye. These programs bring a high level of visibility to preservation goals, and help to increase awareness of the preservation ethic in communities. MHC specifically intends to use these programs to increase the public's knowledge of preservation. This policy will translate into specific allocation decisions. For example, in communities and areas with few preservation constituencies, our first involvement in the area might well be a "demonstration-type" grant program to preserve a resource which is evaluated as significant by local groups. On the other hand, MHC would be reluctant to be involved in a controversial review action in such an area with the absense of strong constituency support. Similarly, in communities where preservation is a better accepted alternative, MHC grant allocation might be more likely invested in the type of property often neglected by communities in order to broaden the preservation base: nineteenth century industrial structures, archeological resources, outbuildings to farmsteads, etc. MHC's review involvement will be both more intense and more sucessful in areas with strong preservation constituencies. This policy recognizes that both the grants program and the environmental review program are limited in scope by funding and staff time: MHC will allocate these very limited resources to the types of projects and to areas where we can yield the highest return in increasing the preservation ethic, and thus come closer to achieving the preservation goal.

STATEWIDE PRIORITIES

Specific management needs will be identified by study unit; however, three priorities emerge as statewide concerns and cross-cut study unit boundaries. MHC will come closer to achieving the goal of protecting the significant cultural resources in Massachusetts by: (1) expanding the public education program, (2) intensifying the comprehensive survey program, and (3) strengthening the existing legislative framework. In

making decisions to allocate MHC resources, the Commission will maintain these three activities as statewide planning priorities.

MANAGEMENT NEEDS: STUDY UNITS

The following are specific needs identified by study unit. These are not listed in priority order.

Berkshires

(a) Conduct prehistoric survey and research at the reconaissance level in the entire unit. So little survey work has been accomplished that general background literature research, collector location, and collection analysis are needed.

(b) Conduct historic survey in the hill-top agricultrual community and rural village centers; this should include the identification of agricultural structures such as barns and other outbuildings.

(c) Conduct historic survey of threatened nineteenth century resort communities and resources.

(d) Expand the prehistoric and historic developmental model to provide a context within which resources identified by local preservation organizations can be understood.

(e) Establish local historical commissions in the communities lacking them.

(f) Evaluate both prehistoric and historic survey data leading to National Register nomination; only twelve communities in the region have National Register properties.

Connecticut River Valley

(a) Conduct prehistoric survey and research at the reconnaissance level in the upland sections of the study unit, including collection analysis, recording known but previously unrecorded sites, and preliminary field checking of recorded sites.

(b) Field test models which have been developed to predict prehistoric site encounter probabilities especially in the upper and lower sections of the main river and in specific tributary drainages (e.g., Millers River, Falls River, Green River and Mill River).

(c) Conduct comprehensive survey in the Route 57 expansion corridor.

(d) Conduct historic survey of industrial/commercial centers in the northern part of the study unit, including Greenfield and Gill.

(e) Develop planning tools to protect rural areas, and rural town centers in the high growth area around Amherst/Hadley.

(f) Implement mechanisms to revitalize decaying urban centers in important industrial cities.

(g) Expand study unit developmental model to provide historic and prehistoric context for local survey efforts occuring throughout the unit.

(h) Evaluate both prehistoric and historic survey data leading to National Register nomination; for historic resources the need is greatest in the high growth areas (Amherst/Hadley), in the industrial urban centers, and in the hill towns. For prehistoric resources evaluation needs to occur in areas where sites have been field tested.

(i) Establish local historical commissions in the seventeen communities lacking them.

Central Massachusetts

(a) Improve existing prehistoric survey data by contacting collectors and analysing collections; field check recorded sites.

(b) Conduct extensive site survey to determine the dynamics of upland/ lowland relationships. Because prehistoric upland sites are small and difficult to locate, sophisticated and extensive sampling and precise field techniques should be developed.

(c) Conduct immediate historic and prehistoric surveys along the planned Route 191 corridor, and the planned expansion of Route 146.

(d) Conduct historic survey of the Blackstone Valley, including the mill structures and mill village landscape.

(e) Expand study unit developmental model to provide prehistoric and historic context for local ongoing survey efforts.

(f) Evaluate survey data leading to National Register nomination in the industrial population centers in the north (Fitchburg, Leominster), the rural agricultural communities in the north with excellent local surveys, and in lowland and upland areas which have recorded sites.

(g) Develop and implement planning tools to preserve scarce agricultural resources and landscapes in the north and west.

(h) Implement planning tools to revitalize center cities, including Worcester, Fitchburg, Gardner, Leominster, and depressed mill villages in the Blackstone Valley.

Eastern Massachusetts

(a) Analyze of extensive prehistoric collections and field check known sites.

(b) Conduct reconaissance prehistoric survey in neglected areas.

(c) Conduct comprehensive historic survey in the high growth area between Route 128 and Route 495, including the identification of nineteenth century resources which have been generally neglected in local survey activity.

(d) Develop and implement growth management measures, including re-use of existing structures, to help reserve resources imminently threatened by growth.

(e) Expand study unit development context knowledge.

Essex

(a) Evaluate and field check recorded prehistoric sites. A recent study (Barber, 1977) demonstrated that there are tremendous errors in site recording, and that twenty-eight percent of recorded sites have already been destroyed.

(b) Conduct reconnaisance prehistoric survey of non-riverine and non-coastal areas which have never been surveyed.

(c) Expand study unit developmental model information to provide an historic and prehistoric context for extensive local survey now being generated.

(d) Evaluate survey data leading to National Register nomination, particularly in industrial commercial centers (Peabody, Lynn, Salem, Haverhill and Methuen) and more rural communities faced with suburbanization.

(e) Implement planning mechanisms to preserve urban cores threatened with deterioration, and village centers and rural landscapes threatened by growth pressures.

(f) Increase public awareness of the importance of archeological resources to help protect those resources threatened by private development.

Boston

(a) Evaluate the extensive prehistoric and historic survey data to determine eligibility for the National Register.

(b) Develop and implement tools for preservation of depressed urban cores.

(c) Implement tools to ensure that public and private development in inner suburbs does not destroy cultural resources.

Southeast

(a) Evaluate extensive prehistoric survey data to determine which properties meet National Register criteria.

(b) Conduct comprehensive historic survey particularly needed to identify (1) nineteenth century specialized industrial towns, (e.g. boat and shoes, tacks and nails) (2) nineteenth century coastal resort towns, (3) coastal fishing and shipbuilding towns.

(c) Expand study unit developmental model information to provide prehistoric and historic context for local survey information.

(d) Conduct National Register evaluation of historic survey data in the industrial cities which have completed survey.

(e) Implement protective mechanism for remaining rural/open space.

(f) Implement mechanism to revitalize severely depressed urban cores.

(g) Increase constituency involvement in preservation.

Cape Cod and Islands

(a) Conduct reconnaisance survey of prehistoric resources on Cape and Martha's Vineyard including interviewing collectors, and analyzing collections.

(b) Evaluate prehistoric sites on Nantucket leading to National Register listing.

(c) Conduct survey of historic resources in coastal areas threatened with destruction, particularly by coastal eosion.

(d) Expand study unit developmental model information to provide prehistoric and historic context for local survey information.

(e) Implement planning tools to preserve the village character that typifies this region.

Conclusion

CONCLUSION

Cultural resource management strategies vary according to four elements: knowledge of resources, the resources themselves, the threats to the resources and the constituencies who act to protect the resources. Since none of these four elements is constant across the state, MHC's management strategies will necessarily vary across the state. MHC will define survey and registration strategies by evaluating the resources themselves and the level of informatin about the resources. Grants allocation decisions (both survey and planning, and aquisition and development) and involvement in the environmental review process will be dictated by evaluating the threats to resources and constituencies who act to protect the resources.

Preliminary information regarding how each of the four elements vary across the state is provided in the text by study units. The study units divide the state into manageable areas which allow for analysis of regional trends. General management strategies according to the variations in the four elements of the planning model have been identified.

This planning model provides the process by which MHC will be able to make rational and defendable decisions regarding the future of cultural reosurces in the state. However, priorities for implementing management strategis will be made each year in MHC's annual work program. This annual reevaluation of priorities will allow for feedback into the flexible planning process which adapts to changes in management strategies according to changes in any one of the four planning elements. The MHC planning model actually defines a flexible process which will be annually evaluated against constraints of legislation, staff time and levels of preservation funding.

Appendices

APPENDIX A: INITIAL FRAMEWORK

Initial Proposal: Framework For the Plan

At the start of the project in September, the project coordinators developed a framework which was intended to provide initial direction for the interdisciplinary consulting team. Although over the next ten months the goals, the emphasis and the direction of the project changed considerably, it was this statement which provided the initial impetus.

A PLAN FOR THE ASSESSMENT OF CULTURAL RESOURCE SIGNIFICANCE IN MASSACHUSETTS

Approaches

An Interdisciplinary Approach: With the help of a group of professionals, the project will study the patterns and processes of settlement in Massachusetts, based on the broadest possible spectrum of current thought in the social sciences and humanities. Since cultural resources often defy disciplinary categorization, their study requires a synthetic approach. The concepts of time and space cut across disciplinary boundaries and are basic to any study of cultural history. A geographical approach combines formal recognition of time and space concepts with the capacity to integrate perspectives from many disciplines.

The Geographical Framework

We propose that the integrating framework for this interdisciplinary project, an approach developed from historical-cultural geography, will place the cultural resources of Massachusetts in the context of (1) the succession of people who have lived in the Commonwealth (sequent occupance); (2) the changing lifestyles practiced and resource exploitation techniques utilized by different groups in local environments (local ways of life/cultural ecology); (3) the changing structures of spatial organization--transportation and communications networks, trade flows, hierarchies of urban centers--that have linked activities at different periods of time (areal functional organization); and (4) the historic patterns of diffusion, from centers of innovation, of material artifacts and ideas as indicators of changes in lifestyles (origins and dispersals). The project framework

assumes that human settlement in Massachusetts has developed in non-random patterns, that these patterns can be explained by evaluating the operations of past culture systems in the environment, and that these systems have areal expression in the cultural landscape.

Sequent Occupance: Basic to the framework is the assumption that the cultural resources of Massachusetts may be understood in the context of a historic reconstruction of successive cultures active in the Commonwealth from the earliest times to the present. Within each culture, development toward a period of relative stability can be identified by the efflorescence of cultural expression in representative cultural features. Most cultures have left some characteristic features--material artifacts or structures-- the sum total of which make up the cultural landscape of Massachusetts today.

Local Ways of Life: Each phase of human occupance has been characterized by a distinctive way of life, a particular cluster of resource evaluations and ways of modifying the environment to meet the needs of survival and cultural expression. In this context, works of man can be viewed as phenomena resulting from human activity applied directly to functional problems in local environments. Structures and artifacts result from a dynamic, ecological relationship between lifestyles/techniques and the natural environment.

Areal Functional Organization: On a larger scale, local ways of life are functioning parts of regional systems of spatial organization and cultural interaction. There are locations of concentrated activity (nodes, cores, central places) and connections between these focal points and surrounding areas (hinterlands, fringes, service areas) of more dispersed activity. A complex pattern of regional organization is distinguished by spatial linkages between populations. The structure of these linkages is composed of many hierarchically nested orders of areal functional organization, in which human activities are arranged around cores of varying size and character, and with the intensity of activity decreasing away from these cores. Patterns of commercial agricultural activity, trade, industrial

location, etc., and their associated expressions on the landscape must be understood in terms of regional patterns of spatial organization.

Origins and Dispersals: Finally, the geographical framework places culture in the context of phenomena of change, originating, spreading and evolving in time and space. Cultural features and ways of life have origins in specific places and times, and follow distinctive routes at varying rates and in different manners of diffusion. There is a close connection between the evolution of cultural forms through time and their diffusion over space. The processes of innovation and diffusion work through the patterns of spatial organization to produce distinctive man-environment relationships that find expression in culture areas, with their distinctive cultural landscapes, of which the present cultural resources of Massachusetts were once a living part.

Inter-Disciplinary Contributions to the Framework

While a geographical framework provides an organizational scheme, we will be very much dependent on the contributions of knowledgeable experts to help fill in the specifics and refine the model. The first goal of the project is to determine appropriate spatial and temporal divisions relevant to the cultural history of the Commonwealth. The concepts of sequent occupance, local ways of living, spatial organization and diffusion point toward the recognition of cultural and sub-cultural areas, and ageographer looking at the landscape would perceive a particular periodization scheme.[1]

We are interested in the ways that other scholars currently divide Massachusetts in time and/or space in the context of their fields of interest. What spatial frameworks or periodization schemes have been used in course outlines, lectures or research that might have application to the cultural history of the state? What are the critical processes and variables

[1]Introduction to the geographical persepctive may be found in: National Academy of Sciences-National Research Council, The Science of Geography, Washington, 1965 (See particularly the section on "Cultural Geography"); Peter Haggett, Locational Analysis in Human Geography, London, 1965; and Philip Wagner and Marvin Mikesell, "Introduction" to Readings in Cultural Geography, Chicago, 1962.

that have determined those distinctive units of space and periods of time? For example, what impacts have population movements, industrial development, transportation networks, economic growth and decline, or changes in "style" had upon the face of the land? How have these processes found expression in the structures and artifacts in the landscape which comprise the cultural resources of the Commonwealth today?

While we realize the complete agreement on the nature of these critical processes and their impacts is unlikely, we feel that interdisciplinary conversations will go a long way toward generating complementary ideas.

Organization

A key element of the project will be to draw upon the resources of a multidisciplinary group of consultants to assist in the development of the plan. Massachusetts Historical Commission has staff expertise in Massachusetts archaeology, architectural history, and history, and the project coordinators represent the geographical perspective. While preservation planning in Massachusetts is already an interdisciplinary process, the success of the project will be dependent on outside advisors, who will generate ideas, suggest alternative areas of investigation, and provide information from different disciplinary perspectives on the cultural resources characteristic of historic cultural systems.

APPENDIX B: TOWNS WITH LOCAL HISTORICAL COMMISSIONS AND HISTORIC DISTRICT COMMISSIONS

BERKSHIRE STUDY UNIT

Local Historical Commissions	Historic District Commissions
Adams	Alford
Alford	Lenox
Becket	
Cheshire	
Dalton	
Egremont	
Great Barrington	
Hancock	
Lanesborough	
Lee	
Lenox	
New Marlborough	
Otis	
Pittsfield	
Richmond	
Sheffield	
Stockbridge	
Washington	
Williamstown	
Windsor	

* Historic Commission also serves as Historic District Commission.

CONNECTICUT RIVER VALLEY

Local Historical Commissions

Amherst
Belchertown
Bernardston
Buckland
Charlemont
Chester
Chesterfield
Chicopee
Conway
Cummington
Deerfield
E. Longmeadow
Easthampton
Erving
Goshen
Granby
Granville
Greenfield
Hadley
Hatfield
Hawley
Heath
Holyoke
Leverett
Leyden
Longmeadow*
Middlefield
Monson
Montague
New Salem
Northampton
Northfield
Orange
Palmer
Pelham
Shelburne
South Hadley
Southampton
Southwick
Springfield*
Wales
Warren
Warwick
W. Springfield
Westfield
Westhampton
Whately
Wilbraham
Williamsburg
Worthington

Historic District Commissions

W. Springfield

CENTRAL MASSACHUSETTS

Local Historical Commissions

Ashburnham
Athol
Auburn
Barre
Berlin
Blackstone
Boylston
Brimfield
Brookfield
Charlton
Clinton
Douglas
Dudley
Fitchburg*
Gardner
Grafton
Harvard*
Holden
Hopedale
Hopkinton
Hubbardston
Lancaster
Leicester
Leominster
Lunenburg
Mendon
Milford
Millbury
New Braintree
No. Brookfield
Northboro
Northbridge
Oakham
Oxford
Paxton
Petersham
Princeton
Rutland
Shrewsbury*
Shutesbury
Southborough
Southbridge
Spencer
Sterling
Stow
Sturbridge
Sutton
Templeton
Upton
Uxbridge
Webster
W. Boylston
W. Brookfield
Westborough
Westminster
Winchendon*
Worcester*

Historic District Commission

Holden
Northboro

EASTERN MASSACHUSETTS

Local Historical Commissions

Acton
Ashby
Ashland
Avon
Bedford
Bellingham
Billerica
Braintree
Canton
Carlisle
Chelmsford
Cohasset
Concord
Dover
Dracut
Dunstable
Foxborough
Framingham
Franklin
Groton
Hingham
Holbrook
Holliston
Hudson
Hull
Lakeville
Lincoln
Lowell*
Marlborough
Maynard
Medfield
Medway
Millis
Natick
Needham
Norfolk
No. Reading
Norwood
Pepperell
Plainville
Randolph
Reading
Sharon*
Sherborn
Shirley*
Sudbury
Tewksbury
Townsend*
Tyngsboro
Walpole
Wayland
Welleseley
Westford
Weston
Weymouth
Wilmington
Wrentham

Historic District Commissions

Carlisle
Chelmsford
Cohasset
Concord
Framingham
Groton
Hingham
Natick
Wayland

ESSEX

Local Historical Commissions

Amesbury
Andover
Beverly
Danvers
Essex
Georgetown
Gloucester
Groveland
Hamilton
Haverhill
Ipswich
Lawrence
Lynn
Lynnfield
Manchester
Marblehead
Merrimac
Methuen
Middleton
Nahant
Newbury
Newburyport
No. Andover
Peabody
Rockport
Rowley
Salem*
Salisbury
Saugust
Topsfield
W. Newbury

Historic District Commissions

Beverly
Boxford
Danvers
Gloucester
Haverhill
Rockport
Topsfield
Wenham
W. Newbury

BOSTON AREA

Local Historical Commissions	Historic District Commissions
Arlington	
Belmont*	Arlington
Boston	Boston:
Brookline	Beacon Hill
Burlington	Back Bay
Cambridge	Dedham
Chelsea	Lexington
Dedham	Newton
Lexington	
Malden	
Melrose	
Milton	
Newton	
Quincy*	
Revere	
Somerville	
Stoneham	
Watertown	
Winchester	
Woburn	

SOUTHEASTERN MASSACHUSETTS

Local Historical Commissions

Abington
Acushnet
Attleborough
Berkeley
Bridgewater
Brockton
Carver
Dartmouth
Dighton
Duxbury
E. Bridgewater
Easton
Fairhaven
Fall River
Freetown
Halifax
Hanson
Kingston
Marshfield
Mattapoisett
Middleborough
New Bedford
No. Attleborough
Norton
Norwell
Pembroke
Plymouth*
Plympton
Raynham
Rehoboth
Rochester
Rockland
Seekonk
Somerset
Stoughton
Swansea
Taunton
Wareham
W. Bridgewater
Westport*
Whitman

Historic District Commissions

Norton
Plympton
Wareham

CAPE AND ISLANDS

Local Historical Commissions

Barnstable

Bourne

Brewster

Chatham

Dennis

Falmouth

Harwich

Mashpee

Oak Bluffs

Orleans

Provincetown

Sandwich

Tisbury

Truro

Yarmouth

Historic District Commissions

Old King's Highway Regional Historic District

Dennis

Falmouth

Sandwich

Tisbury

APPENDIX C: FEDERAL AND STATE PROGRAMS AND LEGISLATION

FEDERAL PROTECTION PROGRAMS

National Historic Preservation Act: expanded the National Register of Historic Places, established the Advisory Council on Historic Preservation, and the 106 Environmental Review procedures.

Executive Order 11593: extended 106 protection to properties eligible for the National Register of Historic Places.

National Environmental Policy Act: established the Federal policy of determining environmental impacts, including impacts on cultural resources, before Federally assisted projects could be undertaken.

Archaeological and Historic Preservation Act of 1974: authorized Federal agencies to conduct necessary preservation activities, including data collection, to moderate adverse effects to cultural resources.

Public Buildings Cooperative Use Act: directed by the General Services Administration to acquire Federal office space in buildings of historic, architectural, or cultural significance, and to rehabilitate buildings, where possible, instead of building new buildings.

Wild and Scenic Rivers Act: authorized the Federal and State government to identify and to protect culturally or naturally significant rivers.

FEDERAL FUNDING PROGRAMS

Department of the Interior

Historic Preservation Fund: provides matching grants for resources listed in the National Register of Historic Places.

Urban Park and Recreation Recovery Act: provides financial and technical assistance to economically distressed communities to restore urban parks.

Department of Housing and Urban Development (HUD)

Several major HUD funding programs affect resource areas as follows:

Community Development Block Grants: provide block grants to communities to improve urban living conditions through housing and environmental changes. Programs must, as a whole, benefit low or moderate income people and prevent or eliminate urban blight.

Urban Development Grants: grant funds are given to severely distressed cities to alleviate physical and economic deterioration.

Section 8 Subsidy: provides rental subsidy to pay the difference between what a low income family can pay, and the reasonable rent on new or substantially rehabilitated rental units.

Section 312 Loans: are subsidized loans for repairs and improvements to bring privately owned property up to minimum standards; loans are only made in designated blighted areas.

Title I Home Improvement Loan, and Historic Preservation Loans: these loans are made at market rate by private financial institutions, and are guaranteed by the Federal government.

Urban Homesteading: provides low cost, conditonal conveyance of vacant HUD owned properties to individuals to rehabilitate and occupy property.

Economic Development Administration (EDA)

Emergency Jobs Programs: EDA is periodically charged with the administration of emergency public works programs, which provide grants to state and local governments for public works projects in areas of high unemployment. Projects include construction or rehabilitation of public buildings and general improvements to neighborhoods and commerical areas.

Comprehensive Employment Training Act: provides funding to employ and train the unemployed in high unemployment areas. Can be for a wide variety of jobs, including cultural resource survey work.

Tax Reform Act of 1976: allows owners of certified historic income producing property to ammortize the costs of rehabilitation over five years, or take accelerated depreciation on the building. It also disallows the deduction of demoliton costs for certified historic property and prohibits the use of accelerated depreciation for a new building on the site.

In addition to the programs mentioned there are numerous smaller funding programs out of the Department of Agriculture and Department of Commerce which can be used for preservation projects.

STATE PROTECTION PROGRAMS

MGL Ch 9, Sec 27-32: established the Massachusetts Historical Commission and the Office of the State Archaeologist, who is given permit granting authority for archaeological excavations and surveys on public land.

Massachusetts Environmental Protection Act: establishes a state policy of considering the impact of a state assisted undertaking on the environment, including cultural resources, before projects starts.

Historic District Act (MGL Ch 40C): enabling legislation which allows communities to establish local historic districts, in which a historic district commission has design review authority over changes to exterior architectural features, including demolition and new construction within the district.

Local Historical Commission Act (MGL Ch 40 Sec 8d): allows communities to establish historical commissions, an advisory board responsible for advising community government on all matters relating to historic preservation.

Conservation/Preservation Restriction Act (MGL Ch 184, Sec 27-32): establishes legal authority for preservation and conservation restrictions by identifying procedures and stating which state agencies have approved capabilities.

Scenic Roads Act (MGL Ch 67): allows a community to designate non-numbered roads as scenic roads. No stone walls or trees can be disturbed without permission of the planning board.

Agricultural Lands Restoration Act (MCL Ch 780): allows the state to acquire development rights on agricultural land, in order to preserve them in their original use.

Urban Redevelopment Corporations (MGL Ch 121A): if accepted by a community, it allows a developer and the community to work out a special tax agreement which consists of the payment of a yearly percentage of income in lieu of taxes. A developer can receive an extra bonus for the rehabilitation or restoration of a significant cultural resource.

Heritage Parks Program: the State Department of Environmental Management can issue bonds to fund the development of State Heritage Parks.

Burial Grounds Permits (MGL Ch 272): serves to protect gravestones in cemetaries by requiring permits for gravestone repair or reproduction.

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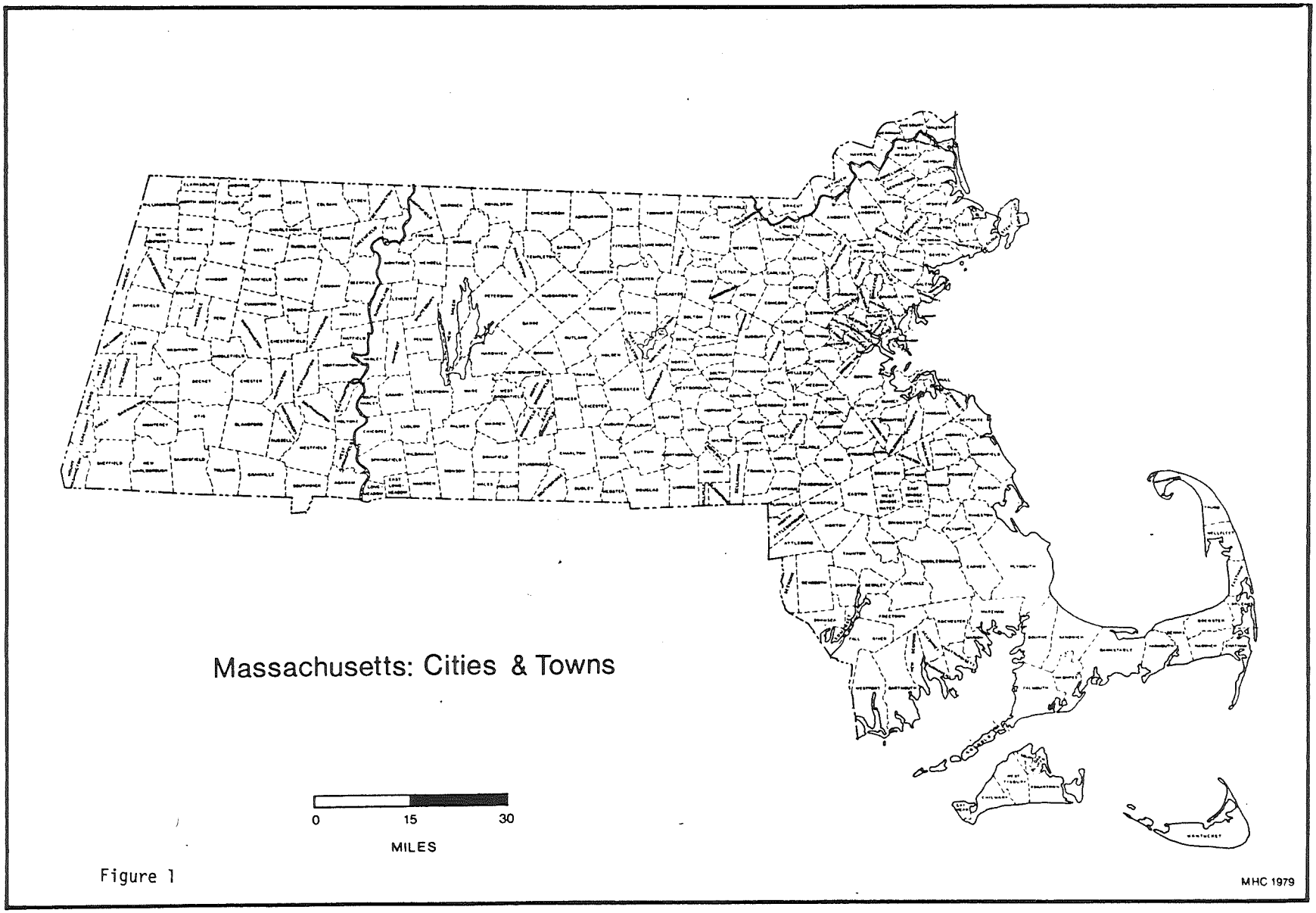
Maps



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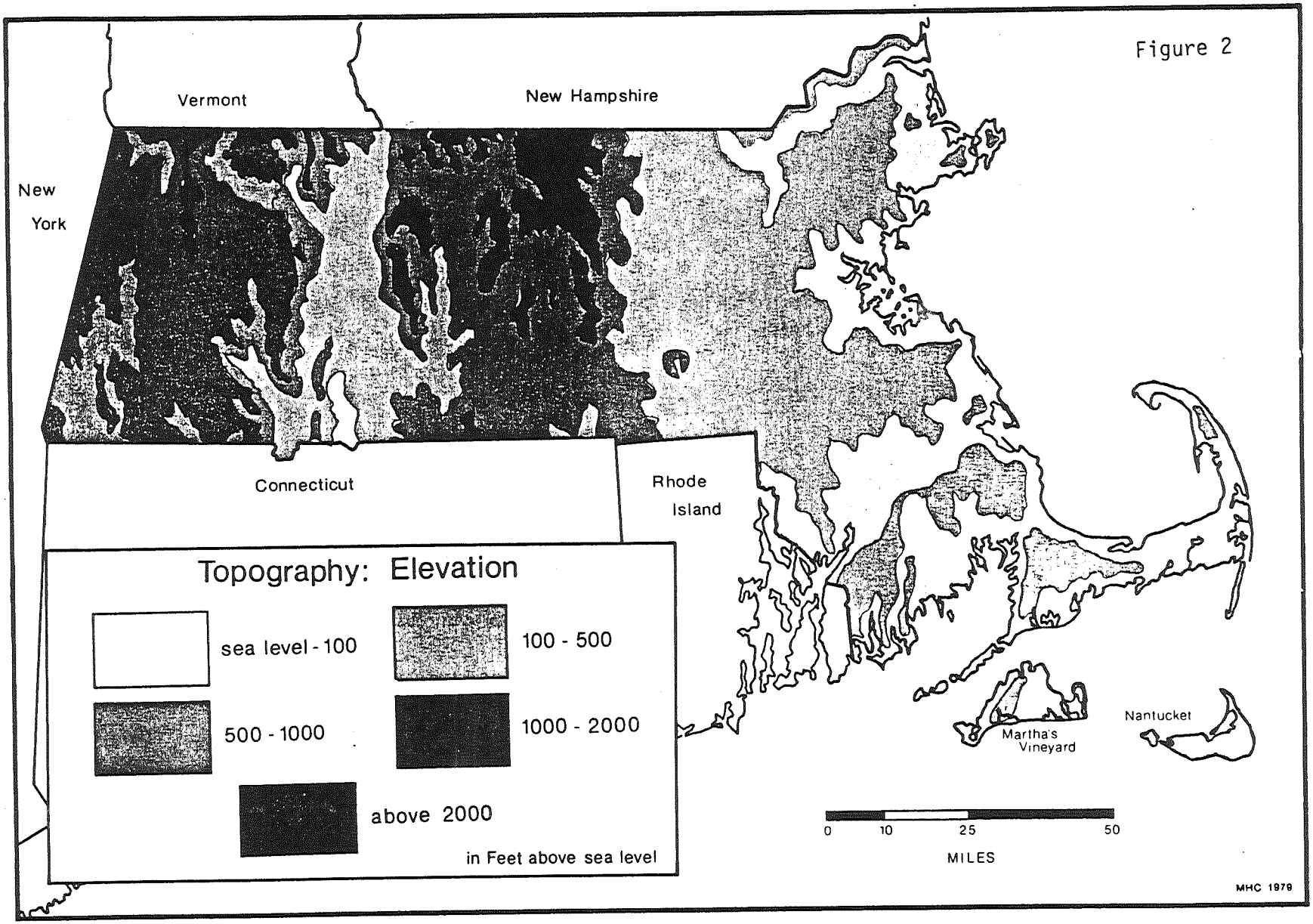
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500 - 1000
1000 - 2000
above 2000
in Feet above sea level
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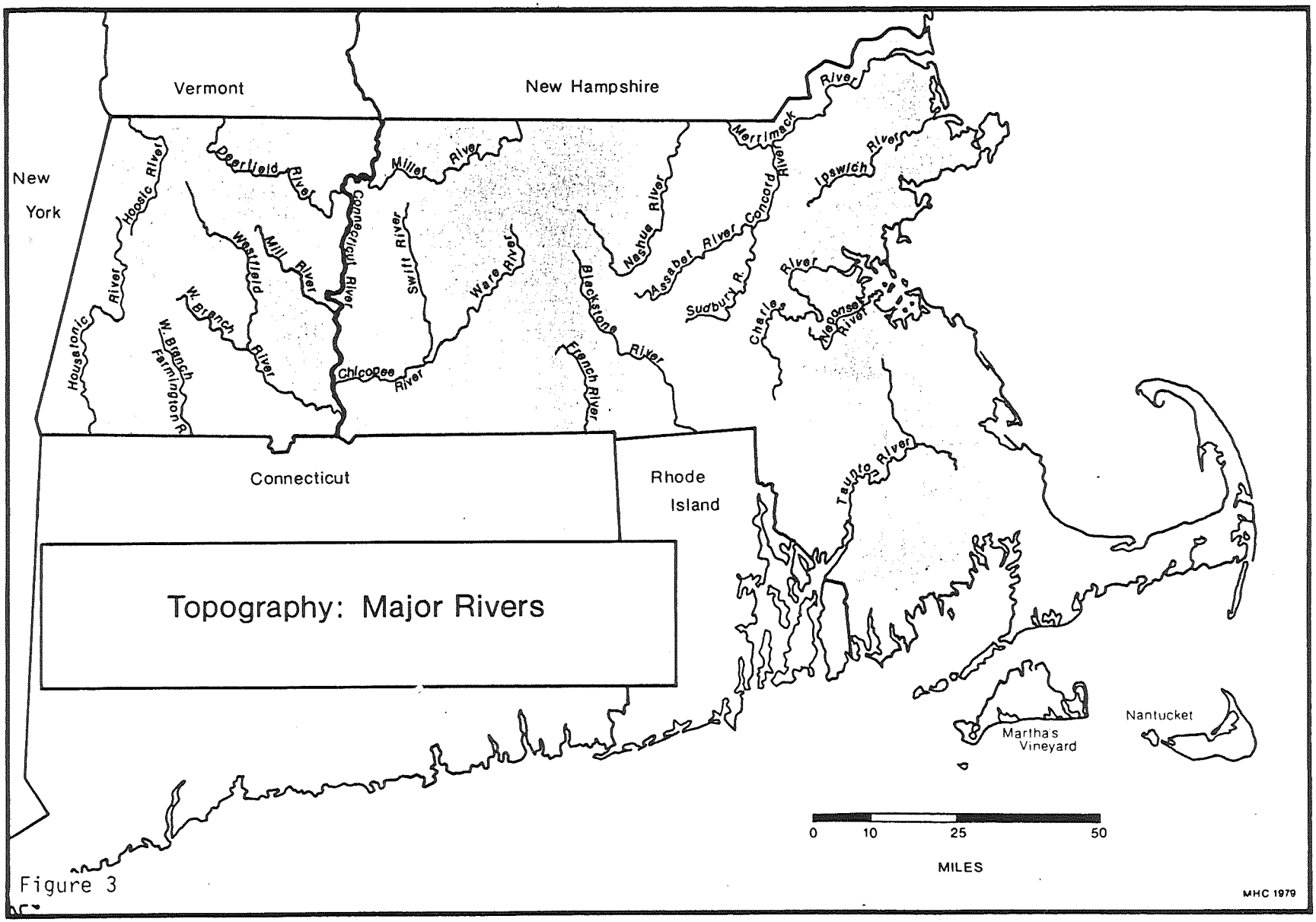
MHC 1979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Housatonic River
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W. Branch
Chicopee River
Nashua River
Merrimack River
Ipswich River
Assabet River
Concord River
Sudbury R.
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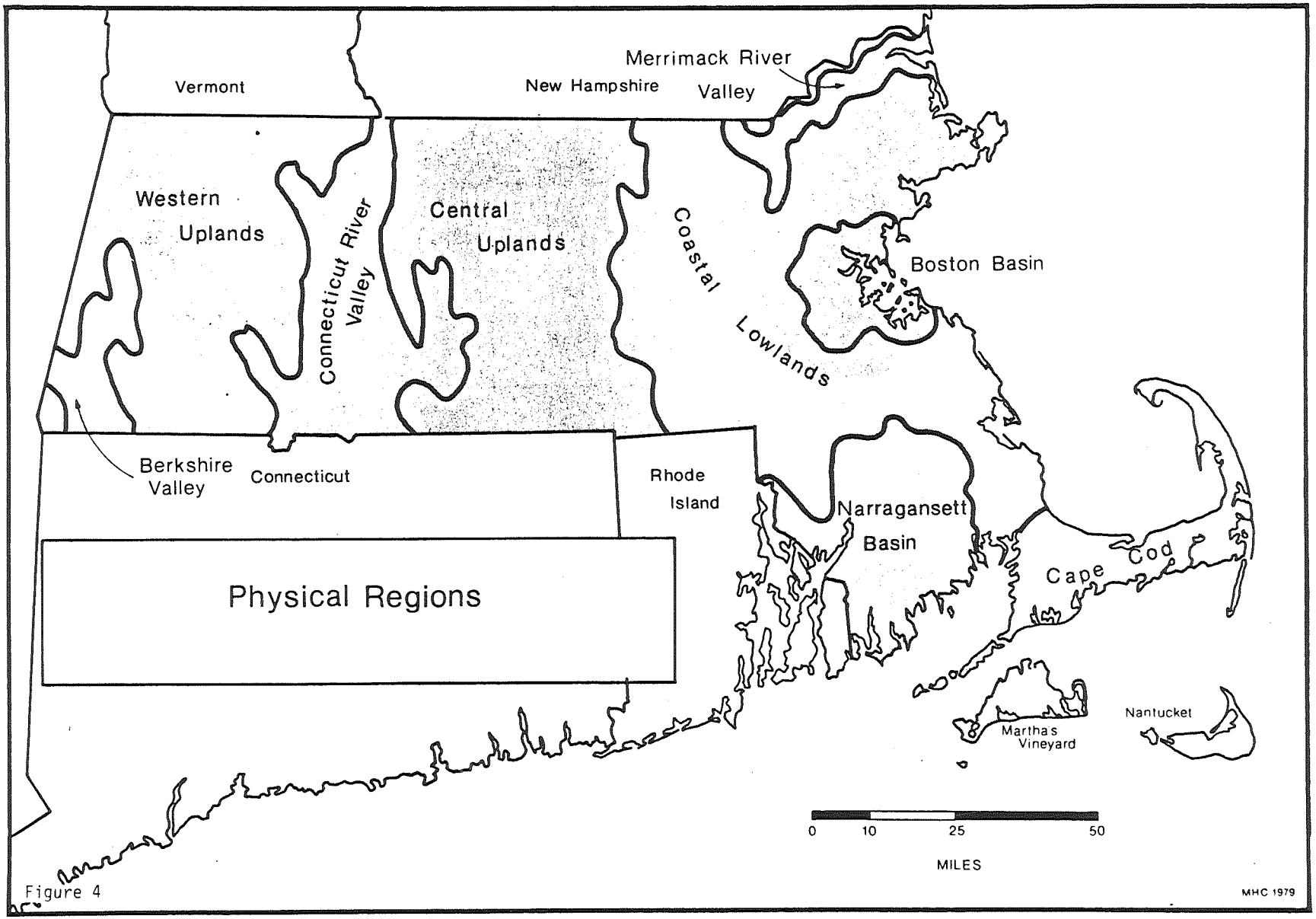
Figure 3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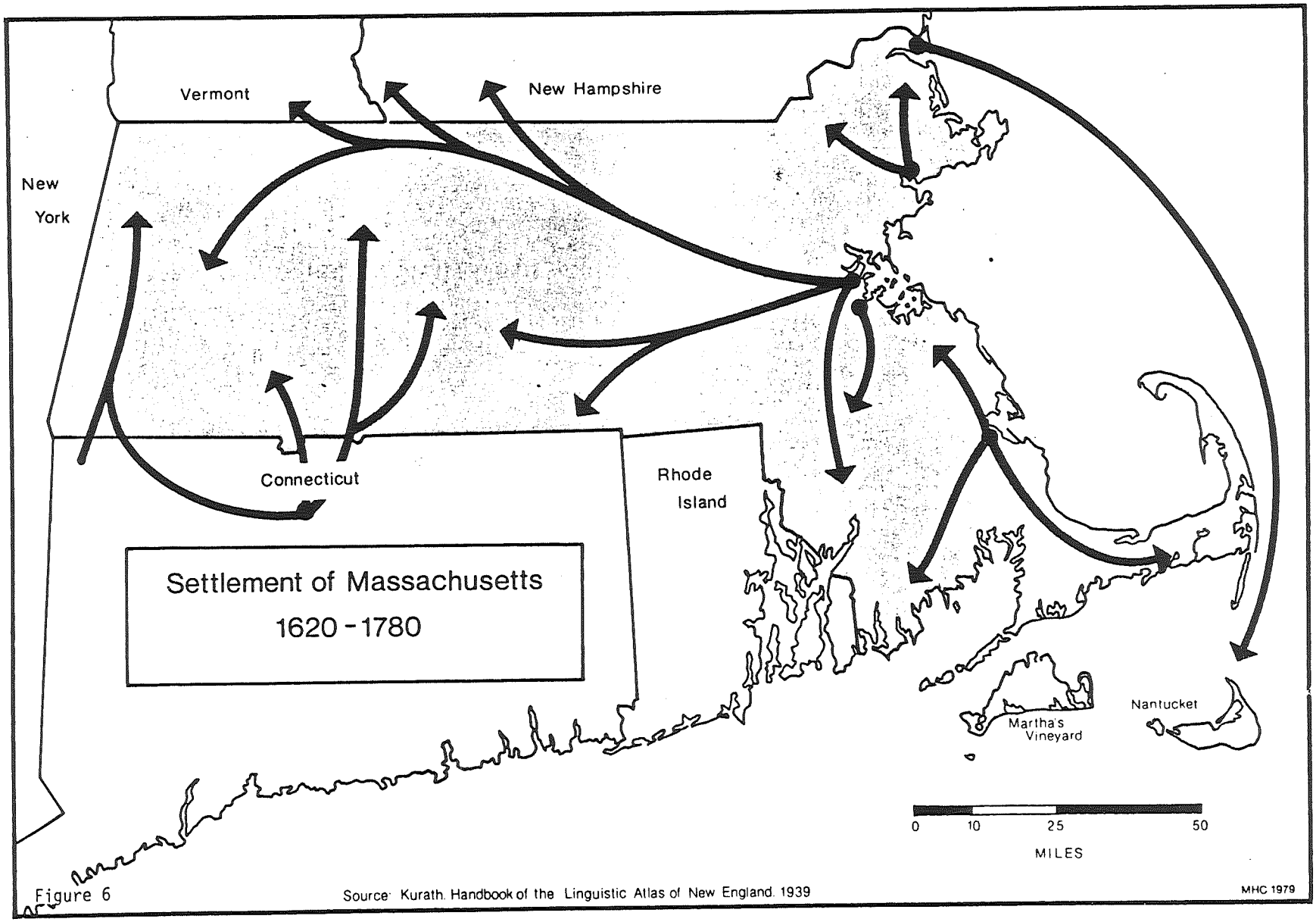

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Source: Kurath. Handbook of the Linguistic Atlas of New England. 1939

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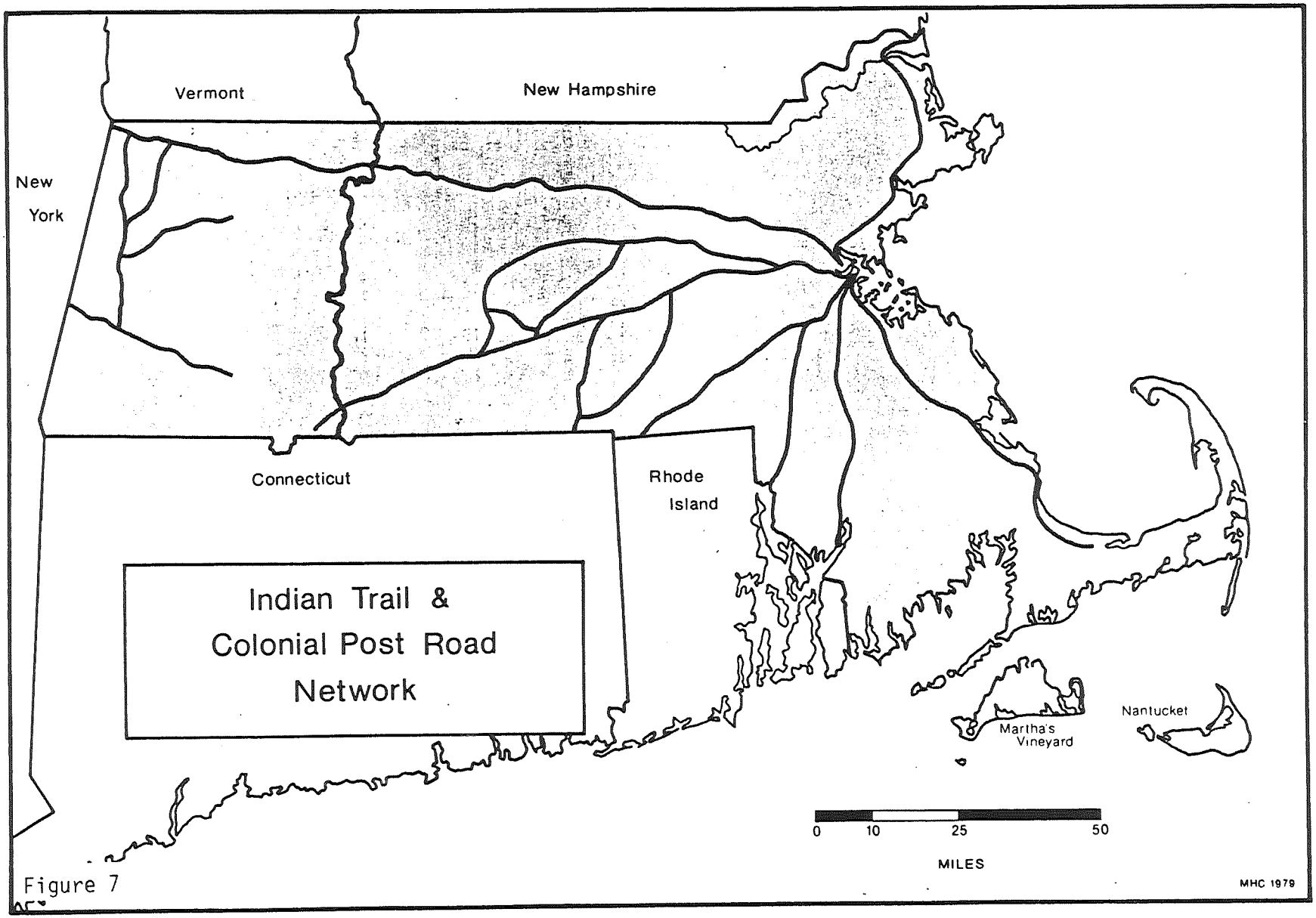
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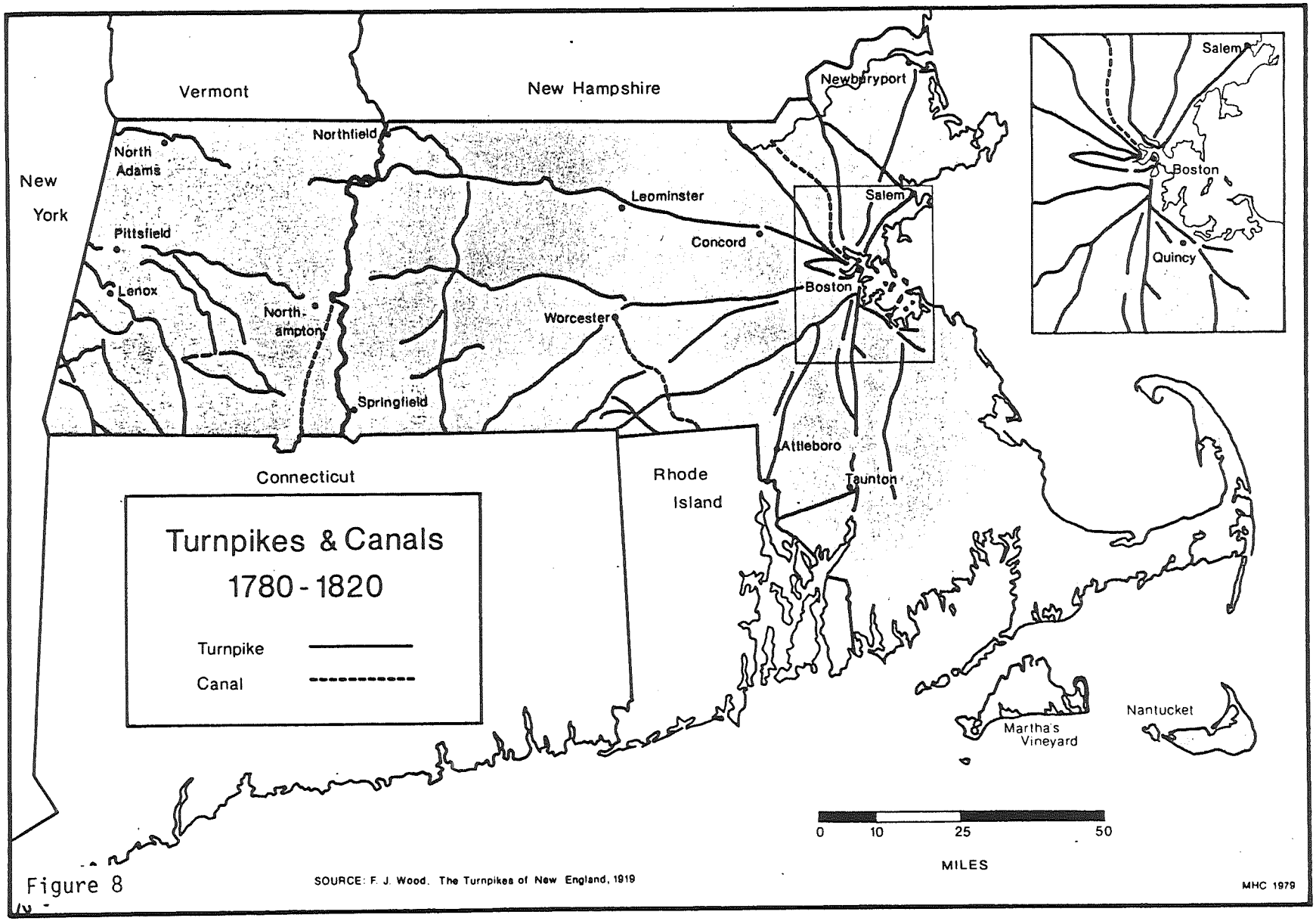
Figure 7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Concord
Boston
Salem
Newburyport
Attleboro
Taunton
Martha's Vineyard
Nantucket
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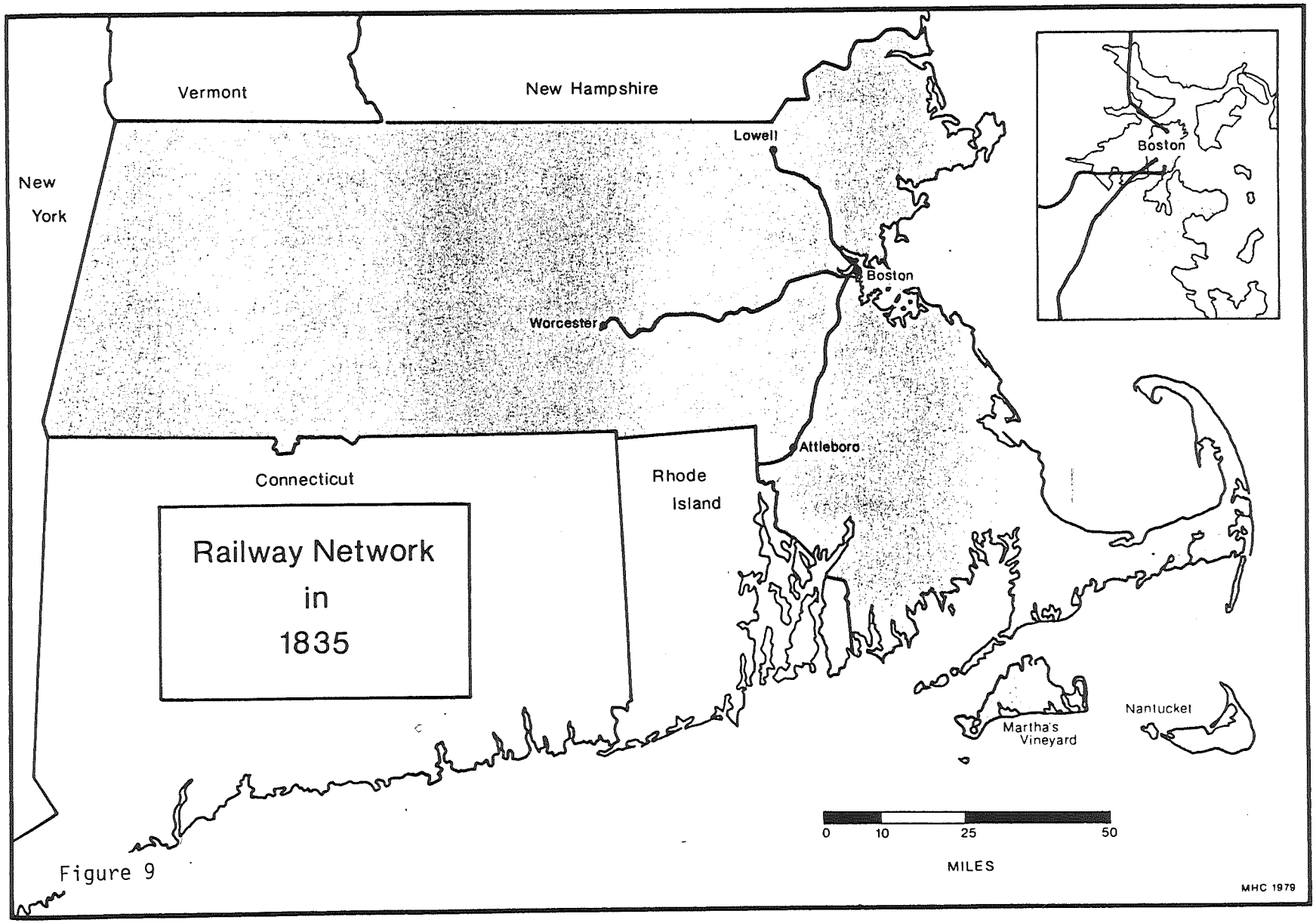
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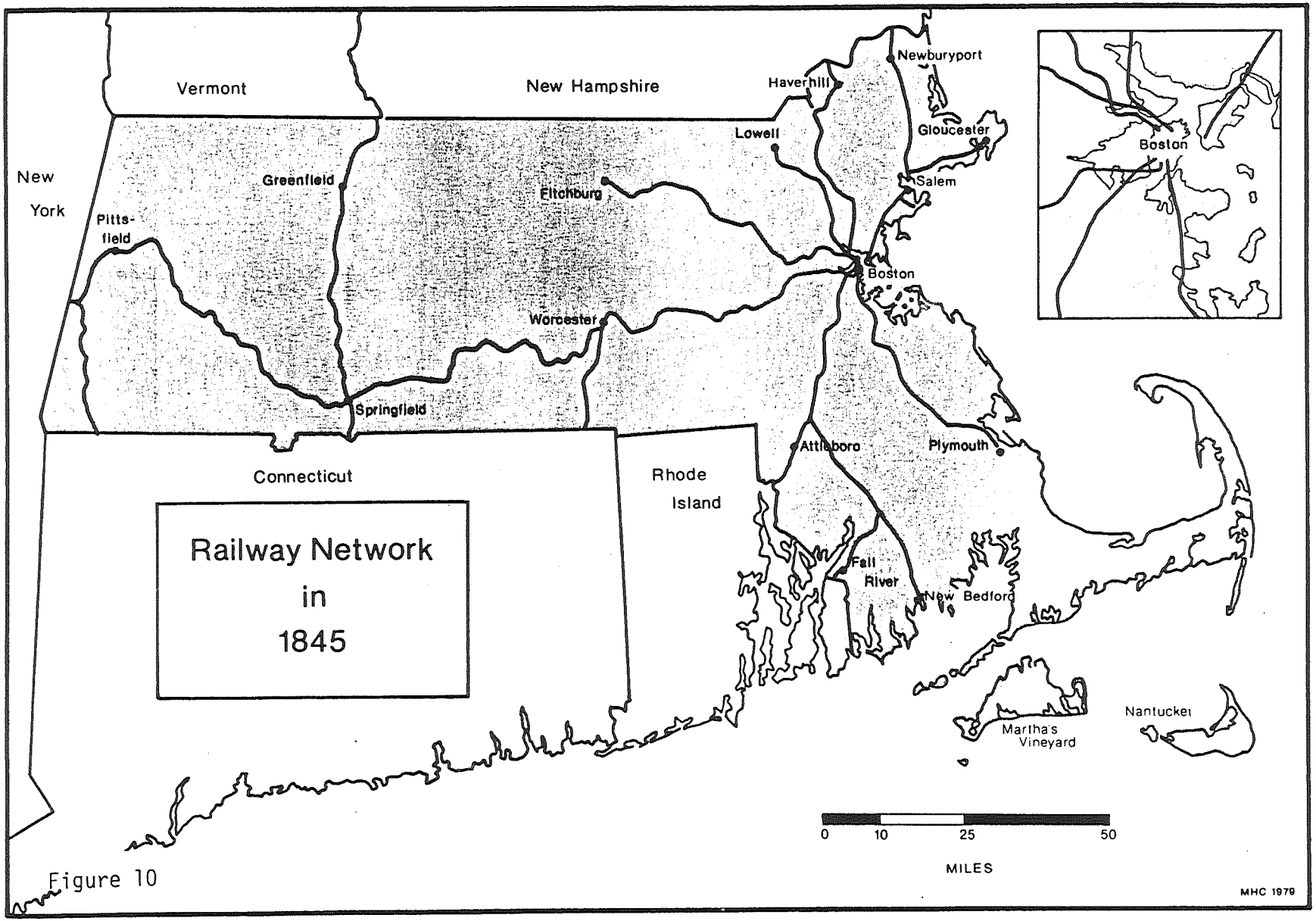
MHC 1979

Figure 9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Connecticut
Rhode Island
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Springfield
Worcester
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Haverhill
Newburyport
Gloucester
Salem
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Attleboro
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Fall River
New Bedford
Martha's Vineyard
Nantucket
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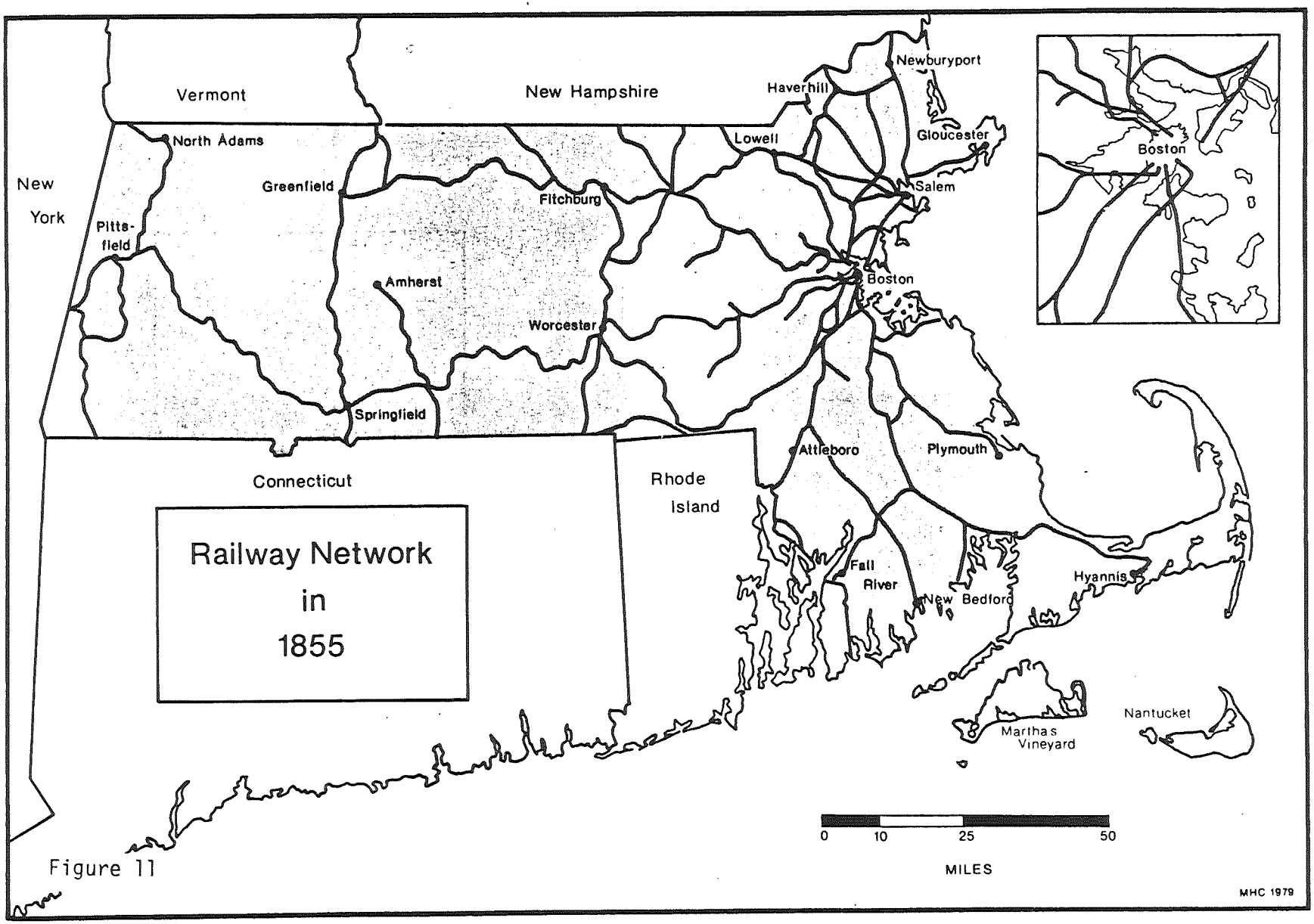
Figure 10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Rhode Island
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Amherst
Springfield
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Fitchburg
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Haverhill
Newburyport
Gloucester
Salem
Boston
Boston
Attleboro
Plymouth
Fall River
New Bedford
Hyannis
Martha's Vineyard
Nantucket
Railway Network in 1855
0 10 25 50
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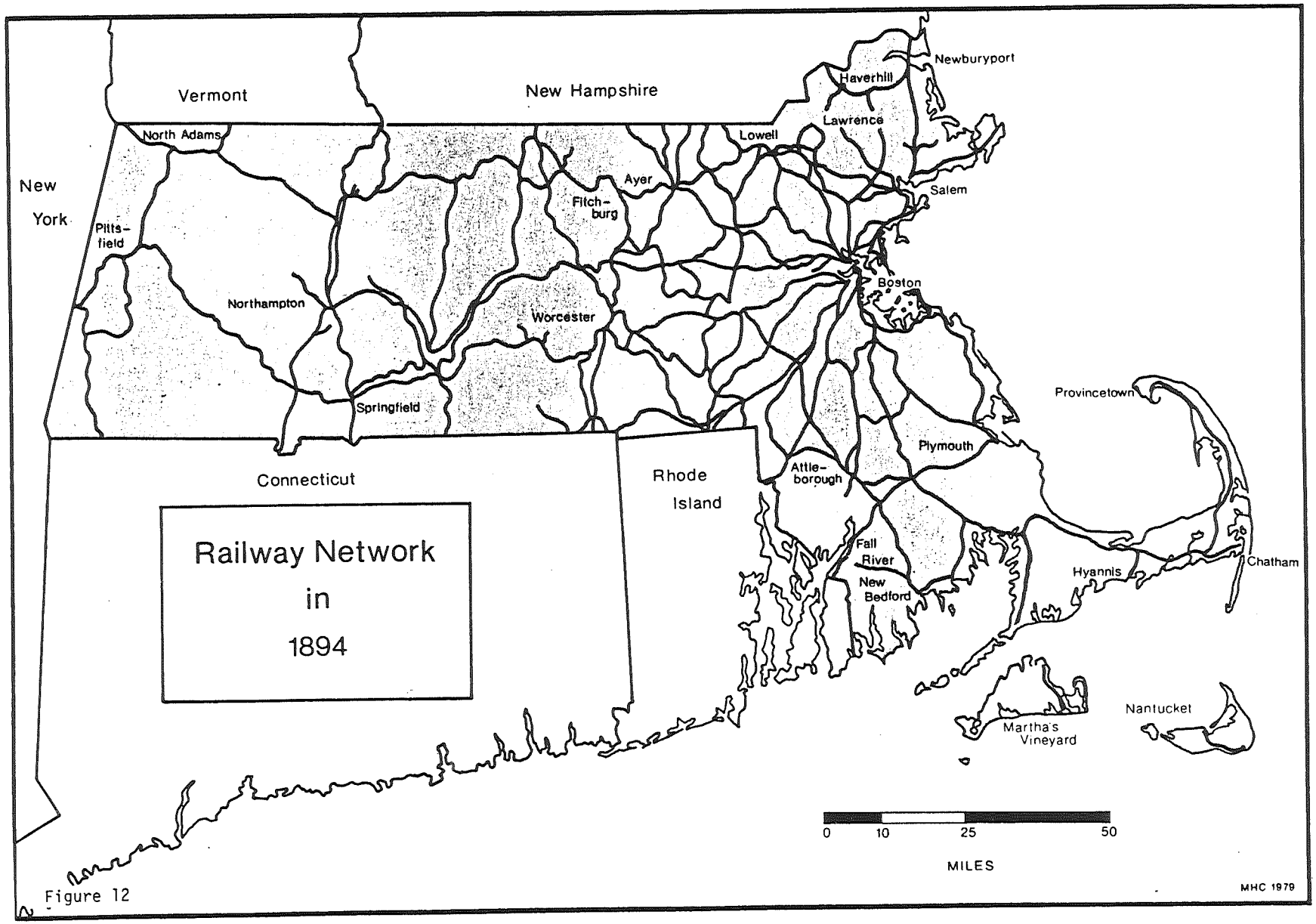
Figure 11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New York
Connecticut
Rhode Island
Railway Network in 1894
North Adams
Pitts-field
Northampton
Springfield
Worcester
Ayer
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Lowell
Haverhill
Newburyport
Lawrence
Salem
Boston
Provincetown
Plymouth
Attle-borough
Fall River
New Bedford
Hyannis
Chatham
Martha's Vineyard
Nantucket
0 10 25 50
MILES
MHC 1979

Figure 12

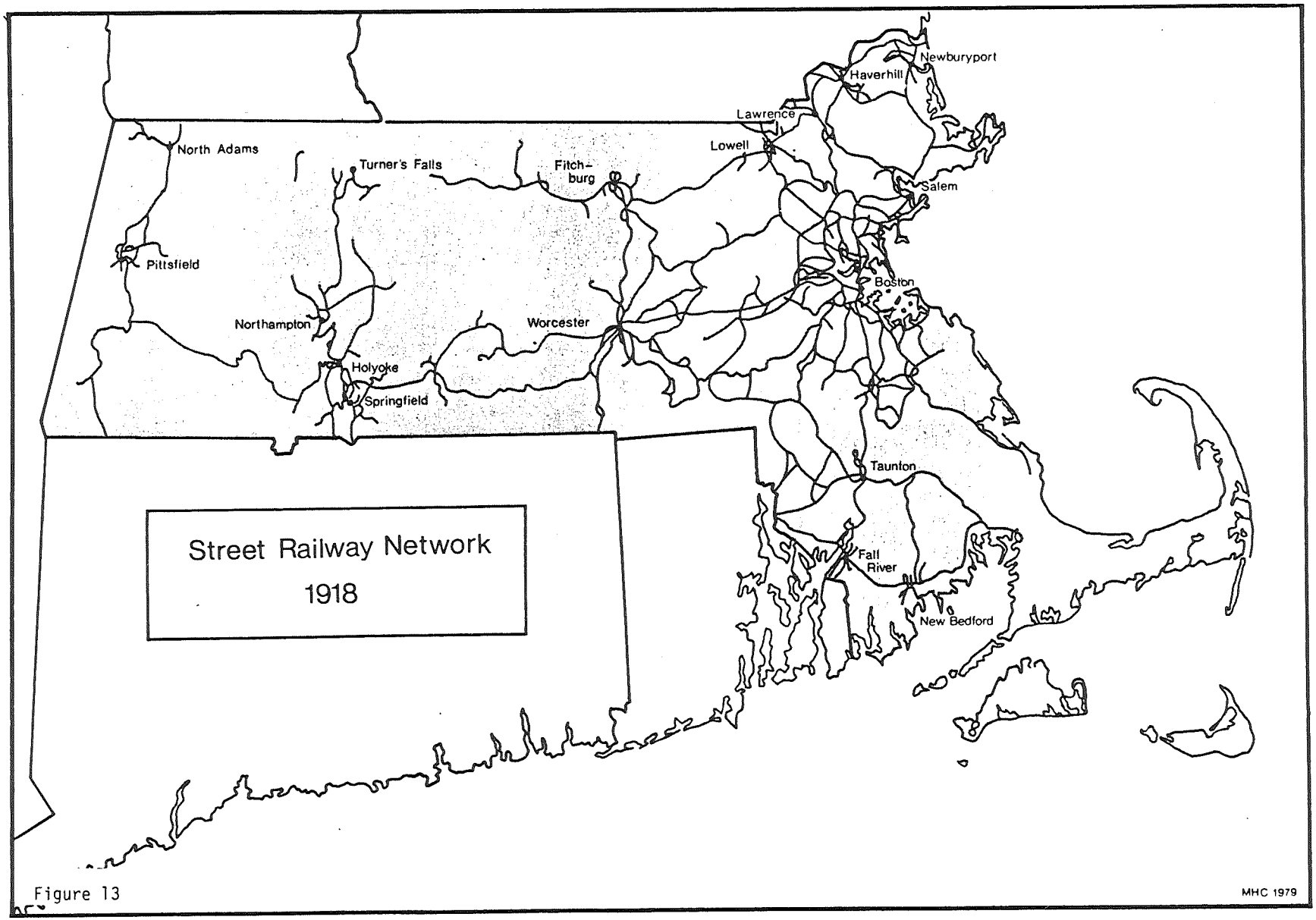

Newburyport
Haverhill
Lawrence
Lowell
North Adams
Turner's Falls
Fitch-
burg
Salem
Pittsfield
Boston
Northampton
Worcester
Holyoke
Springfield
Taunton
Street Railway Network
1918
Fall
River
New Bedford
MHC 1979

Figure 13

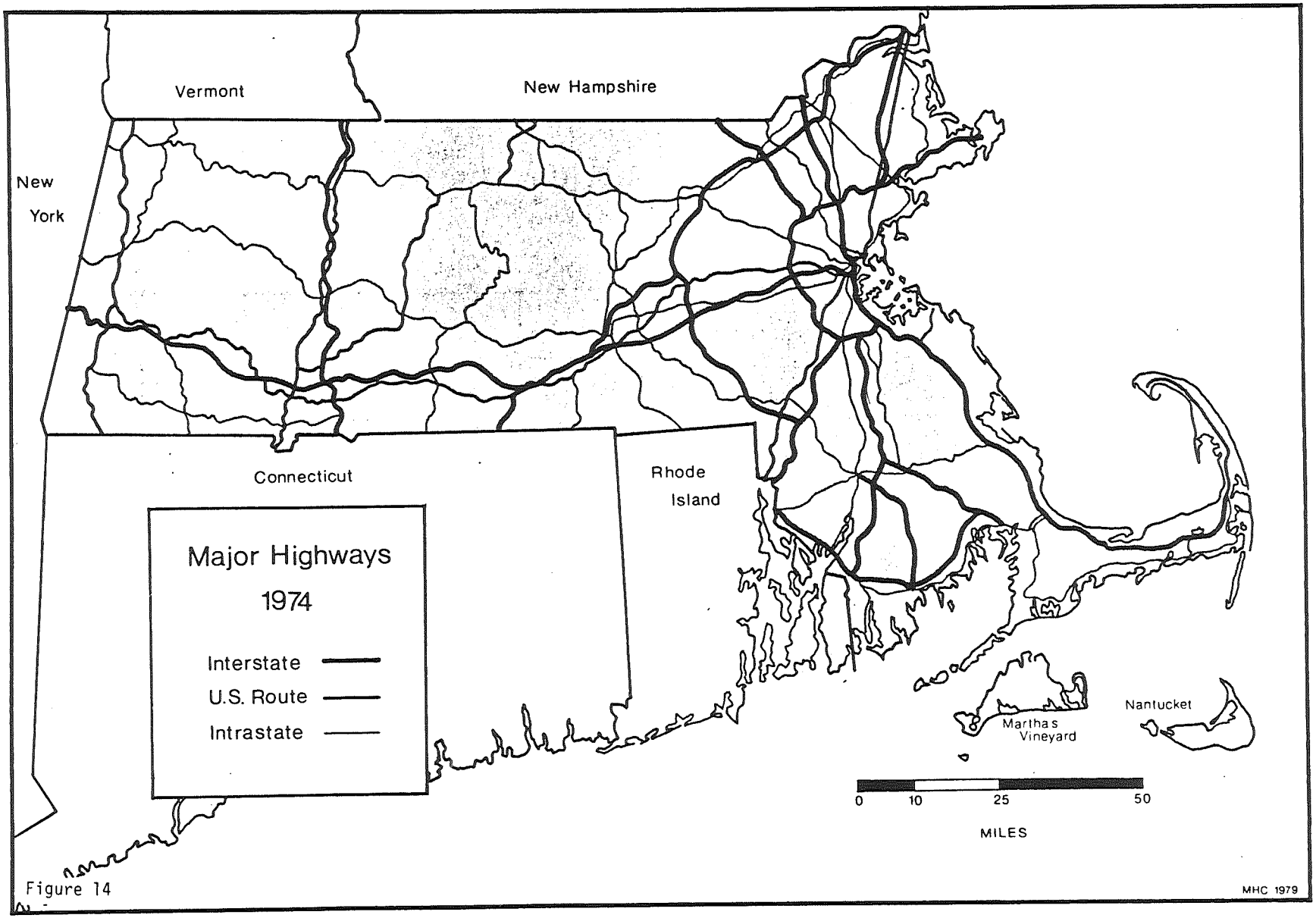

Vermont
New Hampshire
New York
Connecticut
Rhode Island
Major Highways
1974
Interstate
U.S. Route
Intrastate
Martha's Vineyard
Nantucket
0 10 25 50
MILES
MHC 1979

Figure 14

Berkshire Study Unit

Cities & Towns

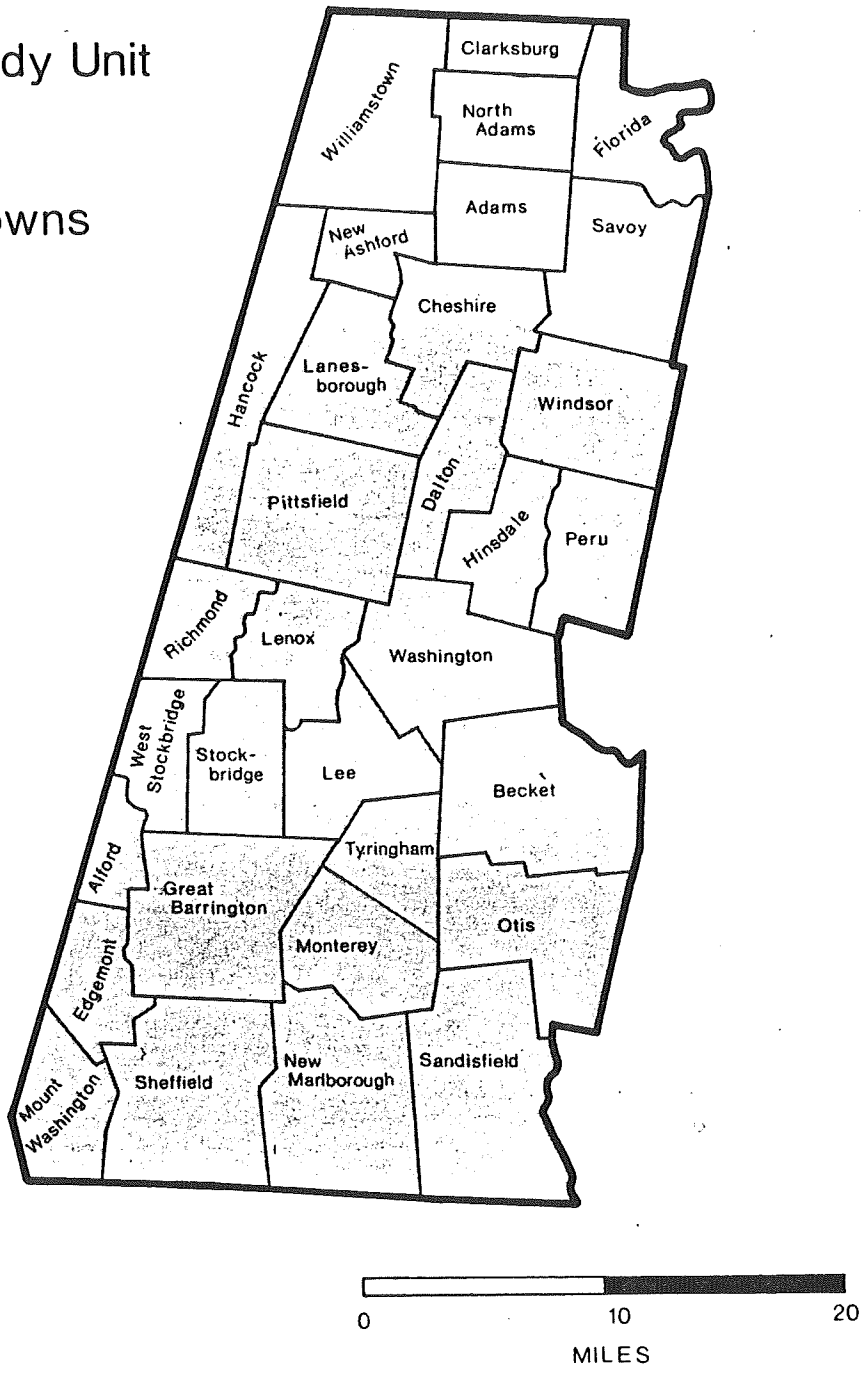
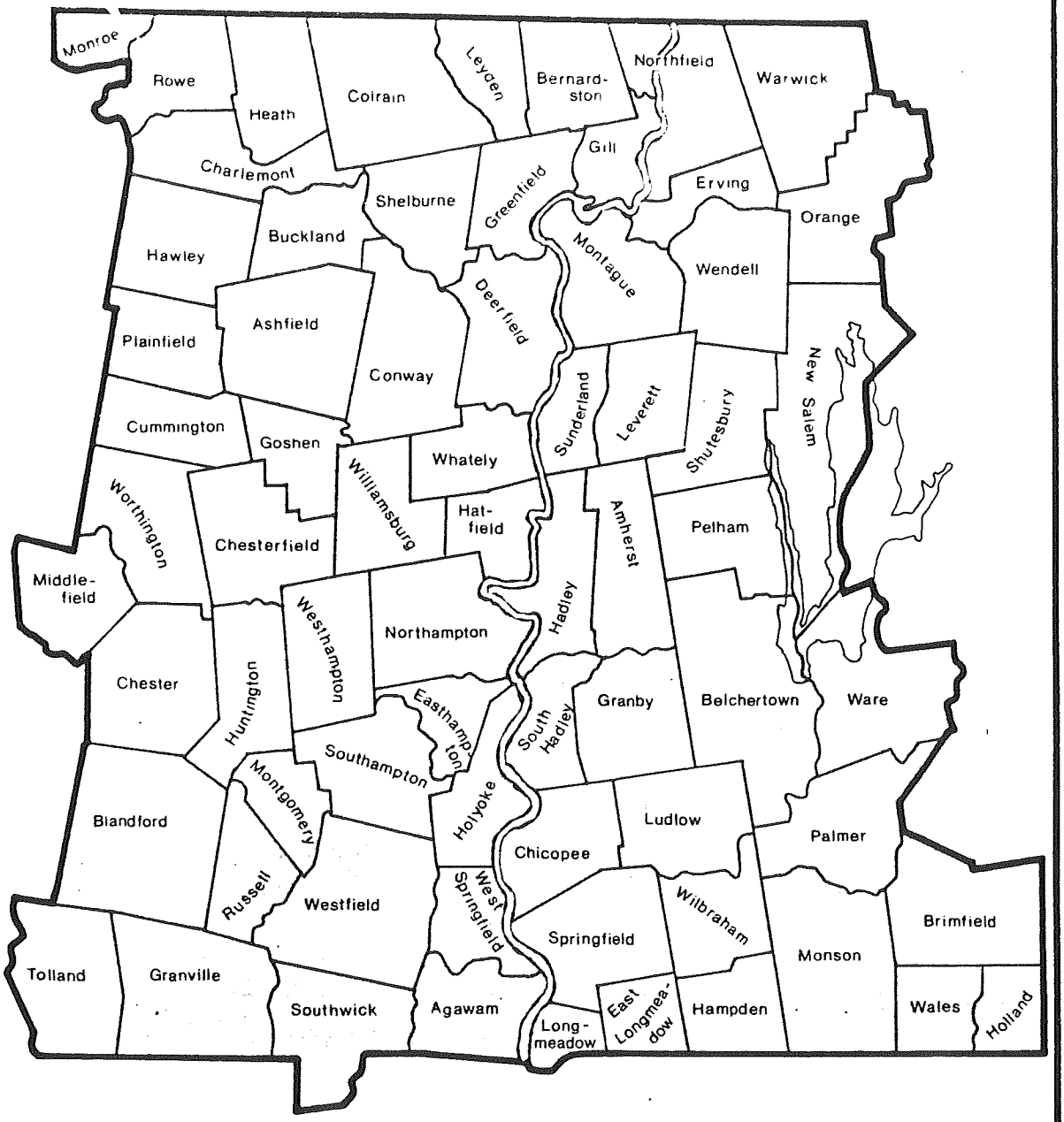


Figure 15

MHC 1979



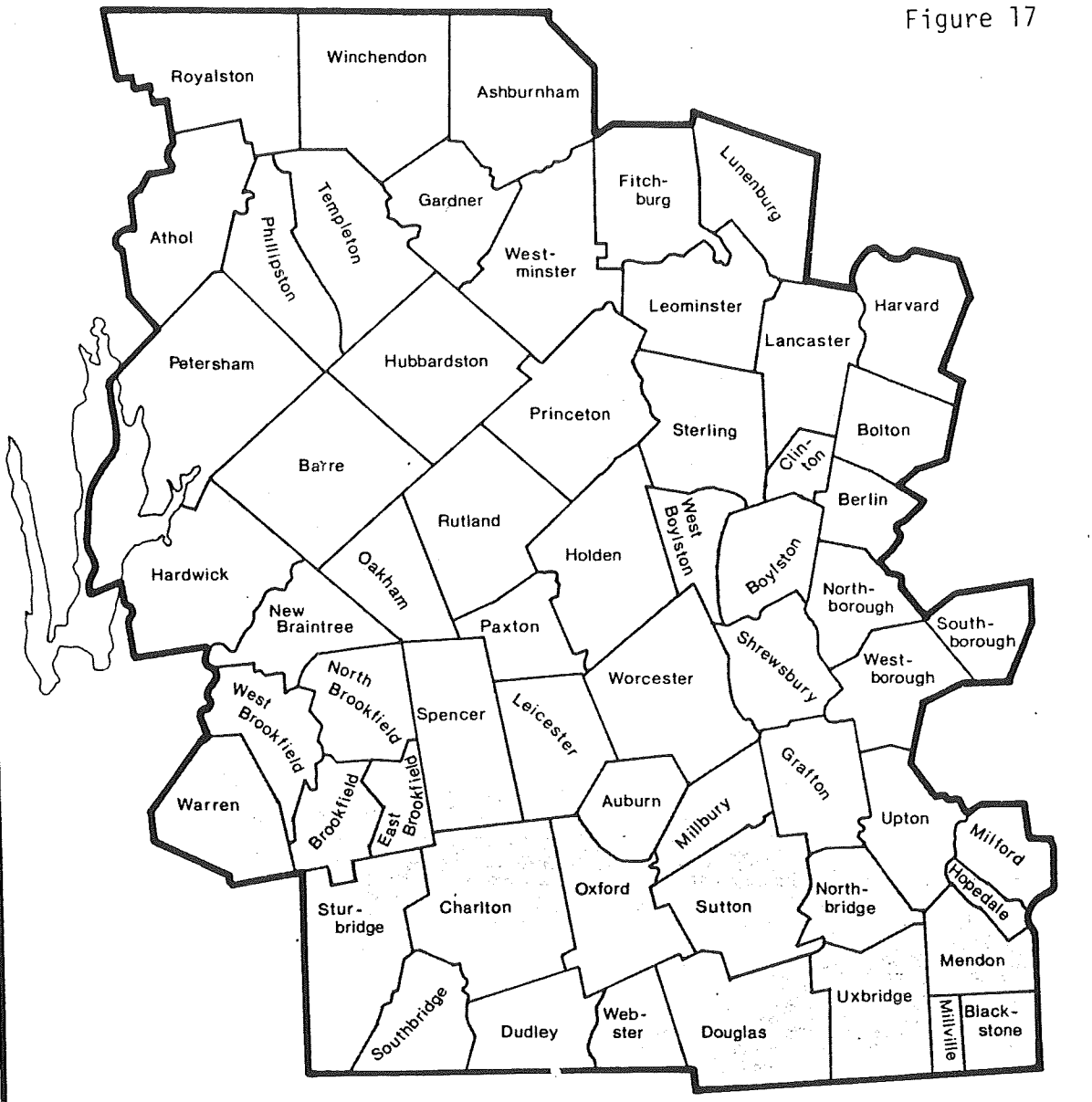
Connecticut River Valley Study Unit

Cities & Towns

Figure 16

MHC 1979

Figure 17

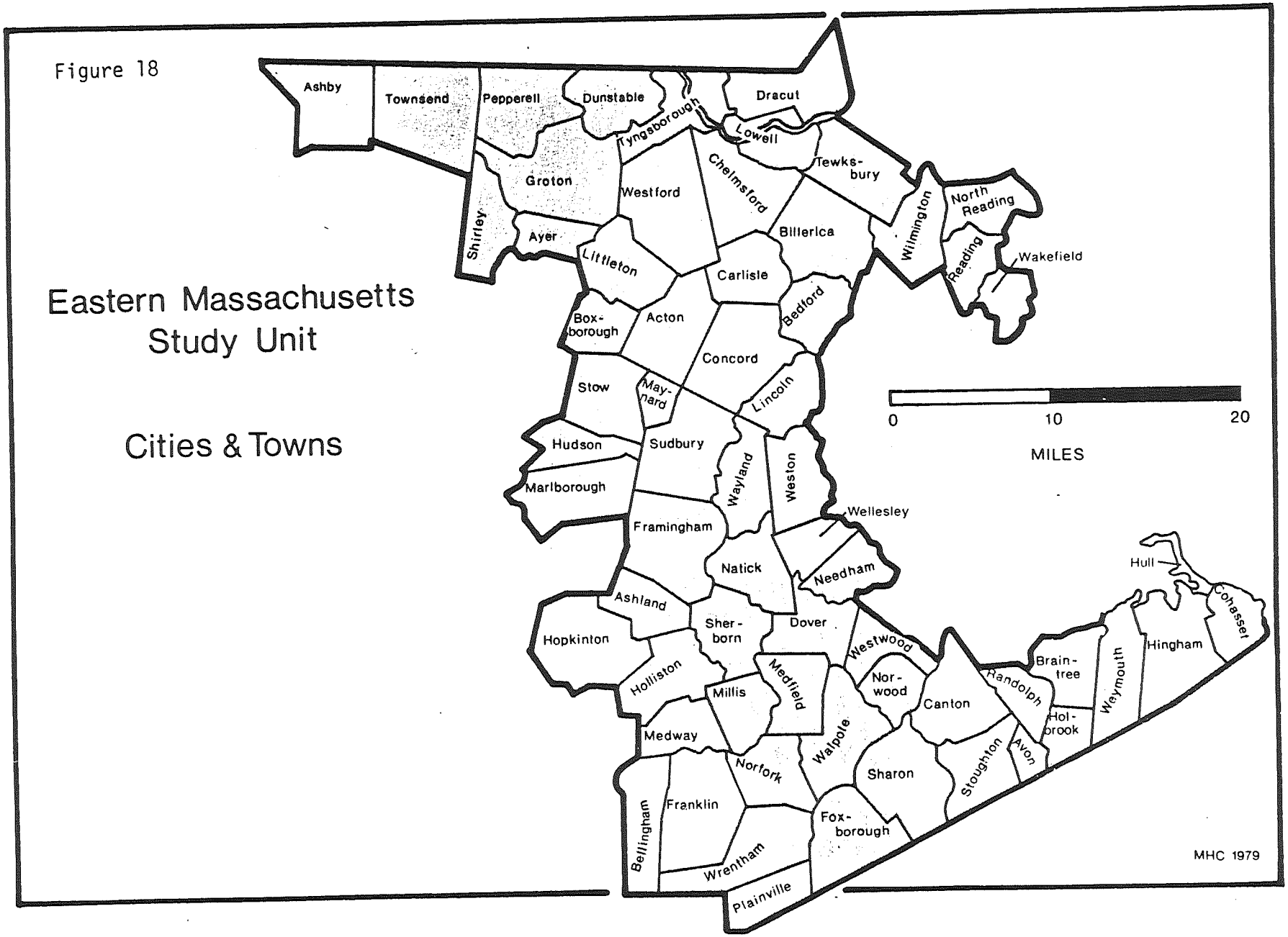


Central Massachusetts Study Unit

Cities & Towns

MHC 1979

Figure 18


Eastern Massachusetts
Study Unit
Cities & Towns
Ashby
Townsend
Pepperell
Dunstable
Tyngsborough
Dracut
Lowell
Tewksbury
Wilmington
North Reading
Reading
Wakefield
Billerica
Chelmsford
Westford
Groton
Shirley
Ayer
Littleton
Carlisle
Bedford
Boxborough
Acton
Concord
Lincoln
Stow
Maynard
Hudson
Sudbury
Marlborough
Wayland
Weston
Wellesley
Framingham
Natick
Needham
Ashland
Sherborn
Dover
Hopkinton
Holliston
Millis
Medfield
Westwood
Norwood
Canton
Randolph
Braintree
Weymouth
Hingham
Cohasset
Hull
Holbrook
Avon
Stoughton
Sharon
Walpole
Norfolk
Medway
Franklin
Bellingham
Foxborough
Wrentham
Plainville
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MILES
MHC 1979

0 10 20

MILES

Essex Study Unit

Cities & Towns

Figure 19

MHC 1979

Boston Area Study Unit

Cities & Towns

Figure 20

MHC 1979

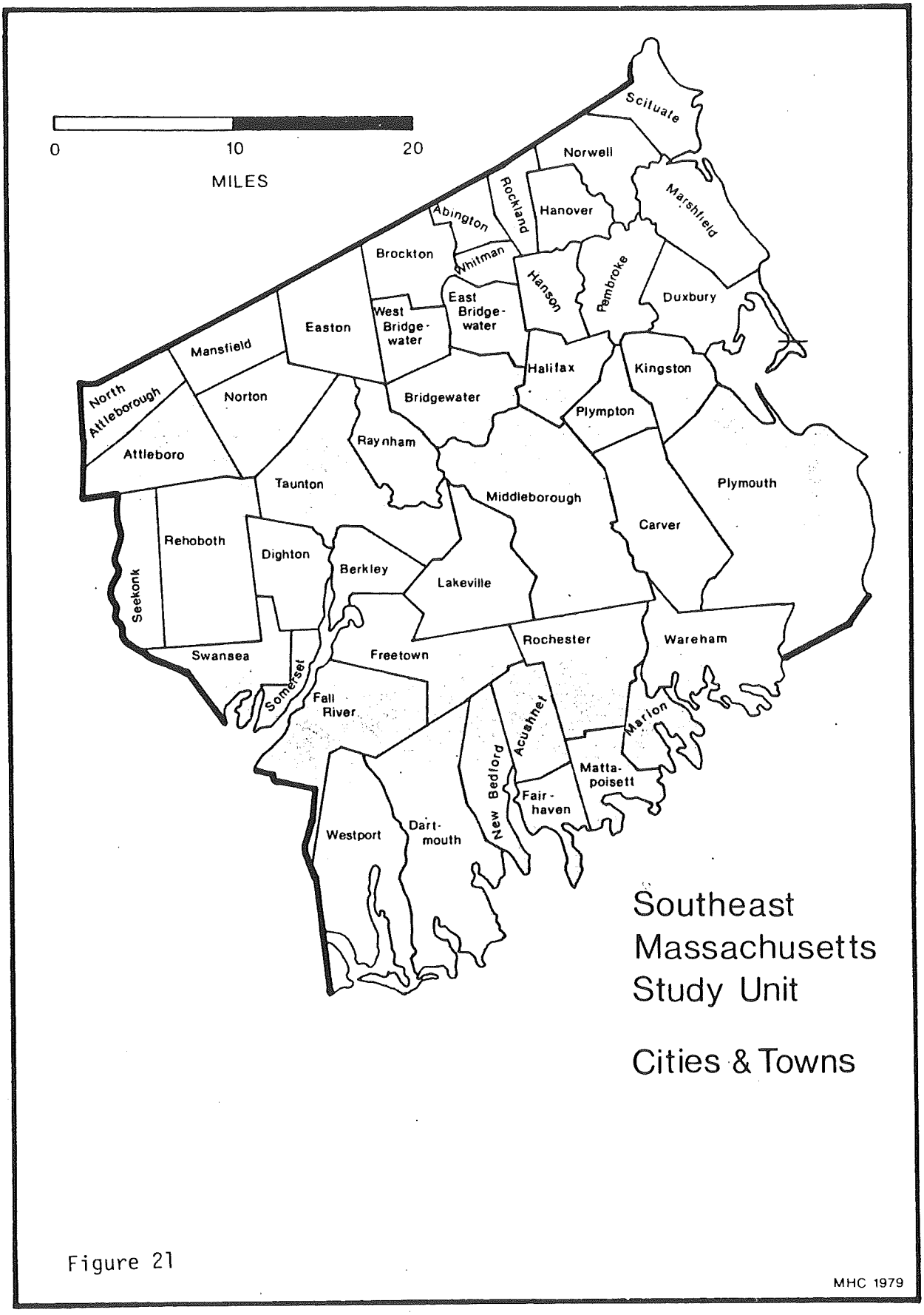


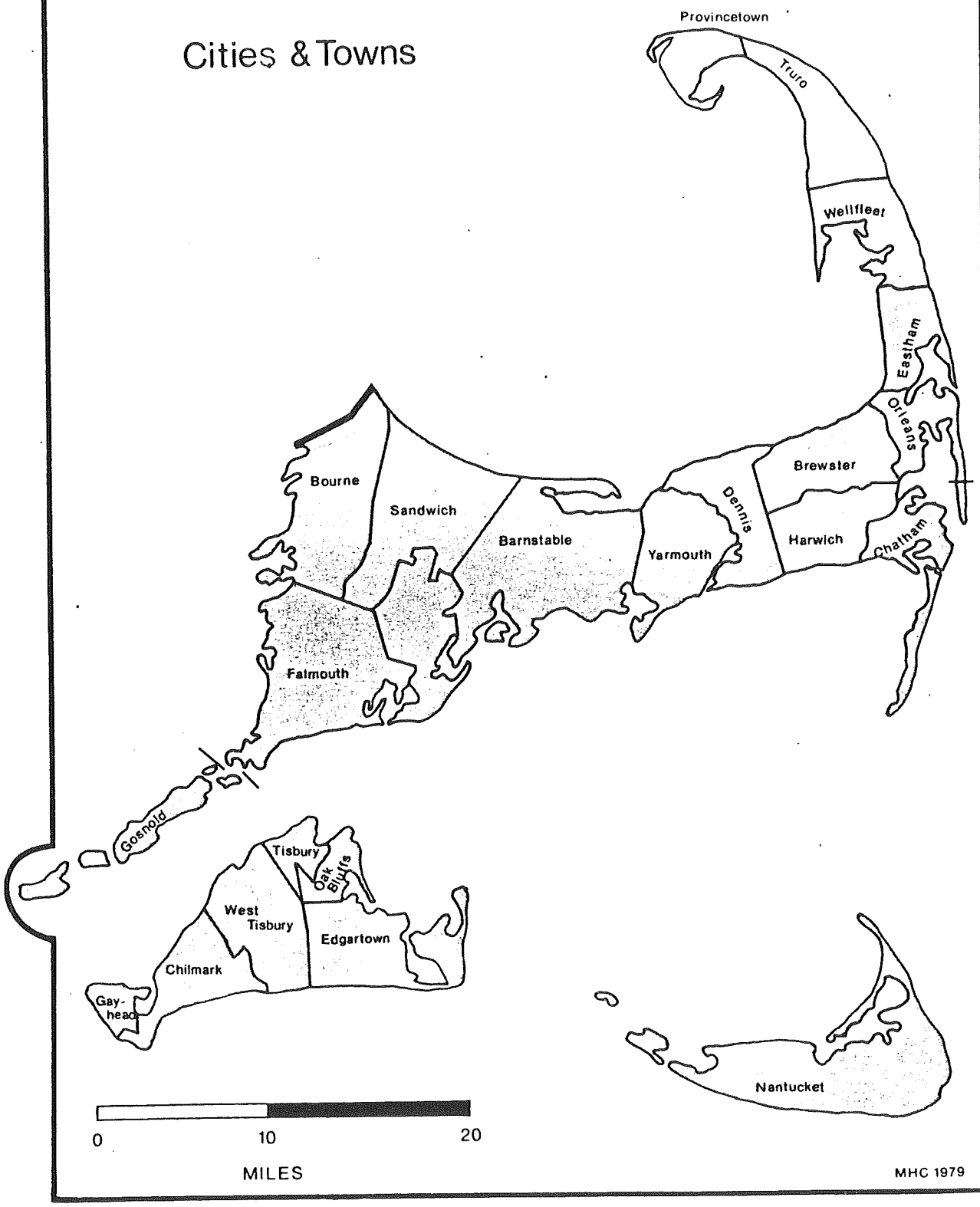
Figure 21

MHC 1979

Figure 22

Cape Cod & Islands

Cities & Towns



Berkshire Study Unit

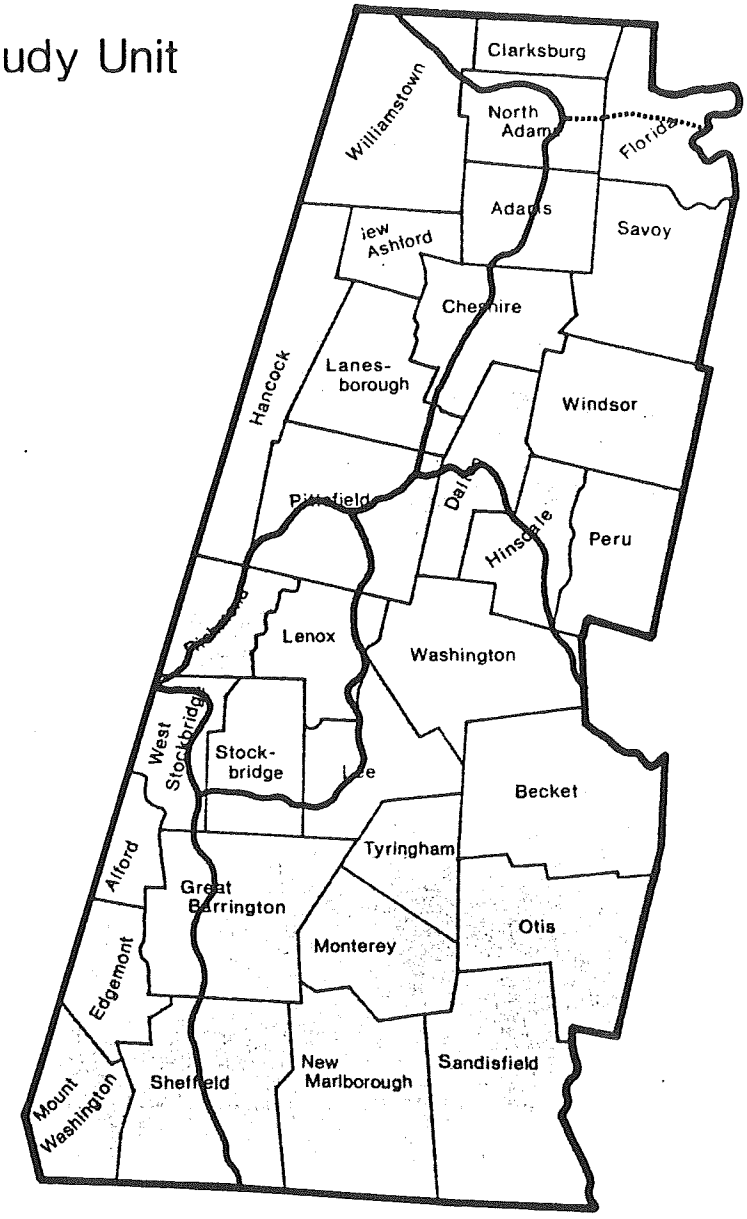
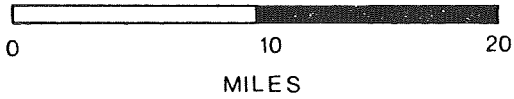


Figure 24



Railway Network

1855 ———

1894 .....

MHC 1979

Berkshire Study Unit

Turnpikes & Canals

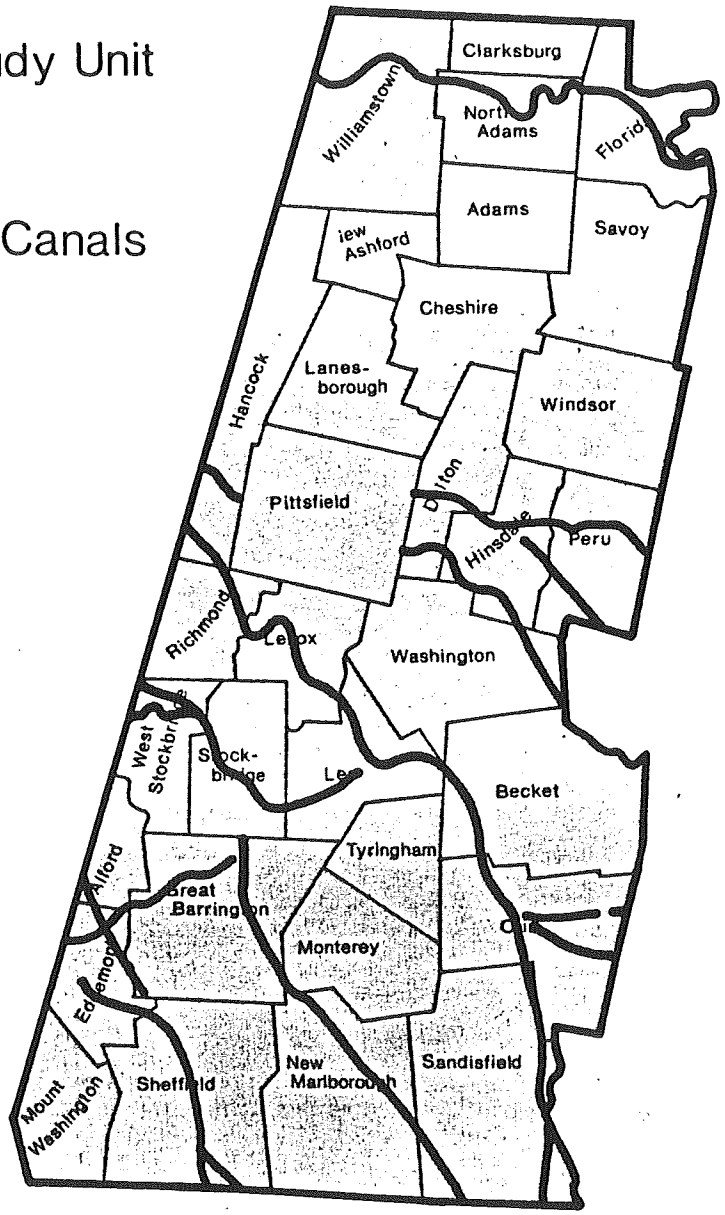


Figure 23

Turnpikes

Canals

MHC 1979

Berkshire Study Unit

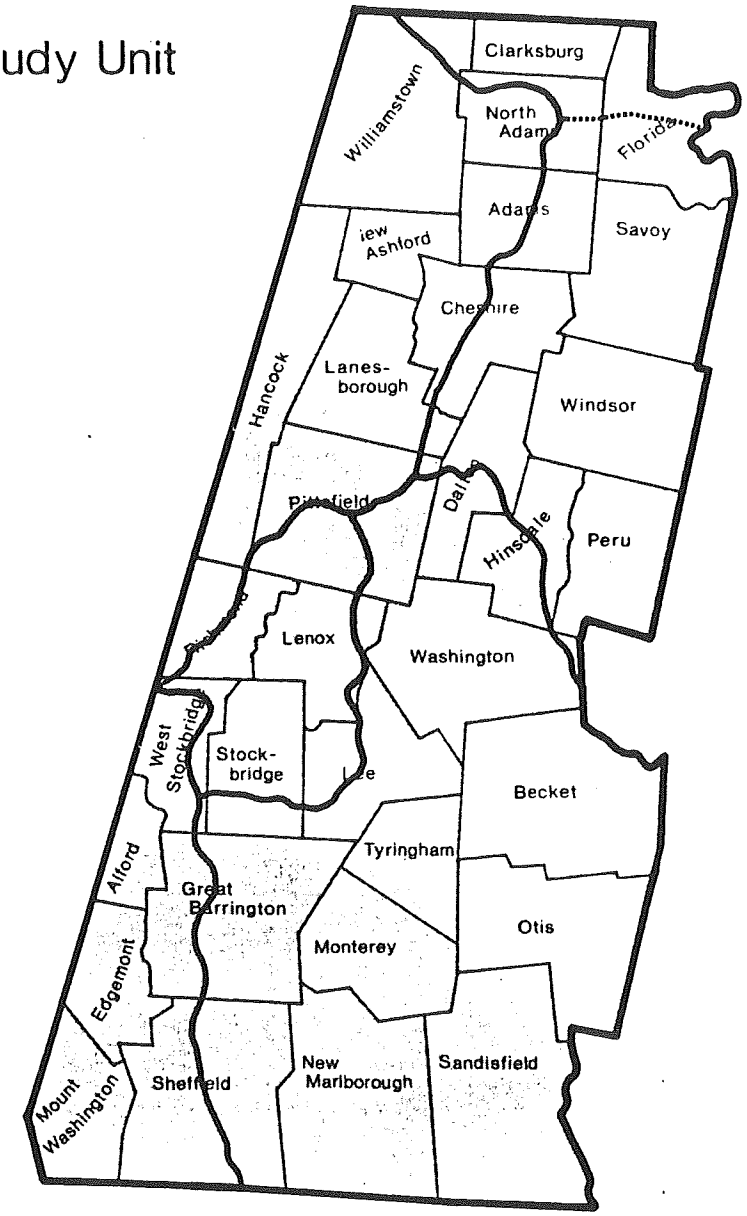


Figure 24

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MILES

Railway Network

1855 ———

1894 .....

MHC 1979

Berkshire Study Unit

Major Highways 1974

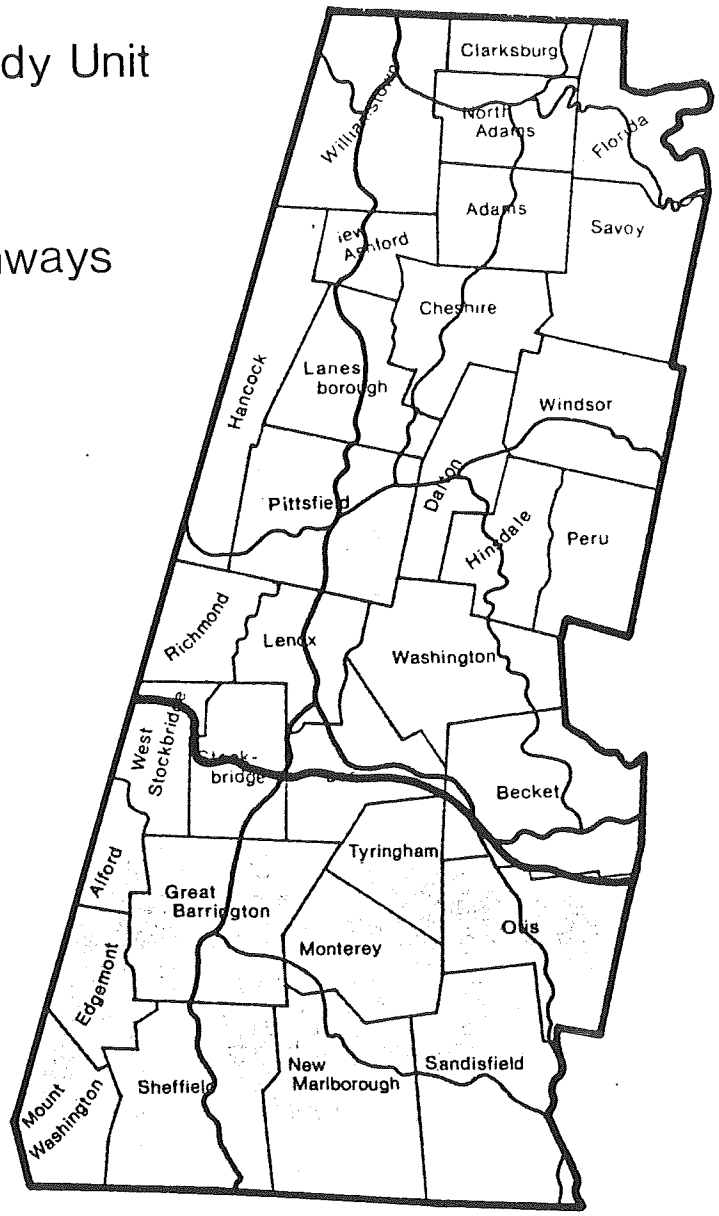


Figure 25

0 10 20

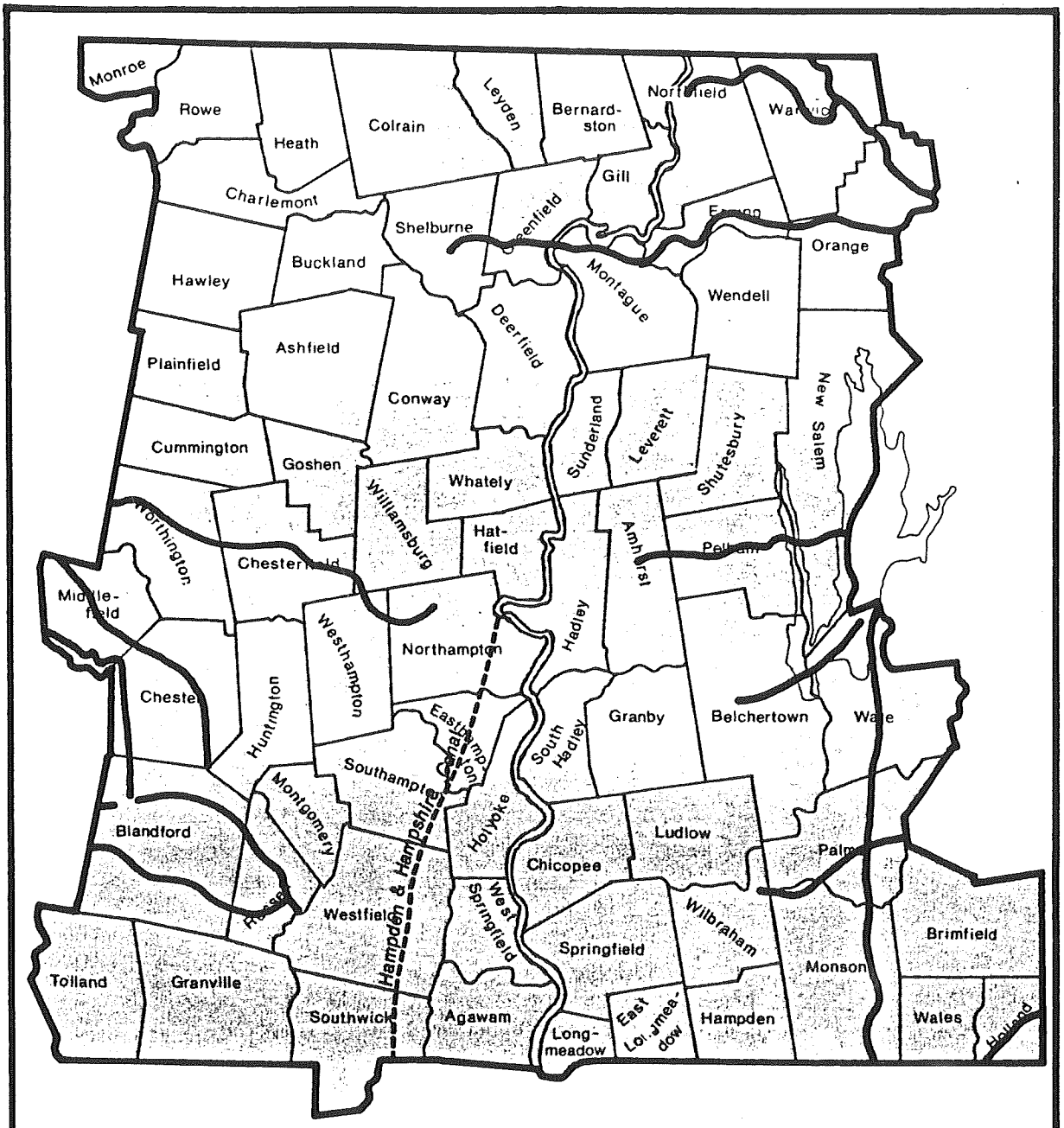
MILES

Interstate

U.S. Route

Intrastate

MHC 1979



Connecticut River Valley Study Unit

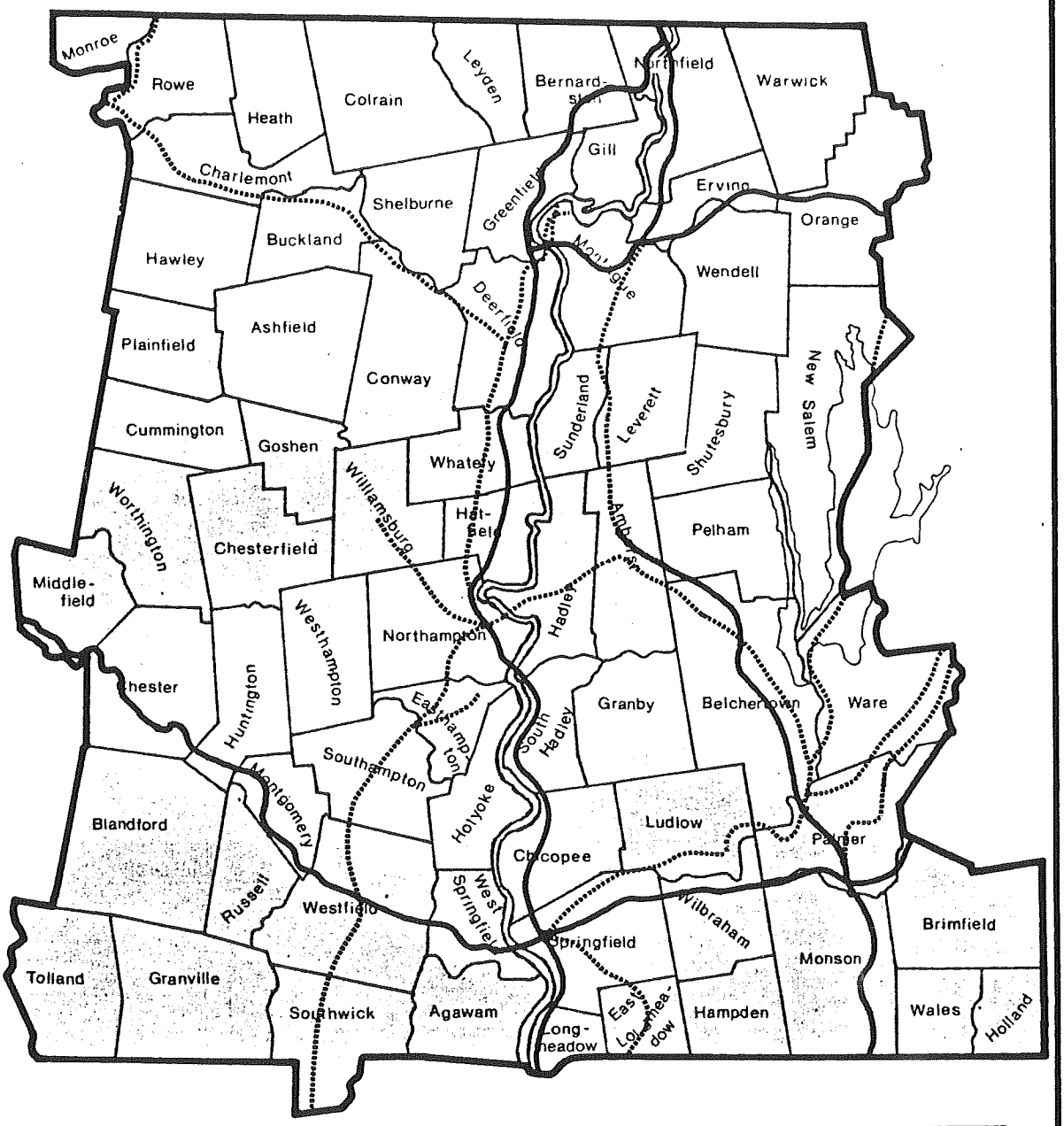
Turnpikes & Canals

Turnpikes ——

Canals - - - - - -

Figure 26

MHC 1979



Connecticut River Valley Study Unit

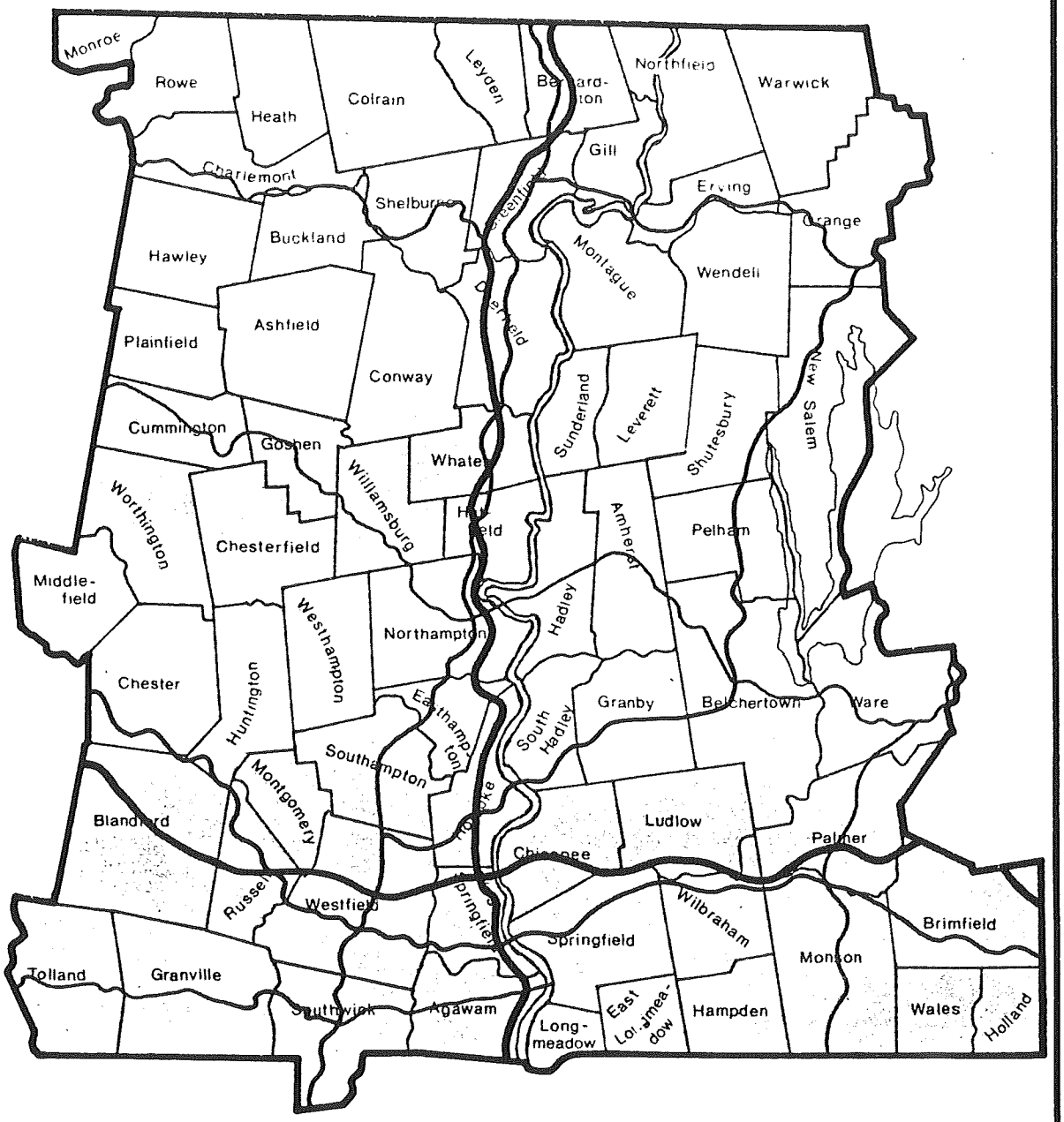
Railway Network

1855 ———

1894 .....

Figure 27

MHC 1979

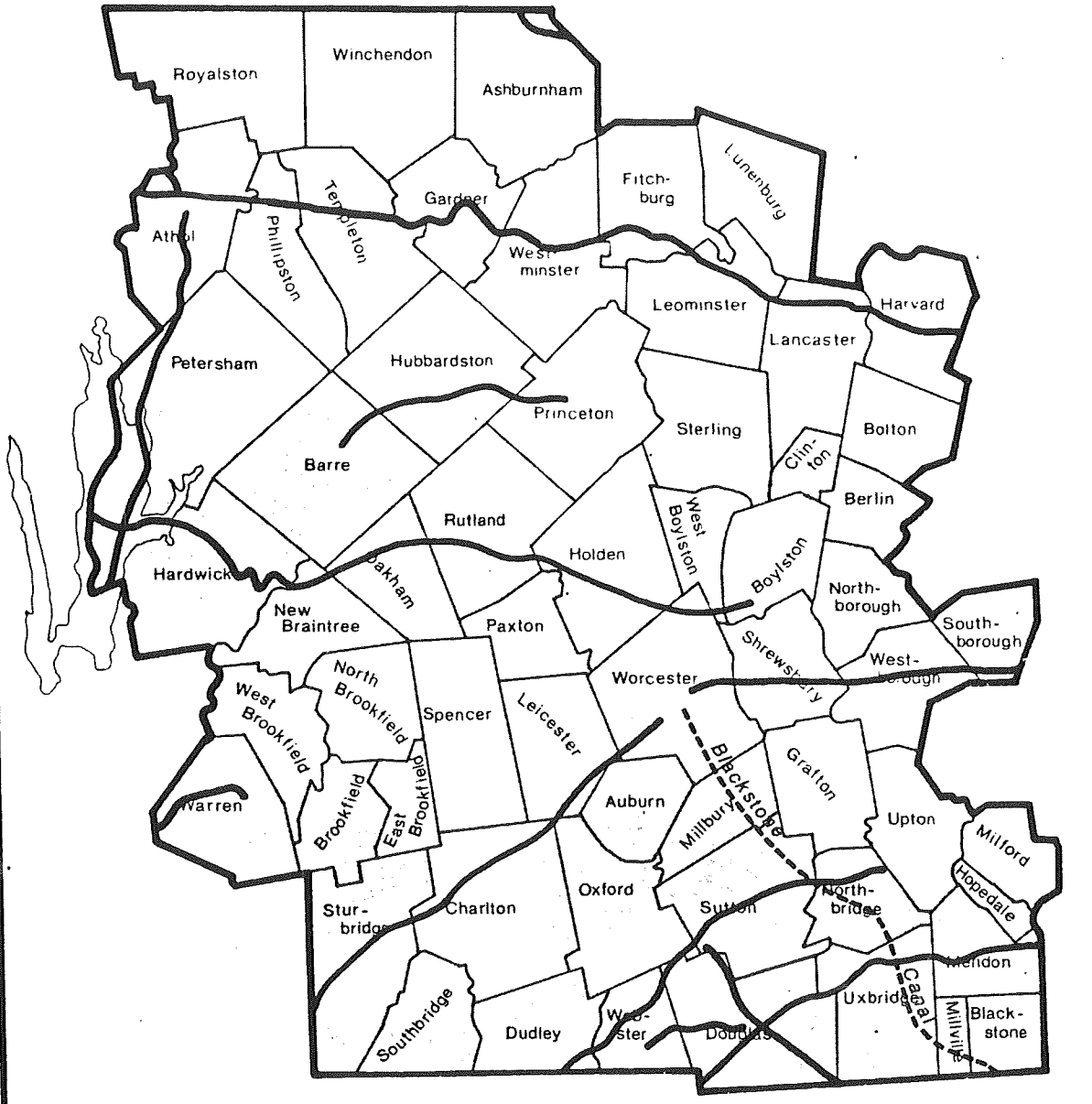


Connecticut River Valley Study Unit

Major Highways 1974

Figure 28

MHC 1979



Central Massachusetts Study Unit

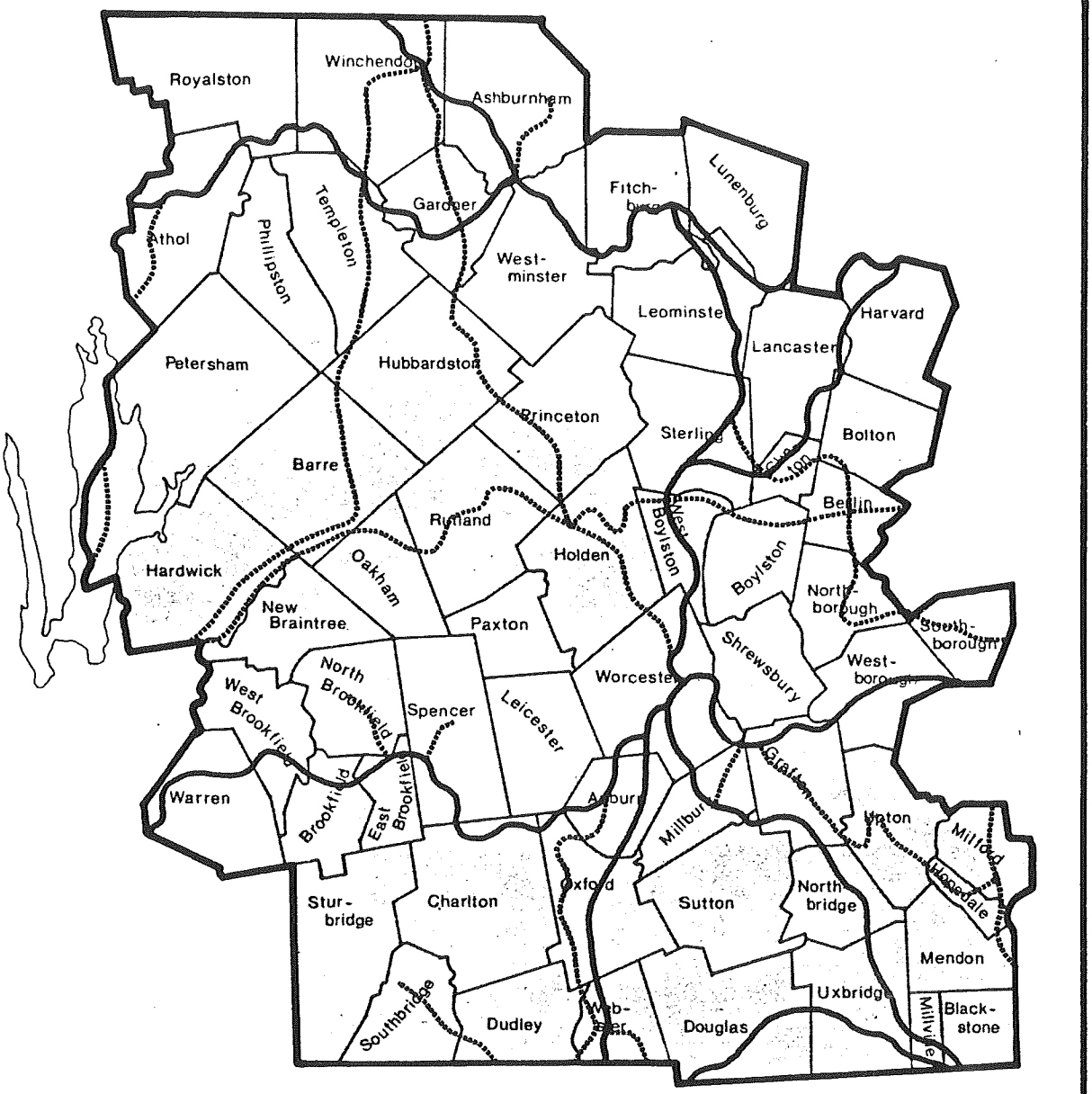
Turnpikes & Canals

Turnpikes ——

Canals - - - - - -

Figure 29

MHC 1979



Central Massachusetts Study Unit

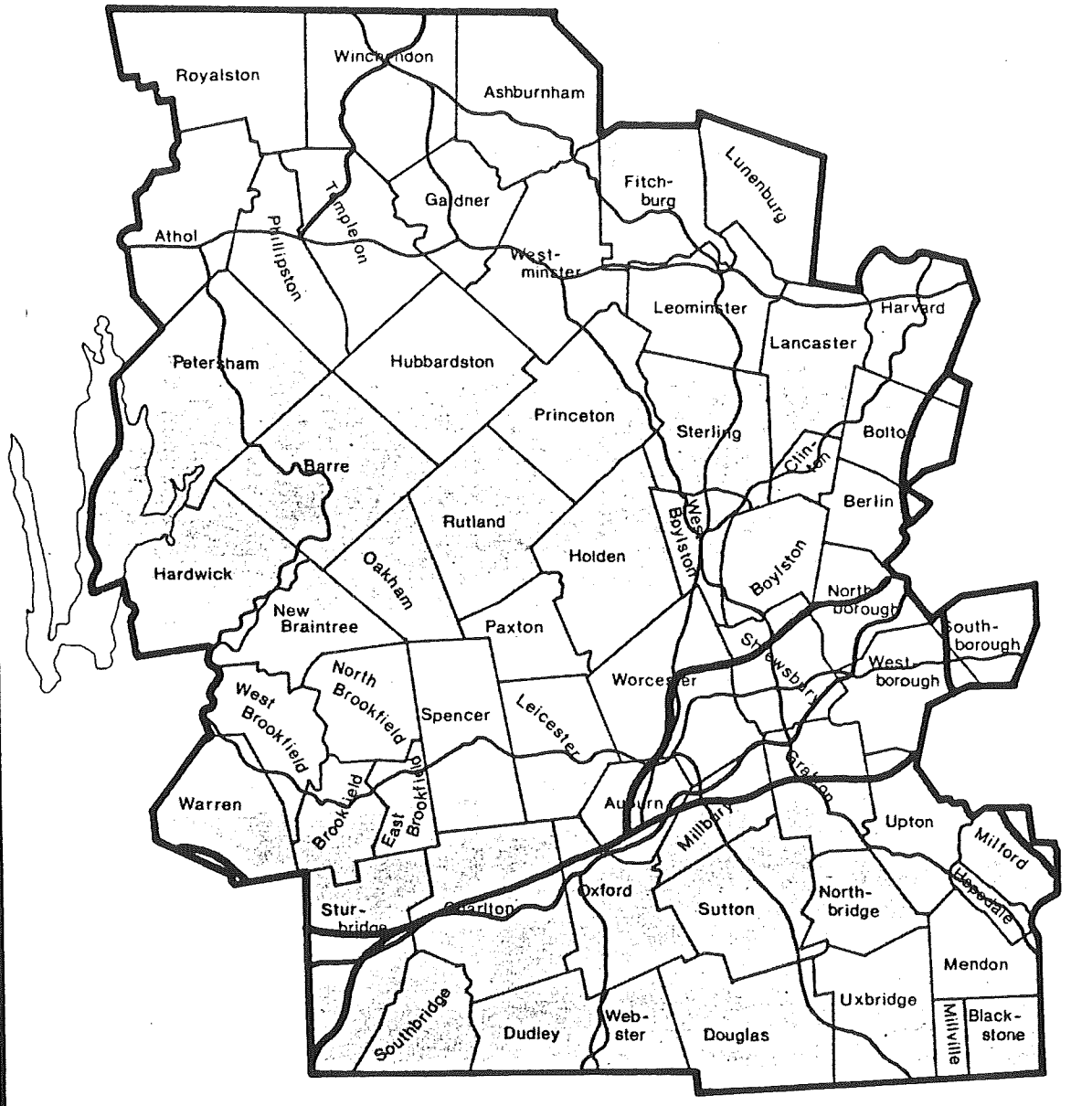
Railway Network

1855 ——————

1894 ....

Figure 30

MHC 1979



0 10 20

MILES

Central Massachusetts Study Unit

Major Highways 1974

Interstate

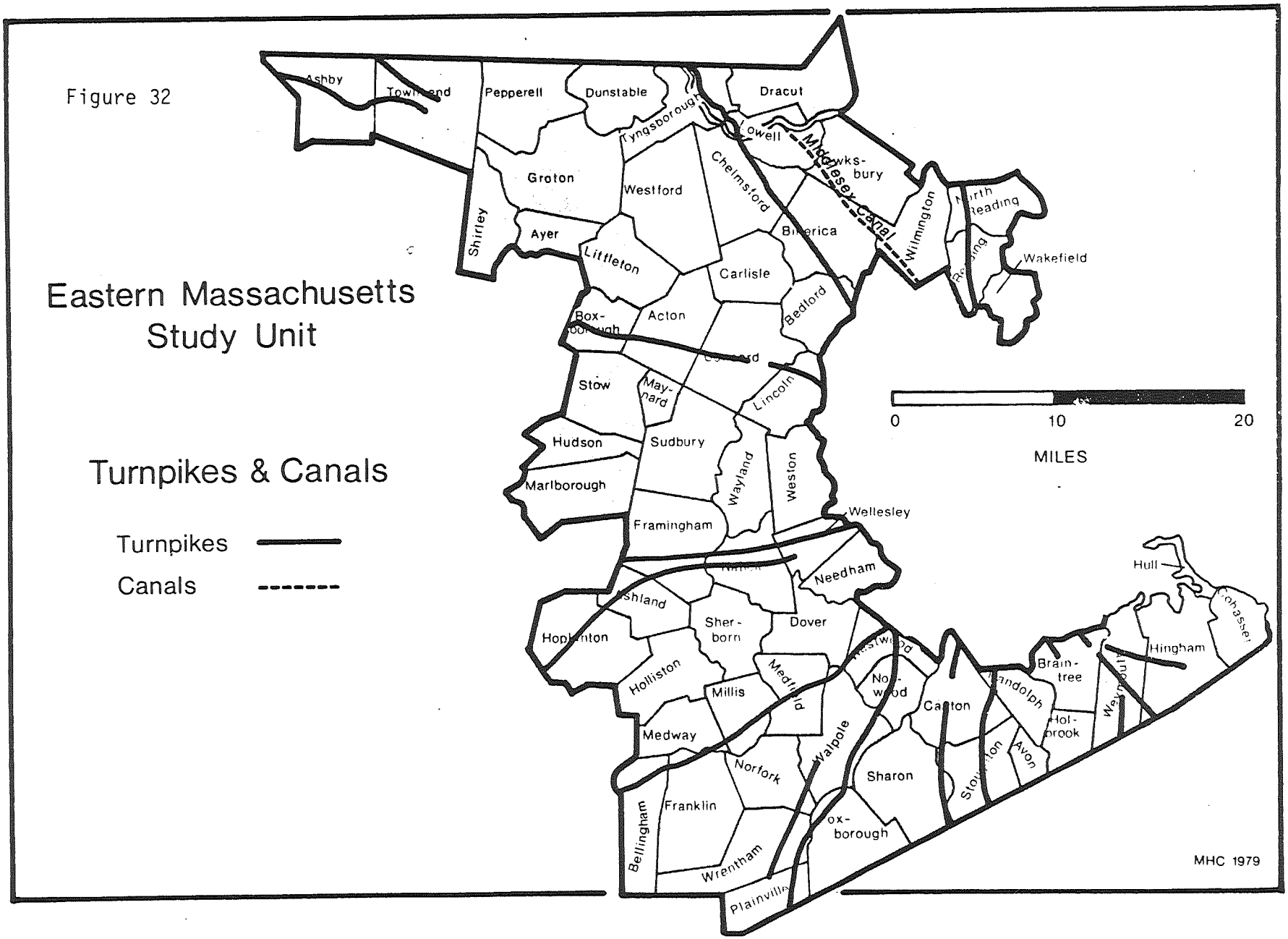
U.S. Route

Intrastate

Figure 31

MHC 1979

Figure 32


Eastern Massachusetts
Study Unit
Turnpikes & Canals
Turnpikes
Canals
Ashby
Townsend
Pepperell
Dunstable
Tyngsborough
Dracut
Lowell
Merrimack River Canal
Hawks-
bury
Groton
Westford
Chelmsford
Billerica
Wilmington
North Reading
Wakefield
Shirley
Ayer
Littleton
Carlisle
Bedford
Box-
borough
Acton
Stow
May-
nard
Lincoln
Hudson
Sudbury
Wayland
Weston
Marlborough
Framingham
Wellesley
Needham
Ashland
Sher-
born
Dover
Hopkinton
Hollis-
ton
Millis
Medfield
Medway
Norfolk
Walpole
Sharon
Franklin
Bellingham
Wrentham
Plainville
ox-
borough
Canton
Brain-
tree
Randolph
Hol-
brook
Avon
Hingham
Hull
Cohasset
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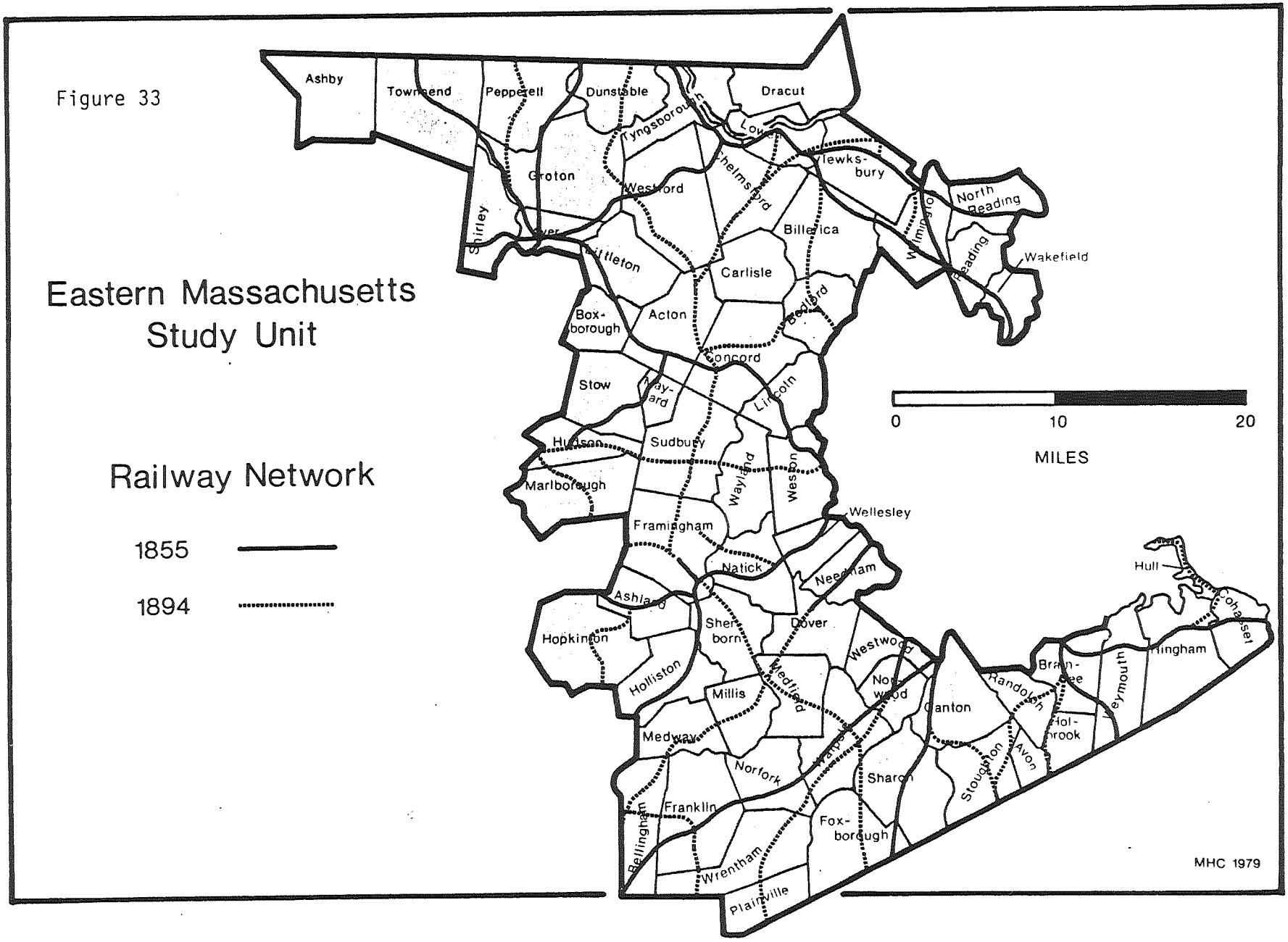
MILES
MHC 1979

Figure 33


Eastern Massachusetts
Study Unit
Railway Network
1855
1894
Ashby
Townsend
Pepperell
Dunstable
Tyngsborough
Dracut
Lowell
Groton
Westford
Chelmsford
Tewksbury
North Reading
Wilmington
Reading
Wakefield
Billerica
Carlisle
Littleton
Bedford
Boxborough
Acton
Concord
Stow
Hudson
Sudbury
Lincoln
Marlborough
Wayland
Weston
Wellesley
Framingham
Natick
Needham
Ashland
Hopkinton
Sherborn
Dover
Westwood
Hull
Hingham
Braintree
Weymouth
Randolph
Canton
Holbrook
Avon
Stoughton
Sharon
Norwood
Medfield
Millis
Medway
Norfolk
Franklin
Bellingham
Foxborough
Wrentham
Plainville
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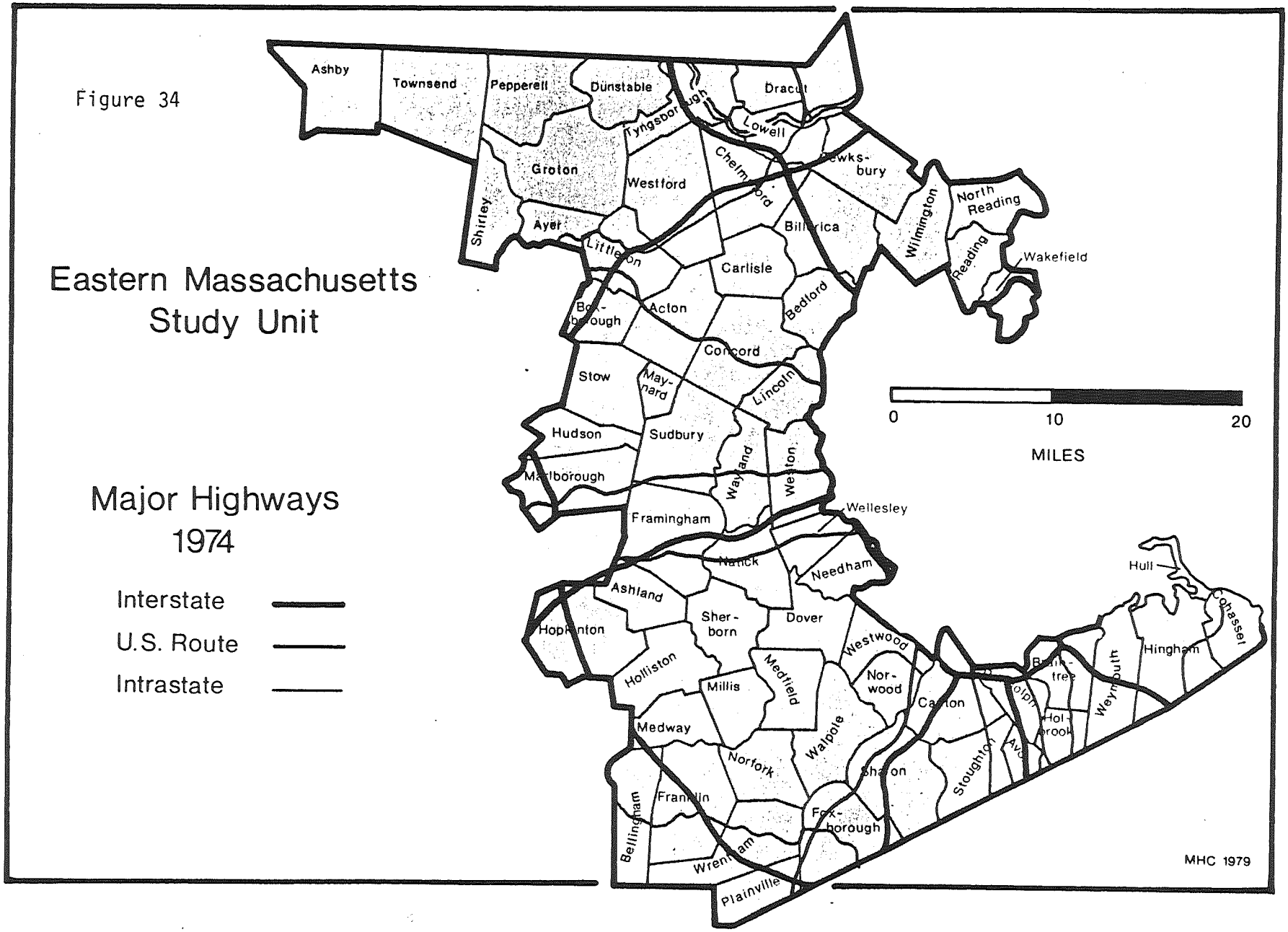
MILES
MHC 1979

Figure 34


Eastern Massachusetts
Study Unit
Major Highways
1974
Interstate
U.S. Route
Intrastate
Ashby
Townsend
Pepperell
Dunstable
Tyngsborough
Dracut
Lowell
Groton
Westford
Chelmsford
Shirley
Ayer
Littleton
Billerica
Wilmington
North Reading
Reading
Wakefield
Carlisle
Bedford
Acton
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Maynard
Lincoln
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Sudbury
Marlborough
Framingham
Wellesley
Natick
Needham
Ashland
Dover
Sherborn
Hopkinton
Holliston
Millis
Medfield
Westwood
Norwood
Canton
Medway
Norfolk
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Stoughton
Franklin
Foxborough
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Wrentham
Plainville
Braintree
Weymouth
Hingham
Hull
Cohasset
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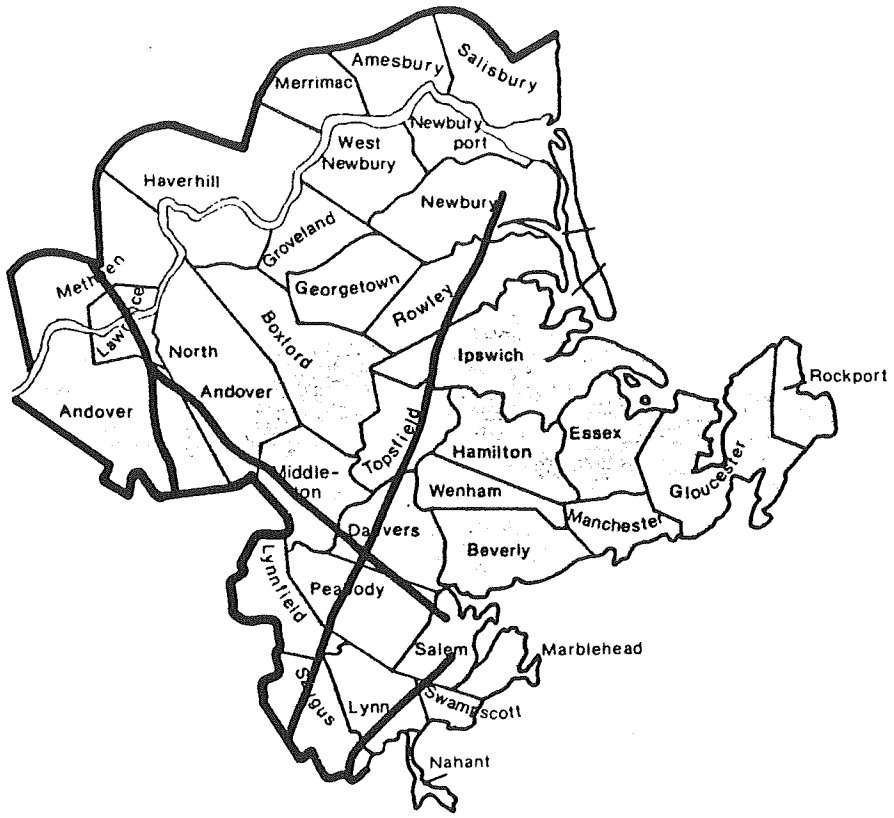
MILES
MHC 1979



Essex Study Unit

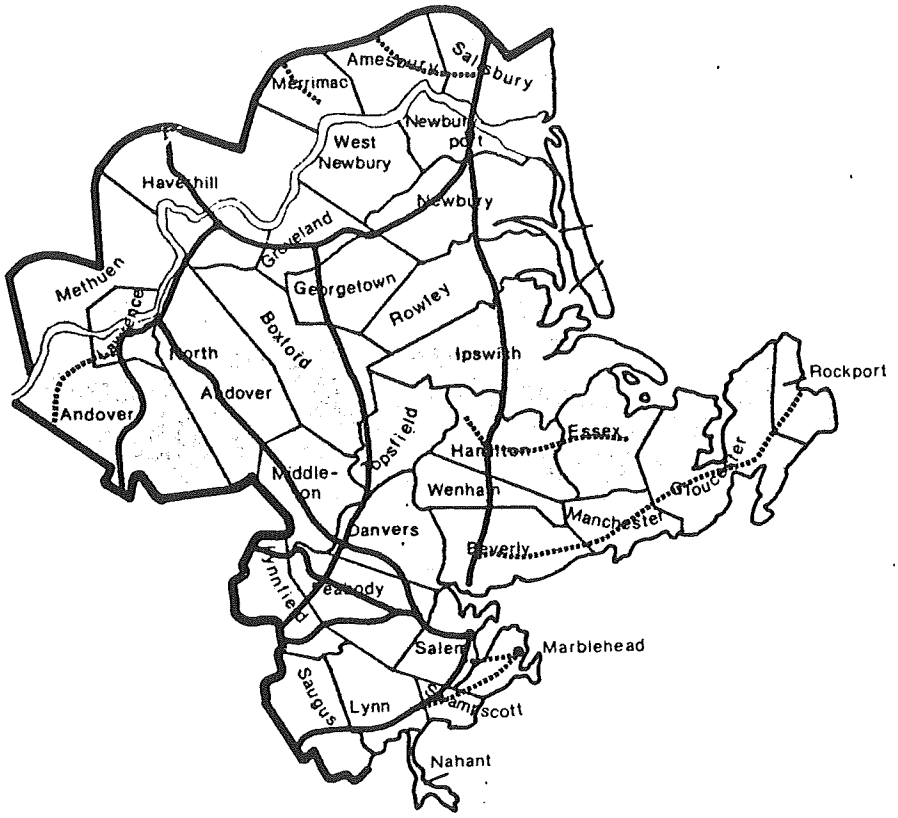
Turnpikes & Canals

Turnpikes ——

Canals - - - - - -

Figure 35

MHC 1979



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MILES

Essex Study Unit

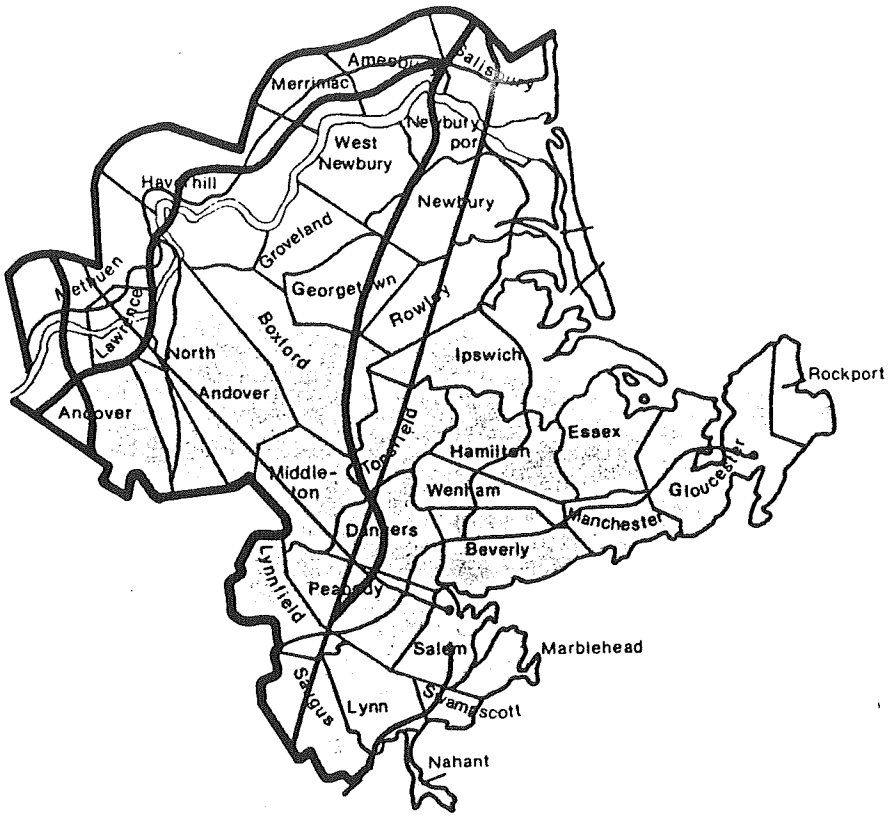
Railway Network

1855 ——

1894 .....

MHC 1979

Figure 36



Essex Study Unit

Major Highways
1974

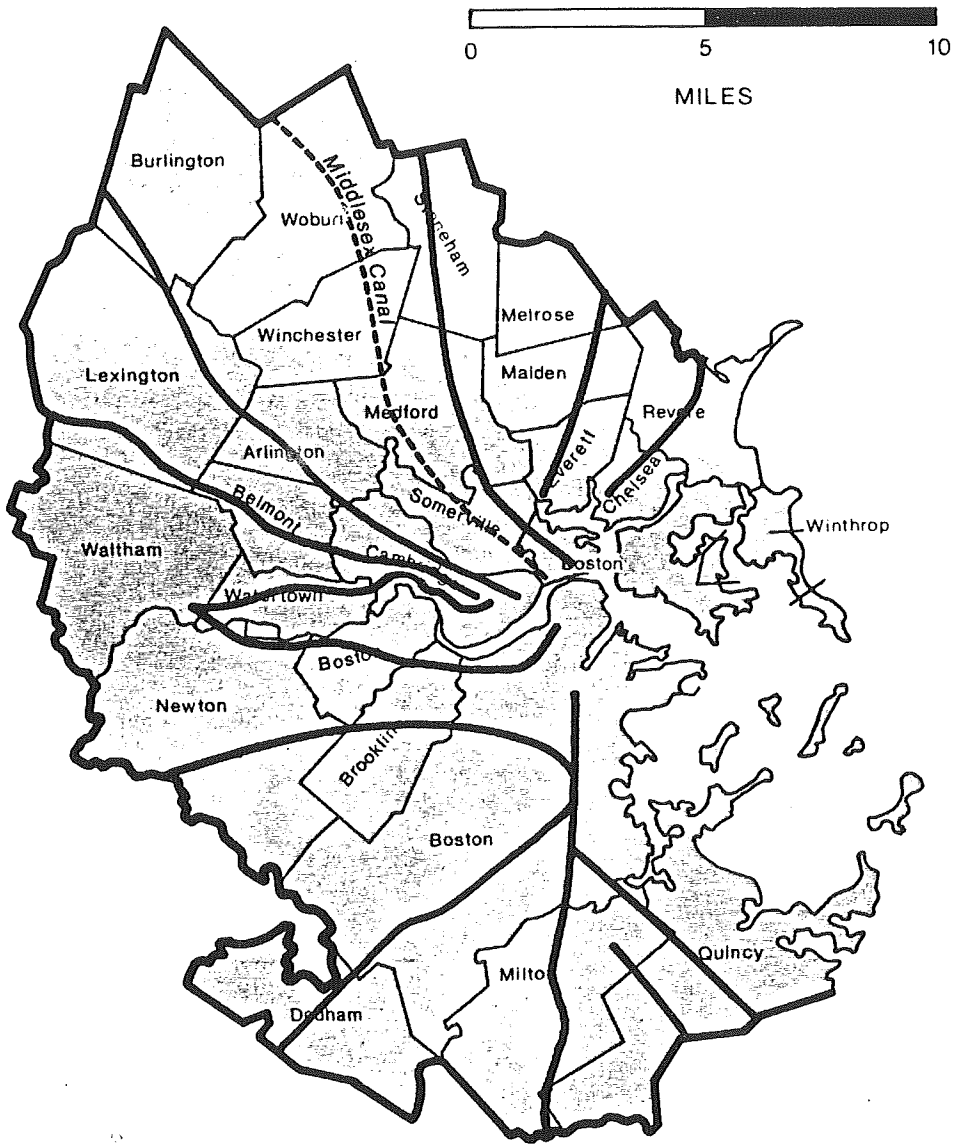
Interstate ——

U.S. Route ——

Intrastate ——

Figure 37

MHC 1979



Boston Area Study Unit

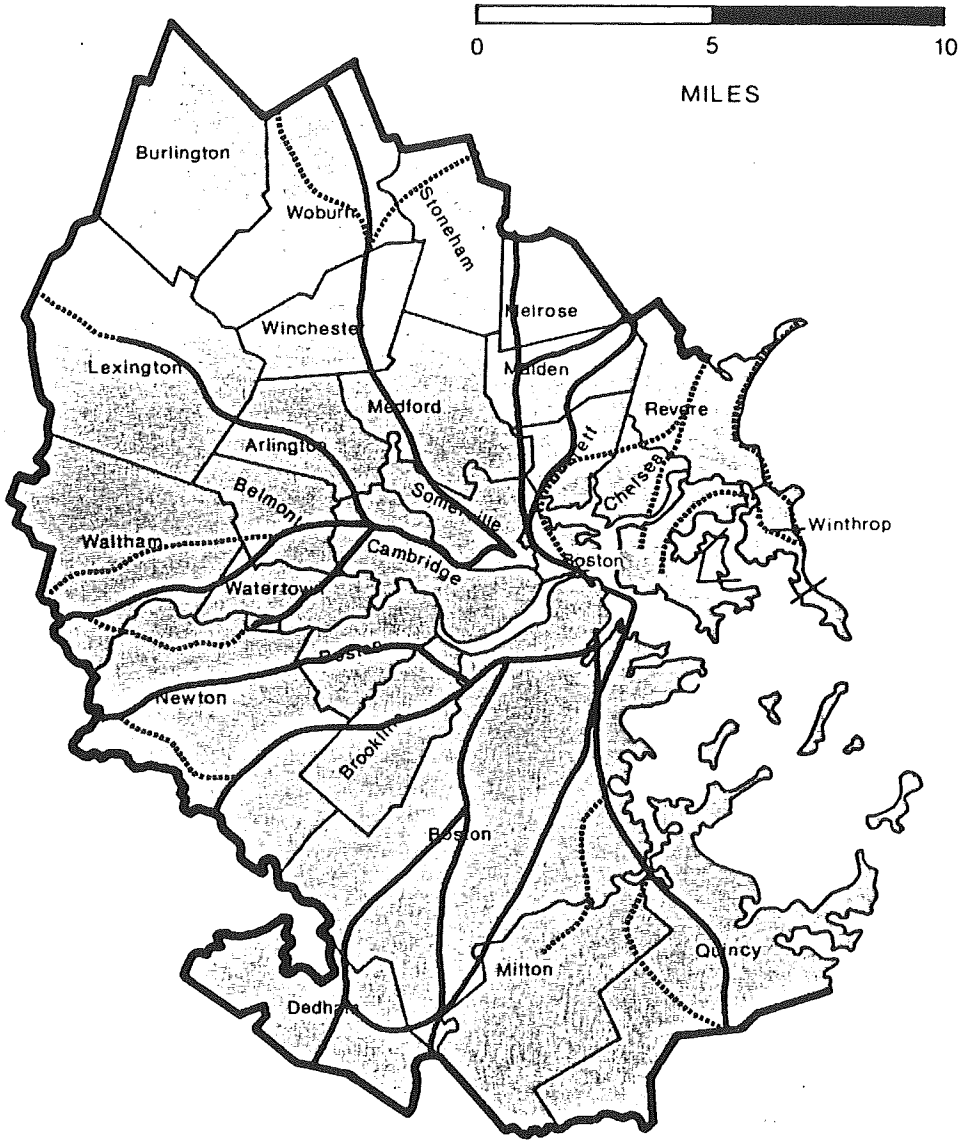
Turnpikes & Canals

Turnpikes ——————

Canals - - - - - - - - -

Figure 38

MHC 1979



Boston Area Study Unit

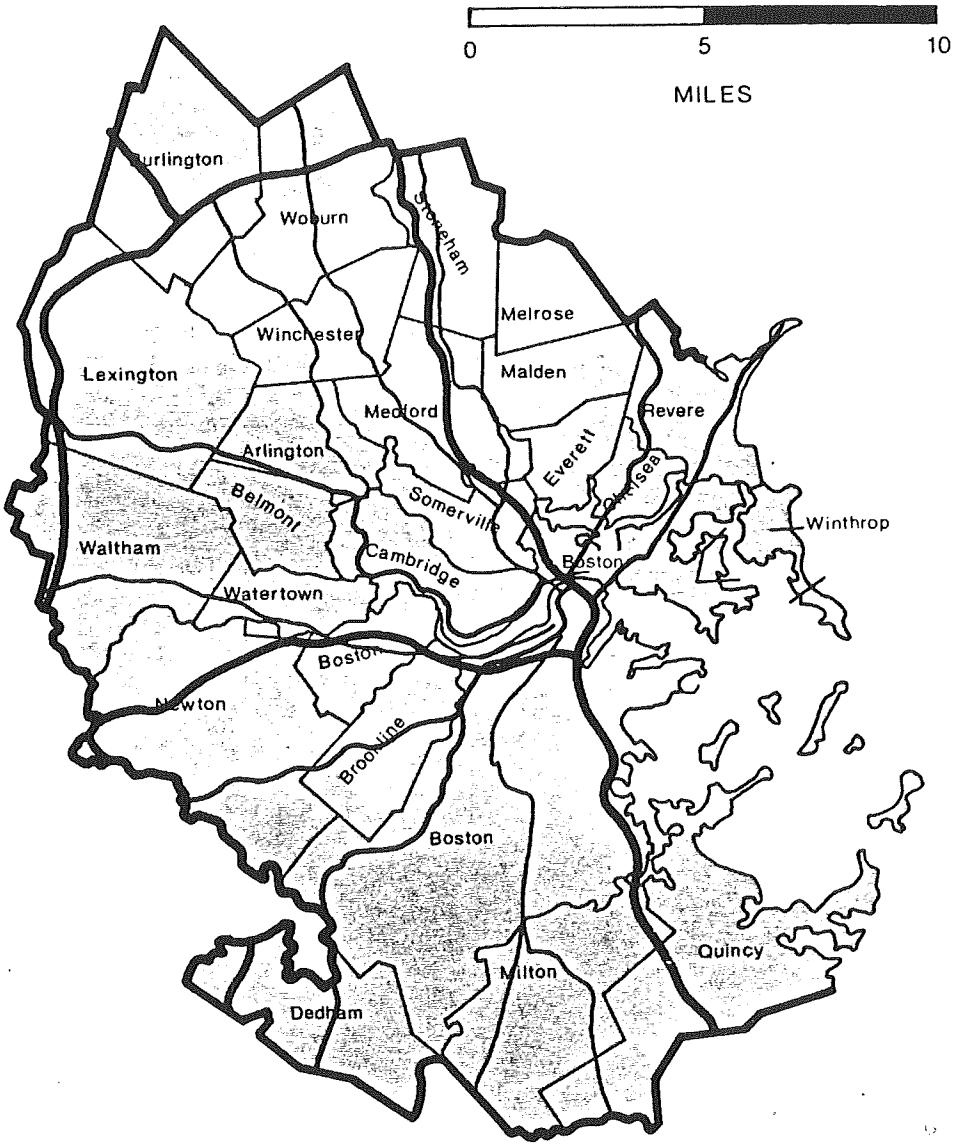
Railway Network

1855 ——

1894 ·····

Figure 39

MHC 1979



Boston Area Study Unit

Major Highways
1974

Interstate ——

U.S. Route ——

Intrastate ——

Figure 40

MHC 1979

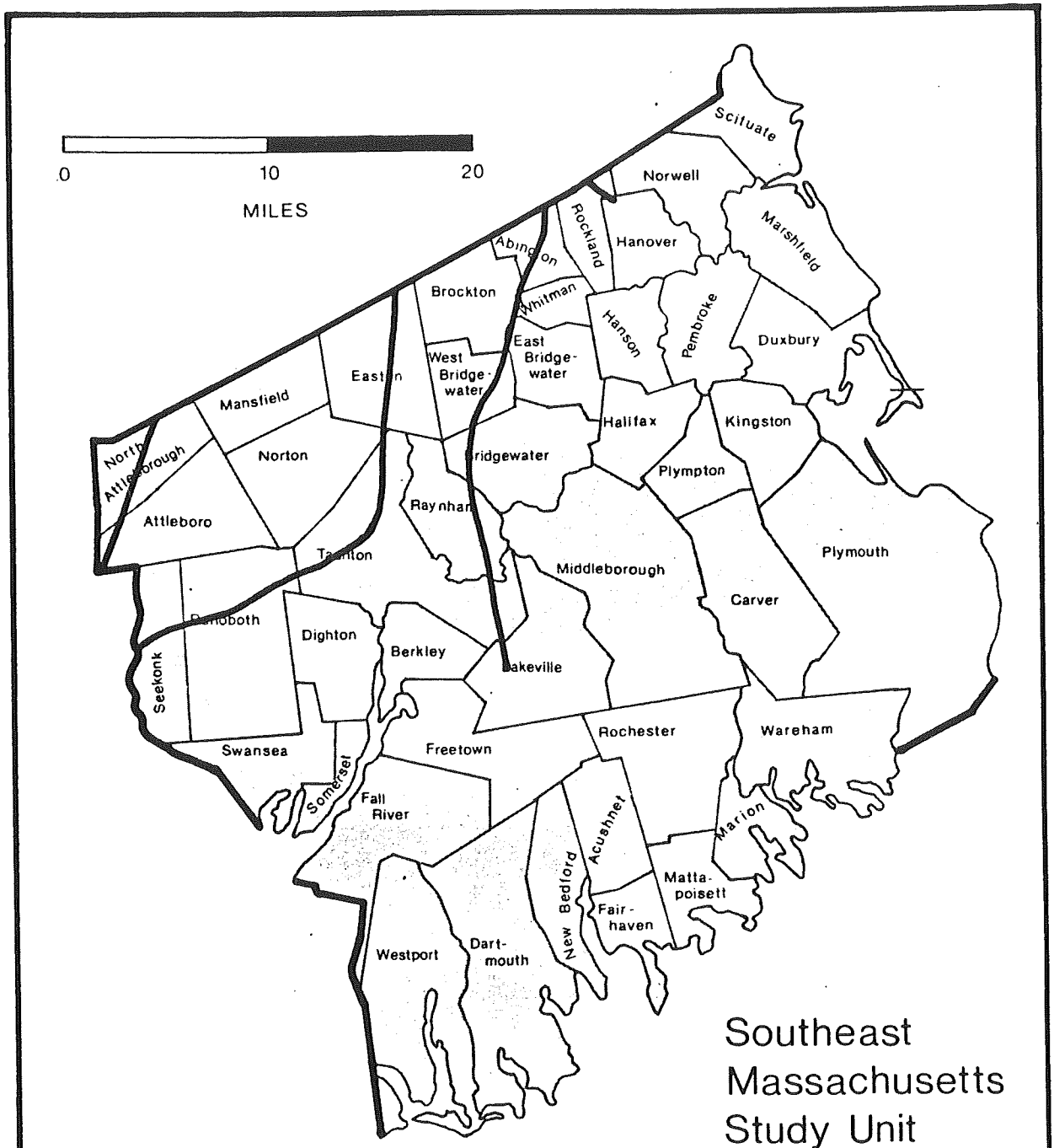


Figure 41

MHC 1979

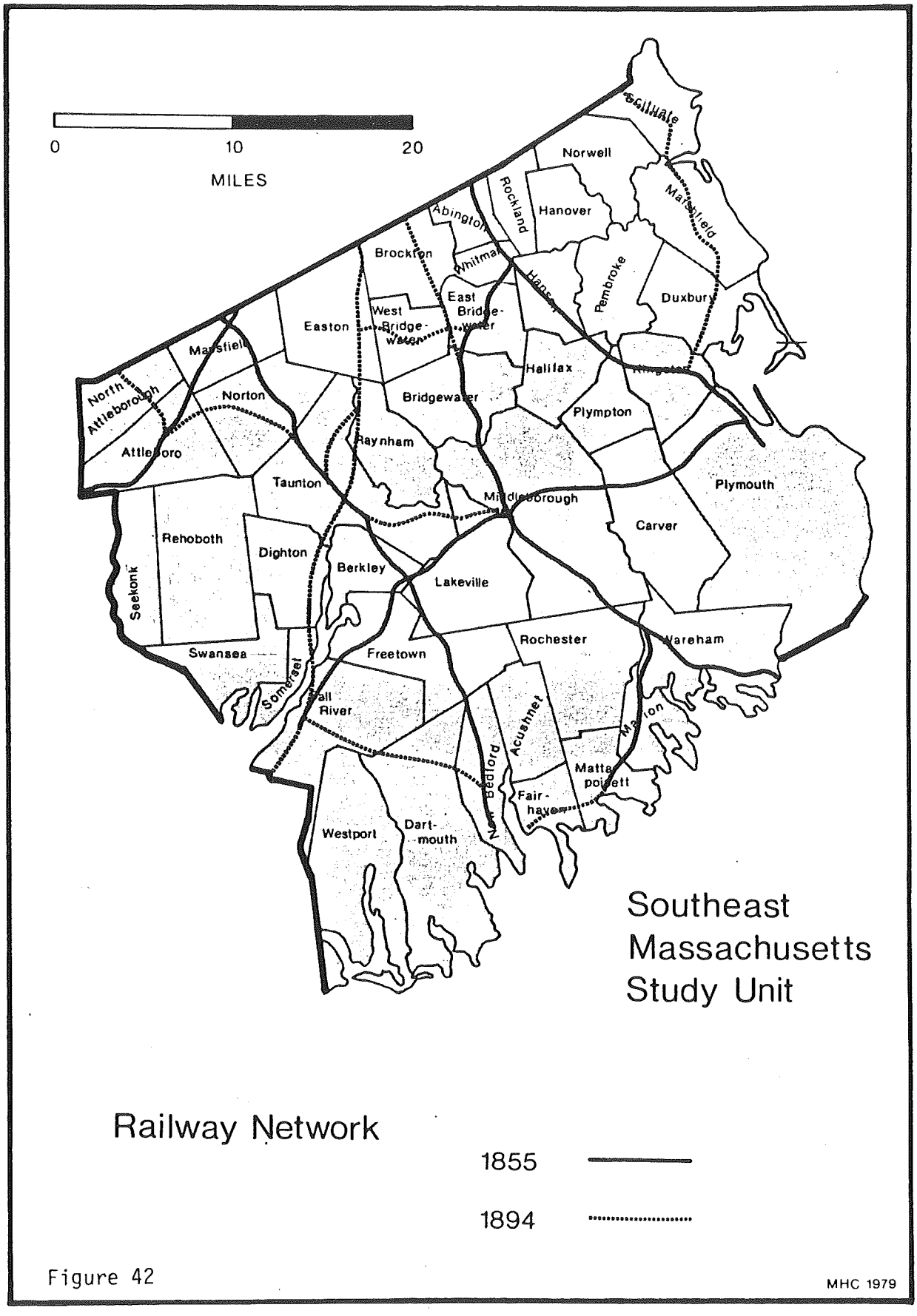


Figure 42

MHC 1979

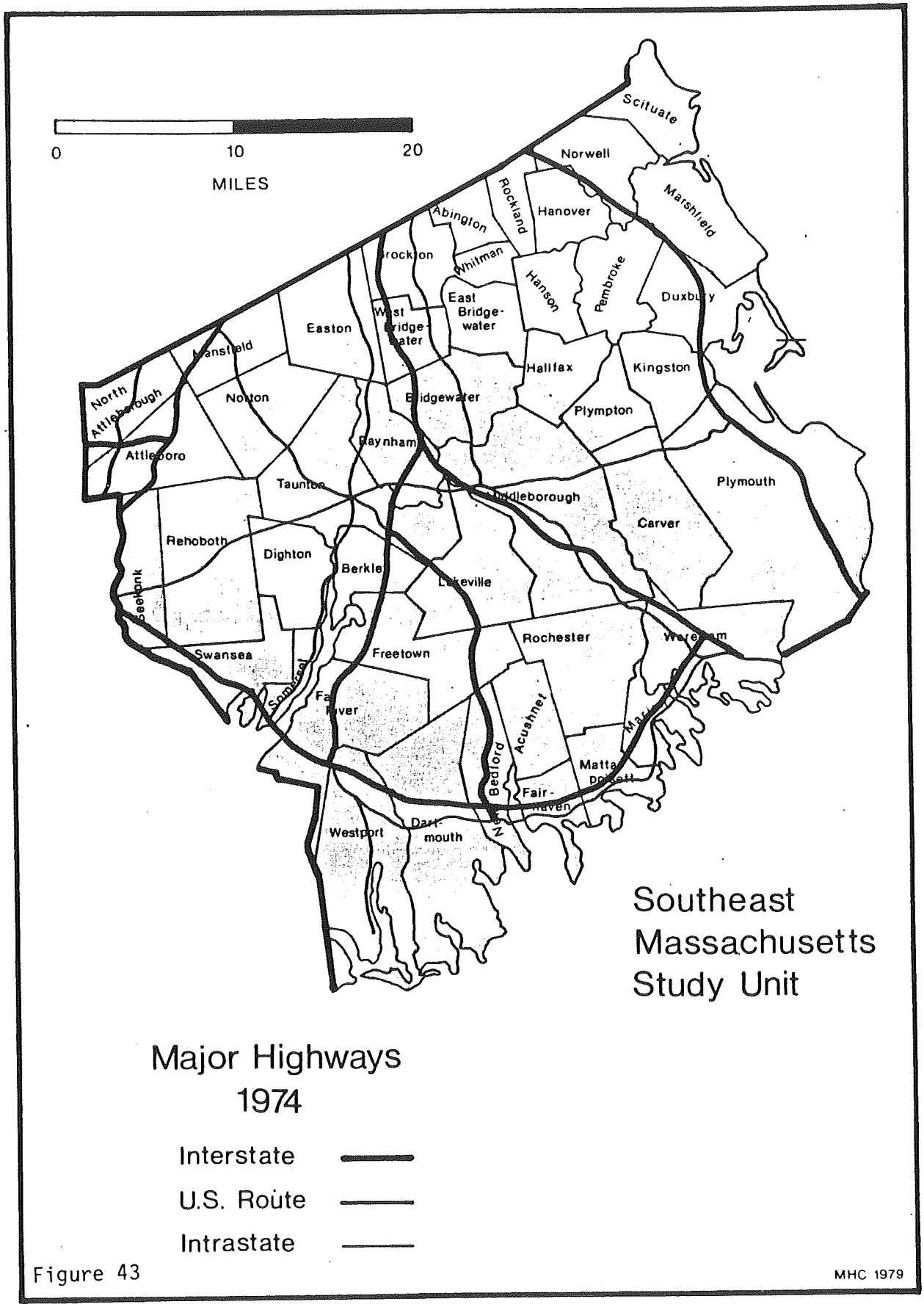


Figure 43

MHC 1979

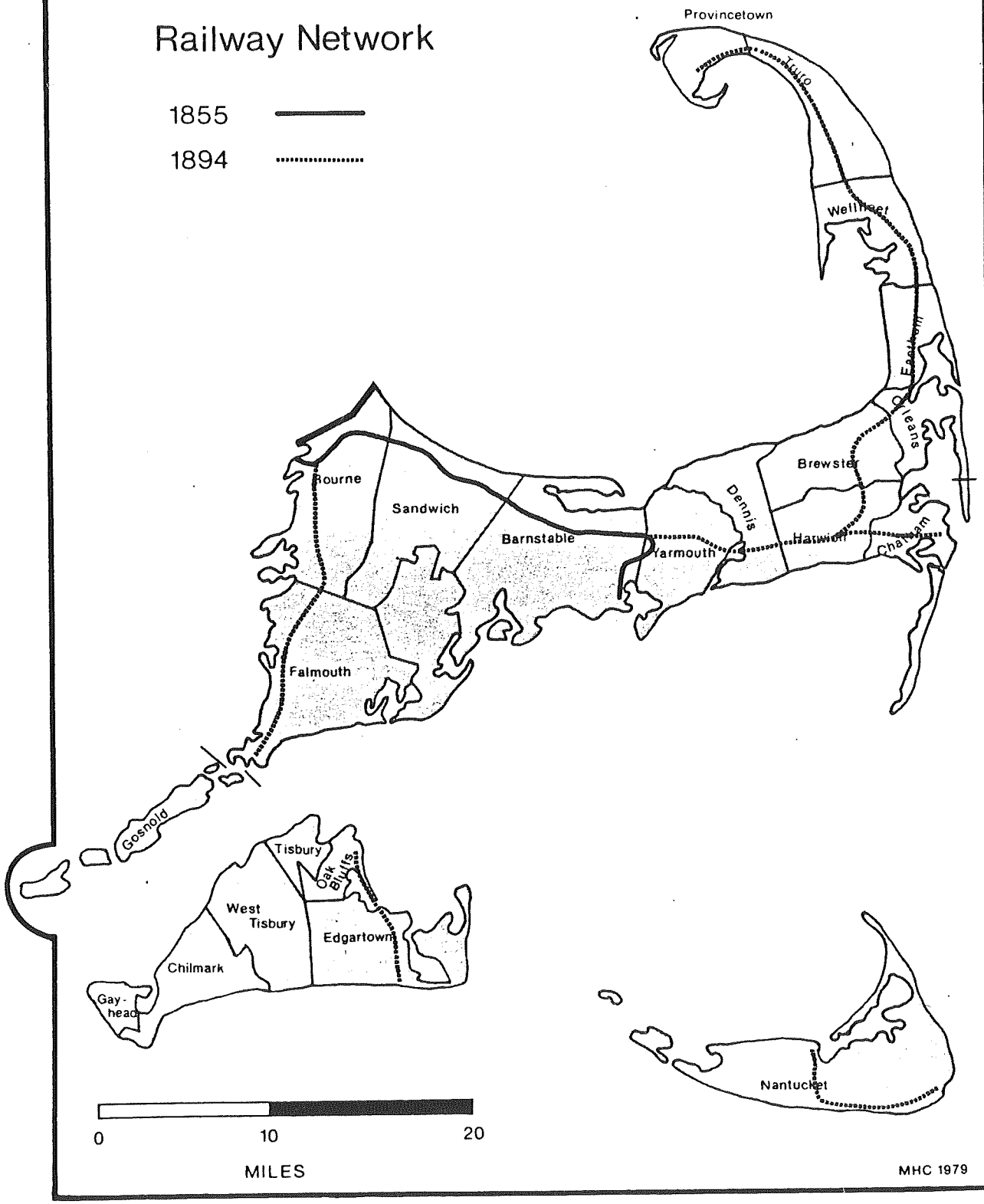
Figure 44

Cape Cod & Islands

Railway Network

1855 ——

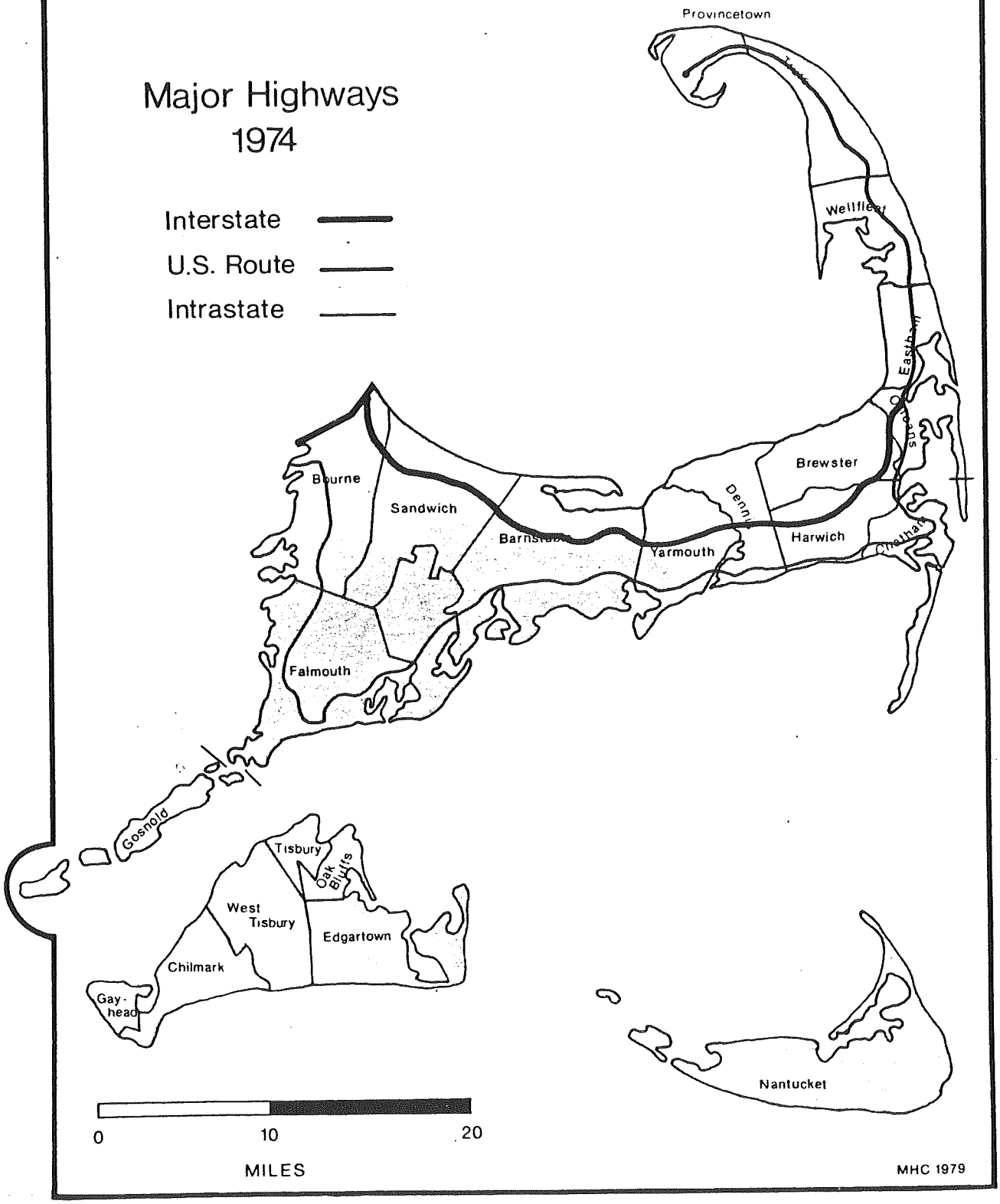
1894 ·····



MHC 1979

Figure 45

Cape Cod & Islands



Berkshire Study Unit

Population Projections 1975-1985

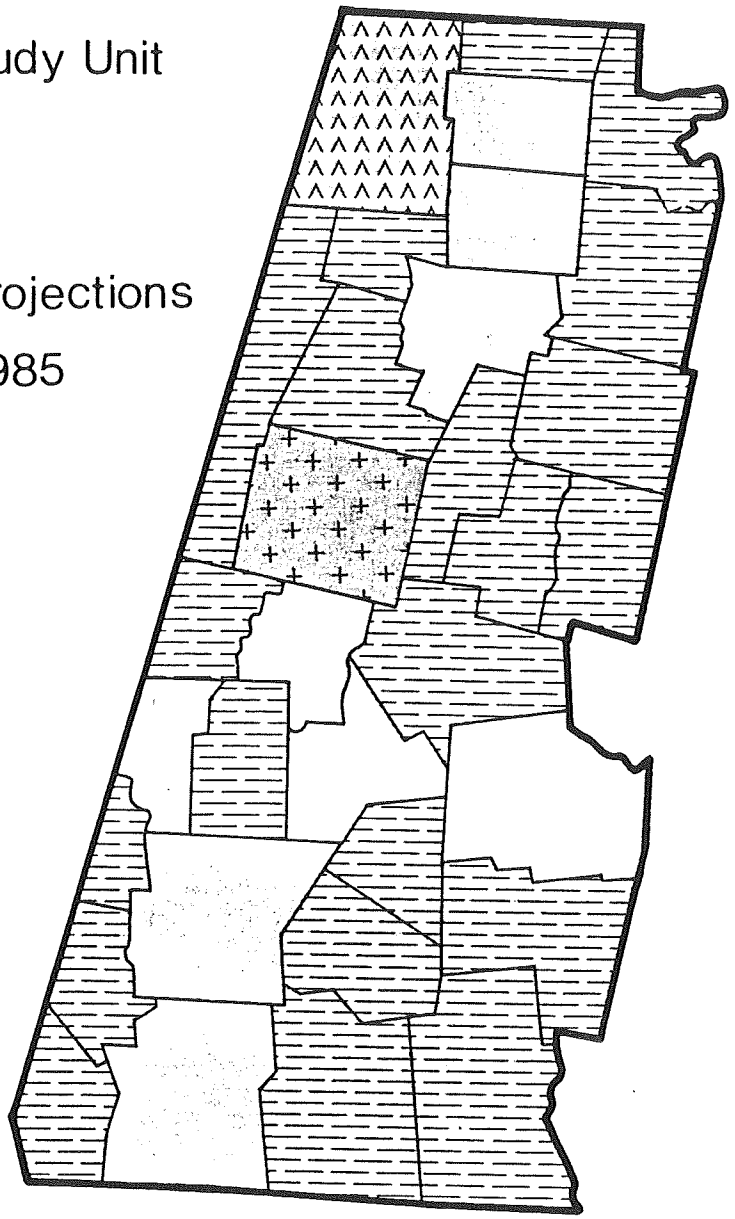


Figure 46

High Growth +2500

Moderate Growth 1000-2500

Stable +/-250/ Minor Growth or Decline

Moderate Decline 1000-2500

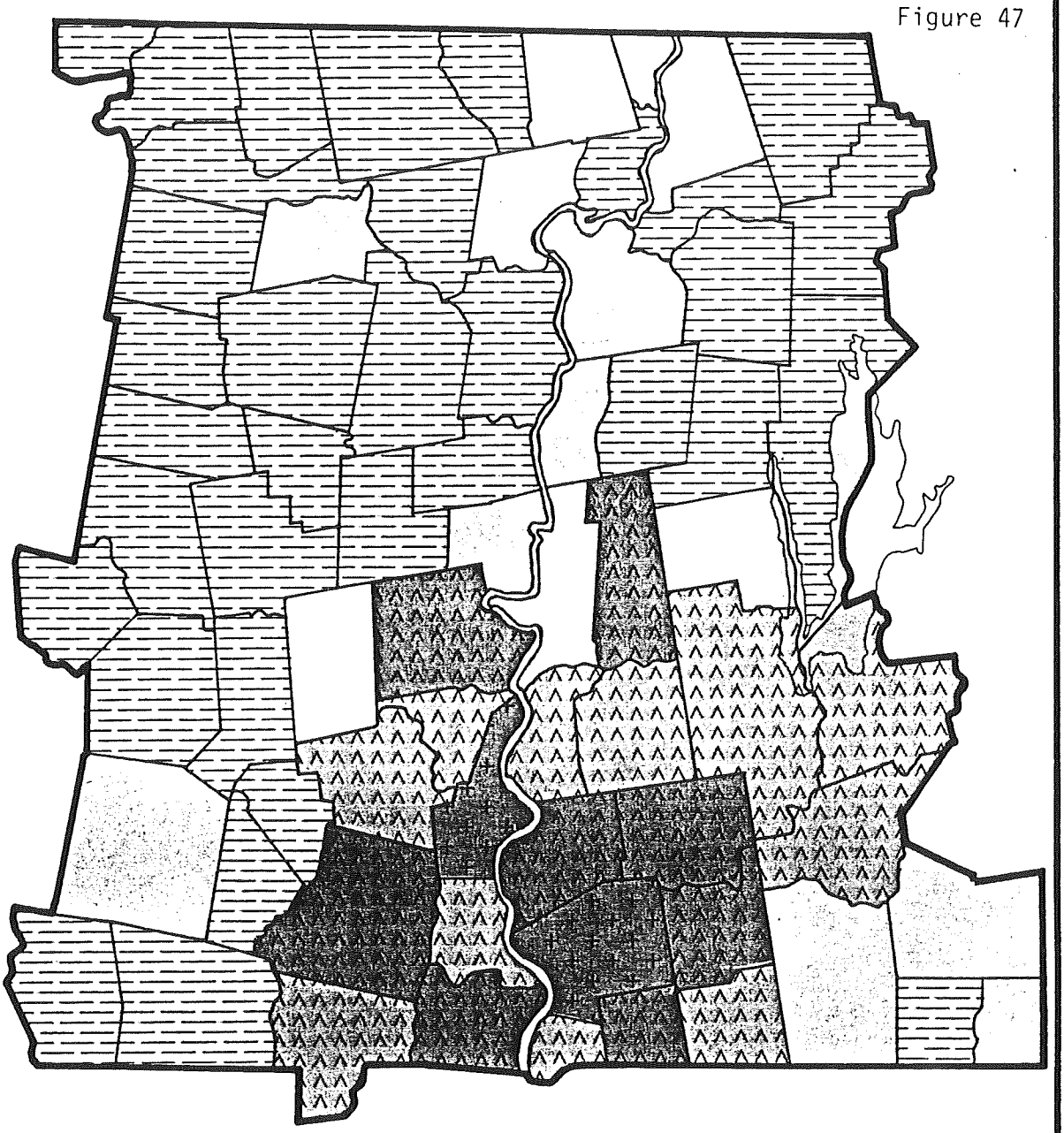
Severe Decline -2500

0 10 20

MILES

MHC 1979

Figure 47



Connecticut River Valley
Study Unit
Population Projections 1975-1985

0 10 20
MILES

High Growth +2500

Severe Decline -2500

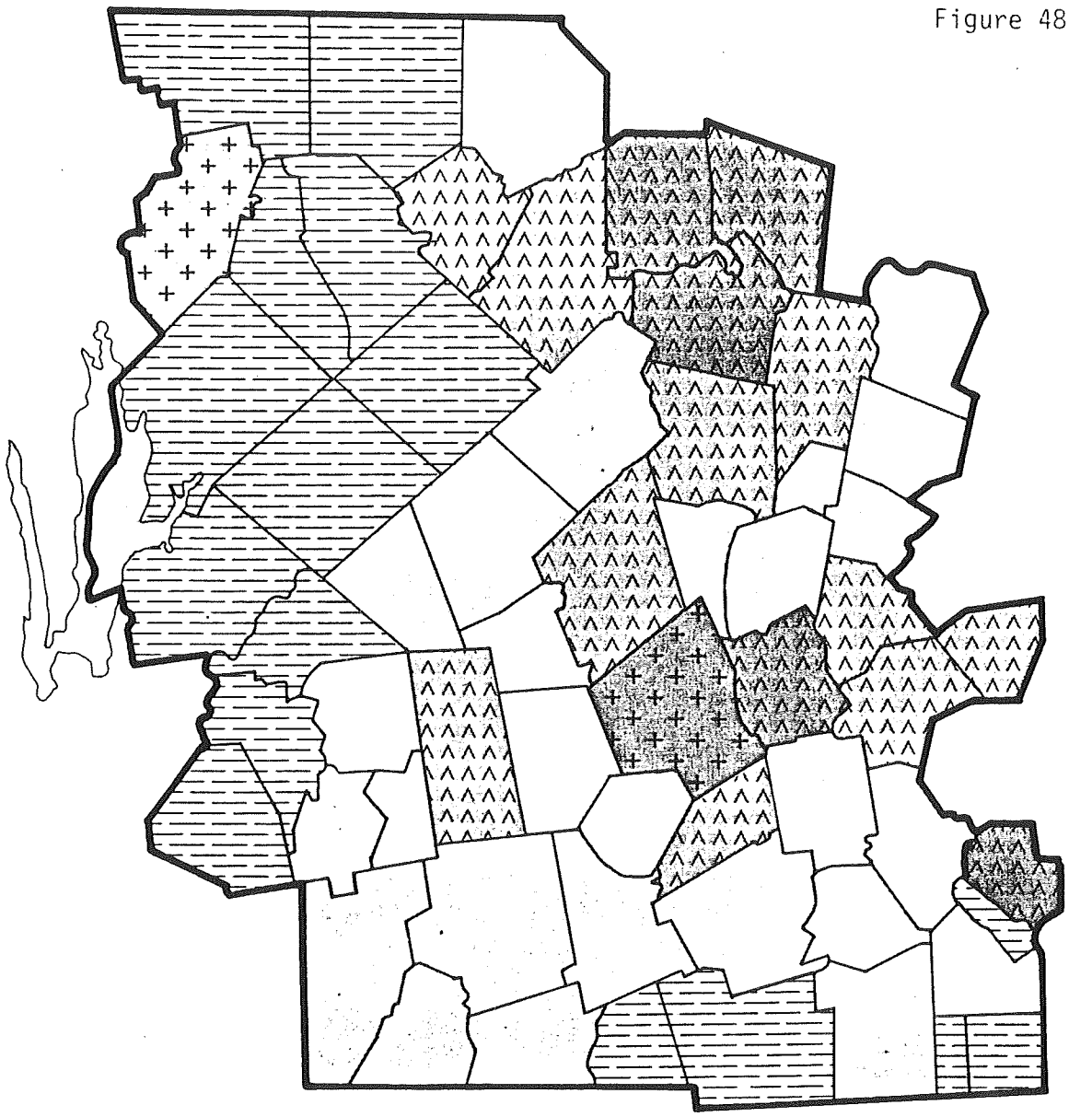
Moderate Growth 1000 - 2500

Moderate Decline 1000 - 2500

Stable +/- 250/ Minor Growth or Decline

MHC 1979

Figure 48



0 10 20
MILES

Central Massachusetts Study Unit Population Projections 1975-1985

High Growth +2500

Moderate Growth 1000 - 2500

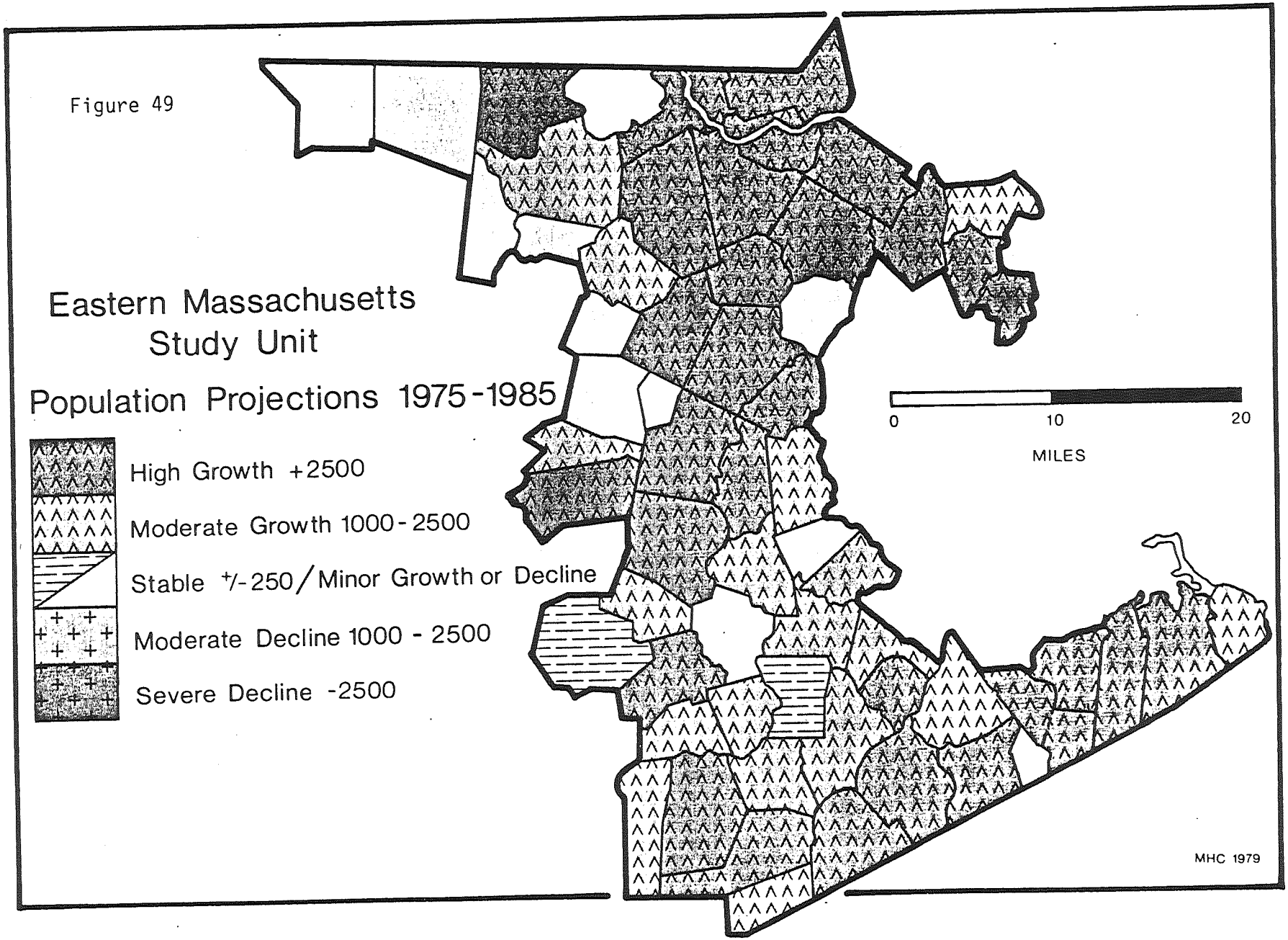
Severe Decline -2500

Moderate Decline 1000 - 2500

Stable +/- 250 / Minor Growth or Decline

MHC 1979

Figure 49


Eastern Massachusetts
Study Unit
Population Projections 1975-1985
High Growth +2500
Moderate Growth 1000-2500
Stable +/-250/Minor Growth or Decline
Moderate Decline 1000 - 2500
Severe Decline -2500
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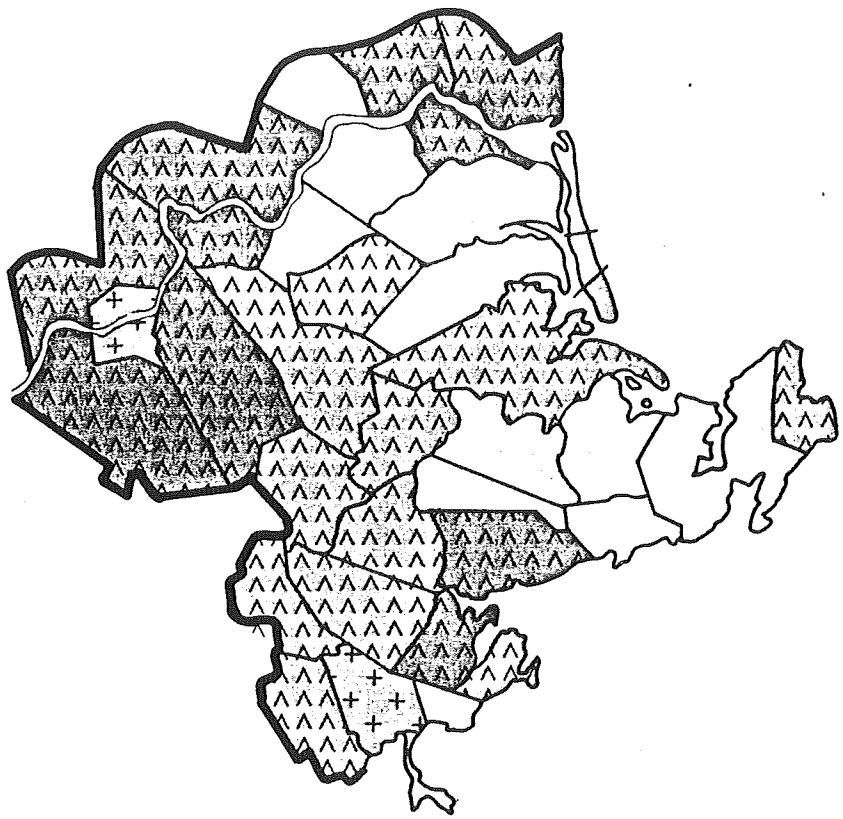
MILES
MHC 1979



Essex Study Unit

0 10 20

MILES

Population Projections 1975-1985

- High Growth +2500
- Moderate Growth 1000 - 2500
- Stable +/- 250 / Minor Growth or Decline
- Moderate Decline 1000 - 2500
- Severe Decline -2500

Figure 50

MHC 1979

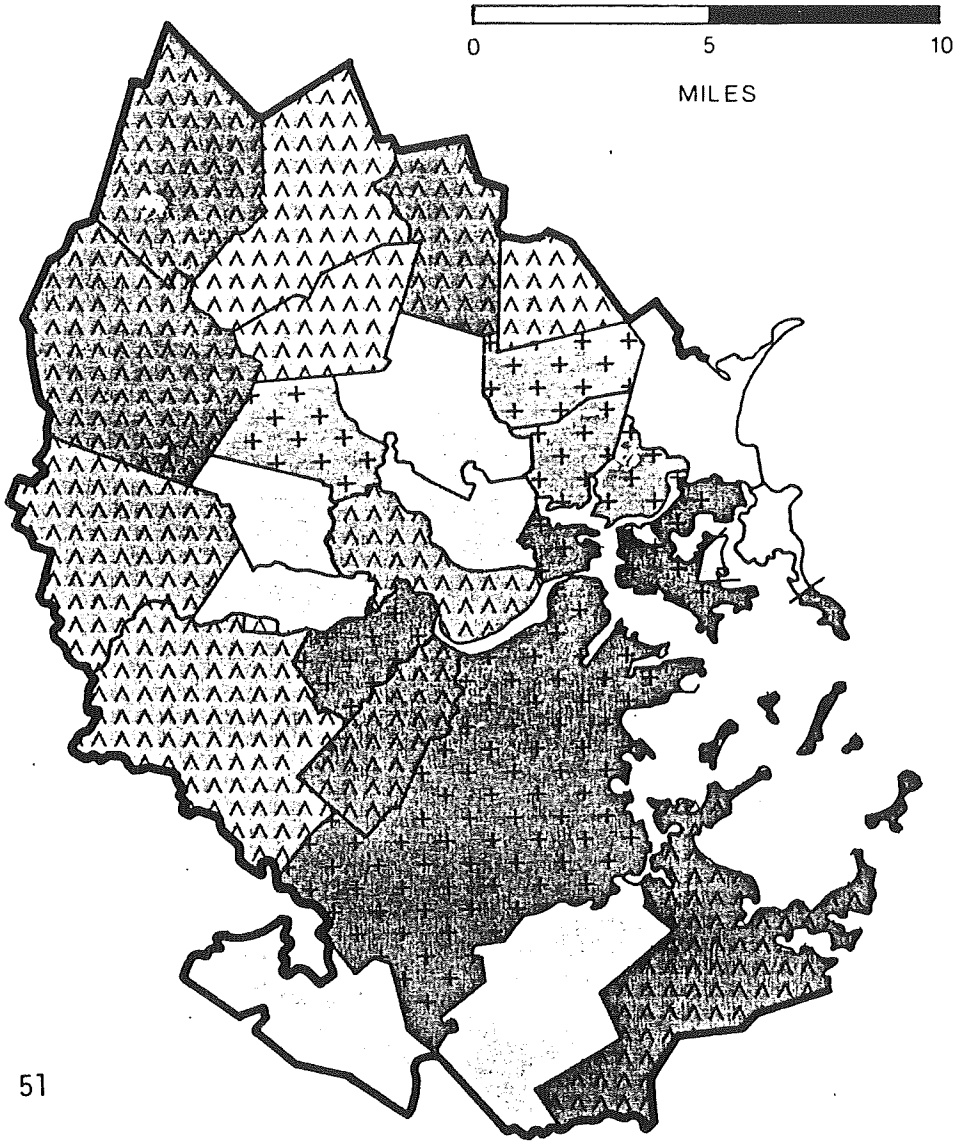


Figure 51

Boston Area Study Unit

Population Projections 1975-1985

High Growth +2500

Moderate Growth 1000-2500

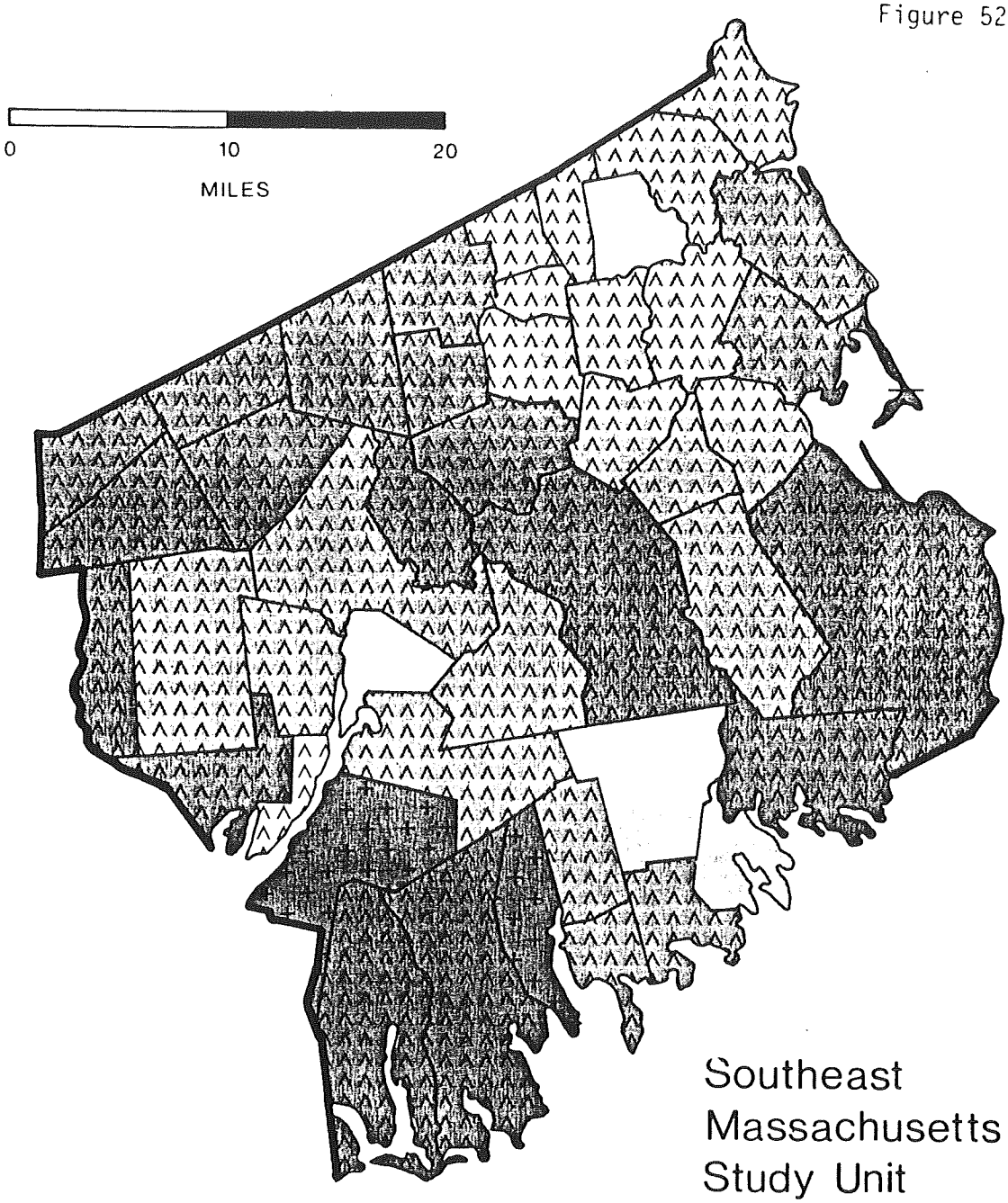
Stable +/-250 / Minor Growth or Decline

Moderate Decline 1000-2500

Severe Decline – 2500

MHC 1979

Figure 52



Population Projections 1975-1985

High Growth +2500

Severe Decline -2500

Moderate Growth 1000 - 2500

Moderate Decline 1000 - 2500

Stable +/- 250/ Minor Growth or Decline

MHC 1979