

COASTAL CONNECTIONS AND RESERVATION CONTEXTS: EASTERN PEQUOT
COLLECTION AND CONSUMPTION OF SHELLFISH IN THE EIGHTEENTH AND
NINETEENTH CENTURIES

A Thesis Presented

by

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ABSTRACT

COASTAL CONNECTIONS AND RESERVATION CONTEXTS: EASTERN PEQUOT COLLECTION AND CONSUMPTION OF SHELLFISH IN THE EIGHTEENTH AND NINETEENTH CENTURIES

August 2012

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By the mid-eighteenth century, members of the Eastern Pequot community in southeastern Connecticut had been living on their reservation, approximately 5 miles from the coast, for several generations. During the period leading up to and following the establishment of this reservation in 1683, the Eastern Pequot community lived enmeshed in colonial processes. Colonial and reservation policies placed certain pressures on the Eastern Pequot community, forcing individuals to adapt to changing and often challenging circumstances. Despite this, people found ways to endure and adapt, sometimes by adopting new practices, and at other times by preserving others. One such practice that shows remarkable continuity is shellfish collection and consumption. Through the shellfish remains recovered during archaeological investigation on the

reservation, I explore the role that shellfish gathering played in subsistence and how it provided more than a mere food source. As a resource with a long history of use by Native communities in southern New England, continued consumption of shellfish provided a valuable tie to the past and reinforced social networks in the eighteenth and nineteenth centuries. Off-reservation Native communities provide a potential link between inland reservations and culturally valuable resources, while collecting shellfish served as an opportunity to strengthen off-reservation social ties and to remain connected to longstanding food resources. Moreover, links between women and shellfish gathering provide insight into how gender imbalances of reservation populations influenced visible activities as well as offering suggestions for how certain practices changed or stayed the same.

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CHAPTER 1

INTRODUCTION

This thesis investigates the historic use of shellfish by Eastern Pequot people, a Native American community, on their reservation in southeastern Connecticut. The shells from several eighteenth- and nineteenth-century reservation sites are considered as part of foodways among the Eastern Pequot reservation inhabitants, as a form of continued traditional practices and cultural memory, and as evidence of the realities of both land access and restriction combined with off-reservation communities and mobility. My work is situated within a growing body of archaeological research addressing Native American histories during approximately the past 500 years. In the American Northeast, this period can be characterized by the continuation of a trend toward increasing sedentism, a growing reliance on agriculture, and the development of larger and less egalitarian social communities (Dincauze 1990; McBride 1994). Much of this period is also heavily shaped by the increasing presence of Euro-American traders and settlers after the early 1600s, a relationship which quickly became colonial for the Pequots and many other Native American communities in what is now New England (Ceci 1990; McBride 1990; Silliman 2005, 2009; Starna 1990). This sets the context for considerations of coastal resource use by Native American people faced with novel and

quite challenging contexts.

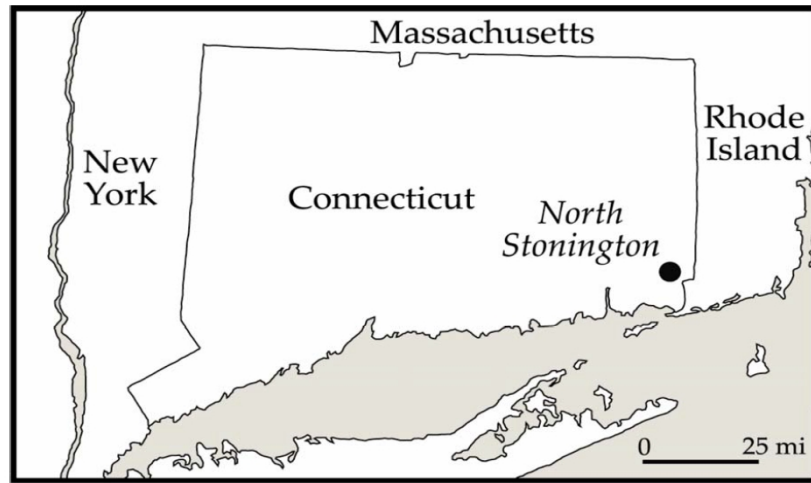
The reservation was a colonially defined and governed space, originating in 1683 in the aftermath of the 1638 Treaty of Hartford ending the Pequot War. During the subsequent 45 years of community negotiations of a settler landscape, it also was home to many eighteenth- and nineteenth-century Eastern Pequot families, who identified with the reservation as part of their ancestral homeland and still do (Silliman 2009). Through a mix of continuing and ever changing daily practices, enduring ceremonial and ritual activities, continual residence, and overt acts of resistance (Den Ouden 2005), these Eastern Pequot individuals created and maintained a home, a community, and a culture for themselves in a changing world.

Despite the limitations placed on Pequot individuals by colonialism and life within reservation contexts, these individuals actively shaped their daily lives within these constraints. Moreover, these constraints were not purely dichotomous, defining merely things that were or were not permitted or possible. Rather, certain activities were made more difficult through social pressure and political regulations, but there remained ways around these restrictions – although often not without the threat of possible repercussions. Therefore, in this study, I attempt to consider what choices Eastern Pequot individuals made in procuring shellfish off of the reservation, what possible challenges they may have faced in doing so, and what short-term and long-term benefits shellfish may have provided.

The Eastern Pequot Reservation is located in the present day town of North Stonington, Connecticut, located approximately 5 miles from the coast in southeastern

Connecticut (Figure 1). Since 2003, Dr. Stephen Silliman, in conjunction with University of Massachusetts Boston and the Eastern Pequot Tribal Nation, has conducted eight field seasons of archaeological research, which has provided information about eighteenth- and nineteenth-century life on the reservation (Silliman 2009; Silliman and Sebastian Dring 2008). My research centers on an understudied but abundant material dataset recovered during these excavations: shellfish remains. This thesis investigates the general use of shellfish on the reservation, focusing primarily on three discrete middens from the reservation which contain high percentages of shellfish remains and one site with a significant quantity of shells in a general refuse midden. The primary sites under consideration date primarily to the mid- and late eighteenth century, although additional sites occupied into the nineteenth century are briefly considered. These four middens can be considered as separate case studies, from which we can learn about household daily practices and diversity across the reservation, and to this I add scattered shell remains which are present in varying quantities from almost all excavated sites to date to provide complementary data. Furthermore, as all sites under extensive consideration date within 50 to 70 years of each other, when taken together these sites can provide a more comprehensive picture for general reservation life.

Figure 1: Map of Connecticut and location of the Eastern Pequot Reservation in North Stonington, Connecticut (from Cipolla 2005: 2).



In addition to original analysis of the shellfish deposits, this thesis draws on complementary data and analysis from the Eastern Pequot project as a whole. Faunal analysis by Cipolla (2005, 2008; Cipolla et al. 2007) and Fedore (2008), as well as ceramic and spatial analysis conducted by Witt (2007; Silliman and Witt 2010), provide grounding and supplementary data sets. These allow me to consider how shellfish were integrated into larger systems of subsistence and how this integration varied from site to site and over time at each given location.

Through an analysis of the midden contexts on each site, I am able to shift scales and consider changes within specific sites as well as changes over time and space on the reservation. This allows greater insight into the daily practices conducted by specific sets of individuals and how the meals consumed in their homes changed over individual lifetimes. On a broader scale, shellfish consumption was part of larger cultural traditions

and shellfish gathering related to inter-community and regional social ties. As a result, I discuss the potential meaning of continued shellfish gathering and consumption as a way of maintaining culturally significant practices in a changing world. These practices were frequently tied to gender- and age-based roles (Claassen 1998; Williams and Bendremer 1997), which were in some ways intensified by the demographic instability that resulted from individuals seeking work off the reservation (Den Ouden 2005: 70-71, 83; Mancini 2009; Mandell 2007: 27, 43). As shellfish gathering was frequently the domain of women and children in many communities, likely including the Eastern Pequot (Claassen 1998; Williams and Bendremer 1997), it may have lent itself towards persistence in spite of disruptions to community stability in light of ongoing colonialism and economic pressures as these frequently left women and children as the primary reservation inhabitants (Den Ouden 2005:70-71, 83; Mandell 2007: 27, 43). Moreover, as individuals increasingly sought work off the reservation and the disproportionate number of women on the reservation led to increasing intermarriage, individuals formed geographically expanding social networks (Mancini 2009). As some of these off-reservation social networks and communities of color were located closer to the coast, they would have facilitated the necessary coastal access despite colonial limitations of land use; additionally, trips for the purpose of gathering food could also be worked to strengthen and maintain off-reservation social ties (Mancini 2009: 113-128).

I begin in Chapter 2 by providing a general overview of Eastern Pequot history, with a focus on eighteenth- and nineteenth-century reservation life, as well as aspects of longer term community and regional history relevant to shellfish gathering, coastal ties

and general foodways. In this chapter I summarize results of previous archaeological work which provide background information, grounding and additional data. In Chapter 3, I present an overview of theoretical and analytical approaches used in my analysis. Here, I cover the general approaches to the archaeology of colonialism, particularly as it pertains to studies of Native American archaeology. I then address relevant studies of shell middens, research into foodways, and applicable theories of gendered behavior in Native communities in southern New England. In Chapter 4, I give descriptions of the field and laboratory methods employed in collecting and processing the shells under consideration, followed by a general overview of the empirical data. In addition to species identification, I describe methods used to obtain oyster height-to-width ratios for analysis of growing habitats. Lastly, I summarize the methods employed in making thin sections on a sample of soft shell clams and the age and season of death information these thin sections yield, and the laboratory and analytical process employed to obtain these data. Chapter 5 provides an elaboration of site-specific data and a synthesis of this information aimed at understanding the role of shellfish consumption on each individual site via analysis of midden deposition patterns and relationships between shellfish and other faunal remains. This provides insight into household-specific use of shell and changes within a site on the scale of an individual lifetime. Subsequently, in Chapter 6, I expand this analysis to community wide scales of practice. This chapter addresses three general topics: the role of shellfish in subsistence, mobility and land access, and the role of gender and community demographics in continuing shellfish gathering.

CHAPTER 2

EASTERN PEQUOT HISTORY

Introduction

Southern Connecticut and the Long Island Sound, which comprise the larger regional context of the Eastern Pequot reservation, have long histories of indigenous occupation, dating back many thousands of years. The complete occupational, political and social history of the region is far too complex to address here; rather, in this section I address those topics most relevant for situating the eighteenth- and nineteenth-century Eastern Pequot's reservation histories and practices. I begin by considering general regional settlement and subsistence patterns, forms of political and social organization, and the major shifts in these patterns before colonialism. Then I briefly consider events of the early colonial period, especially as they led to the formation of what would become the Eastern Pequot Tribal Nation, and the creation of the reservation in the Lantern Hill region of what was once the town of Stonington. Finally, I address information recorded in historical documents and the archaeological record regarding events and practices that played out during the late seventeenth, eighteenth and nineteenth centuries, which grounds the archaeological sites and materials under consideration.

A Broad History of Southern New England Indigenous Communities

Archaeological evidence as well as Native oral histories document thousands of years of human occupation in southern New England. In the last three millennia, the archaeological record points to a shift from generally a sparse, highly mobile occupation to growing sedentism, intensified agriculture, and increasingly complex social-political organization occurring gradually between 3,000 and 1,000 years ago (McBride 1994). In part due to the incomplete archaeological record, the exact timing and relationship between factors such as sedentism, agriculture and population increase, especially in coastal areas, is still somewhat under debate. It also appears, however, that early attempts by archaeologists to generalize for the entire region have failed to address differences between coastal and inland patterns, which have come to light over the last 20 years. Rather, coastal areas show trends towards population aggregation without a heavy reliance on corn agriculture, during which time they maintained seasonal patterns of mobility to obtain coastal resources – patterns which diverge from inland settlement trends which initially were applied to the whole region.

The adoption of corn agriculture, thought to occur around 1000 A.D., has long been considered one of the primary factors in changing settlement patterns. However, McBride (1994) questions this link, citing archaeological evidence of population aggregation in coastal areas over 2,000 years ago and hence well before intensive agriculture. In keeping with this, Luedtke (2002: 10) observed a pattern of multi-component, seasonally occupied coastal sites prior to 1200 A.D., with a shift after this date towards villages located near good farm land. This trend roughly matches the

approximately 1000-1300 A.D. date for the spread of corn agriculture into the region (Chilton 1999, 2002), and aligns with McBride's (1994) observation of increased sedentism (centered around intensive corn agriculture) along the Connecticut River Valley.

While the nature and degree of the relationship between agriculture and the use of marine resources in coastal areas prior to European settlement is somewhat tentative, many sites with shell-containing features in southern New England appear to date from approximately the last 1,000 years, overlapping with the broader spread of maize cultivation (Bernstein 2002; Kerber 2002; Landon and Cipolla 2005; Lightfoot and Cerrato 1988). Throughout the centuries immediately prior to European colonialism, and to some degree persisting through colonialism, communities in southern New England relied on mixed horticulture, hunting, fishing and gathering for subsistence, often with seasonal or semi-seasonal movements (Starna 1990). Moreover, while settlement patterns and trade relations shifted, often quickly, as a result of European trade alliances and land pressures, Native communities were involved in complex trade networks with other Native groups in the local and broader region (McBride 1990, Starna 1990).

In general, archaeological sites dating to the fifteenth and sixteenth centuries in southern New England are scarce and understudied, making a solid history of Pequot lifeways in the centuries prior to colonization rather elusive. To begin, one should note that the present day Eastern Pequot Tribal Nation and their cousins, the Western or Mashantucket Pequot Nation, are a product of colonial history, having once formed a single Pequot nation until the third decade of the seventeenth century. Prior to

colonialism, the Pequot were a single, though somewhat dispersed and diverse social-political, entity with ties to and tributary relations throughout the broader region. The Pequot, along with other groups in southern New England, are classified ethnographically as “Algonquian” peoples on the basis of the larger language family (Bragdon 1999).

Within this broad group, a loosely organized social and political group centered in the land surrounding the present day Thames and Mystic Rivers, spoke what is referred to by linguists as the “Mohegan-Pequot” language (Bragdon 1999) and were part of the same general group until they split to form the Pequot and Mohegan Nations in the early seventeenth century. Through the late sixteenth and early seventeenth century, this broadly defined group occupied much of the Connecticut coast and Long Island sound, either in territory directly under the Pequot sachem or as tributary groups (Starna 1990). With abundant land access along the coast, marine resources played a key role in Pequot lifeways, both for subsistence and in securing political-economic control. One such non-food shell use, the production of wampum, became a crucial component of trade with European colonists (for immediate and inland negotiations of economic relationships) as well as an item of spiritual and cultural significance to both coastal and inland Native communities.

Colonial History and the Eastern Pequot

The Pequot and other communities in southern New England engaged in occasional exchanges with traders and explorers during the sixteenth and early seventeenth centuries (Bragdon 1999; Cave 1996). The first known European recording of such interactions that specifically identifies the Pequot is Adriaen Block's 1614 map of

the Long Island Sound; while this was not by any token the first encounter between the Pequot and Europeans, it is in some ways the beginning of a shift in the nature of such relationships (Cave 1996). Full-scale European settlement in southern New England began in the 1620s, and European populations grew significantly in the 1630s. This led to intensified trade relations which increased the frequency of Native-European interactions, and for some Native communities, including the Pequot, led to increased conflicts. As a community with strong ties to the coast as well as territory extending inland into estuary and riverine ecosystems, the Pequot were well situated to play key roles in the early wampum and fur trades with contacts to both Dutch merchants and English settlers. This initially put the Pequot in a powerful trade position, but also played a role in shaping the conflict with the English, who quickly sought to exterminate the Pequot community and open the land for European use (Cave 1996; Hauptman 1990).

Following a few minor disputes in 1636, the English settlers launched a full-fledged war on the Pequot, allying with the Mohegan and Narragansett communities to do so. In May 1637 the English and their Native allies dealt a major blow to the Pequot communities by burning the fortified Pequot village at Mystic and killing several hundred women and children trapped inside (Hauptman 1990). While the Pequot War and especially the Mystic Massacre are major historical events that embody examples of European colonial policy and shaped the history of the Pequot, in-depth details of the war are outside the scope and focus of this research and better discussed elsewhere (see Cave 1996; Hauptman 1990 for a more complete history of the Pequot War). Rather, I am concerned primarily with the events that followed the war and the dispersal of surviving

Pequot individuals. Specifically, I consider how events following the war played into forming the Eastern Pequot Tribal Nation as it exists today and how surviving Pequot individuals adapted to changes in land access, community boundaries and political structure in the decades and centuries that followed.

The massacre at Mystic served as a major turning point in securing English military victory, and the 1638 Treaty at Hartford codified this victory. In the treaty, the Pequot were decreed to no longer exist, use of the name Pequot was forbidden, and surviving Pequot individuals were divided amongst the Mohegan and Narragansett communities, or sold as slaves primarily to Bermuda and the West Indies (Hauptman 1990: 76). Despite this seemingly unequivocal declaration of defeat, the Pequot did not cease to exist as a self-identified community, and groups began re-coalescing under the name Pequot essentially as soon as the treaty was signed (Cave 1996; Den Ouden 2005). Indeed, in 1638, Roger Williams wrote to John Winthrop concerning a group of Pequot individuals who had returned to and were cultivating land (Den Ouden 2005: 15), and John Mason, along with 40 soldiers and Mohegan allies, was dispatched that same year to disperse an emerging Pequot settlement near Pawcatuck (Cave 1996: 162).

Although English and Mohegan forces did to some degree prevent Pequot communities from re-establishing themselves during these early efforts, in 1650 a group of Pequot individuals, under the leadership of Robin Cassacinnamon, petitioned the Colony of Connecticut for recognition and rights to land (Hoadly 2010[1870]; McBride 1994). In 1651, the Colony of Connecticut granted rights to 500 acres of land at Noank, on the coast between present day Mystic and New London, to this Pequot community

which persisted among those sent to live with the Mohegans. This community then petitioned the Connecticut government for additional land, citing a shortage of usable land and firewood, and in 1666 was granted almost 3,000 acres for a permanent reservation at Mashantucket, forming what is now known as the Western, or more commonly Mashantucket, Pequot Nation (Hoadly 2010[1870]; 1994).

Likewise, in the mid-seventeenth century, the Pequot community living under the the Narragansett petitioned the Colony of Connecticut for land rights. In 1663 the colony ruled that they should indeed be granted a reservation, first stated to be established in Stonington and then later in Pachaug; however, European settlers already established in the area successfully prevented this land from being granted to the Pequot community. Finally, in 1683 this community was granted a mere 280-acre reservation in the Lantern Hill area of Stonington, Connecticut, and in 1724 the reservation and surrounding areas were incorporated as North Stonington (Den Ouden 2005). This community became known as the Eastern Pequot Tribal Nation and has maintained ties through the present day to the reservation, which has been continuously occupied by members of the community since it was granted.

The recognition and land titles given to the Eastern and Western/Mashantucket Pequot communities by the Colony - and later State - of Connecticut did not result in uniform treatment of Native American communities. Government-sanctioned activities frequently did not follow officially stated policies, and local communities and individuals frequently attempted to restrict Eastern Pequot rights, land use and mobility on and off the reservation. After the community at Noank successfully petitioned the Colony of

Connecticut for additional land and was granted the property at Mashantucket, conflict increased over the use of both Noank and Mashantucket. Since much of the Mashantucket property remained in a state that the Connecticut government deemed “unimproved,” and as a result of inaccurately deflated population counts, a 1714 survey concluded that Mashantucket provided sufficient land for subsistence needs (Den Ouden 2005: 58). As a result, the community ceded planting rights at Noank, but this quitclaim stated “that the said Indians shall be allowed for their conveniency of clamming, fishing or fowling, to come to the sea or salt water upon Nawayunk [Noank] neck, as other Indians have been constantly allowed in other places” (Hoadly 2010[1870]: 431). This theoretically provided guaranteed access to coastal resources, such as the shellfish examined in this thesis, to the Mashantucket Pequot community, which likely would have similarly provided a secure area for Eastern Pequot individuals to gather shellfish.

Legal guarantees, however, are not an accurate indication of the realities that Native individuals faced when off of reservations, nor did they ensure the protection of reservation land in practice. Den Ouden (2005) notes that the Eastern and Mashantucket Pequot communities, as well as the nearby Mohegan community, had to fight an almost continual battle against encroachment on their land, as well as outright land sales, often by the very reservation overseers whose jobs were to protect the interests of these communities. Similarly, a series of petitions by Mohegan, Eastern and Mashantucket Pequot leaders throughout the eighteenth century attest to difficulties in providing for subsistence needs as a result of damage to agricultural land on the reservation, restrictions on where Native peoples could hunt, and the threat of being charged with trespassing

when attempting to access coastal areas (Den Ouden 2005: 24, 62-64).

During the eighteenth and nineteenth centuries, the Eastern Pequot population on the reservation was generally small and in flux, as was the case for many Native communities in southern New England. Petitions written by the Eastern Pequot in the early eighteenth century record populations of 30 men, plus women and children at one point, and a population of over 130 in a 1723 petition (Den Ouden 2005: 29). Around 1780, Mandell (2007: 4) lists a population of 237, falling to 30 individuals in 1815 and 50 in 1825. During the mid-to-late-eighteenth century, this population was comprised of approximately 50% more women than men (Mandell 2007: 43), owing to the larger numbers of men who worked away from the reservation as whalers, sailors, and wage laborers (Den Ouden 2005: 70; Mandell 2007: 43). This in turn led to relatively high rates of intermarriage with other communities of color, and placed Native women in the position of cultural brokers and as a conservative force in holding and maintaining cultural memories and traditions (Den Ouden 2005:28-29, 70-76, 128-133; Mandell 2007: 45, 61). In this way, the Eastern Pequot and other Native communities in southern New England maintained ties to land and culture, despite their often small populations and despite economic forces that necessitated leaving the reservation for employment and other political forces that sought to restrict and oppress Native lives.

Jumping forward in time for the sake of brevity, in 1983 the Mashantucket Pequot Tribal Nation was granted federal recognition. However, despite very similar colonial histories and the long term recognition by the Colony and then State of Connecticut, the Eastern Pequot Tribal Nation has been denied federal recognition. The Eastern Pequot

Tribal Nation first filed for recognition in 1978, in 2000 was issued a preliminary positive finding, and in 2002 was declared to be federally recognized by the Assistant Secretary for Indian Affairs, following a lengthy comment period. However, this decision was soon appealed by the local towns and some public officials, and in October 2005, this decision was rescinded. Upon receiving this ruling, the Eastern Pequot Tribal Nation attempted to pursue a further appeal, but in 2006 this appeal was dismissed and the denial of federal recognition was ruled final (Silliman and Dring 2008). It is within this context that Dr. Stephen Silliman, in collaboration with the Eastern Pequot Tribal Nation, began the Eastern Pequot Archaeological Field School. This collaborative team has conducted eight field seasons of archaeology to date on the Eastern Pequot reservation, beginning in 2003 and working every summer except 2010.

Eighteenth- and Nineteenth-Century Reservation History and Archaeology

Archaeology conducted on the Eastern Pequot Reservation has investigated several house sites with occupations ranging from the mid-eighteenth to mid-nineteenth century, as well as their associated features (Silliman 2009), but their locations will be withheld due to privacy concerns for the Eastern Pequot Tribal Nation. To date, nine houses have been the focus of at least some excavation beyond basic shovel test pit surveys; five of these sites have extensive excavation, while investigations at the remaining sites are more limited. These include a mid-eighteenth century structure with no visible surface features (Site 102-124, excavated in 2007), five houses dating generally to the late eighteenth century (Site 102-116, excavated in 2003 and 2004; Site 102-118, excavated in 2003; Site 102-123, excavated in 2005 and 2006; Site 102-125,

excavated in 2008; and Site 102-126 , excavated in 2011), and three from the early to mid-nineteenth century (Site 102-113, excavated in 2004; and Site 102-128, excavated in 2009). Additionally, seven houses have been identified and briefly surveyed with nearby shovel test pits, and the resulting artifacts and general architectural observations are thought to indicate occupation periods during the nineteenth century. Numerous stone walls traverse the landscape, frequently but not always surrounding known houses, and abundant stone piles dot the land especially in association with houses (Hasho 2012).

By the mid-eighteenth century – the earliest period for which we have archaeological information for the reservation – the Eastern Pequot community had possessed their reservation for over half a century and had been entangled in European colonialism for more than a century. While documents from the early reservation period speak to the use of both wigwams and framed houses, archaeological study has only identified framed house structures, with the exception perhaps of Site 102-124, which seems to represent a wigwam (Hayden 2012). However, framed houses clearly leave a larger architectural and archaeological footprint, so this disparity is likely somewhat influenced by the difficulties of detection during archaeological survey and should not be used to call into question the recorded evidence of continued wigwam construction.

Just as Euro-American colonists grew increasingly reliant on markets for purchasing ceramic and glass tablewares during the eighteenth century, Eastern Pequot individuals adopted these same market goods and incorporated them into their lives in meaningful ways (Silliman 2009; Silliman and Witt 2010). Here, Silliman shows that, across the approximately 100 years of reservation life examined through archaeology, the

community showed relative continuity of practice in the acquisition and use of ceramic goods. The specific forms of ceramics shift over time on the reservation as they do elsewhere, with redware dominating all assemblages paired with white salt-glaze stoneware, Astbury-type and Staffordshire-type wares at the mid-eighteenth century sites, shifting to creamwares and then pearlwares during the later portion of the century into the nineteenth century. Other market goods are likewise represented throughout this period and include glass bottles, metal knives, buttons and beads, coins, ox shoes, and other items typical of daily life in the eighteenth and nineteenth centuries, while a small number of chipped stone tools round out the assemblages (Silliman 2009).

Overall, while the quantity and form of goods purchased varied and changed somewhat over this period, it is clear that the Eastern Pequot community was well integrated into the larger market economy by the mid-eighteenth century and continued to forge these economic relationships through the nineteenth century (and to the present day). However, in consideration of the specific choice of goods, as well as their uses, Eastern Pequot individuals acted in keeping with their ideals and worldviews, while at the same time balancing the pressures and realities of the world they had come to live in (Silliman 2009; Silliman and Witt 2010; Witt 2007).

Diet and Consumption

Archaeological evidence and merchant records provide background information about Eastern Pequot foodways during the reservation period. Fedore (2008) considered the faunal remains from two eighteenth-century sites, Site 102-123 and Site 102-124, and Cipolla (2005, 2008; Cipolla et al. 2007) analyzed those from Sites 102-113 and 102-116,

dating from the nineteenth century. This work provides a solid context within which to consider the shellfish remains, including faunal analysis from one of the specific sites, Site 102-123, where substantial quantities of shell were recovered. In general, this previous analysis shows that by the mid-eighteenth century, hunting contributed only a small portion of the mammal remains, with only one deer bone at Site 102-123 and a second deer bone at Site 102-113, and with an additional small number of rabbit and rodent bones at both eighteenth- and nineteenth-century sites.

Domesticated mammal (primarily cattle, sheep, goats and pigs) dominate the mammal remains at all investigated sites. Birds make up a very small percentage of the assemblages, contributing 1.9% of the combined biomass of nineteenth-century assemblages and under 1% of the combined eighteenth-century assemblages. At the eighteenth-century sites with completed faunal analysis, the single identified bird specimen, a possible passenger pigeon humerus, comes from a wild species, while the mix of wild and domestic birds from the nineteenth-century sites may indicate a slightly higher percentage of wild birds (Cipolla 2005; Fedore 2008). However, due to the very small total contribution of birds to the overall diet, this difference is likely insignificant when considering general trends in food procurement. Fish likewise contribute a small percentage of the overall diet, ranging from <1% to 3.8% (Cipolla 2005 41-42; Fedore 2008: 45, 48, 51, 57, 67, 68). However, since fish, like shellfish, have potential to illuminate patterns in coastal access similar to those I consider for shellfish, I discuss patterns in archaeological remains of aquatic animals in more detail below. The data indicate that throughout the eighteenth and nineteenth centuries, domesticated mammals

provide the largest dietary contribution, with little change in the relative quantity of food provided by domestic and wild animals over this period.

While domesticated animals were central to the Eastern Pequot reservation household diet, the role of aquatic animals – though numerically small – is not insignificant from a statistical standpoint, nor for its broader implications. At the earliest of the eighteenth-century sites, fish make up a small but noteworthy percentage of the faunal assemblage (21.8g or 3.82% of the total biomass), with all identified species coming from coastal, saltwater habitats (Fedore 2008: 48). Shellfish are well represented in the general faunal and midden assemblages, although there is no shell-dominated feature. Furthermore, merchant records from the 1750s record sales of bass by an Eastern Pequot individual to a local merchant, in exchange for credit (Witt 2007: 60). Together, these suggest strong ties and significant access to marine areas continuing in the mid-eighteenth century, which were used to provide directly or indirectly for subsistence needs, either through direct consumption as seen archaeologically, or to exchange for credit to use in the eighteenth- and nineteenth-century markets in which they were enmeshed (Silliman and Witt 2010; Witt 2007: 60).

In the late eighteenth century at Site 102-123, fish make up a much smaller percent of the faunal assemblage (0.3% of the total biomass); furthermore, these fish came from a mix of saltwater and freshwater habitats (Fedore 2008: 57). The dense shellfish midden at this site appears to reveal a different pattern of marine food use than indicated by fish remains; however, as I discuss more in Chapter 5, the shell midden appears to date primarily to the early period of this site's occupation. The two nineteenth-

century sites at which faunal analysis has been conducted contain a likewise minimal quantity of fish bones (0.3% of the combined total biomass) with only one specimen identified as a saltwater species (Cipolla 2005: 56). Very few shellfish have been recovered from nineteenth-century sites.

While complete faunal analysis for the site excavated in 2011, dating to the mid-to-late eighteenth century, is still ongoing, this site contained abundant shellfish (although very different in species profile than elsewhere) and a substantial quantity of fish bones and scales. Together, this information indicates that while domesticated animals had become a routine source of food by the mid-eighteenth century, trips to the coast to acquire additional food were common. By the nineteenth century, acquisition and consumption of marine species appears much rarer. In the subsequent chapters I discuss possible causes and implications for this variation.

CHAPTER 3

THEORETICAL BACKGROUND AND SHELLFISH RESEARCH

Introduction

Archaeological contexts and sites on the Eastern Pequot reservation were created by the daily lives of individuals involved in many intersecting practices, practices which took place both on and off the reservation and involved both Native and Euro-American people. These individuals adapted to, accommodated, resisted and at times were marginalized by the meetings of colonial and indigenous ways of life. Cultures and communities are inherently dynamic: continuously shifting, maintaining, shaping and re-shaping themselves. Moreover, these communities are made up of diverse individuals with their own preferences and skills, leading to variable experiences and practices within certain confines of technological constraints, social expectations and political regulations. As such, multiple approaches and scales of analysis are needed to fully capture this diversity of practices and experiences which left traces in the archaeological record.

The context of the Eastern Pequot reservation necessitates attention to colonialism and reservation politics and how these did – or did not – influence individual practices. Here one must consider not only the physical nature of where these activities were carried out and by whom, but also at times what was intended and experienced by those

individuals engaging in them. In doing so, one must consider the long-term histories of colonial entanglements, the large-scale externally imposed changes such as confinement to a reservation, and the introductions of new material technologies, as well as the small scale, day-to-day activities of procuring, preparing and consuming meals and changes within the lifespan of single individuals and households (Jordan 2010; Silliman 2009).

The specific focus of this thesis on several shell midden contexts further frames the theoretical and analytical approaches. Since shellfish serves as a source of food, one can begin by addressing what was being consumed, in what quantities, by whom, and where, as well as where and how this food was obtained and prepared. The presence of shellfish on the inland reservation raises questions concerning land access, resistance, identity, and cultural memories among the Eastern Pequot that were related to the obtaining of shellfish. In combination with considerations of other food sources, the identification of hunted, fished and purchased animals, and the techniques used to prepare these animals for consumption, one can evaluate the impact of economic marginalization on diet as well as the persistence or modification of long-standing practices. The interplay between gendered implications of various food procurement and preparation processes and known gender imbalances of the reservation population allow for additional interpretations. Below, I expand upon some of the core theoretical approaches to shellfish research, foodways and colonialism that inform the analysis in later chapters.

Archaeologies of Colonialism

Recent archaeological work on Native American sites has begun to re-evaluate the interpretive frameworks to consider the complexities of colonial interactions and how

communities adapted to and were constrained by these situations. Recently, scholars have stressed the need to consider long-term cultural processes to move beyond unnecessarily anchoring discussions to artificial pre-Columbian and post-Columbian periods or invented, supposedly unchanging “traditional” practices (Jordan 2009; Lightfoot 1995; Silliman 2005, 2009). Instead, these authors push for diachronic approaches which approach sites through multi-scalar lenses (Jordan 2009, 2010) and according to time scales of personal and cultural memory that were relevant to a site's inhabitants (Silliman 2009). In doing so, Silliman (2009) encourages scholars to interpret artifacts in ways that move beyond simple identifications of change and continuity. Here he asserts that the artifacts found on eighteenth- and nineteenth-century Eastern Pequot sites do not in fact represent “change” by virtue of the fact that items such as ceramics were manufactured in Europe and purchased in markets. Indeed, he argues that once adopted as part of standard household assemblages, these items became “Eastern Pequot items” and did not need to be continually re-adopted by individuals who had grown up with wheel thrown ceramics as part of everyday life (Silliman 2009). Likewise, Ferris (2009) states that changing uses of material goods should not be taken as evidence of cultural discontinuity, but rather as part of the constant reworking of social practices. By considering both long-term and regional scale processes, Jordan (2010) attempts to decouple changes in material culture and settlement patterns from the simple presence of European settlers and situate them in culturally relevant processes.

Additionally, recent scholarship has sought to emphasize individuality and agency, particularly when studying marginalized communities. One approach to this end

is to focus attention on single households, objects or other sites that allow for in-depth consideration at a very small scale to create a detailed, specific portrayal. This can be valuable when paired with documentary records which provide individual names, tax and probate records, deeds, merchant records and other information to complement the archaeology and fill in details that do not preserve well in the archaeological record. These scholars often approach historical archaeology in ways that see the most value in filling in and correcting one-sided historical portrayals. However, so often for Native communities, recorded information is very limited often leaving little information for archaeologists to tie a given site to specific individuals or even well-documented activities. These difficulties plague every excavated site on the Eastern Pequot reservation.

In light of these considerations and limitations, a synthetic approach is needed to form a clearer picture of what practices were in play, how material objects were used in these practices, and what sort of variations occurred within these practices. By approaching small-scale sites, including houses occupied by both known and unspecified individuals, at a full range of scales, one can avoid both the homogenizing and often patently incorrect conclusions of now largely rejected acculturation narratives, while also moving beyond what Kurt Jordan (2010) terms the “one site against the world” approach that fails to contextualize findings at specific archaeological sites within broader networks. Jordan asserts that this lack of regional scale attention leads to the under-consideration of political-economic interconnections that Native communities engaged in throughout the colonial world. Furthermore, I believe that attention to individuals

without attention to comparative contexts can lead – often unintentionally – to false generalizations and lack of insight into individual choices and variability when one fails to consider what the full range of experiences, practices and expressions look like.

Practices, Context, and Analytical Scale

On the Eastern Pequot reservation, the majority of sites excavated to date include structural remains of a house along with associated features and artifact scatters. Most houses appear to be occupied continuously for a 20-40 year period, with the exception perhaps of Site 102-123, which may have two distinct but connected occupation episodes (Silliman and Witt 2010; Witt 2007). As such, it is likely that these houses were inhabited by a single household and not sold (not generally occurring on the reservation anyway) or otherwise passed to unrelated individuals; moreover, these houses were likely only in use for one or two generations, at most. The earliest identified site dates to approximately 1740, and extensive excavation has not yet been conducted on any sites dating later than the mid-nineteenth century (Silliman 2009). This provides archaeological information from just over 100 years of reservation life represented through discrete households.

When considering the long-term history of Eastern Pequot reservation life, this leaves only a few sites for each period of time and relatively short periods of overlap as one attempts to trace practices through time. As a result, household variability is difficult to distinguish from widespread change. When considering activities like shellfish collection and consumption, this is further complicated as only a portion of the excavated sites have evidence of extensive shellfish use, and archival records provide little complementary data. While any analysis must proceed with due caution, when one

places these archaeological remains in context with information on reservation populations, the ability to make solid interpretations increases. The Eastern Pequot reservation never housed a large number of people, and eighteenth-century petitions tend to record fewer than 250 individuals on the reservation and at times as few as 30 (Den Ouden 2005: 29; Mandell 2007: 4), indicating that while three excavated households may be empirically a small sample, it likely represents a substantial portion of the reservation residents at any given time.

In this thesis, I specifically focus on three household middens containing shell. Household midden contexts provide the unique opportunity for fine-grained temporal resolution through the analysis of distinct layers and clusters of shell and bones within midden deposits. This opens the possibility to provide insight into changing practices over the lifetimes of specific (albeit unidentified) families and individuals, rather than requiring comparison of discrete and disparate sites datable in close sequence to gain scalar perspectives. Through this, one can sidestep the issues Silliman (2009) proposes with regard to the interplay of cultural memory, change and continuity and previously changed but now routine habitus (*sensu* Bourdieu 1990). Silliman offers a useful perspective in overcoming many of the flaws of acculturation and reductionist, short-term theories of contact; however, considerations of how new materials and practice become part of a daily life remain under-theorized. I propose that by considering tightly-dated contexts such as the Eastern Pequot middens with shellfish remains, one can begin to see changes over individual lifetimes.

Shellfish Studies

Claassen (1998) asserts that based on cross-cultural, ethnographic studies, shellfish gathering for many societies was primarily undertaken by women, children and the elderly. Relying on ethnographic data has its own hazards, especially given that information for seventeenth- through nineteenth-century New England is spotty when it comes to addressing details of subsistence. However, a few accounts do record an association between Native women and shellfish gathering in greater southern New England (Williams and Bendremer 1997: 38-39). Roger Williams (1973 [1643]: 210) in the early seventeenth century records that Narragansett women labor “in the field, in carrying the mighty burdens, in digging clammes and in getting other shellfish from the sea”. While one cannot be certain that such observations represent the full range of practices, or that these practices continued unchanged throughout the reservation period, this opens up the possibility for considering shellfish in part from a gendered perspective.

Gendered implications of shellfish gathering are particularly interesting on the Eastern Pequot reservation and other reservations in southern New England where documentary records indicate a high ratio of women to men residing on the reservations (Den Ouden 2005: 70-71 83; Mancini 2009; Mandell 2007: 43). Especially when tied with faunal information that reveals low levels of hunted animals during the eighteenth and nineteenth centuries, this provides an interesting hypothesis about the implications of the gendered population dynamics, traditionally gendered food procurement activities, and ongoing consumption practices. While economic need may have played a role in shaping subsistence pasterns and could have forced women or others to the coast as the

only viable way to provide for their families, it is more likely that women may have turned to shellfish gathering as part of broader negotiations of their identities and to connect with and pass on personal, family and community histories of shellfish gathering along various parts of the Connecticut coast.

The use of shellfish by eighteenth- and nineteenth-century reservation communities, located approximately 5 miles from the coast, provides not only a window into considerations of foodways, but also considerations of the realities of colonial pressures, land access and mobility restrictions, and gendered activities. Through mobility off the reservation to coastal sites, Eastern Pequot individuals maintained long-standing land ties to locations off the reservation and to traditional subsistence activities. It is well reported that many Native individuals, especially men, worked as soldiers, laborers and whalers, activities that brought them into broader regional networks and forged ties between indigenous individuals of diverse experiences (Den Ouden 2005; Mancini 2009; Mandell 2007; Silliman and Witt 2010). I propose that shellfish gathering may well have constituted a major reason for women to travel to nearby areas, which in turn would have involved them to some degree in local networks. The combination of such shellfish-gathering forays and off-reservation employment may have played into shaping larger community and regional networks that are observed in gatherings between Mashantucket and Eastern Pequot, Mohegan and Niantic communities in southern New England for political and social purposes (Den Ouden 2005: 22-23, 120-121).

In many ways, shell middens in Native North America are frequently viewed as a quintessential Native American coastal feature, a mindset that is not without problems,

but also not without cause. On both the Atlantic and Pacific coasts, shell middens are some of the oldest and largest excavated archaeological features, providing evidence of human habitation and shellfish consumption for 10,000 years (Luedtke 2002).

Significant time and research has been devoted to large shell middens, which stand out as landscape features in areas of Maine (Spiess and Lewis 2001), the Pacific Northwest (Stein 1992), Cape Cod (Widmer 1989), Florida (Widmer 1989), coastal California (Claassen 1998) and Long Island (Bernstein 2002; Cerrato et. al. 1993; Lightfoot and Cerrato 1988) just to mention a few locations in North America. The above-mentioned studies, as with most scholarship that considers shellfish deposits and shellfish, generally draw their samples from middens that often extend several meters deep and cover hundreds of square meters. From this context, they consider places and times where shellfish was intensively harvested and processed through many generations, often over hundreds or even thousands of years. This results in the frequent consideration of shellfish deposits through the lenses of environmental reconstruction, community- or society-level dietary reconstruction, settlement patterns, site formation processes, culture-historical reconstruction and social aspects of midden use and formation (Claassen 1998).

While this work is useful for providing a general framework for research on small shell middens, significant differences occur between the nature and interpretations of such large-scale sites and the single occupation household scale of the Eastern Pequot shell middens. Furthermore, by their very nature, such large-scale shell features primarily exist in close proximity to the coast, which place the Eastern Pequot reservation shells in a unique context due to their distance from shell gathering sites. As such, I draw

cautiously on previous shellfish research, adding in considerations of general foodways along with the above frameworks of colonialism and social memory to contextualize the shell deposits on the Eastern Pequot reservation. However, considering shellfish as part of Eastern Pequot foodways is informative but, as with all approaches, carries its own limitations.

Claassen (1998) cautions against the blind assumption that shell deposits represent solely dietary contributions. However, in light of contextual information, I propose that one can conclude that the majority of shellfish in this study were consumed as food. The primary species – *Mya arenaria* (soft shell clam) and *Crassostrea virginica* (oyster) – are well known and popular food sources both historically and in the present, by both Native and non-Native communities. Certain shellfish – although not generally those found here in the reservation deposits - were used as bait for fishing (Claassen 1998), but it seems implausible that this contributed the bulk of the deposits studied here. Those shellfish used as bait most likely would have been processed - and the shells deposited – near either the source of shellfish or near fishing sites, rather than transported back to the reservation, processed, and then brought out again for fishing. Moreover, one would hazard that if shellfish were frequently used in fishing, fish bones would be well represented in the middens. Even if many of the fish were sold in markets nearby (Witt 2007), one would likely expect a greater degree of fish consumption on the reservation than found by Cipolla (2005) or Fedore (2008); however, a somewhat larger quantity of fish was recovered in 2011 than at the other sites.

A second non-food use of shells, particularly *Mercenaria mercenaria* (quahog, or

hard-shell clam) and *Busycotypus canaliculatus* or *Busycotypus carica* (Channeled Whelk), was in making wampum and other jewelry. This is especially true for southern New England and the mid-Atlantic regions during the sixteenth and seventeenth centuries. Indeed, prior to the Pequot War, the Pequot and allied or tributary communities were heavily involved in the wampum trade (Cave 1996; Ceci 1990). In addition, shell jewelry remains important to many indigenous people today in these regions. However, the species of shells needed for such production are infrequent components of the Eastern Pequot shell middens under consideration, while the oyster and soft-shell clam which do dominate the assemblages are not generally used in such production. Further, only one shell from the entire assemblage of more than 8000 identified hinge fragments and 43 kg of shell shows any sign of working or cut mark, and even this one cut on the exterior of a hard shell clam from Site 102-116 is not conclusively related to the manufacturing of a shell object. This is unsurprising as wampum is generally thought to have decreased in manufacture and trade quantities well before the second half of the eighteenth century – the time period from which the middens date – as evidenced by decreased evidence of production, fewer historical references, and smaller quantities recovered from inland sites (Ceci 1990). Therefore, I conclude with relative confidence that the majority of shellfish on the reservation were consumed, likely as part of the same meals or at least by the same individuals as the faunal remains found often from the same middens at the sites.

By considering shellfish as part of the Eastern Pequot diet, one can create a larger picture of how Eastern Pequot individuals “made do” during the eighteenth and nineteenth centuries (Cipolla et al. 2007). Encroachment on reservation lands, the

already marginal agricultural utility of the rocky upland reservation, and restricted access to regions once crucial to Eastern Pequot subsistence placed significant pressures on reservation communities (Cipolla et al. 2007; Den Ouden 2005). Despite these pressures, Eastern Pequot individuals adapted by selectively adopting new technologies, new material goods and new practices. In order to feed their families, Eastern Pequot individuals purchased animals in markets and began raising livestock, but processed animal carcasses for consumption in a variety of ways. Stone tools were occasionally used alongside metal tools for butchering animals, and high percentages of the recovered bones were burned, possibly in keeping with traditional methods of bone disposal (Cipolla 2005; Cipolla et al. 2007). Within this context, shell appears to play an important role in keeping individuals well fed, as well as providing an avenue to maintain long-standing practices.

CHAPTER 4

MATERIALS, METHODS, AND DATA

Introduction

The majority of shells recovered during excavations on the Eastern Pequot reservation come from discrete middens on four separate sites, although a small to moderate quantity of shells is present in the general artifact scatter at these and other sites. The largest quantity of shells was excavated in 2006 from a midden approximately 6-8 m from the edge of the general household architectural area at Site 102-123, which dates to the mid- to late eighteenth century (Silliman and Witt 2010; Witt 2007). A second significant shell deposit was excavated in 2011 on Site 102-126 and approximately 8 m from the house at the site center. This house structure and midden appear to have been in use during the same general period as Site 102-123. A smaller but still substantial shell deposit was excavated in 2003, located approximately 20 m away from a house that tentatively dates to again the same date range. However, because less excavation has been conducted in this area, current information about the nature of the site and features in question is insufficient to either firmly link the midden to the house site or suggest a lack of association. While each of these features contained large numbers of shell, vertebrate faunal material and artifacts similar to those found elsewhere

at the respective sites were recovered within the middens in variable quantities.

Additionally, the earliest archaeologically known site, Site 102-124 - dating to the mid-eighteenth century - contained a substantial quantity of shells in the general refuse midden, although this midden contained more general refuse and a lower percentage of shells than the three previously described sites.

Combined Data

Across all excavated reservation contexts, a total of over 43 kg of shell has been recovered with over 8,800 identified hinges; of this 27 kg and almost 7,000 hinges come from Site 102-123, 14 kg and 1,300 hinges come from Site 102-126, 1 kg and 360 hinges from Site 102-118 and 0.8 kg, and 120 hinges from Site 102-124 (see Table 1). Of the total shell count, 87% is soft shell clam, although with a generally lighter shell they comprise only 64% of the combined shell weight. Moreover, this number is somewhat misleading for the generalized use of shell on the reservation as a whole as it is heavily influenced by the large number of shells, almost all of which are at Site 102-123.

Oysters, the most common species at Site 102-126, make up 8% of the identified shell hinges and 21% of the shell weight across all reservation sites. Hard shell clams are generally well represented in non-midden contexts, likely in part due to their generally sturdier shells; however, overall they contribute 1.5% of the total hinges and 5.5% of the total weight. Mussels contribute 3% by both weight and hinge count, while whelk and scallops each contribute less than 1% of either weight or hinge count and in total under 1% of the hinges and 5.6% of the total shell by weight was unidentified.

Table 1: Total Shell Weight from Eastern Pequot Contexts

Site	Soft-Shell Clam	Quahog	Oyster	Mussel	Other + Unidentified	Total
102-123 Midden	22735.3	1263.5	350.9	585.7	2075.4	27010.8
102-126 Midden	3916.4	420.6	8753.4	1047.3	303.9	14441.6
102-118 Midden	1057.1	17.4	0.1	0.5	107.7	1182.8
102-124 Site	198.9	512.7	69.6	5.3	37.3	823.8
Other Sites and Site areas	70.5	186.1	400.1	7.1	18.6	682.4
Total	27978.2	2400.3	9223.2	1645.9	2542.9	43790.5

Generally speaking, all species present in the reservation assemblages are available in local coastal and estuarine areas, or in the case of some of the mussel species, in local river habitats. Soft-shell clams were abundant along almost the entire East Coast of North America throughout the past several thousand years. Soft shell clams grow best in marine and estuarine environments, tolerating variable salinity levels ranging from 10ppt to 25ppt. As a species that burrows several centimeters into the ground, they require soft, generally sandy substrates (Abraham and Dillon 1986). These conditions can be found along the Connecticut coast and along several inlets and harbors near Mystic, Groton and the southern portions of Stonington. Like soft shell clams, the hard shell clam or quahog burrows into soft, sandy or muddy substrates in estuarine environments, although quahogs tolerate somewhat higher salinity levels up to 35ppt

(Stanley and DeWitt 1983). Generally speaking, oysters inhabit similar though expanded environments to those described for both soft and hard shell clams (Stanley and Sellers 1986). As this species grows on to, rather than in, the surrounding substrate, oysters tolerate a wider range of surfaces, from soft sands and muds to hard, rocky substrates (Kent 1988). While oysters grow best in environments with moderate salinity levels similar to hard and soft shell clams, they tolerate salinity levels as low as 2ppt, allowing them to grow further inland (Stanley and Sellers 1986). The majority of mussel specimens appear to be saltwater species from the family Mytilidae, with a smaller number possibly from the freshwater species in the family Unionoida, although species specific identification was not carried out for these shells; however, species from both these families are local to the Connecticut coast (Newell 1989).

Most of the recovered shells were unmodified, unburnt shells or shell fragments. Only one specimen from the entire reservation, a single hard shell clam recovered from Site 102-113, shows any sign of tool use associated with shells; moreover, the single cut mark on this shell cannot be definitively tied to any intentional working. Negligibly few shells from outside the Site 102-126 show evidence of burning; here 3-5% of the shells appear burnt. A portion of shells from the Site 102-126 were analyzed for age and season of harvest, and the majority of these shells tend to be harvested in summer while still quite young. In the remainder of this chapter I describe field methods of shell recovery and laboratory methods of identification, and present a summary of both the quantitative and qualitative data gathered from these shell collections. In the following two chapters, I expand upon and evaluate some of the implications of these data.

Shell Species and Attribute Identification

All excavated shellfish remains were identified by taxon through comparison to the shellfish type collection at the University of Massachusetts Boston zooarchaeology laboratory with the advice and guidance of Dr. David Landon. These shells were then identified as complete (>90% intact), hinge fragments (>50% of hinge intact but <90% of total shell complete), and shell fragment (all other shell portions). The degree of burning visible from macroscopic changes to the shell associated with charring was described as none, lightly burnt, moderately burnt, or heavily burnt. This identification was done qualitatively, with none describing a collection in which no evidence of burning was noted, and with light, moderate and heavy each representing increasing increments equal to about 1/3 of the sample. The majority of the analysis was conducted by the author during spring and fall of 2011, and those specimens cataloged by other individuals from earlier excavations were reviewed by the author to ensure consistency. These include the shell collected in 2004, which was analyzed by Cipolla (2005), a sample of the Site 102-123 midden examined by Fedore (2008), and portions of this midden cataloged by graduate students, Samantha Henderson and Anna Hayden, in February and March of 2011 alongside the author.

Due to the large quantities of often rather fragmentary shell in certain contexts, many shell fragments were visually non-diagnostic, resulting in a need to balance time constraints with accurate, thorough identification. To begin identifying specimens in a given context, the author began by removing any large or obviously identifiable shell fragments and sorting them according to taxon and portion. Once the majority of hinge

fragments and other easy-to-identify specimens were categorized, the remaining shells were screened through a 1/4-inch mesh to assist sorting. All fragments larger than 1/4 inch were then examined individually for diagnostic traits and cataloged appropriately or as unidentified. The smaller debris was visually scanned for any remains with distinguishable traits, but little total time was invested in the overall identification of these remains, and the majority of these fragments were grouped as “unidentified.” The total mass of shells within each taxonomic category and shell portion was recorded, and all hinge fragments and complete shells were also counted. The vast majority of fragments which included the hinge were identified to a specific species, genera or family, while a larger number of general shell fragments remained unidentified to any level. Over 99% of the counted hinges were assigned some taxonomic category, and over 90% (by weight) of the shells were identified at some taxonomic level. It is likely that given more time and additional methods of analysis that many of the specimens categorized as “unidentified” could be given some taxonomic categorization; however, given the large number of hinge fragments, and the relatively small weight contribution of currently unidentified remains, it was determined that this improved identification was not worth the extra resources beyond the size sampling undertaken here.

As mentioned above, both weights and hinge counts were recorded for each species and context. The accuracy of counts versus weights of shells is a matter of much discussion in the archaeological literature, with no general consensus on whether one method uniformly results in more accurate data (Claassen 2000; Glassow 2000; Mason 1998). In light of this, I opted to consider both methods, and for the majority of contexts

under study in this thesis which contained significant quantities of shell, no significantly different interpretations result from using the two different data sets. Generally speaking, however, rare shell taxa are under-represented in hinge counts, since these shells are frequently only recovered in small, highly fragmented portions with no identified hinges. Weights, however, undercount shells with lighter or more fragile shells since a single mussel shell, for example, weighs much less than a single oyster shell. Therefore, both counts and weights were considered to attempt to account for differences in these data types, although this was often done simply by comparing the two data sets qualitatively. If counts and weights did not appear significantly different, statistics were only calculated and reported for weights; when the two provide substantially different findings, both were reported and potential interpretations are discussed.

In addition to interpretive choices discussed above, certain taphonomic processes that occur within the ground have potential to skew numerical data. Different soil conditions and variable shell sturdiness result in differential preservation across sites and between shell species. Heavier shell species not only contribute more mass per shell, but also tend to be less resistant to degradation; however, the overwhelming quantity of soft shell clams in several reservation contexts despite these preservation issues leads me to give only slight consideration to this issue. Acidic soils, like those commonly found in New England, provide for generally poor preservation of organic material. As decomposing shells increase soil alkalinity, this increases preservation of both shells and other faunal material within the middens, making middens a highly valuable source of data for any study of organic material.

Midden Identification, Excavation and Shell Data

2005-2006 Excavation: Site 102-123

At Site 102-123, a stone pile near the house was strategically chosen for investigation during the 2006 field season. Two contiguous 1 x 1 m units were opened within the rock pile. The first five courses of rocks contained a moderate quantity of artifacts and a small number of shells and extended to a depth of 40-50 cm. At this point, excavators encountered an abundance of shells that continued throughout the next several rock courses before rapidly diminishing at a depth of around 70-80 cm. The full area of the shell deposits in this feature is unknown as these units were insufficient to define clear boundaries of the shell deposits. However, it is unlikely to extend much beyond the rock pile, which is roughly circular and approximately 5m in diameter. No obvious stratigraphy or evidence of discrete deposits was visible during excavation. Due to the high rock content of the area, excavation proceeded in natural levels corresponding generally to courses of rocks, although an attempt was made to keep level depths close to 5 cm, as non-feature excavation on the reservation was generally conducted in arbitrary 5 cm levels. Due to the resulting variation in level depths, in my analysis I consider both the raw counts of artifacts, shell and bones, as well as the numbers resulted by scaling level counts according to the average depth (calculated using the four corner points or other relevant depths recorded in the field) for the two corresponding level contexts from both units. Because of the overwhelming number of shells in seven of the unit levels, including many small shell fragments, all materials that did not pass through a 1/8-inch screen in the field were bagged and sorted in the lab; the remainder of the levels followed

standard field screening and sorting procedures using a 1/8-inch screen.

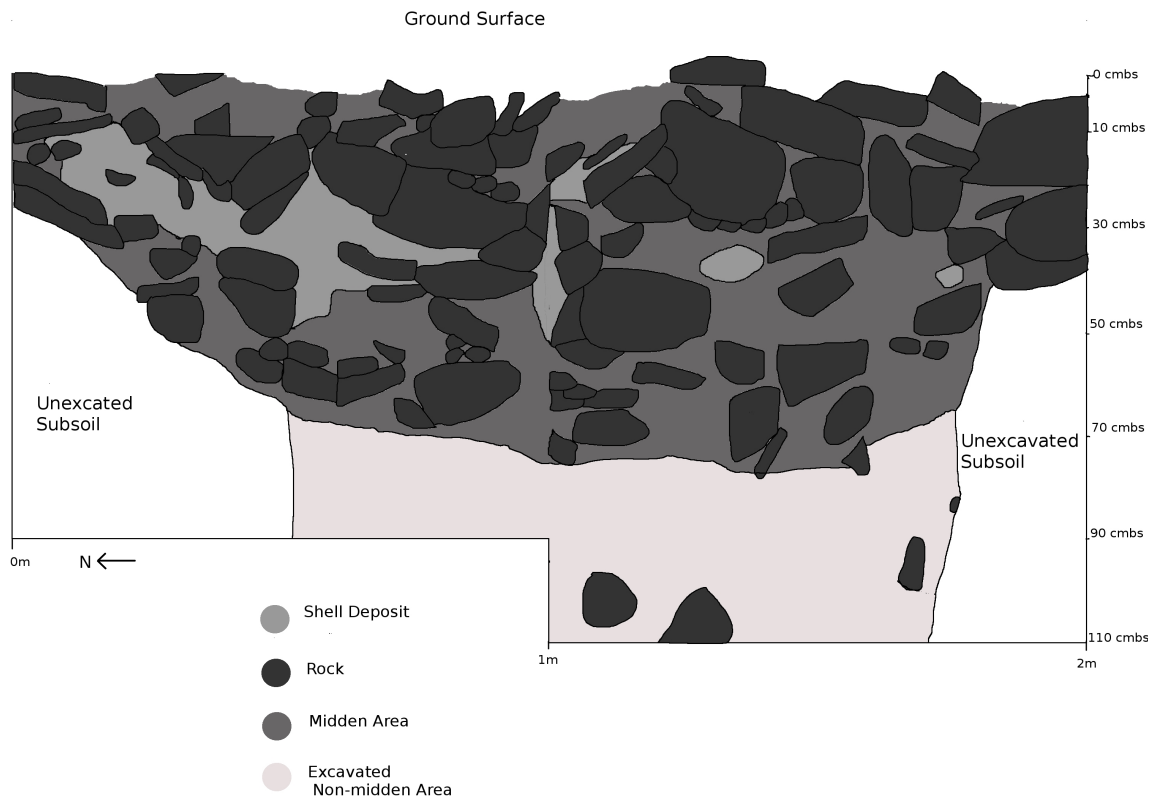
The midden associated with this site is located approximately 18 m away from the center of the house structure and approximately 6-8 m from the edge of the main household structure and artifact spread. The two square meters excavated within the midden produced 6,988 identified shell hinges (i.e. those specimens identified either as “complete” or “hinge fragments”) and a total of 27,010.8 g of shell, making it the most shell-dense of the three middens identified on the reservation (Table 2). Soft-shell clams dominate the assemblage, with 6,774 identified hinges comprising 96.9% of the total shell hinges and 84.2% of the total shell weight. Mussel contributes 4.7% of the total weight, quahog contributes 2.2%, and oyster makes up 1.2% of the total shell mass, with 7.7% unidentified. Using Salwen (1970) to calculate edible meat weight, the shell recovered from this midden corresponds to over 8,724 g of edible food, although this excludes the unidentified shells from the calculation. None of the shells appear to be burnt or worked/modified.

Table 2: Site 102-123 Shell

Species	Hinge Count	Weight (g)	Percent by Count	Percent by Weight	Approximate Meat Weight (g)
Oyster	22	350.9	0.3	1.3	70
Quahog	65	1263.5	0.9	4.7	299
Mussel	120	585.7	1.7	2.2	293
Soft-Shell Clam	6774	22,735.3	96.9	84.2	8062
Atlantic Pearl Oyster	1	0.6	<0.1	<0.1	----
Unidentified	6	2074.8	0.1	7.7	----
Total	6988	27,010.8	100	100	8724

This midden was primarily composed of rock, with very little soil matrix filling in between rock courses (see Figure 2). The areas between these rocks were densely packed with shells and a moderate degree of faunal remains and artifacts. The greatest quantity of shells was located between Levels 6 and 9 (approximately 30-50 cm below the surface), with quantities decreasing significantly and quite uniformly as one moves either deeper or closer to the surface. The maximum depth of any recovered shells was 90cm, though shells are few and scattered well before this point. Concentrations of faunal remains were highest in Levels 4 through 9, with an additional spike at Level 11, indicating that they roughly correlate to shell concentration. However, faunal deposits were present above and below the main shell deposits and faunal quantities rise and fall somewhat less regularly than do the shells. Additional insight into depositional processes within the midden and the association of the feature to the larger site come from the 791 ceramic sherds from the midden. Ceramic sherds were recovered from all of Levels 1 through 10, with the highest quantities in Levels 5 through 8 – although with 376 sherds, Level 7 alone contains 47% of the midden ceramics. Redwares and unidentified coarse earthenwares dominate the assemblage, as they do for most of the site, leaving just over a third of the midden ceramics (271 sherds) useful for dating and depositional analysis, as discussed in the next chapter.

Figure 2: Site 102-123 Midden Profile

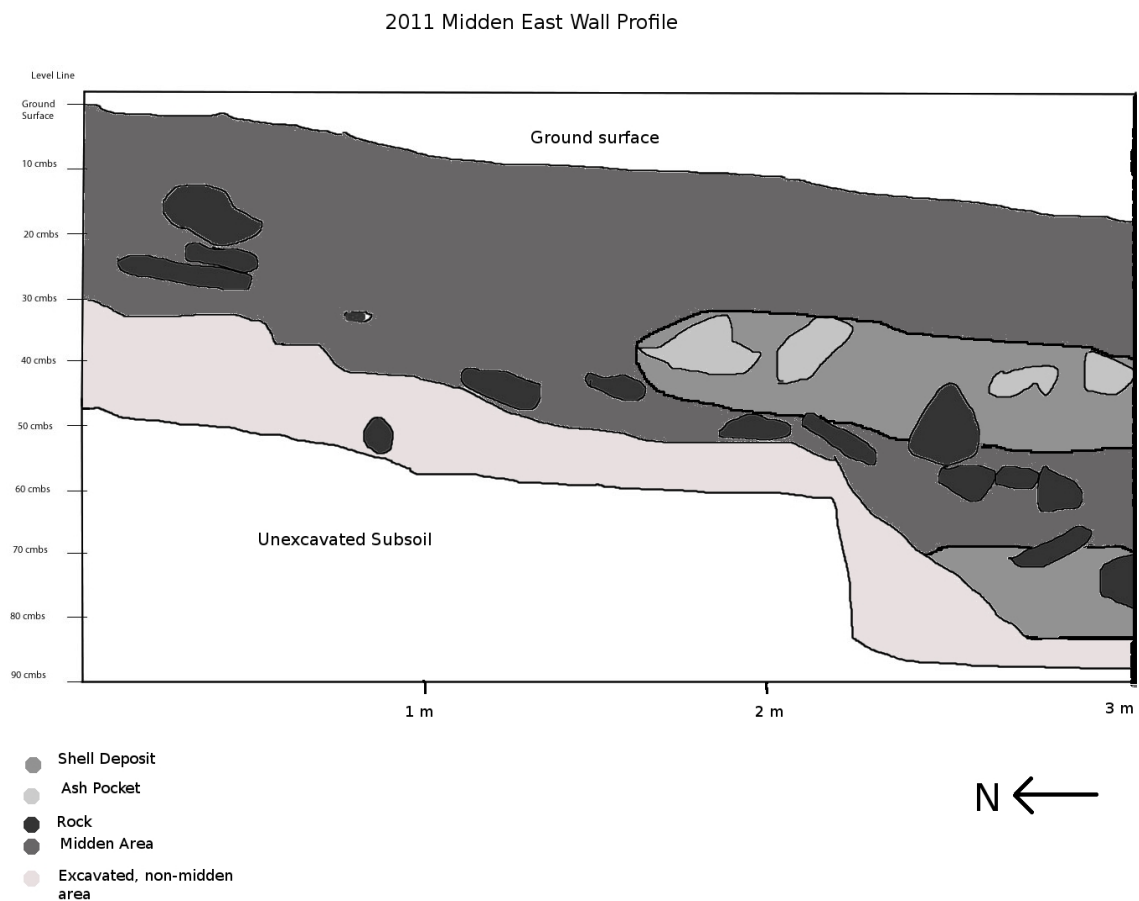


2011 Excavation: Site 102-126

The chimney fall from the structure at Site 102-126 (located approximately 450 m west of Site 102-123) is visible from the surface and as such served as a center point for an initial shovel test pit survey, conducted at 5 m intervals. This survey identified an area approximately 8 m away from the south edge of the chimney fall with a high number of shells and bones. Based on this find, a 1-x-1-m excavation unit was opened immediately south of the test pit. As this unit contained a deposit of shell and bones and indicated a strong potential for a larger midden feature, additional units were opened in this area. In total, 4.75 m² were excavated in the midden, which is thought to correspond to roughly

75% of the midden based on the fact that excavated identified approximately three-quarters of the edge of the midden. The midden itself appears to be composed of an intentionally dug and filled pit covered by a more extended spread of shells, bones, and artifacts that may have resulted from the continued piling of refuse onto the surface once the pit was filled. The general refuse spread appears to be mostly contained in an area approximately 3 m north-south by 2 m east-west and extends approximately 40 cm deep. The deeper pit is located towards the southern portion of this area and extends approximately 1 m north-south by 1.5 m east-west where it was dug to about 75 cm below the present ground surface (see Figure 3).

Figure 3: Site 102-126 Midden Profile



The excavated matrix at the site in general and in the feature area was screened through ¼-inch mesh during the shovel test pit survey, which affected only 0.5 x 0.5 m of the midden, and through ⅛-inch mesh for unit excavation. Shovel test pits were dug to 50 cm unless artifacts or potential features indicated further excavation or rocks prevented excavation of the full depth, with only at the A/B horizon transition. Excavation units were dug in a mix of arbitrary 5 cm levels and natural layers, with additional sub-unit horizontal mapping of concentrations of shell and bone, as determined by the excavators.

A total of 14,441.6 g of shells with 1,332 shells with intact hinge fragments were recovered from the midden at Site 102-126. Unlike the other two middens a small but notable portion of the shells are burnt (Table 3); while less than 10% of the shells have visual evidence of burning, the midden itself contained substantial deposits of ash and charcoal. Oyster dominate the assemblage at 51.2% of the shells by weight, with soft-shell clam at 27.1% of the shell weight. Mussel contributed 7.25% of the weight, and quahog provided 2.9% of the total weight, while whelk, surf clam, and scallop together form less than 0.5% of the shell by weight. Using weight likely under-counts mussels, since these shells tend to be thinner. In fact, the 152 hinge fragments and complete mussel shells contribute 11.4% of the total, whereas the heavier shells of quahog only comprised 1.3% of the counted specimens. Only 2.7% of the shells could not be assigned to any taxonomic category; this very low percentage likely results from the high degree of preservation resulting in large shell fragments which are easier to definitively identify.

Table 3: Site 102-126 Shell

Species	Hinge Count	Weight (g)	Percent by Count	Percent by Weight	Approximate Meat Weight (g)
Scallop	0	0.2	0	<0.1	----
Whelk	1	43.8	0.1	0.3	----
Oyster	682	8753.4	51.2	60.6	1751
Quahog	17	1047.3	1.3	2.9	99
Mussel	152	420.6	11.4	7.3	534
Soft-shell Clam	472	3916.4	35.4	25.1	1394
Atlantic surf clam	1	17.9	0.1	0.1	----
Unidentified	7	242	0.5	1.7	----
Total	1332	14441.6	100	100	3767

Depositional processes of the Site 102-126 midden are complex, with distinct clustering of shells, ash, charcoal and faunal material throughout the midden. Unlike the midden at Site 102-123, this feature was only moderately rocky throughout most its depth, although a few courses of rocks did line the bottom of the pit. The density and quantity of shells peak twice, once between 25-45 cm below the surface, and again at the bottom of the pit at 60-75 cm below the surface. Ceramic data again provide dating information for midden deposits, but is much less complete than for Site 102-123 as fewer than five ceramic sherds are available for any level below Level 6, with no ceramics in Levels 9, 12 or 13 – all of which have sizable shell quantities. Despite this, and because of the more evident stratigraphy throughout the spread of shells in the midden, dating information is suggestive of the midden's use history.

2003 Excavation: Site 102-118

The 2003 shell deposit was located during a general shovel test pit survey of a broader reservation area; during this shovel test pit survey, the soil matrix was screened through ¼-inch mesh. A shovel test pit located approximately 20 m away from a house structure at Site 102-118 (located approximately 500 m southeast of Site 102-123 and 450 m northwest) recovered a substantial quantity of shells, so a 1-x-1-m excavation unit was opened adjacent to the test pit. Here excavation proceeded in 5 cm arbitrary levels, with an additional break at what appeared to be the transition between the A and B horizons, although shell and bone continued for approximately 15 cm into the B horizon, reaching a total depth of 40-50 cm below the surface. Excavated material was screened through ⅛-inch mesh. The general extent of the 2003 midden is not well known, nor has its association with other features and sites nearby been well explored.

Excavation in 2003 at the sampled shell midden near Site 102-118 recovered 1,182.2 g of shell from 1.25 m² of excavation. In the recovered material there is a total of 1,182.8 g of shell and 363 identified hinge fragments, of which 1057.1 g (89.4%) and 361 hinge fragments (99.4%) are identified as soft-shell clam, while the two remaining hinge fragments are quahog. Although no oyster or mussel hinges were identified, a few fragments, weighing 0.6 g in total, were identified as such. In addition, 9.1% of the total shell weight was unidentified (Table 4). No shells appear burnt, cut, or otherwise modified. At present, it is unknown whether this midden indeed relates to the household at Site 102-118, some as of yet unidentified structure, or is an isolated feature. The small number of ceramics from recovered from both the midden and the house are both

dominated by redware, creamware and pearlware, consistent with a late eighteenth-century date for both areas and providing no evidence to rule out a relationship between the midden and the nearby house.

Table 4: Site 102-118 Shell

Species	Hinge Count	Weight (g)	Percent by Count	Percent by Weight	Approximate Meat Weight (g)
Oyster	0	0.1	0	<0.1	----
Quahog	2	17.4	0.6	1.5	4.1
Mussel	0	0.5	0	<0.1	0.2
Soft-Shell Clam	361	1057.1	99.4	89.4	374.9
Unidentified	0	107.7	0	9.1	----
Total	363	1182.8	100	100	379.2

2007 Excavation: Site 102-124

Site 102-124 (located just over 100 m south of 102-123, approximately 400 m primarily east of Site 102-126, approximately 600 m northwest of 102-118) is unique amongst all currently excavated sites on the reservation in that no evidence of the house structure nor any associated features are evident on the surface (Fedore 2008; Hayden 2012). Rather, this site was located during shovel test pit survey of the general reservation area. Following the identification of an area with substantial artifact deposits, several excavation units were opened across the site. While no feature was identified as a shell-dominated midden during excavation, a significant quantity of shells were recovered from a general refuse midden on the site; however shells in this feature do represent a significantly lower percentage of the material recovered from this midden

than the features at Sites 102-123, Site 102-126 and near Site 102-118.

The largest quantity of such shell was recovered at Site 102-124, excavated primarily in 2007 with a few additional units in 2008, where a total of 825.5 g of shell was recovered from 18 different units. Of these shells, 613.6 g or 74% were recovered from approximately 4 m² located within a general refuse midden, which contained much higher quantities of artifacts and faunal material than the shell-dominated middens discussed above. While this site lacks the density of shell deposits located at the previously discussed sites, it still contains a sizable quantity of shell, with over 10 times as much shell as any of the remaining sites. Across the site as a whole, quahog accounts for 29.8% of the shell hinges by count and 62.2% by weight; within the general refuse midden these numbers are very similar at 29.6% and 66.3%, respectively. Soft shell-clam comprise 53.7% of the total shell count and 24.1% of the total shell weight from across with site; in the midden itself these numbers shift slightly to 60.6% by count and 25.8% by weight. Oyster, scallop, mussel and surf clam make up the remainder of the identified species (See Table 5 and Table 6).

Table 5: Site 102-124 Shells (Entire Site)

Species	Hinge Count	Weight (g)	Percent by Count	Percent by Weight	Approximate Meat Weight (g)
Scallop	3	1.8	2.5	0.2	----
Oyster	10	69.6	8.3	8.4	13.9
Quahog	36	512.7	29.8	62.2	121.2
Mussel	2	5.3	1.7	0.6	2.6
Soft-Shell Clam	65	198.9	53.7	24.1	70.5
Atlantic Surf Clam	0	2.1	0	0.3	----
Unidentified	5	33.4	4.1	4.1	----
Total	121	823.8	100	100	208.3

Table 6: Site 102-124 Shell (General Refuse Midden)

Species	Hinge Count	Weight (g)	Percent by Count	Percent by Weight	Approximate Meat Weight (g)
Scallop	3	1.8	4.2	0.3	----
Oyster	4	29	5.6	4.2	5.8
Quahog	21	407.1	29.6	66.3	96.2
Mussel	0	4.5	0	0.7	2.3
Soft-shell Clam	43	158.1	60.6	25.8	56
Surf Clam	0	1	0	0.2	----
Unidentified	0	12.1	0	2	----
Total	71	613.6	100	100	160.4

Other Sites

In addition to the three shell middens, excavation at most sites produced a small quantity of shellfish in scattered contexts, regardless of whether a shell-containing midden was located. However the quantities of shell are generally quite small, as less

than 100 g of shell were recovered at each site without a shell-containing midden.

Amongst these sites, hard shell clam is proportionally better represented in non-midden areas, forming the most common type of shell by count and weight overall on the reservation in non-midden contexts; however the thicker and sturdier shell of this species likely contributes significantly to this difference. Certainly, this comparison across sites can only address very general patterns without consideration of the excavation strategies involved; however, given the quite small quantities of shell even among those sites with extensive excavation, the absence of significant shell at any site dating to the nineteenth century is notable.

Shell Growing Habitats, Seasonality, and Age Profiles

The environment in which all shellfish grow influences certain aspects of the macroscopic and microscopic morphology. General species habitats are described at the beginning of this chapter; however, for certain species, more specific information about the growing habit of an assemblage is available through morphological analysis of the individual specimens. In particular, the shape and size of oyster shells is well known to be influenced by the growing surface (Kent 1988). As such, measurement of the height-to-length ratios of oyster shells is frequently used as a means of assessing the growing environment of a collection of oyster shells. Here, the height of an oyster is measured as the distance from the ventral margin to the valve, and the length is measured as the maximum length of shell perpendicular to this measurement. In this study, I measured height to length ratios from two units of the Site 102-126 midden to produce a sample of 323 oysters, or just under half of the total oyster assemblage. Additionally, I recorded if

the oyster was part of a cluster (that is, attached to another oyster shell), contained an attachment scar from another shell, or was still attached to part of its original rock substrate. In addition to providing information about growing habitat, shell heights can provide general information about the age profile of harvested shells (Kent 1988). Although this information is less precise than measurements of growth rings, it suffices to provide a general picture of age of harvest (Kent 1988).

An examination of oyster shells from two midden units at the Site 102-126 found 46% of the shells had length to width ratios of less than 1.3, consistent with growth on sandy substrates, while 48% had ratios of between 1.3 and 2, consistent with growth on mixed muddy sand (Kent 1988). The remaining 6% had higher length to width ratios, which most commonly occur in oysters growing in either channels or reefs, with oysters growing in reefs on sandy substrates primarily growing directly on the surface of another oyster, forming clusters. Of the oysters at Site 102-126, only 22% of the total assemblage are part of a cluster, although when one considers those oysters with height-to-length ratios of greater than 2.0 (as typically found in both channels and reefs), this number increases to 39% that were part of a cluster. These numbers fall well below the 50% of oysters in clusters which Kent (1988) presents as the lowest proportion expected for reef oysters, indicating that these few elongated specimens more likely come from deeper channels rather than reefs. However, as the number of elongated oysters is quite small overall, it appears that shallower, sandy and muddy conditions dominate the areas where the oysters recovered from the reservation were gathered. As such, the growing habitats for the oysters found in this midden are relatively consistent with the softer and shallower

estuarine and intertidal areas from which the other commonly recovered shell species were gathered.

In addition, a sample of 39 soft shell clams from two contexts within the Site 102-126 shell midden were selected and prepared for thin section analysis of age and season of harvest. This sample was composed of 16 shells selected from a shell concentration approximately 30-45cm below the surface in a cluster with approximately a 1-m radius, and 23 shells from the base of the midden feature, approximately 60-75cm below the surface. Both samples contain all soft-shell clams with complete umbo and chondrophore, a small protruding appendage near the hinge in soft-shell clams, within what appear to be spatially distinct deposits.

Preparation of thin section slides followed the methods described in Cerrato, Wallace and Lightfoot (1991, 1993), in collaboration with Dr. David Landon and Université Laval graduate student, Stéphane Noël. Each shell was coated with epoxy along the length of the chondrophore, umbo, and out to the ventral margin (or whatever shell edge was available in cases where part of the shell was broken off) to strengthen the shell in preparation for cutting. These shells were cut as close to the center of the chondrophore and umbo as possible using a low speed saw. One half was chosen, ground with 500 grade sandpaper until smooth, and then epoxied to a slide where one side had been ground briefly with sandpaper to create a rough surface, better for the shell to adhere to. These shells were then cut to approximately 400 to 500 microns and then ground with 500 grade sandpaper to a thickness of between 200 and 300 microns. Each shell was then observed under a microscope to examine the clarity of growth banding,

and if needed was ground further.

Once these slides were prepared they were studied under transmitted light at variable magnifications for patterns of growth banding. As recorded in Cerrato et al. (1991), soft shell clams contain yearly growth banding comprised of alternating opaque and translucent bands (when viewed under transmitted light), with translucent bands corresponding with summer seasons (See Figure 4). The pattern of opaque and translucent bands were observed and recorded for each shell by the author, Dr. David Landon, and Stéphane Noël. Both age and season of death were recorded. Age was assessed by the number of translucent and opaque bands, while season of death/harvest was assessed by noting the character of the last growth band at both the junction of the umbo and chondrophore and the chondrophore edge.

The determination of season and age made by each observer were discussed, and in the case where initial readings did not agree, an attempt was made to arrive at a consensus. A confident determination of season-of-harvest was not possible for every shell, although an assessment of season was established for 31 of the 37 shells from which sections were made. Most the shells for which no season-of-harvest was determined were missing conclusive shell edges, either as a result of degradation of the initial shell, or as a result of degradation of the shell resulting in missing chondrophore edges, or due to inconsistencies in slide preparation.

Figure 4: Two examples of soft shell thin sections (a) summer harvest. (b) autumn harvesting



(a) Summer harvest, 5 or 6 years old

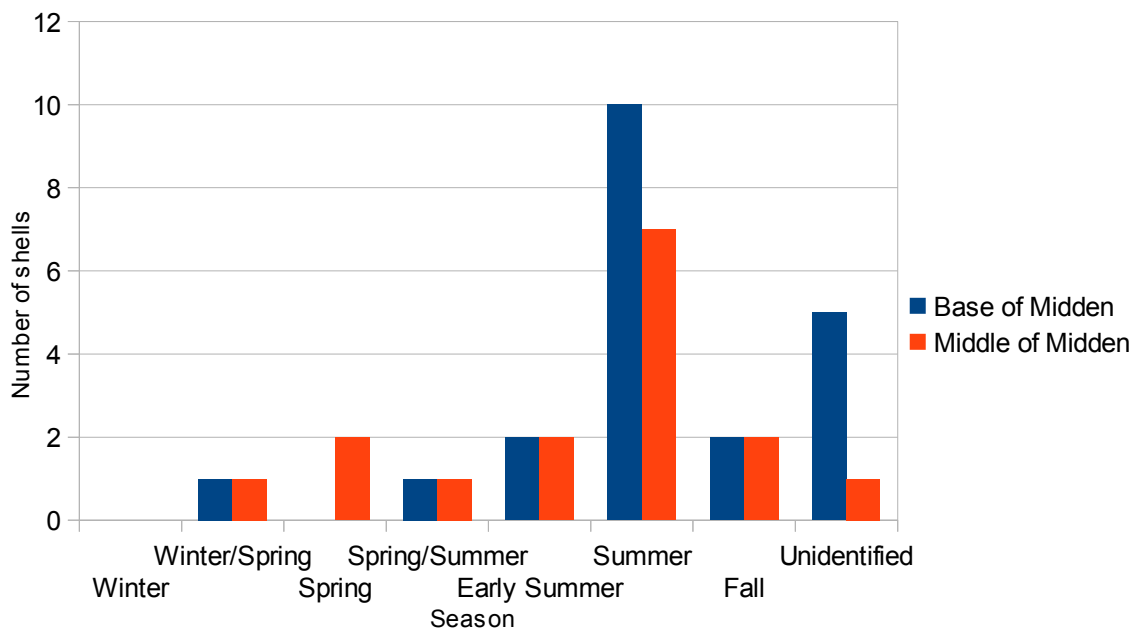


(b) Autumn harvest, 4 years old

Both samples evaluated show a strong peak in clams harvested during the summer. A season of harvest determination was made for 16 of the 21 shells from the bottom cluster and 15 of the 16 shells for the middle cluster, although the one remaining shell in this cluster appeared to represent non-summer harvesting, though no further assessment could be made. In the bottom cluster, 12 of these shells were gathered during

summer, while 9 in the middle cluster show evidence of summer harvesting. Additionally, 1 shell in each cluster was identified as either spring or summer harvesting. Neither sample contained any shells that conclusively appear to be harvested during the winter, though 1 shell in each sample was assessed as either winter or spring harvesting (See Figure 5 for complete season of harvest information).

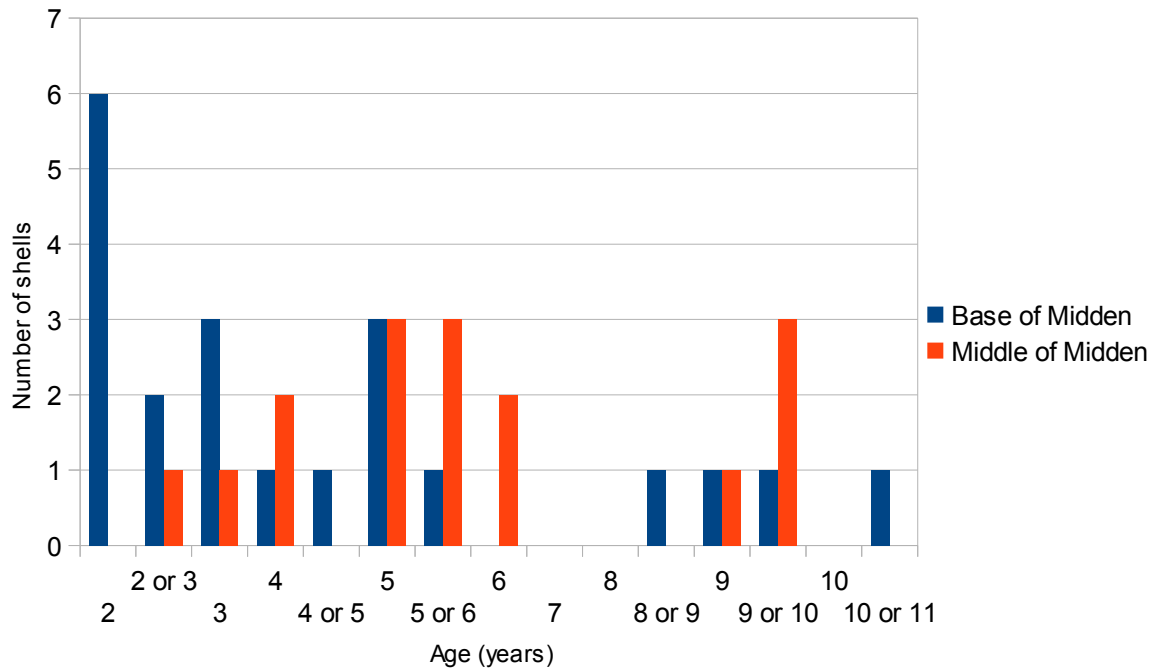
Figure 5: Site 102-126 Midden Soft Shell Clam Season-of-harvest



Ages of harvested clams range from two to eleven years with the majority between two and six years; a determination of age or age range was made for all specimens. At the base of the midden, 17 of the 21 shells were identified as six years or younger at the time of harvesting, with 11 of these specimens only two or three years old (see Figure 6 for full age of harvest information). The shells from the middle section of the midden were again largely six years or younger, with 12 of the 16 specimens falling

in this range. However, of these, only 2 were three years of younger, 2 were four years and 8 were five or six years old at the point they were harvested.

Figure 6: Site 102-126 Midden Soft Shell Clam Age-of-Harvest



The preponderance of small, young clams in the bottom level of the midden and to some degree in the middle, indicate intensive harvesting or significant predation on soft-shell clams. This is especially striking in the earliest midden deposit, where the majority of clams were harvested before reaching full maturity at 5 years of age (Abraham and Dillons 1986), whereas those in the middle level of the midden tend to be harvested very close to when they mature. This potentially indicates that the bulk of these shells were obtained from marginal shell beds, and may indicate some – albeit fluctuating – restriction on the ability of Eastern Pequot individuals to access high quality shellfishing areas. Furthermore, I believe that the reliance on these generally smaller,

younger clams likely indicates that these shellfish were indeed gathered by Native individuals rather than obtained from a market source. While many items used by Pequot individuals in the eighteenth century were purchased in markets, I propose that market procurement of shellfish would likely result in an older, more balanced age profile, as the very young shellfish represented here do not provide an ideal source of food. Furthermore, harvesting individuals before or very nearly after maturity likely indicates heavy population pressures and unstable harvesting patterns.

CHAPTER 5

SHELLS AND SITES: HOUSEHOLD SCALES OF ANALYSIS

Introduction

In considering sites on the Eastern Pequot reservation, it is important to consider them both as parts of the broader community and as individual households that were the sites of daily activities for a small number of individuals. As it was the collection of these individual households that comprised the community, and members of each household were responding in culturally relevant ways to internal and external circumstances, it is possible to make useful generalizations from selected households, as will be discussed in the next chapter. However, it is also useful to take a small scale approach and consider not only the total site assemblages, but also changes within them. This lends insight into how changes in practice might have been experienced over the lives of individuals, which in turn can overcome dichotomous paradigms of change and continuity by exploring how new practices became routinized (Silliman 2009).

Occupation dates for excavated sites are typically inferred by the general range of artifact dates, which at colonial era sites in New England frequently rely heavily on ceramic dates. Most reservation sites appear to be occupied for 20-40 years, providing a relatively tight snapshot of community-wide practices. However, when one considers

individual experiences, the perspective on this time period shifts from that of approximately one generation, to a quarter or half of one's lifetime. By breaking down an analysis of midden contexts into a consideration of their multiple deposits, I consider the archaeological remains within these multiple frames of reference.

Midden and Site History at Site 102-123

Both structural remains visible from the surface of Site 102-123 and archaeological excavations in 2005 and 2006 at this site reveal a complex occupation history that at present appears unique to this site. This site is characterized by a large spread of associated artifacts and features, surrounding a chimney fall associated with a framed structure and deep cellar with a second chimney fall just seven meters away (Witt and Silliman 2010). The remains of two hearths were excavated in the house areas near the chimney falls, while other nearby features include a depression which is interpreted as a possible root cellar to the southwest, a dense rock and shell midden to the east, an additional trash deposit, several rock piles and nearby stone wall enclosure comprising a site area of approximately 2,500m² (Fedore 2008; Silliman 2009; Silliman and Witt 2010; Witt 2007). It is currently unclear whether these two chimney falls and associated structural remains comprise one building with a double chimney, multiple construction episodes on the same basic household or two separate and concurrent or sequentially occupied houses (Witt and Silliman 2010). Architectural analysis of the site is ongoing, but completed faunal analysis (Fedore 2008) and ceramic analysis (Silliman and Witt 2010; Witt 2007) provide some further details to which this shell midden analysis seeks to add.

Witt and Silliman (2010) note that while the site as a whole yielded a mean ceramic date of approximately 1780-1788, the depression to the southwest of the house – tentatively identified as a root cellar – contained ceramics dating approximately 20 years prior to those elsewhere on the site, with an MCD of 1768. When considered as a single context, the midden yielded an MCD of approximately 1785, on par with the 1780-1790 dates for the house structure and immediate vicinity (Witt and Silliman 2010).

Creamware and pearlware were well represented in the house vicinity but make up a much smaller portion (14%) of the ceramics from the root-cellar depression. In contrast, the depression just south of the house contained the majority of the tin-glazed earthenware, slipware and white salt-glaze stoneware recovered from the site, indicating a somewhat earlier use of this area. This led the authors to conclude that a shift in site use occurred around 1780 and may be related to a rebuilding episode associated with the second chimney structure at the site (Silliman and Witt 2010). Furthermore, one must approach mean ceramic dates with caution, as they indicate a single averaged date of site occupation based on the range of ceramic production dates, and do not capture the full use history of these ceramics, nor the site on which they are found.

In light of this, I conducted a more detailed, level-by-level analysis of the ceramics in the midden to reveal any association of midden deposits with the larger site history (see Table 7). By considering the ceramics in the midden in conjunction with other artifacts, shell and faunal information, one can see a clear passage of time through the changing representation of different ceramic types that parallel distinct changes in shell deposition. Moreover, these changes in midden use tie in to larger site

modifications and together provide insight about the occupation history of the site. The deepest portions of the midden (levels 11-14 or approximately 60-100cm below the surface) contained very small quantities of shellfish, small quantities of mammal bones, and few to no artifacts. It is distinctly possible that the scattering of deeply buried remains resulted from post-depositional processes such as bioturbation.

Table 7: Site 102-123 Midden Analysis by Level

Level	Average Depth (cm)	Average Thickness (cm)	Weight of Shell (g)	Weight of Fish (g)	Weight of All Mammals (g)	Ceramics (count)	Glass (count)
1	4.9	4.9	0	0	0	20	1
2	6.3	1.1	5.2	0	10.4	7	5
3	14.45	7.15	0.6	0	1.2	2	2
4	19.75	5.3	204.7	0	409.4	15	8
5	23.35	5.6	1473.8	0.2	2878.9	131	78
6	28.85	3.5	3947.6	0.2	7726.9	96	59
7	32.65	3.8	6917.5	1.6	13,534.9	376	85
8	36.35	2.6	7019.7	0.8	13,763.4	98	75
9	39.2	3.95	5663.4	0	10,737.1	30	34
10	42.95	3.75	1414	0	2718.3	16	2
11	44.35	1.4	37.9	0.1	61.9	0	0
12	49.65	5.3	11.6	0	23.2	0	0
13	52.35	2.7	17.7	0	14.9	0	0
14	59.75	5.4	3.1	0	5.6	0	0

Faunal material comprised mostly of cattle bones and unidentified vertebrates spiked sharply in level 11, prior to any discarded ceramics and preceding significant shellfish deposition. This arguably represents the first use of the area for refuse disposal

at a time prior to any sizeable shellfish consumption by the site residents. A small amount of soil and rocks with few artifacts, shells or bones covered this layer prior to an increase in almost all types of artifacts and ecofacts. While redware is the most ubiquitous ceramic type, the lower food- and shell-containing midden levels contained high quantities of creamware and Jackfield/Jackfield-type ceramics, with a smattering of white salt-glaze stonewares, grey stonewares and tin-glazed earthenwares. These provide an MCD in the 1760s to 1780s for levels 8-10, during which shellfish deposition increased and peaked. Moreover, the complete absence of pearlwares in these levels despite their presence at the larger site indicated these levels may have pre-dated the last quarter of the eighteenth century.

While shellfish levels remained high in the two levels following their peak, mammal bones drop distinctly for one level before again rising. It is in this level that the largest number of ceramics was discarded, with creamwares, grey stoneware, Jackfield/Jackfield type, and undecorated redwares the most common. The absence of white salt-glaze stoneware and tin-glazed earthenware push potential dating for this period slightly later than the deposits immediately below it, although the complete absence of pearlware still indicates a likely date before the end of the eighteenth century. Over the next few levels, quantities of ceramics, other artifacts, shells and bones continued to decrease, with shellfish decreasing more rapidly than other forms of refuse. In total, 93% of the shells were recovered from below level 5, the first level containing pearlware, and less than 2% of the total recovered shellfish were from the top 4 levels. While artifact quantities were much lower near the surface, a substantial number of rocks

cover the bulk of the food refuse. Datable ceramics are somewhat scarce near the top of the midden area, but a total of eighteen datable ceramics – mostly pearlware and grey stoneware - capped the artifact component of the midden with a deposit dating the around the turn of the eighteenth century.

Through this consideration of the midden levels, several patterns of site activity emerge. Given the complex architectural history of the site and the 1760s mean date of the southern depression area in contrast to the 1790s mean date for the main site, it appears that at least two construction episodes and possible two occupation periods occurred on the site (Witt 2007). Fitting with this, the complete absence of pearlware in the midden levels that contain over 90% of the shell indicates that the extensive shell consumption likely occurred prior to or within the same time frame as the architectural shift at the site. This could be in keeping with a shift in site occupants to individuals with fewer coastal ties as time passed and new generations aged without forging the same coastal ties, or changes in food sources might have paralleled additional changes at the household level or larger changes in political, social or economic realms. Any of the above or some combination could have prompted changes in both subsistence and foodways. Nearly one-third of the faunal mass was contained within levels 1 through 5, with most of this in levels 4 and 5, which post-date the peak shell deposits, indicating that substantial non-shell food refuse was deposited in the midden after shellfish consumption decreased. This suggests that shellfish went from contributing significantly to the household diet to playing a relatively minor role in this instance around the turn of the nineteenth century.

While fish bones were never heavily represented in the midden, the only sizable quantities of fish from the midden (and the site overall) came from those levels with the largest numbers of shells, one of which also contains a marked drop in animal bone mass. This drop in bone mass appears caused by a marked drop in cattle, which provide the bulk of the non-shell faunal material on site and in the midden. Similarly, nearly 10% of the faunal remains pre-date substantial shell consumption, with bone mass rising briefly before dropping off immediately prior to the rapid increase in shell deposits. Without outside information it is difficult to assess whether a decision to gather and consume sizable quantities of shellfish led to a decreased use of other meat sources or whether an interruption in the supply of mammals led residents to seek alternative food sources.

Within the general site, Fedore (2008: 50) calculated that excavated bones provided 23.57 kg of edible biomass, of which 23.46 kg came from mammal sources. Shells contribute over 8.72 kg of edible food weight, of which 8.06 kg are from soft shell clams. The midden itself contained 9.53 kg of vertebrate biomass (calculated by the author using data produced by Fedore) and 9.32 kg of the total shell biomass, indicating essentially equivalent food contributions from shell and vertebrates disposed of in the midden area.

Midden and Site History at Site 102-126

Analysis and interpretation of Site 102-126, excavated in 2011, are still in the preliminary stages, but the midden context itself provides a wealth of information. Unlike Site 102-123 where a lack of clear stratigraphic layering left depositional history up to inferences based on artifacts and faunal remains, the Site 102-126 midden contained

visually distinct deposits and shell/bone concentrations recorded in the field. These provide traces of practices on a short-term, event-level scale.

The midden area was comprised of a pit dug to approximately 75 cm below the present day ground surface, covered by a larger spread of refuse down to approximately 45 cm below the current surface. This tells of the evolving use of the area. At some point early in the site history a pit was dug and trash was disposed within this pit, which after a time became full, at which point refuse continued to be deposited in the area, creating a larger spread of artifacts and food waste beyond the original perimeters of the pit feature. The deepest portion of the midden extended approximately 65 to 75cm below the present ground surface and was contained within approximately 75 cm² of one of the excavated units, although it appears to spread to the north into an unexcavated area, but based on the general midden plan it is unlikely to extend more than about 50 cm² into this area. This area contained a dense shell layer approximately 10 cm thick with very little faunal material and no artifacts. Oyster makes up 72.1% of this shell in this deepest level with soft shell clam contributing almost all the remaining shells at 25.6% of the shell weight in this level. Covering this deposit was a layer of rocks, soil, a small but increasing quantity of artifacts, and a moderate quantity of shells.

This initial shell layer showed only slight evidence of clustering indicative of separate deposits, as three rough concentrations were recorded in the field, but these essentially merge to cover the full extent of the midden bottom. As such it is difficult to determine whether this represents a single episode or three (or more) deposits that merged in the ground without additional filling. Using an estimate of 0.2 g of useable meat per

gram of oyster and 0.35 g for one gram of soft shell clam (Salwen 1970), the 1,930.8 g of oyster shells and 710.6 g of clam shells gives approximately 645 g of edible meat. Given the relative absence of other substantial food remains in this deposit, it is possible that these shells represent a single meal or small number of meals consumed by the members of the household. Following this, the discarded shells were covered by a layer of rocks and soil, a common practice to cut down on vermin and smells surrounding food wastes.

Over time, additional shells and larger numbers of bones and artifacts continued to build up in the midden, indicative of periodic trash disposal. Due to the small number of datable artifacts in the next 20-30 cm of soil (in total only 6 non-redware ceramics), it is unclear how long this process took. However, the creamware, delftware and Astbury ceramics that were recovered from those levels indicate a mid-to-late eighteenth-century date, skewed slightly earlier than the following levels. After these moderate density deposits, shell concentrations peaked again at approximately 30-45 cm below the surface, which generally corresponds to the point where the midden spreads beyond the dug pit to a larger surface spread. Therefore, it is important to acknowledge the changing surface area of the midden at each corresponding depth when considering shell quantities.

However, despite the increased spatial extent of shell remains, the bulk of these shells remain concentrated in an area slightly larger than the square meter near the initial pit.

In total, 2,603.9 g of shell were recovered from the above described area, of which 62% is oyster, 24% is soft shell clam, and 12% is mussel, with small quantities of hard shell clam and unidentified fragments. Together, these contribute approximately 700 g of usable meat weight. Detailed faunal analysis is still in progress from the site, but general

bone counts indicate a much higher level of vertebrate consumption associated with these deposits than at the base of the midden. Although already largely clustered within a general area, several distinct concentrations were noted during excavation, indicating that multiple deposits associated with multiple meals were represented. No significant differences are evident in the composition of these concentrations.

Above 30 cm the quantities of shellfish decreased smoothly, although with 2,624.9 g of shell in the top 30 cm, this area still represents significant consumption. Creamware, tin-glazed earthenware and white salt-glaze stonewares were well represented in this area, with moderate quantities of pearlware pushing the dates into the late eighteenth century. Mean ceramic dates show a slight progression of dates, but given the small number of ceramics in many levels, this information adds little to the overall midden history as these dates fluctuate between the 1760s and 1780s, with a trend towards the later dates near the surface. More significant is the noticeably higher number of ceramics within the top 20 cm; this area contained 90% of the ceramics, but only 6% of the shell mass. Shell species became more varied in the top 30 cm, with oyster representing 62% of the shell weight, soft shell clam at 19.9%, mussel 8.6% , hard shell clam 5.7%, and other species (surf clam and scallop) representing 0.3% in total and with 2.9% of the collection unidentified. If one considers only the top 20 cm, oyster percentages drop to 40%, with corresponding increases in all other categories except scallop and surf clam. No corresponding changes in oyster size accompany these changes in absolute or relative contribution, indicating it is unlikely that changes in oyster populations themselves are responsible for this change. However, changing access to

land may have restricted access to certain areas previously used for harvesting oysters or opened up new areas for collecting.

Over the course of the site's history as described above, several changes are notable in the shellfish assemblage and its role in diet, which encode changes in practices. Initially shellfish generally and oysters specifically appear to be a primary protein source for the site's residents. Little is known from either the archaeology or documentary records about the specific identities of residents in any reservation houses during the eighteenth century, leaving open the question of what occupants of various houses did for a living and the demographics of these households. It is likely that it took these individuals some time from moving to a new location and constructing a house until they developed a sufficient livestock and agricultural base to sustain themselves. Depending on the reason for constructing a new house, individuals may also have been short of capital needed to buy food in nearby markets. However, given the strong seasonal trends in shellfish gathering evident in the examined soft-shell clams, including those from the initial deposit, it is also probable that the exact timing of household relocation played a role in the initial food sources employed. If shellfish gathering was indeed strongly to the summer months as it appears, and residents moved to a new house at that time, it is natural that shellfish would be heavily consumed during the initial months at this location. Moreover, as some fluctuations in reservation inhabitants occurred over time, it is possible that residents relocated to the reservation – due to intermarriage or otherwise – from outside areas and may have maintained personal and social ties to coastal areas that previously were in closer proximity.

Any of the above reasons could lead to an initial heavy reliance on shellfish, with later integration of more varied food sources. Moreover, it is plausible that the initial use of the midden and corresponding consumption of shellfish does not coincide with the initial habitation of the site, but rather a shift in practices towards a heavier reliance of shellfish. The subsequent dip in shell quantities may merely represent a filling episode, or may coincide with other activities. General food needs would decline if some household members spent a period away from the reservation as so many Eastern Pequot individuals did throughout the eighteenth century (Den Ouden 2005: 258; Mancini 2009: 70-72; Mandell 2007: 27, 43). Seasonal changes in food acquisition likewise would change the ratio of shellfish to vertebrates consumed, although further analysis of the faunal assemblage along with season of harvest information for the shellfish could provide stronger evidence for this case. A return to heavy shellfish consumption, however, indicates that coastal ties and a need or desire to consume shellfish persisted and may indicate a resurgence in subsistence needs, economic hardship, seasonal patterns, or correspond to a visit to an off-reservation, coastal community (Mancini 2009: 142-151). Nearer the top of the midden, the decreasing quantities of shellfish parallel the abandonment of the site. The increasing number of household items in the midden indicates the general disposal of artifacts which may be associated with the abandonment of the property.

Midden and Site History at Site 102-124

Excavated in 2007, Site 102-124 provides the earliest currently known archaeological context from the reservation period. Shovel test pit survey located an area

with high artifact concentrations, including a limited quantity of architectural remains such as window glass and nails, in an area which unlike other excavated sites contained no features visible from the surface. The complete absence of creamware indicate that the site was uninhabited much past 1760, while stonewares and delftware indicate an initial habitation date of around 1740 (Hayden 2012). During excavation, a general refuse pit was located and three 1-x-1-m excavation units plus smaller units (adding approximately another 1 m²) were excavated. Although the midden pit appears to be used predominantly to discard broken household items including ceramics, glass, metal and pipes, food refuse was also well represented. A total of 570.6 g of shell were recovered from this area along with 443.1 g of bone (calculated by the author from data gathered by Fedore), representing nearly two-thirds of the 825.5 g of shell and 653.4 g of bone (Fedore 2008: 44) recovered across the entire site.

Shells, other faunal material and artifacts were well mixed throughout the entire depth of the midden, which extended approximately 60cm below the present ground surface. Aside from a higher number of fish bones within the midden, where preservation conditions tend to be better, the shell and faunal representation within the midden was largely the same as the site in its entirety. Hard shell clams are the most prevalent bivalve species by weight, contributing 66% of the midden shell weight and 62% of the site total, while soft shell clam are most common when one considers hinge counts with 60% of the midden shells by count and 54% of the site total by count. This difference is likely strongly influenced by the thicker, denser shells of hard shell clams combined with the fact that the valve portion of soft shell clams tend to preserve quite well (Cerrato and

Lightfoot 1988). When one considers available biomass, hard shell clams contribute approximately 121 g, soft shell clams 71 g, and vertebrates supply 8,850 g, of which 339 g comes from fish. Domesticates, primarily cows and pigs, provide the bulk of the edible biomass, indicating that while these animals served as dietary staples, sea resources offered a small but not uncommon contribution (Fedore 2008: 44-49).

Intersite Comparisons

Several notable differences are evident across the sites with major shellfish deposits that reflect significant synchronic household variation. Most striking is the difference in species representation. Site 102-123 and 102-118 contain soft-shell clams almost to the exclusion of all other species, while the Site 102-126 contains a more well-mixed, albeit oyster-dominated assemblage, and Site 102-124 contains high quantities of both hard and soft shell clams. At Site 102-124, shells provide a consistent though relatively small portion of the diet, with the majority of food waste made up of domesticated species. Similarly, shellfish are consistently part of the Site 102-126 residents' diet, but the relative role they play varies over time. The earliest refuse deposits indicate a temporary rather exclusive use of shellfish as the main protein source (or separate, as of yet unrecovered disposal of bones), with increased faunal contributions later. Discrete deposits evident in the excavation units indicate single or short-term cleaning events from which shellfish are rarely absent. Likely this indicates at least yearly periods of routine shellfish consumption, and could indicate a much more frequent supply.

In contrast, Site 102-123 contains a dense layer of shellfish mixed with moderate

to large quantities of bone, but bracketed by additional layers of vertebrate faunal remains without significant shellfish quantities. As such, residents of this site evidently went through a substantial period where shellfish were consumed in large quantities, but did not make them a consistent part of their diet at other times during the habitation of the site. While no clear stratigraphic breaks were observed other than courses of rocks (which still contained shells in the surrounding shell matrix), it appears from the quantity of food and the passage of time evident in the included artifacts that this midden was the result of multiple deposits and not a single, feast-style episode. This refines the preliminary conclusions made by Fedore (2008: 69), who proposed based on the faunal remains and a sample of two shell midden unit levels (equaling approximately 15% of the total shell mass), that this midden represented a few large meals, either with or without the associated social implications of a full feast. Here, an in-depth analysis of the midden depositional history indicates a longer-term accumulation of refuse rather than the limited number of episodes suggested largely by the total faunal biomass. This total midden and site biomass therefore likely significantly underestimates food consumption, as is so often the case in archaeological case studies as the result of many taphonomic processes (Landon, personal communication 2012).

While it is tempting to adopt a change-over-time paradigm to explain these household differences, the site dates currently do not support such a conclusion. Certainly, the lack of shell at most nineteenth-century sites is informative (although in need of further exploration), this is as far as any time based trends go. Site 102-118, 102-123, and Site 102-126 all overlap significantly in occupation dates with both containing

substantial evidence of late eighteenth-century occupation and midden use. The largest quantities of shell at Site 102-123 appear to very slightly predate major discards of pearlware, indicating these shells were likely consumed during the last two decades of the eighteenth century. The initial concentration of shells at Site 102-126 date to a similar period, although no ceramics were recovered from these layers, the subsequent levels contain a mix of creamware, tin-glazed earthenware and white salt-glaze stoneware, akin to those in the shell-containing levels of the Site 102-123 midden. The later shell concentration at both sites contains a mix of these same ceramic types, plus pearlwares, indicating use of the midden towards the very late eighteenth century and perhaps into the early nineteenth century. Despite these overlapping dates, these two shell deposits are the most different of those found on the reservation. Likewise, the midden near Site 102-118 appears to overlap significantly in time given few creamware and pearlware fragments amongst the small number of artifacts within this deposit. This midden shares a very similar species profile to Site 102-123, with a heavy dominance of soft-shell clam, but lacks the density of shells of either Site 102-123 or Site 102-126; however given the limited excavation in the area, it is possible that only the edge of a larger and denser deposit has been recovered. Therefore, large-scale changes such as environmental impacts on various shell species populations or newly restricted or opened land access do not account for the main source of differences between these sites, although they could account for the apparent decrease in shell gathering much into the nineteenth century.

CHAPTER 6

SHELLFISH IN SOCIAL, POLITICAL AND ECONOMIC CONTEXTS

Introduction

At present, archaeological excavation provides insight into life on the Eastern Pequot reservation covering approximately a century from the mid-eighteenth until the mid-nineteenth centuries. This allows for considerations of how the community adapted and changed while remaining grounded to its past in a changing social, political and economic world. Shellfish consumption provides a possible window into several diverse social and subsistence practices. While confinement to an inland reservation with poor farmland forced certain changes, shellfish found on the reservation indicate that some effort was expended to continue some specific traditional subsistence practices. Moreover, gathering shellfish required, and hence provides evidence for, continued access to some coastal areas. In accessing these coastal areas, individuals may have established and reinforced a network of social ties to broader communities of color based outside the reservation. These communities and networks of Native American and other “people of color” in southern New England have been studied by researchers at the Mashantucket Pequot Museum and Research Center (e.g., Mancini 2009).

In this chapter, I draw on this research to explore how these communities may

have aided in maintaining Native ties to the coast despite their inland reservations. Reservation demographics and gender- and age-based practices may have encouraged pursuing shellfish as a food source; likewise, shellfish gathering, unlike hunting, may have slipped through European imposed restrictions on Native activities as an activity less threatening and less obvious than hunting. In this chapter I explore the variable contribution of shellfish to the Eastern Pequot diet and the role of procuring shellfish within relevant social and economic contexts. Here I develop possible relationships between obtaining shellfish and colonial land access and the role of reservation community dynamics in food procurement and consumption.

Shellfish and Subsistence

Since the Pequot and related communities in southern New England had been a seasonally mobile community with strong coastal ties for thousands of years before European arrival, shellfish were a major food source for the Pequot and other communities in what is now coastal New England. While scholars working in New England often assumed that Native Americans gathered coastal resources primarily during warmer weather, thin-sectioning of shells from two sites on Shelter Island and one in Mount Sinai Harbor both show nearly year-round collection, with a preponderance of shellfish collected during late fall and early winter (Bernstein 2002; Lightfoot and Cerrato 1988). At some coastal sites, shellfish provided nearly all the discarded faunal material. For example, over 99% of the faunal biomass at the Laspia site on Long Island, which dates to approximately the fifteenth century, is from *Mya arenaria* (Cerrato et. al. 1993).

In light of this, shellfish in reservation contexts are part of long-term subsistence traditions in southern New England. Unfortunately, the archaeological record for the sixteenth and seventeenth centuries in the region is rather sparse, leaving somewhat of a gap between the excavated eighteenth- and nineteenth-century remains and earlier periods of the reservation and pre-reservation histories. While no sites from before the mid-eighteenth century have yet been located on the Eastern Pequot reservation, a small number of seventeenth-century and older sites at the Mashantucket Pequot Reservation provide supplemental information.

Prior to the encroachment of European settlers, many sites in southern New England were at specialized, seasonally inhabited locations (Bernstein 1990; Luedtke 2002; McBride 1994). Food was frequently one such specialized resource, resulting in significantly different faunal remains from sites before the seventeenth century depending on the location. Coastal sites, such as those on the Long Island Sound, frequently contain almost exclusively fish and shellfish as the main protein source (Bernstein 1993, 2002; Lightfoot and Cerrato 1988), while inland sites tend to be dominated by birds and land mammals, with much smaller numbers of fish and shells – if they are included at all. Although shellfish dominate most coastal assemblages, these shell heaps do often contain small quantities of deer, small mammal and bird bones (Bernstein 2002).

As the area now contained within the Mashantucket Pequot reservation has archaeological evidence of thousands of years of habitation, a few sites from the Late Woodland era provide evidence of foodways within a few centuries before the reservation period. One rockshelter campsite excavated on what is now the Mashantucket

reservation reveals a mix of generally unidentifiable mammals, birds, and reptiles, with shell contributing only 2.1% of the assemblage weight (Vasta 2007: 77-78). In contrast to this, several Mashantucket sites from the early reservation period through the late eighteenth century often contain large quantities of shellfish (Bernstein 1993; Vasta 2007). One such site, the Monhantic Fort site, which dates to the late-seventeenth century, is discussed further below to provide information on the early reservation period not well represented archaeologically on the Eastern Pequot reservation. This difference between pre-reservation and reservation era sites likely results in part due to the seasonal mobility possible during pre-colonial times. This would have allowed for short-term occupation of coastal areas where shellfish were consumed and discarded and a resulting lack of reason to carry shellfish inland. During early colonial periods, individuals maintained coastal ties while establishing more permanent homes on the reservation, where they returned with shellfish, which they consumed and discarded the associated waste at these reservation homes.

The Monhantic Fort on the Mashantucket Pequot reservation was occupied for only two to five years during and possibly for a short time after King Philips War in 1675 (McBride 2006: 323). This site was the focus of intensive excavation by archaeologists at the Mashantucket Pequot Museum and Research Center, and faunal material from several features was analyzed by Vasta (2007) as part of her dissertation. Two midden areas, a storage pit and the palisade area, provide insight into food consumption at the fort. A total of 11 bones from pigs, cows and unidentified ungulates contribute only 6.8% of the bone mass recovered from the site, while wild mammals provide 41.2%, wild birds

0.9%, fish 10.2% and amphibians and reptiles 1.7%, with the remainder unidentified (Vasta 2007: 155-162). However, vertebrate bones contribute only 4.2% of the total faunal mass with shells providing all the rest. Among these shellfish, oysters contribute just over one-third of the assemblage weight, soft shell clams just under one-third, quahog at 10%, and ribbed mussels at 5% (Vasta 2007: 155-160). The remainder of the assemblage is comprised by a variety of species including scallop, freshwater mussel, whelk, and snail, as well as the 16% of shell specimens that remained unidentified (Vasta 2007: 159).

At eighteenth- and nineteenth-century sites on the Eastern Pequot reservation, wild mammals contributed little to the household diet, leaving shellfish as the largest non-domesticated food source (Cipolla 2005; Fedore 2008). From the two eighteenth-century and two nineteenth-century sites with extensive faunal analysis, only two deer bones were identified, one each from Site 102-123 and Site 102-113 (Cipolla 2005: 44; Fedora 2008: 51). This, in contrast to the 30 to 100 bones from cow, pig and sheep combined at these sites, indicates a shift from deer hunting in seventeenth-century subsistence practices as a major meat source towards domesticated and market animals. Sites at Mashantucket from the end of the eighteenth century show a similar trend, with growing quantities of domesticated mammals, and deer rare but not completely absent (Vasta 2007).

On first glance this appears indicative of a near complete shift in subsistence patterns from hunted and trapped wild animals to purchased and raised domestic mammals, with a clear decline in deer and small mammals paralleled by an increase in

domesticated ungulates. However, the contribution of fish, shellfish, birds and reptiles reveals a much more complex picture of food procurement and consumption. Shellfish from Site 102-123 and Site 102-126 contribute to faunal material in significant quantities, on par with that at Monhantic Fort. At Site 102-124, Fedore (2008: 48) identified 549 fish bones, although only 6 specimens were identified to the species level, including at least two tautogs, and one bone was identified as a right-eyed flounder. At Site 102-123, only 43 fish bones were identified, representing at least one animal each from the smallmouth bass, seatrout/weakfish, seabass and porgy families, although 44 bones are simply identified as “fish”; similarly, a single snapping turtle vertebrate was identified (Fedore 2008: 57). As snapping turtles were not part of regular eighteenth-century diets or other market activities, it is unlikely that the residents of this site obtained the turtle from a market source. Instead, it appears that this turtle was brought from wetter, marshier areas than that immediately surrounding the site, where it likely was consumed (Fedore 2008: 57). The bones from the seatrout and seabass, both saltwater species, were recovered from within the shell midden, while a porgy and smallmouth bass were found elsewhere and indicate some access to both saltwater and freshwater environments.

One might naively expect that just as hunted animals decreased sometime in the seventeenth and eighteenth centuries, use of non-purchased fish and shellfish was also on its way out but this is evidently not the case through the end of the eighteenth century. Moreover, while significant shellfish deposits have not been identified for any nineteenth-century sites, fish remain present in small but significant quantities throughout. At Sites 102-113 and 102-116, one chain pickerel, one yellow perch, one

yellow porgy and 18 unidentified fish bones were excavated from a much smaller area than at Sites 102-123 and 102-124 (Cipolla 2005: 44). From these data it is clear that non-domesticated sea resources remained important to the Eastern Pequot throughout the eighteenth and somewhat, although perhaps less so into the nineteenth century.

Of particular note is the potential rise in shellfish consumption at several sites during the late eighteenth century, around 1760-1800, which coincides with periods of external and internal change and conflict. Placed within a broader political context, this period overlaps with both the French and Indian War and the American Revolution. During both these conflicts, significant numbers of Native American men served in colonial militias (Den Ouden 2005: 70-71; Mandell 2007; Silliman and Witt 2010; Witt 2007). The subsequent effect on reservation dynamics likely played a role in driving subsistence needs and may have contributed to the often short term, intensive harvesting of shellfish seen in certain reservation deposits.

On a smaller scale, seasonal trends in shellfish gathering seem to run parallel to known patterns in employment and other activities. In contrast to the shellfish deposits on Long Island during the Late Woodland period where shellfish gathering appeared to occur year-round with more intensive harvesting in the winter, Site 102-126 on the reservation shows a strong pattern of summer harvesting for soft-shell clams. As Silliman and Witt (2010) observe, there were distinct seasonal patterns to individual employment recorded by Jonathan Wheeler, and likely for other nearby merchants. Here, ten years of work by one Pequot individual is recorded, with each year the work period spanning from April until October or November. Similarly, militia records indicate that

during the French and Indian War, many Native men served from spring into fall and were discharged for the winter. Therefore, the prevalence of summer harvesting coincides with these periods of increased male absences, perhaps offering a tie to gender dynamic on the reservation and traditionally gendered practices, which I discuss in more depth in the next section.

Certain activities involved in food preparation leave evidence on the non-consumed portions that enter the archaeological record. Cut marks indicate the methods and tools used in butchering animals, and can indicate the portions of meat used at sites, from which archaeologists can infer ideas about food preparation methods. Any activities – both in food preparation and waste disposal – that expose bones and shells to fire leave traces for archaeologists to consider. Fedore (2008: 62) noted that over half of the faunal material at Sites 102-123 and 102-124 was calcined, meaning that they were exposed to high temperatures. In contrast, only 37% of the bones in Site 102-113 were burnt, although at Site 102-116, 52% of the bones were burnt (Cipolla 2005: 94), an amount comparable to Site 102-124. As activities related to waste disposal rather than food preparation also result in burnt bone fragments, one cannot immediately conclude that burnt bones indicate that the bones were exposed directly to fire during cooking. In addition to the predominance of burnt bones, Cipolla (2005) and Fedore (2008) found that many of the bones were crushed, likely as part of the cooking process to extract additional nutrition.

The contrasting character of shellfish remains at Site 102-126 and Site 102-123 and Site 102-118 is instructive when one pairs it with faunal and material data. Although

73% of the bones at Site 102-123 were calcined, not a single one of the over 6,000 shells was visibly burnt. At Site 102-126 approximately 3-5% of the shells showed evidence of burning. With the exception of the combined Level 4 data (15-20cm below the surface), which contains two to three times as many burnt shells, all other midden levels contained relatively consistent quantities of burnt shell. However, unlike bones, where crushing facilitated the extraction of additional nutrients and certain cooking methods may have exposed bones directly to fires, shells are less likely to be burnt during food preparation itself. Rather, burning of shells as with some bone burning is more likely to result from waste disposal practices. This could either come from intentional burning of refuse, although the relatively low numbers of burnt shell indicate this was not common practice, or from sweeping general household debris into fireplaces, which were later cleaned and disposed of in the midden. This latter practice very likely also accounts for the clusters of ash and charcoal found in the midden areas, which do not seem to have a correspondingly higher percentage of burnt shell refuse associated with them, nor an overall strong relationship with identified burnt or unburnt shell clusters.

Shellfish Gathering, Reservation Demographics and Gendered Practices

The establishment of the Eastern Pequot reservation provided formal recognition of the existence of the community and offered what was supposed to be a guaranteed land base for community members. While some Eastern Pequot individuals have made their homes on the reservation since the reservation's establishment, the demographics of the reservation population remained in flux throughout much of seventeenth, eighteenth and nineteenth centuries. Reservation populations were never large, with fewer than 250

individuals recorded in all historic records and at times as few as 30 individuals (Den Ouden 2005: 29; Mandell 2007: 4). Information about the number, age and gender of reservation inhabitants comes from appointed overseers' records, petitions made by the community itself, records of nearby merchants and ministers, and censuses conducted for the Connecticut Colony. None of these sources is without bias, as many Euro-American individuals had motivation to under-report populations and frequently measured the perceived health of the community through the number of adult males, while ignoring the significant number of families headed by women (Den Ouden 2005: 28, 70-71). In petitions, the Eastern Pequot community sought to refute outside claims that the community was dying out, emphasizing the number of men as well as total community numbers (Den Ouden 2005: 29); as many individuals worked off the reservation for portions of the year (Den Ouden 2005; Mandell 2007; Witt and Silliman 2010), it is possible that these counts also include these part-time residents. However, through critical examination, certain demographic patterns, particularly with regard to gender ratios, become evident.

Over the course of the eighteenth- and nineteenth-centuries, large numbers of Eastern Pequot individuals, as well as individuals from all nearby Native communities, were employed off reservations (Den Ouden 2005; Mancini 2009; Mandell 2007). As Native communities became increasingly entangled with growing market economies, individuals sought sources of capital with which to purchase the ceramics, glassware, tools and other commodities that had become integral to their daily lives. At only 225 rocky and often swampy acres, which were furthermore subject to frequent

encroachment, the Eastern Pequot reservation would have provided only marginal farmland for bare subsistence needs, rendering farming within the reservation a difficult way to sustain all household food and economic needs. Rather, individuals took employment as whalers, sailors, soldiers, domestic servants and general laborers in the surrounding communities (Den Ouden 2005; Mancini 2009; Mandell 2007). A smaller number worked as craftspeople or healers, often traveling to surrounding areas to sell the products and services (Mancini 2009; Mandell 2007). Some of those who traveled further afield for work never returned, and a disproportionate number of these individuals were men who suffered higher risks of dying in wars or at sea as well as those who found lives for themselves while they were away from the reservation.

Indeed regardless of their source, almost all counts of the reservation population record fewer adult men than adult women (Mandell 2007: 43, 47). For Native groups in general across Connecticut, surveys during the 1750s and 1760s record approximately 50% more Native women than men (Mandell 2007: 43, 47). At Mohegan in 1782, 9 of the 24 recorded households were headed by women, with the associated assumption that men were absent from these homes, and throughout the eighteenth and nineteenth centuries women signed petitions to the Colony of Connecticut in equal or greater numbers than men (Mandell 2007:43, 47). Furthermore, European claims of pending extinction of Native tribes in southern Connecticut frequently cited small numbers of men residing on the reservations, claims that were frequently countered in Native petitions – often authored by women – asserting that while adult men may be few, women and children still provide for an enduring community (Den Ouden 2005: 28, 76-78).

It is only natural that the demographics of the reservation inhabitants would influence the subsistence strategies employed by individuals seeking to feed their families, in whatever form those families took at any given time. Clearly those who spent extended periods well away from the reservation did not directly take part in the practices that produced midden deposits during the times they were away, as they neither procured nor consumed food eaten within reservation households at these times. Still, the economic effects of their employment may well have shaped the types and quantities of food their families were able to purchase, while at the same time, their absence left them unable to assist in cultivation of crops or raising livestock. Those working and potentially living near the reservation had limited ability to contribute to agricultural tasks, but records from merchants in Stonington reveal that individuals working as laborers at times took days off to provide agricultural assistance, although they lost income for these days (Silliman and Witt 2010: 55). The remaining individuals on the reservation had to negotiate a mix of economic pressures, challenges to traditional subsistence practices, and limitations of land, location and resources in order to meet dietary needs.

Ethnographic data and assumptions frequently describe shellfish gathering as primarily the work of women, young children and the elderly or infirm, generally with the connotation that shellfish served as a marginal, “starvation” food (Moss 1993; Osborne 1977), although uniform applicability of this view has been called into question (Claassen 1998; Erlandson 1998). The long term coastal ties of southern New England peoples with temporary coastal encampments that appear in use variably during all parts

of the year prior to colonialism (except perhaps the late winter, when other food would also be scarcest) further call into question the marginality of shellfish use in this area (Bernstein 1990, 2002; Lightfoot and Cerrato 1988; Luedtke 2002). Rather, shellfish were a routine and culturally relevant component of the Pequot diet prior to colonization. Indeed, while shellfish are often discounted as a poor source of calories, Erlandson (1988) demonstrates that they are a quality source of protein, which when combined with plant dietary contributions could have provided a valuable dietary contribution. Few historic accounts provide any solid links between gender and shellfish gathering, but Roger Williams (1973[1643]) recorded that men focused their subsistence attention on hunting and fishing while women tended to agricultural fields and dug clams and other shellfish (Bendremer and Williams 1997). Moreover, women such as Patience Toby were highlighted in accounts as late as the nineteenth century, described as seasonal residents on the Mashantucket reservation who took trips to Noank for shellfish (Mancini 2009: 147-148).

These ties between women (and likely children) and shellfish provide a supporting link to often repeated claims that women served as cultural brokers and holders of tradition (Den Ouden 2005: 76-78; Mandell 2007: 61). This association generally relies on ethnographic and documentary records, since little in the material record has yet been studied from this perspective. Certainly, few objects that match what are stereotypically assigned to women's roles are recovered from the reservation; similarly objects of Native manufacture are rare. Hand-made ceramics which were common through the sixteenth and seventeenth centuries are completely absent in favor

of mass-produced, market-purchased wares. A handful of chipped stone tools are recovered across the reservation, but not in high quantities. While women were certainly capable of producing and using such tools, general ethnographic knowledge points to men as the primary likely stoneworkers. In addition, a handful of thimbles indicates some that some individuals were engaged in sewing, and a small number of adornment objects may have had gendered implications (see Patton 2007), but these objects are rare enough and only weakly linked to any gendered behavior that no analysis has examined their role. Unfortunately, floral preservation on the reservation has been generally poor, so this link to women as the primary pre-reservation period horticulturalists remains unexplored.

While discontinued use of traditional materials is not indicative of cultural loss (Silliman 2009), continued use of pre-reservation materials and resources is rare by the late eighteenth century, leaving open questions as to why certain materials and practices continued unchanged while others were adapted, discarded or adopted. Subsistence needs certainly played a role in determining diets, but I argue that reasons for gathering shellfish went beyond that. The lack of good farmland, challenges adapting to raising domesticated animals, the minimal capital possessed by many reservation individuals, restrictions on hunting, and the absence of many of the most experienced hunters caused certain challenges that subsistence decisions had to work around. As women, children and elderly were the dominant demographic on the reservation, it is unsurprising to find food resources typically available to and gathered by these individuals. However, this should not be dismissed merely as a reliance on starvation foods in light of marginal

conditions. Rather, given the strong social roles held by women, making trips to the coast undoubtedly served as a way for these women as well as the general community to preserve coastal ties and traditional food practices. As an activity easily accessible to the young, shellfish gathering traditions also may have suffered fewer interruptions, as children likely traveled with their mothers to the coast from an early age, even before they reached an age where they may have been employed as household servants or the like. This may have allowed coastal ties and shellfish gathering to continue even as families shared less and less time residing together due to work, and children who resided some time away from the reservation likely learned coastal traditions early enough that they could then pick them back up when they returned to the reservation in a way they could not for more skilled tasks. It is unclear how reservation-era fishing tied into these practices and traditions.

Shellfish, Land Access, Off-Reservation Communities and Travel

The land granted to the Eastern Pequot community in 1683 lies inland, approximately five miles from the nearest coast with a suitable habitat for the species found on the reservation. Unlike other communities in southern New England, such as the Mashantucket Pequot or the Mohegan, which experienced land loss through sales or legal proceedings, the present day, eighteenth-century and initial boundaries of the reservation appear largely unchanged. Land sales reduced the reservation by only 55 acres from its original 280 acres to its present day 225 acres (Silliman 2009: 218). This places nearly a century of inland habitation between the establishment of the reservation and the bulk of the shell deposits under consideration in this thesis. During the initial

reservation period, the neighboring community at Mashantucket retained a title to and habitation of a coastal property at Noank, whose resources were likely also available to the Eastern Pequot community. However, the shellfish deposits on the Eastern Pequot reservation, which primarily date to the late eighteenth-century, indicate coastal access and shellfish gathering for over 50 years after the title to Noank was forfeited in 1714. As such, it is necessary to explore the means by which individuals maintained or re-established the coastal ties necessary to acquire marine resources.

The household sites under investigation were clearly home to members of the Eastern Pequot community for at least parts of the year; however, some members of the household may have spent considerable time elsewhere. Whether this time away from the reservation consisted of long term blocks for employment or occasional trips to other locations, it frequently served as a way to forge and maintain social ties through continued and emerging networks of people and places. Throughout the eighteenth and nineteenth centuries, as individuals sought work outside reservation boundaries and intermarriage increased, small communities of Native individuals and mixed-ethnic families formed outside reservation boundaries (Mancini 2009; Mandell 2007: 45). One such community formed near the Poheganut Bay in Groton during the 1760s and continued at least through the end of the century at which point the Groton town records become inconclusive (Mancini 2009: 117-118). Similar communities existed nearby at Candlewood Hill in Groton and Old Mystic in Stonington from the end of the eighteenth century throughout much of the nineteenth century (Mancini 2009: 118-120, 126-127). These communities were located with easy access to coastal resources, and they or other

similar locations may have served as a bridge towards obtaining shellfish for feeding reservation-based families (see Figures 7 and 8).

Figure 7: Old Mystic, Eastern & Western Pequot Reservations (Mancini 2009: Map 10)

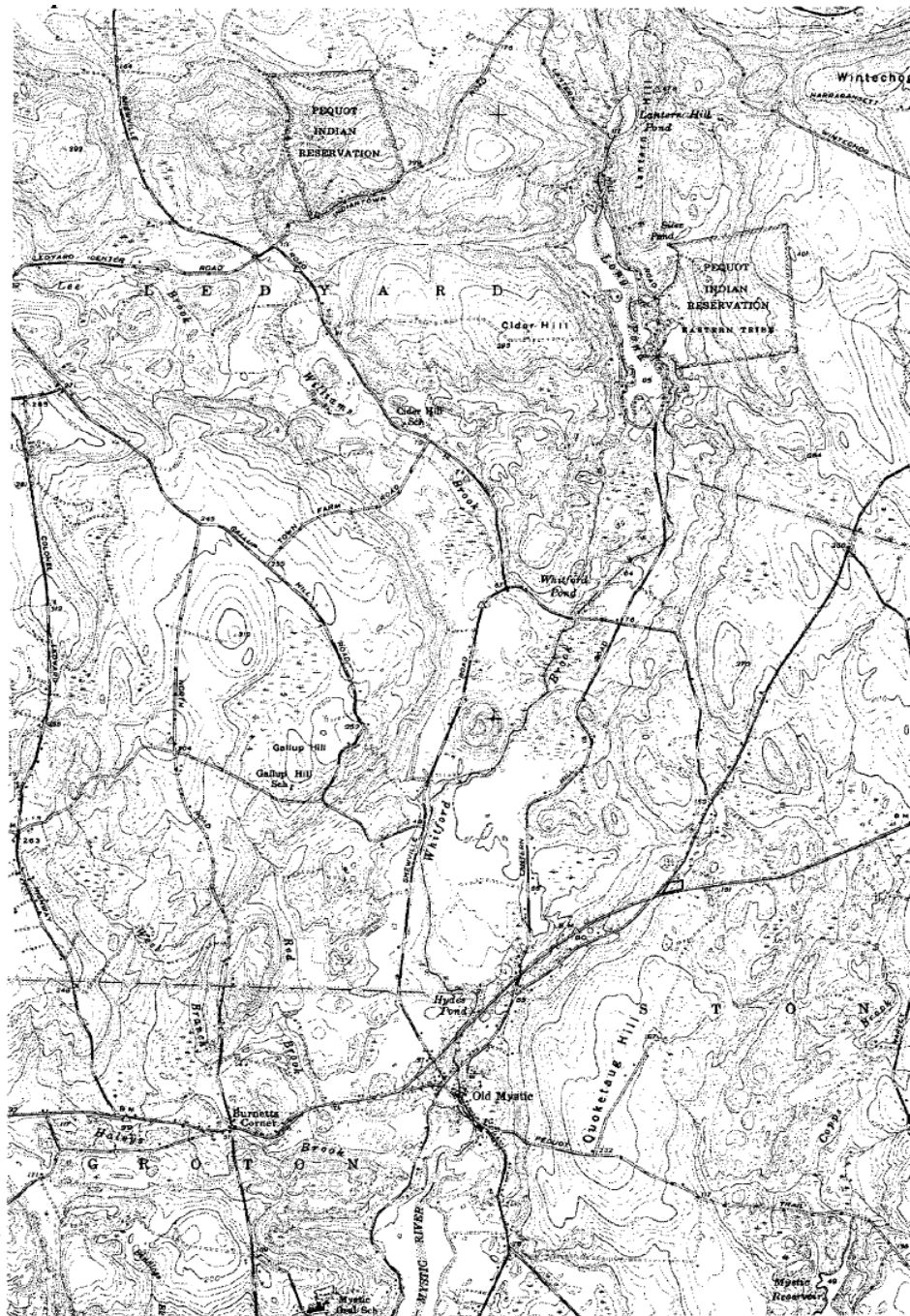
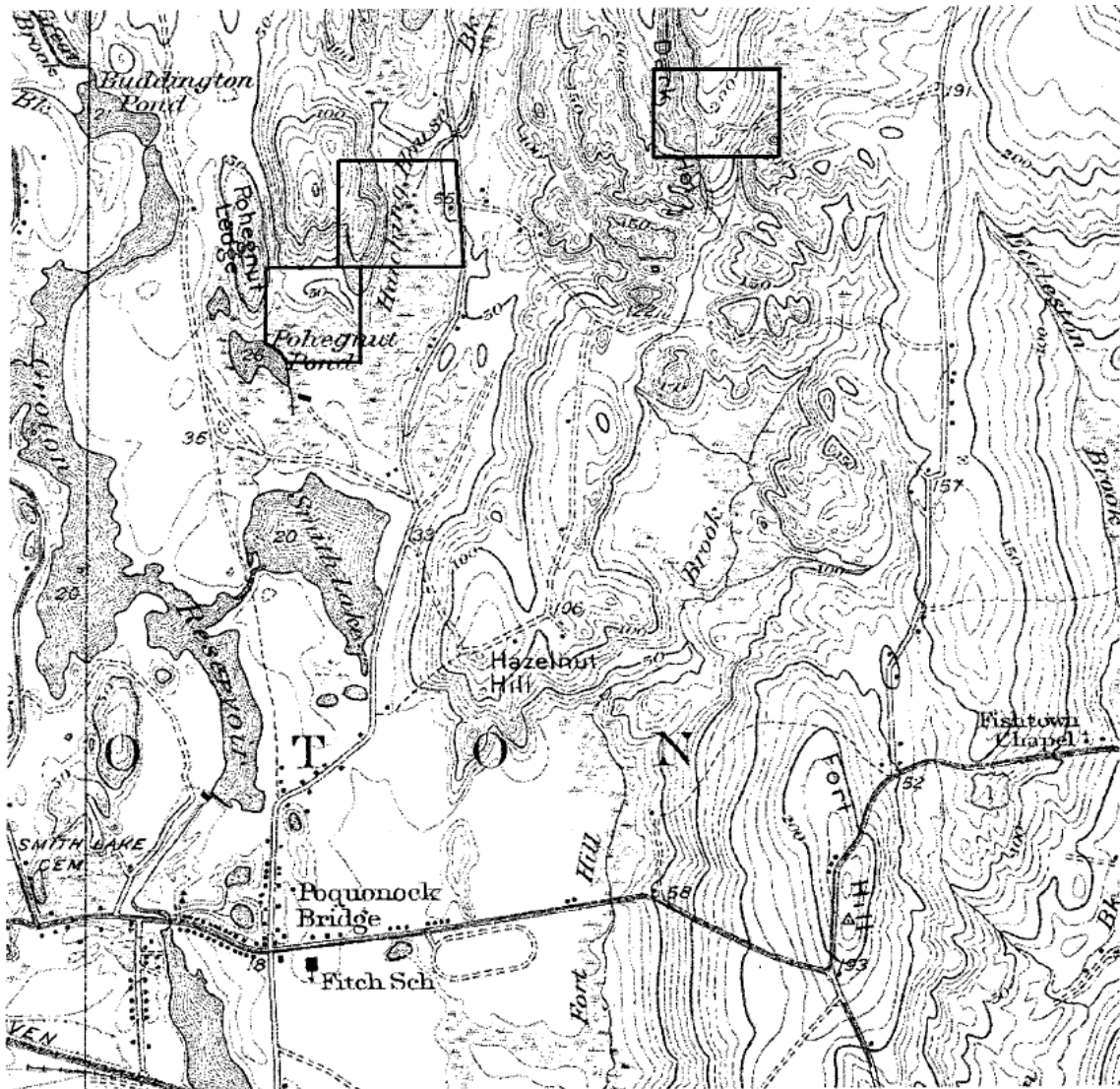


Figure 8: Communities of Color near Pohegnut Bay (Mancini 2009: Map 8)



Just as some individuals sought off-reservation employment, others peddled crafts or services in a transient manner through neighboring areas, frequently orienting their routes both toward seasonal resources and social visits. Information on the routes traveled by Ann Wampy, a Pequot basketmaker, indicate that her travels took her through many off-reservation communities of color where she visited friends and relatives while

selling her wares (Mancini 2009: 142-144). Likewise routes taken on trips to the coast for subsistence needs may have similarly doubled as social visits. Despite losing their reservation at Noank in 1714, some individuals continued to call this their home as the Mohegan minister Samson Occom recorded staying at the home of a Pequot individual there in 1754 (Mancini 2009: 147-148). As late as the 1830s, Patience Toby, a Pequot woman part of a larger group from the Mashantucket Pequot Reservation, was recorded to have made a journey to Noank, where they spent the summer using the estuarine resources in the area (Mancini 2009: 147-149).

These off-reservation communities of color and trips by reservation residents show that European colonist and Euro-American settler attempts to confine Native populations and restrict movements were not wholly successful. Throughout the early eighteenth century, Connecticut towns placed restrictions on where Native individuals could hunt, requiring “friendly” Indians to make themselves known to local towns, and enacting strict penalties against “skulking Indians” (Den Ouden 2005: 78-80). As coastal towns grew in size and became covered by European property laws, Native individuals faced the threat of trespassing when attempting to access traditional coastal and hunting grounds (Den Ouden 2005: 24). Despite this, Native communities continued clearly to reside in many coastal and inland areas outside of reservations, and those living on the reservation made their way across the land periodically. However, while shellfishing remained prevalent and individuals peddled wares and visited friends, hunting appears to have decreased dramatically sometime between King Philip’s War and the late eighteenth century. Both hunting and shellfishing required access to non-reservation land, but

inherent differences in the activities may have resulted in differential reactions by European settlers. The demographic differences discussed above for these activities may have resulted in differential visibility, with settlers more concerned about potential interference and conflict from Native men and rendered activities of Native women and children relatively invisible. Native possession of firearms always remained a major source of anxiety for European settlers, even if these guns found their ways into Native hands as members of militias or as allies in colonial wars. As such, hunting may have drawn more attention and hence more enforced restrictions than shellfish gathering, allowing the latter to proceed long after the former became difficult for Native individuals to continue.

Discussion

Seventeenth- and eighteenth-century Eastern Pequot reservation residents enacted major changes in daily practices, including a dramatic reduction in hunting and a shift towards consuming domesticated mammals. However, other subsistence sources such as shellfish and, to smaller degree, fish remained important elements of their diet. In continuing to procure shellfish, individuals maintained and passed on ties to land off the reservation and forged evolving social networks with non-reservation communities of color. These communities of color indeed may have enabled continuing access to coastal resources, and social visits may have served as an additional goal of shellfishing forays. Intertwined within this is the high numbers of women and children residing on the reservation during this period and the common association of shellfish gathering with these individuals. As such, shellfish gathering could have been continued more easily

than certain other practices despite the frequency of off-reservation employment. Moreover, trips to the coast would have served as a time for these individuals to establish social networks that paralleled the relationships formed by men working as whalers, laborers or soldiers.

Conclusion

As evidenced by substantial shell deposits at several reservation households, Eastern Pequot individuals continued to make use of coastal resources throughout the eighteenth and to some degree into the nineteenth century. This time period saw a marked shift towards consumption of domesticated animals over wild animals; however the continued consumption of shellfish reveals that the transition in mammal sources did not constitute a simple loss of tradition. Rather, individuals maintained certain practices, adapted old ones and adopted new ones to serve the needs of their communities within certain boundaries forced by colonialism. The shellfish gathered by residents of certain eighteenth-century sites definitely contributed substantially towards subsistence needs, but their value did not end at the calories and protein provided.

The Eastern Pequot community, as with other Native communities in southern New England, have a long history of coastal ties and procurement of these coastal resources. Shellfish provided substantial quantities of food for these communities at varying points of the year not restricted to these periods when other food sources were most limited (Bernstein 2002; Cerrato et.al. 1993; Lightfoot and Cerrato 1988). European colonial practices and the establishment of Indian reservations placed restrictions on Native mobility and land access; however these restrictions were not

absolute. While the Western (or Mashantucket) Pequot community was initially granted a reservation on the coast at Noank, this land was quitclaimed in 1714, leaving both the Pequot communities with inland reservations. However, certain individuals with ties to these Native communities and larger communities of color maintained residences near the coast, while other individuals living on the reservation made occasional journeys to coastal areas, enabling them to access shellfish (Mancini 2009).

The work presented in this thesis shows strong evidence for the continued importance of shellfish for both subsistence and cultural identity, especially during the eighteenth century. Information from the neighboring Mashantucket Pequot Reservation indicates that the reliance on hunted animals decreased notably sometime in the late-seventeenth to early-eighteenth century, but excavations from both reservations reveal a different pattern for shellfish. However, currently available evidence hints that shellfish use may likewise decreased around the turn of the nineteenth century. Further excavation of nineteenth-century sites is needed before this can be stated unequivocally. Likewise, hopeful future identification of early reservation period sites could fill in information about shell use during this period, and how it parallels changes from hunted to domesticated vertebrate faunal remains.

As an inland reservation, shellfish provide evidence for off-reservation mobility and these coastal trips allowed for the continuation of traditions and provided a venue to forge larger community ties. As a limited amount of evidence links shellfish gathering to women and children, and documentary records reveal a disproportionate number of these individuals amongst reservation populations, shellfish gathering by reservation residents

may have had particular relevance. Despite demographic instability and increasing economic pressures which forced many individuals off the reservation for labor, shellfish gathering may have served as a continuing cultural anchor as well as a means to feed reservation families.

Drawing from Mancini's (2009) research into communities of color in colonial Connecticut, this work identifies several locations that may have served as ongoing links to coastal areas. To date these communities of color are known only through historical records, and thus aside from a few specific references to shellfish gathering, their existence and location are the main reasons to propose this possible connection. Excavation at these off-reservation communities of color could further support the existence of ongoing ties to the reservation area. Similarly, identification of shellfish deposits in these areas could strengthen the proposed link between these neighborhoods and shellfish gathering by reservation residents.

The limited season-of-harvest data presented in this thesis indicate that shellfish gathering – and therefore perhaps off-reservation travel – may have taken place largely in the summer. However, while the two samples show strong seasonal association, it is important to note that these two samples were drawn from only two of many discrete shellfish clusters within one midden, from just one of the four sites with substantial shell deposits. Further sampling both within this midden and across a full range of sites could lend strength to the idea that shellfish gathering was indeed a seasonal activity, or could indicate a wider range of practices as well as possible variations between households. Likewise additional information on season of death for the mammals contained within the

midden could fill in a broader range of seasonal practices.

In conclusion, this thesis presents an analysis of the subsistence and cultural role of shellfish excavated from the Eastern Pequot Reservation. While the quantity and varieties of shellfish vary significantly across the examined sites, the data presented in this thesis show a strong reliance on shell in the late-eighteenth century. Through the examination of demographic records and local histories, this indicates continuing ties to off-reservation coastal locations and communities and provides insight into enduring, potentially gendered, culturally relevant practices.

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