

Part I

The Context of Human Adaptation

Environmental studies are the foundation of human ecology. Yet uncritical acceptance of apparent correlations between aspects of human behavior and environment remains more common than not. The context of human adaptation in the Northeast is explored here through four cautionary tales. These papers are critical in orientation and methodology, and are sensitive to the problems of scale and interpretation inherent in their respective data sets. As a result, the authors possess tight control over environmental variability, and thus provide more detailed reconstructions of various Holocene environments.

Barber's paper on the use of land snails as paleoenvironmental indicators builds upon a series of earlier studies on basic analytical technique and applications. Here the emphasis is on the logic and strategies of analysis. He discusses not only the biology of land snails, and why they are sensitive indicators of human habitat, but also exposes the myth of their poor preservation and limited utility in the Northeast. Land snails do occur at archaeological sites here, and are relatively sensitive indicators of highly localized (i.e., site-specific) landscape change. Some land snail species are so specialized in habitat that they may also be used to document microregional shifts in climate, and thus provide independent verification of other lines of paleoenvironmental evidence. Barber's discussion on land snail life and death assemblages emphasizes the role of the individual within the community. A critical review of the life histories of other more frequently used indicators of past environments, such as bivalves and plant macrofossils, for example, would not only expose limitations in their use by human ecologists, but also provide a more fine-grained view of conditions affecting the human ecosystem.

Land snails respond to shifts in moisture or temperature primarily by moving to a more attractive location. How do humans respond to essentially the same stimuli? Baron focuses on the relationship of weather, climate, and human popu-

lations in New England during the seventeenth and eighteenth centuries—the latter part of the Little Ice Age. During this period, interannual weather patterns in the region were highly variable, as measured along a number of climatic parameters. Baron and colleagues have developed methods that track individual climatic variables to produce very fine-grained sets of historic weather data, which can subsequently be used to separate social from environmental causes of change in the human ecosystem. The diversity of records analyzed here, which include weather records, historical documents, and diaries, indicates that some local weather and climate patterns contrasted with regional trends. The highly subjective diary entries are particularly important because they record how individuals perceived the most significant climatic event of the last several hundred years. The impact of the Little Ice Age upon human communities was significant in geographically marginal areas. In the Northeast, however, the effects were apparently so gradual that climatologists did not even record a climatic aberration; likewise, risk-lessening responses to environmental change may already have been in place, given the usual unpredictability of New England's weather.

Carlson neatly bridges the ecology of the prehistoric and historic periods in her paper on the nature of anadromous fish resources in New England and its implications for social change. This study is a good example of how a fresh look at an entrenched notion—the importance of a specific resource to aboriginal groups—provides important insights into prehistoric subsistence and social organization. Carlson utilizes detailed environmental data and life histories of salmon and other anadromous fish to evaluate historical documentation and faunal remains from both coastal and interior sites, and concludes that salmon was not an important resource. She also questions the utility of ethnographic analogs, such as those derived from the Northwest Coast, to explain prehistoric social development in the Northeast. This paper also has important implications for modern fisheries studies, providing one possible explanation as to why the restocking of New England waterways in recent years has been largely unsuccessful—that is, the regional salmon population may never have been extensive in the past.

Kellogg's study is concerned with critical differences between relative and eustatic sea-level data and how they should be utilized to reconstruct local coastal environments. Sea-level change has been perhaps the single most important factor affecting coastal environments during the early and middle Holocene periods in the Northeast in terms of environmental productivity, prehistoric land-use patterns, and archaeological site preservation. Much of the substantial body of sea-level data available for the region has been utilized by archaeologists at one time or another, resulting in interpretations that are frequently inaccurate or incorrect. Kellogg's demonstration that only data on local, relative sea-level rise are applicable to local and regional environmental reconstructions has important implications for coastal landscape history globally.