

SPATIAL ANALYSIS AND SUBSURFACE SURVEY AT A  
19TH-CENTURY EASTERN PEQUOT SITE IN CONNECTICUT

A Thesis Presented

by

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## ABSTRACT

### SPATIAL ANALYSIS AND SUBSURFACE SURVEY AT AN 19TH-CENTURY EASTERN PEQUOT SITE IN CONNECTICUT

August 2013

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The Eastern Pequot's restriction to the Lantern Hill reservation in 1683, and their wider engagements with the settler world and its economy, inevitably led to changes in how the Pequot structured their settlements and utilized the landscape. The Eastern Pequot Tribal Nation's (EPTN) reservation in North Stonington is a complex space representing the subjugation, resistance, and cultural continuity of the Eastern Pequot people. Superficially, by the nineteenth century, the Eastern Pequot appear to have adopted technologies and cultural constituents traditionally classified as Euro-American. The organization and use of extramural spaces at Eastern Pequot sites, however, demonstrates the persistence of both Pequot cultural practices and the broader EPTN reservation community.

This thesis examines the results of a shovel test pit survey, conducted in an area containing multiple surface features including the remnants of a large nineteenth-

century European-style framed house. The ceramic assemblage was subjected to a kernel density analysis performed using a Geographic Information System platform. The results of the kernel analysis were then situated within a framework of previous research at the Eastern Pequot reservation. The diachronic examination of sites at the EPTN reservation, which date within 100 years of this nineteenth-century site, revealed subtle patterns of continuity, change, and spatial organization. Furthermore, the application of this technique demonstrates the potential of a coarse dataset to contribute to the ongoing development of a historical narrative at the reservation.

Despite the adoption of European material culture and architecture, the spatial patterning of EPTN reservation domestic sites from the eighteenth and nineteenth centuries contains elements which speak to being Eastern Pequot. Trajectories of cultural continuity persisted through the organization of extramural spaces despite external colonial forces. Archaeologically, it is evident that individuals continued to structure their daily lives, practices, and uses of space in ways which reinforce their identities and community as Eastern Pequot.

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## CHAPTER 1

### INTRODUCTION

Established in 1683 by the Connecticut colonial government, the reservation on Lantern Hill in what is now the town of North Stonington is a complex space representing subjugation, resistance, and cultural continuity of the Eastern Pequot people. Over 300 years later it is still central to the Eastern Pequot community today. Historically, life on the Eastern Pequot reservation has not been easy as the Pequot people were engaged in conflicts and oppression which ranged from the level of colonial government administrators to local Euro-American farmers. The Eastern Pequot's restriction to the Lantern Hill reservation, coupled with their wider engagements with the settler world and its economy, inevitably led to changes in how the Pequot had structured their settlements and utilized the landscape.

Over the last 10 years the University of Massachusetts Boston has engaged in a collaborative archaeological program with the Eastern Pequot Tribal Nation (see Silliman 2009; Silliman and Sebastian Dring 2008). Undertaken in the form of an archaeological field school at the Eastern Pequot Tribal Nation (EPTN) reservation, students and members of the Pequot tribal community engage in revealing “the cultural survival and historical uniqueness” of the Eastern Pequot people (Silliman and Sebastian Dring 2008:71). As part of the 2004 field school a two hectare (five acre) area, nearly

encompassed by a stone wall and adjacent to a wetland, was examined and sites were identified. Within this project area were multiple surface features including Site 102-113, comprising the remnants of a large European-style framed house with collapsed stone chimney, midden, several stone enclosures, stone walls, and field stone features. Additional field stone features and an enclosure (Site 102-122) are located approximately 50 m west of Site 102-113, within the project area.

This thesis examines the results of the shovel test pit survey, consisting of 286 shovel test pits (STP), conducted in the project area with emphasis placed on the ceramic artifact assemblage. Two primary objectives are used to structure the analysis: (1) establishing a date range for the project area and its components, including examining the potential of a prehistoric site component; and (2) building an interpretation to explain the relationship between the various project area components. A kernel density analysis performed using a Geographic Information System (GIS) platform was utilized in the analysis of these ceramics to further inform the results of the STP survey. A kernel analysis utilizes density to create a conceptually smooth curved surface from point data, such as STPs, illustrating the influence points have on their surrounding space. Additionally, the kernel analysis itself is discussed in terms of how successful its contributions were in developing an interpretation for the project area.

Ceramics were selected as the primary artifact category analyzed in this thesis for several reasons. First, the majority (97%) of the STP assemblage comprises ceramics traditionally classified as Euro-American. However, in this context, although the ceramic types may have originated from European producers, they are utilized by Eastern Pequot

individuals in a distinctive Eastern Pequot context. Second, the ceramic wares created by Josiah Wedgwood provide a reliable means for dating the site and its components, enabling me to begin addressing my first objective stated above. Finally, the distribution, abundance, and use of ceramic artifacts make them the most informative artifact category to examine via kernel analysis.

I achieve my second objective, in part, through the analysis of ceramic density across the project area. The kernel analysis can be used to identify areas of interest for further analysis, verify the existence of depositional patterns identified during fieldwork, and develop a more nuanced interpretation of extramural areas associated with the framed house footprint excavated in 2004 (see Cipolla 2005). I also explore subtle patterns and features, discovered in STPs but unable to be explained through the tightening of testing intervals via the kernel analysis. Upon identifying extramural areas of deposition through the kernel analysis, I examine these areas independently of the total project area assemblage to characterize the nature of the deposits and integrate them into the overall project area interpretation. Utilizing this technique it is possible to move beyond just the examination of visible surface features in order to explore patterns of habitual daily practices created as individuals interacted with their surroundings (Robin 2002).

Utilizing a diachronic approach by historically situating the kernel analysis results within a framework of previous research for the EPTN reservation, I seek to identify similarities and changes in Pequot spatial organization as well as develop explanations for the use of space which leave an ephemeral archaeological imprint. Rather than a comparison of the project area to an established ethnographic baseline, the diachronic

examination of sites dating in a 100-year span from roughly 1750 to 1850 is performed to prevent subtle patterns of continuity, change, and spatial organization from being obscured, even with the use of coarse datasets common in subsurface survey. It is hoped that the techniques employed in this thesis assist in enabling the testing of extramural residential areas to contribute to the historical narrative of the EPTN reservation.

Furthermore, I explore how extramural spaces potentially contributed to the maintenance of Pequot cultural practices. It perhaps not surprising that Pequots would be forced to alter how they traditionally utilized the landscape and structured their settlements once confined to a reservation. The EPTN reservation is a space where the persistence of the Pequot people has been continually assaulted by colonial and post-colonial authorities. Superficially, by the nineteenth century, they appear to have adopted technologies and cultural constituents traditionally classified as Euro-American. However, does this make them any less Pequot? According to Silliman (2009, 2012), it certainly does not. Rather than passively accept an assumed demise of their culture and identity, I ask whether there are elements in the organization and use of extramural spaces which may have contributed to their persistence on this landscape as Eastern Pequot? If so, how will this further inform our understanding of EPTN reservation life and organization during the nineteenth century?

In order to address these issues, I begin by providing an analytical framework within which to anchor this which this. Chapter 2 explores paradigm shifts and approaches currently utilized when researching Native American colonial and post-colonial archaeological contexts. Additionally, it reviews pertinent disciplinary studies

examining Native land use patterns. Chapter 3 is a detailed history of the circumstances which led to the establishment of the EPTN reservation and colonial sociopolitical pressures exerted upon the Eastern Pequot once confined to the reservation. This chapter also provides a discussion of pertinent archaeological research at the EPTN reservation to contextualize the reservation during the eighteenth and nineteenth centuries. Chapter 4 provides a detailed description of the project area and fieldwork undertaken within its boundaries. This is followed by a description of laboratory methods, including analysis of the STP ceramic assemblage and the kernel density analysis process. Next, Chapter 5 presents the results of the STP ceramic assemblage analysis and the kernel analysis results for the entire project area, as well as further examination and interpretation of three areas identified via the kernel analysis within the project area. Finally, in Chapter 6 my findings from Chapter 5 are summarized, concluding my thoughts on the organization of space within the project area and the application of the kernel analysis.

## CHAPTER 2

### ANALYTICAL FRAMEWORK

Inquiries into the fundamental changes and experiences Native Americans underwent upon the colonization of America by Europeans have made substantial leaps in the last thirty years. At the same time, as archaeology has progressed as a profession, the necessity of collaboration, consultation, and involvement of Native communities has shaped research designs and research questions in this field of study. The following section explores paradigm shifts and approaches taken when studying colonial and post-colonial Native American sites as well as discusses studies examining Native land use patterns with emphasis placed on southern New England.

#### *Paradigms*

Beginning in the 1930s, acculturation was the dominant theoretical paradigm of anthropology. Acculturation conceptualized cultures as rigidly bound groups of people who would either adopt or reject the cultural traits of various groups they came in contact with (Redfield et al. 1936:149-152). The process of acculturation was defined as the exchange of cultural traits which would result in cultural groups actively choosing which cultural traits to adopt (Redfield et al. 1936:149-152); however early acculturation studies were hardly politically or academically neutral. These studies were framed as explanations as to why Native American groups had not assimilated into the dominant

culture of the United States, evaluating the perceived amount of change that had occurred within Native communities (Silliman 2004a:284).

As Mitchell and Scheiber (2010) remarked, acculturation research focused on the perceived loss of Native American social practices, typified material culture and technologies. Acculturation was understood as a shift “towards Euroamerican lifestyles” by indigenous communities (Silliman 2004a:285). As a result of archaeologists adopting this anthropological approach, acculturation transitioned “from a theoretical standpoint into a technique for measuring the impact of European colonialism on native peoples” (Mitchell and Scheiber 2010:7). Colonial concepts of European superiority, culturally and technologically, as well as the certainty of Native American culture change was reinforced through the reasoning of acculturation, presenting it as cumulative, unavoidable, and fatalistic (Mitchell and Scheiber 2010:7). Utilizing direct historical analogies further solidified the perception that Native American culture was static and could only deteriorate once in contact with Europeans (Stahl 1993).

By the 1980s processual archaeologists had developed artifact categories as well as quantifiable artifact ratios which acted as an index of culture change (Farnsworth 1989). Silliman (2004a:285) asserts the most significant failing of this viewpoint is the passive role given to material culture, reflecting cultural patterns rather than “active elements in the construction” of those cultures. As a way to bridge emerging gaps between theoretical approaches introduced by post processualist and processual material approaches in the study of space, concepts such as human agency were introduced into archaeological theory (Robin and Rothchild 2002). Archaeologists studying the material



culture of Native Americans in colonial and historical contexts began to approach these domains from the perspective of accommodation and resistance. This broad framework of various models allows cultural traits to become more visible, permitting the investigation of identity or daily practices (Silliman 2004a:285).

Deagan pioneered the use of the concept of accommodation and resistance at St. Augustine, examining interethnic marriages between Native American women and Spanish men in the sixteenth-, seventeenth-, and eighteenth-century Florida (Deagan 1983, 1998). Deagan was able to trace Native women's maintenance of identity as well as roles in colonial households, finding that complex multidirectional exchanges of culture occurred rather than the unidirectionality of acculturation (Deagan 1996, 1998). Practice theory has been utilized to expand on the insights by framing multi-ethnic colonial sites as representing cultural frontiers or zones of social networks interlaced with each other (Lightfoot 2005, 2006; Lightfoot et al. 1998; Martinez 1997). Emphasis is placed on the role of individuals in constructing social identity and the ordering of everyday life. These studies have demonstrated that indigenous people maintained and developed both social and individual identities by utilizing material culture in new ways (Silliman 2004b, 2006). These studies have necessitated that not only change but continuity be explained as well, as the maintenance of continuity requires more than "just the absence of change," since both necessitate social agency (Mitchell and Scheiber 2010:17).

As archaeological study of Native communities in colonial and post-colonial contexts has progressed, it has necessitated both a better understanding of colonial ideas

and histories as well the critique and critical examination of theoretical frameworks archaeologists utilize while researching those contexts which have been marred by the lingering legacy of acculturation models. Colonial representations and descriptions of indigenous people acted as a means to define European identity, by defining a dichotomy between the other (indigenous people) and one's self (Europeans) (Mitchell and Scheiber 2010:4). In colonial contexts, colonialists and settlers strived to reform indigenous people into an ideal image of their own society. Thus colonial policies created "new kinds of people and places, as local actors engage colonial plans according to their own cultural postulates and practices" (Wernke 2007:130). This hybridity is not limited to indigenous people, changing the foreigner as well, creating cultural contexts which cannot be neatly categorized as a pure expression of European or indigenous (Ashcroft 1994; Hantman 2010).

Recognition of these processes has necessitated a recentering of colonial context histories (Hantman 2010), to acknowledge that colonialism is simultaneously a destructive and a creative process (Silliman 2010:151). Acknowledging the creative aspect of colonialism is to recognize "the persistence of history-making and the continuity of cultural trajectories during colonialism" (Silliman 2010:151). To avoid the perpetuation of essentialisms grounded in a colonial framework, post-colonial approaches seek to examine culture through historically situating social agency, identity negotiation, and daily practices (Silliman 2010:147). This also includes research which has recentered European settlements (Hantman 2010) and colonial period indigenous (Jordan 2010) sites within the context of long-term indigenous histories (Rubertone 2012).

The study of change and continuity at Native American sites in colonial contexts requires the application of multiscalar and diachronic techniques (Lightfoot 1995; Silliman 2009, 2010, 2012). Although it was common practice for archaeologists in the past to compare historical Native American period sites to an established pre-contact ethnographic baseline, we must question the appropriateness of its application as the sole arbiter of culture change and continuity (Rubertone 2012; Silliman 2009). There is no one scale which can be universally effective in all archaeological analysis (Mitchell and Scheiber 2010). Long-term scales imposed on past people by archaeologist often do not reflect the scale at which meaningful social narratives are constructed or the scale of a lifecycle (Silliman 2009:216). Questions of continuity have been historically overlooked by archaeologists because the “absence of change has often seemed to require no explanation” (Stahl 2012:159). At the EPTN reservation, the pre-contact cultural practices of the Eastern Pequot are acknowledged as important, but not utilized as a uniform baseline of interpretation regardless of a site’s age (Silliman 2009:222). Instead it has been more effective to study continuity and change on the reservation through the comparison of sites sequenced to one another, moving the point of comparisons forward just as Native communities continue forward (Hayden 2012; Silliman 2009, 2012). This method has allowed for the development of historical narratives and examining mechanisms of social memory (Silliman 2012:118).

The way that material culture has been traditionally classified and conceptualized in Native colonial contexts has hampered the ability of archaeologists to interpret these sites (Rubertone 2012; Silliman 2009, 2010; Stahl 2012). Classing artifacts and

structures as European or traditional Native American oversimplifies the contexts and ways in which they were utilized, negating the role they played in the lives of individuals navigating complex social processes (Silliman 2005:68). It results in inflexible spatial and temporal analyses which “neglect practice and memory, both of which would permit more multiscalar and diachronic views of real historical situations” (Silliman 2009:214). Instead, approaching the analysis of artifacts in terms of practices does not overemphasize a prescribed cultural identity for the artifact allowing for more flexibility in the interpretive process (Silliman 2009:216). The adaptation of European material culture by Native people is done as part of strategies to survive and maintain community in a colonial context and is not done without conscious decision or through idle acceptance (Mitchell and Scheiber 2010; Silliman 2010).

Although colonial periods ended, the process of colonialism for Native people continued and its legacies persist even today. Shifts in political control from one administrative unit to another did not necessarily result in meaningful policy change for Native populations. With this in mind, the term colonialism is defined as a

dual process (1) of attempted domination by a colonial/settler population based on perceptions and actions of inequality, racism, oppression, labor control, economic marginalization, and dispossession and (2) of resistance, acquiescence, and living through these by indigenous people who never permit these processes to become final and complete and who frequently retain or remake identities and traditions in the face of often brutal conditions (Silliman 2005:59).

Studies examining the colonial past cannot be detached from the contemporary struggles of indigenous communities, the results of which affect descendent communities whose modern identity and struggles are entangled in their ancestors' colonial experience (Mitchell and Scheiber 2010).

Descendent communities have begun developing their own cultural resource programs, managing cultural resources on and off reservation lands. Native American stewardship of cultural resources has led to an emerging body of research grounded in collaborative endeavors between indigenous communities and archaeologists (see Atalay 2006; Colwell-Chanthaphonh et al. 2010; Silliman 2008). Historical archaeological sites are seen to play a particularly important role, demonstrating the persistence of Native communities and aspects of cultural continuity into the modern era. In Connecticut, three indigenous archaeological projects focus on the colonial and historical experiences of Native people on three of the oldest reservations in the United States. Jeffrey Bendremer (Bendremer and Thomas 2008) and now Craig Cipolla have directed tribal archaeological research programs for the Mohegan Tribe, and Kevin McBride (McBride 1995; Handsman and McBride 2008) continues to lead archaeological research programs for the Mashantucket Pequot. The third project is directed by Stephen Silliman of the University of Massachusetts, Boston and is a collaborative research endeavor between the university and the Eastern Pequot Tribal Nation (Silliman and Sebastian Dring 2008).

### ***Land Use and Space***

In addition to concerns about artifact classifications in colonial contexts raised above, Robin (2002) has demonstrated the inappropriateness of using inflexible Western

spatial taxonomies while examining indigenous contexts. Initial studies of domestic domains in the 1970s overlaid Western divisions and concepts of interior/female verses exterior/male onto residential sites. This resulted in exteriors and interiors of dwellings being viewed as static containers for particular categories of social interaction, such as private versus public, a position which has been critiqued by feminist scholars (Robin 2002:246). These concepts are historically defined and do not apply cross culturally. Critiques of domestic studies over the years have resulted in the realization that dwellings are neither passive containers nor the entirety of what should be examined in a domestic setting (Robin 2002:247).

This critique applies not only to dwellings but to any space. Not critically examining preconceived notions of public and domestic spaces impedes our ability to effectively understand “historically and culturally contingent situations” (Robin 2002:248). Through interacting with spaces, individuals actively experience and construct meaning at both the conscious and unconscious level (Robin 2002:248). Rather than universal formulas, inquiries of domestic sites require “specific historic, contextualized case studies of people and the places and meanings they construct, inhabit, and experience” (Robin 2002:248). Archaeologists have had a tendency to focus on residential structures often because they are the most visible features on modern landscapes; however, overemphasis placed on architectural remains causes archaeologists to neglect broader patterns of living practices as individuals interact with their surroundings (Robin 2002). To fully understand any context, not just the domestic, vital

attention needs to be given to how meaning is constructed throughout that context and not just a fragment of it, such as a house (Robin 2002:261).

For example, while examining the resettlement of indigenous Andeans to small European-style villages in 1570, Wernke (2007) utilized ethnohistorical analysis of known land use patterns and community organization dating back to the period of Inca rule to inform observations in the archaeological record. Ethnohistorical analysis revealed that prior Inca efforts to reorganize local communities under their rule were uneven, resulting in two components in the political organization during the Inca era. By the time the Spanish arrived and began their resettlement efforts, an implicit “dualistic organization” already existed (Wernke 2007:131). Land use patterns observed through archaeological surveys were then analyzed in GIS. Through this two-stage process it was discovered that new spatial arrangements within communities and upon the broader landscape were the product of local groups negotiating consecutive colonial states. Andean community constructs acted as the “primary interface between local households and the colonial projects of the Inka and Spanish states” (Wernke 2007:146-147). Furthermore, by comparing Inca and Spanish era patterns it became apparent that the new communities were the “product of both the state and local interest groups but which were not entirely controlled by either” (Wernke 2007:147).

More specifically for the project described here, Native American land use patterns in New England have been studied at a variety of scales ranging from communities on reservations to broader examinations of the New England region. Colonists utilized the imagery of Native people as savages, like that of the one pictured

upon the seal of the Massachusetts Bay Colony, “to justify both their colonial charters and their aggressive appropriation of Indian land” (Silverman 2003:512). The colonial governments only allowed Native Americans to claim land which was being “properly used” and “improved upon” as per their definition, which was the implementation of traditional forms of European-style agricultural practices and animal husbandry (Silverman 2003:511-513). Native communities throughout New England adopted these European agricultural practices at different times, resulting in a shift towards European materials and technologies. Although these communities appeared to have adopted European culture on the surface, their sociopolitical structures retained distinctive Native elements or at least were integrated into acts of community that may have permitted distinction from colonists.

Wampanoag cultural persistence has been examined in several studies at an Aquinnah community on Martha’s Vineyard (McBride and Cherau 1996; Silverman 2003, 2005). In 1641, when Europeans began to settle Martha’s Vineyard, the island was divided among four Wampanoag sachems. It is a unique place in that there was never a war between Euro-American colonist and Native people, even though the Wampanoag of Martha’s Vineyard experienced all the same colonial tensions as Native people on the mainland (Silverman 2005).

The southwestern section of the island was occupied by the Aquinnah community, in what today is known as Gay Head (McBride and Cherau 1996:16). In an examination of Aquinnah community land use patterns, McBride and Cherau (1996) describe similar patterns to those seen at Mashantucket. Sites dating to the seventeenth century at Gay



Head were composed of “dispersed residence of small villages or hamlets of related families” which is consistent with prehistoric settlement patterns (McBride and Cherau 1996:20). By the eighteenth century these familial settlements became even more dispersed and begin to resemble Euro-American sites, as the “Gay Head community is one of the first Native communities in southern New England to engage in intensive animal husbandry” (McBride and Cherau 1996:20). By the nineteenth century, settlement patterns at Gay Head shifted to that of a more aggregated community marked by sociopolitical divisions between two particular families (McBride and Cherau 1996:22-24). During this period individual and communal land use patterns are prevalent. While family homesteads were the center of both social and economic activities, members only owned the land through its use; upon its abandonment, the land became community property once again (McBride and Cherau 1996:34).

McBride and Cherau conclude that although on the surface the Aquinnah community appeared to exhibit an intensive adoption of Euro-American culture, “the similarities in historical continuity and community structure, social organization and land use within these communities argues for a degree of cultural continuity not previously recognized in historic period Native communities” (McBride and Cherau 1996:35). They further assert that past studies examining Native communities in New England overstated Christianization as the final step in a community’s acculturation (McBride and Cherau 1996:38). This stance not only neglects underlying traditional Native social structures, it fails to acknowledge “the adoption of Christianity and Euro-American subsistence

patterns as one of many Native strategies to preserve their culture, identity and land base” (McBride and Cherau 1996:38).

Silverman (2005) utilized the entire island of Martha’s Vineyard as a case study to examine “the problematics of peaceful Indian–colonist coexistence and the role of Christianity in intercultural relations and Native community life” (Silverman 2005:11). One of the many important points he discusses is the role geography played and how certain communities were able to utilize it to their advantage. Although Gay Head is located on the least populated side of the island on a peninsula, Euro-Americans still attempted to encroach upon Aquinnah community lands (Silverman 2005:208). Silverman credits their leadership and collective community in deterring these advances. They left roads in disrepair, built fences, and filled adjacent pastures with livestock to discourage encroachment and assert their title to the land (Silverman 2005:208).

Similar patterns were identified by Silverman (2003) in Native communities throughout southern New England. Evidence indicates that the adoption of traditional European animal husbandry was utilized as a means of preserving the rights to their ancestral lands. In contrast to the Euro-American perspective linking successful animal husbandry with individual private gain, Native communities utilized livestock to reinforce community and “protect the collective territory that embodied their peoplehood” (Silverman 2003:515). Rather than replacing traditional Native social and cultural frameworks, animal husbandry was incorporated as an additional seasonal activity (Silverman 2003:520). Often times the true value of modest herds maintained by

Native communities was “as itinerant land claims and expressions of community solidarity than as sources of protein and profit” (Silverman 2003:539).

Moving from examples at the regional scale to the Pequot specifically, McBride (1994a) explored land use and settlement patterns at the Mashantucket Pequot reservation utilizing both archaeological and documentary evidence. Archaeological inventories of Mashantucket have demonstrated continuous occupation and utilization of reservation lands ranging from the Early Archaic Period to modern times (McBride 1994a:65). During the colonial and reservation periods, the Mashantucket Pequot reservation itself was composed of multiple communities which were highly autonomous and reacted differently to European encroachment upon reservation lands.

In McBride’s (1994a) study of the Mashantucket Pequot reservation land use, he found early seventeenth-century Pequot settlements on the reservation (prior to the Pequot War in 1636-1637) utilized a mixture of horticultural and marine/estuarine resources. The villages consisted of a main fortified village associated with secondary villages and hamlets all “organized around lineages or smaller groups of extended families” (McBride 1994a:65). During the late seventeenth through the early nineteenth centuries, evidence of “both dispersed and aggregated communities” exists (McBride 1994a:66). For all intents and purposes seventeenth-, eighteenth-, and early nineteenth-century reservation patterns were similar to those observed prior to the Pequot War.

Documentation of the late seventeenth and early eighteenth centuries revealed two distinct communities on the Mashantucket reservation (McBride 1994a:66-67). An examination of the Long Pond cemetery (associated with one of the two communities)

offered not only insight into internal Pequot society conflicts during this period but also “potential strategies for maintaining Mashantucket identity during the historic period” (McBride 1994a:68). Material culture recovered from the Long Pond cemetery attests to a maintenance of regional trade networks and intensification of traditional ritual objects indicating a “community of Mashantucket Pequots who considered themselves more traditional than others on the reservation” which “may reflect one of many strategies used by them and other groups in southern New England to maintain cultural cohesiveness and identity” (McBride 1994a:70).

The eighteenth century saw changes to land use and subsistence as well as to sociopolitical patterns at Mashantucket. Traditional elements of Pequot society and politics continued to exist into the nineteenth century; however, by the middle of the eighteenth century it appears there is a substantial shift towards European economic practices with the adoption of animal husbandry (McBride 1994a:72). Changes in the subsistence strategies employed by the Pequot were reflected in both settlement patterns and architectural styles (McBride 1994a:73). For instance McBride (1994a:73) states that there is no evidence for framed houses, either documentary or archaeologically, prior to the mid-eighteenth century. It has been well established that late eighteenth-century settlements consist of an increase in framed structures with field stone foundations accompanied by a reduction in the occurrence of traditional wigwams (McBride 1994a:73). At the same time two contrasting settlement patterns occur: the first is a highly aggregated community known as “Indiantown,” while the second consists of dispersed farmsteads (McBride 1994a:73-74).

McBride concludes by observing that even though the Pequots adopted both European material cultural and architecture, “the structure and spatial patterning within Mashantucket domestic sites remained distinctly Pequot” (McBride 1994a:75). There are persistent attributes linking post-seventeenth-century and earlier Pequot sites, so much so that although on the surface historic Pequot sites appear to be consistent with Euro-American sites, are more analogous with “earlier seventeenth century and prehistoric sites on the reservation” (McBride 1994a:75) which illustrates Native communities in southern New England “had and continue to have enduring cultural traditions” (McBride 1994a:63).

The studies of Native communities at Martha’s Vineyard and the Mashantucket Pequot reservation suggest active choices on the part of Native Americans in the incorporation of Euro-American subsistence strategies as a tool of self-preservation. Although animal husbandry was adopted, Native communities and settlements continued to be structured by traditional sociopolitical frameworks. European cultural practices were selectively chosen on the basis of a particular community’s goals and needs (Silverman 2003:547). At the EPTN reservation the examination of domestic sites, spanning the mid-eighteenth century to the mid-nineteenth century, has demonstrated continuity in spatial organization at the household level. Although the material culture and architecture at these sites became increasingly Euro-American in origin, their spatial patterning remained consistently Pequot, as defined not by a millennial-old set of practices but rather by recent adjustments to new circumstances (Hayden 2012) and ongoing residence of their reservation. An increase in Euro-American artifacts such as

ceramics indicated an increased involvement in colonial and local markets and not necessarily (or only) loss of culture. Spatially, sites were found to have consistent patterns of refuse disposal, hearth maintenance, storage and use of extramural space. For instance, nineteenth-century Eastern Pequot residential sites possessing European-style framed structures were discovered to be spatially (internally and externally) organized in similar ways to the potential mid-eighteenth-century wigwam site identified archaeologically on the reservation (Hayden 2012).

Previous research at the EPTN reservation has indicated different trends in the adoption of European agricultural practices than observed at other Native New England communities. Despite the pressures placed on them, the Eastern Pequot selectively adopted European agricultural practices at a rate much slower than that observed in other New England Native communities (Hasho 2012). Archaeological evidence suggests large-scale agricultural practices at the Eastern Pequot reservation perhaps did not begin until the second half of the nineteenth century (Hasho 2012:89). Phases of construction identified at the EPTN reservation indicate that the Eastern Pequot were selective in their implementing of large-scale European agricultural and animal husbandry which produce stone features such as stone walls, field stone features, and enclosures; rather than adopting these practices immediately (Hasho 2012:76).

The examples discussed in this section provide a context for techniques employed by indigenous groups while negotiating rule under colonial and post-colonial authorities, particularly, the importance of extramural space as an active and passive tool for maintenance of cultural continuity. These extramural areas contribute to cultural

continuity through reinforcing habitual use and organization of space over time by utilizing spatial patterns established prior to, or sometimes already within, the colonial period, regardless of the structural or material technologies adopted by Native people to frame and use them. To this end, it is important to examine the role space surrounding domestic sites played in the maintenances of cultural continuity as individuals actively interacted with extramural areas. Additionally, as was demonstrated by McBride (1994a), simply because a domestic site appears European on the surface (because of framed structures and animal husbandry technologies) does not mean it lacks Pequot cultural elements of various temporal depths. These cultural elements are brought to light by utilizing multiscalar and diachronic techniques.

## CHAPTER 3

### HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

To effectively understand the archaeology of the Eastern Pequot reservation, it is critical to understand both the circumstances under which Pequots came to be on the reservation as well as the pressures that continued to be exerted upon Pequot people once confined to the reservation. This chapter provides an overview of the Pequot prior to the arrival of Europeans, the circumstances which led to the creation of the Eastern Pequot reservation, and the various realities the Eastern Pequot have faced while living on the reservation. The results of pertinent archaeological studies that have taken place on the Eastern Pequot reservation are discussed as well in an effort to contextualize the reservation in the eighteenth and nineteenth centuries.

#### ***Historical Background***

Prior to the arrival of Europeans in New England the Pequot resided within the Thames River drainage basin of southeastern Connecticut. Pequot subsistence strategies focused on horticulture supplemented by hunting and gathering with the wigwam being the most common dwelling structure (Starna 1990). Although the Pequot practiced horticulture, their sedentism was conditional at best. During the fourteenth century, the Pequot utilized complex seasonal camps with artifact assemblages thought to represent the remains of individual households (McBride 1994b:10). This corroborates early



European historical accounts describing family camps along the coast “adjacent to agricultural fields during warm months” which were then vacated as families relocated in the fall to hunting camps on the interior (McBride 1994b:10). By the early seventeenth century, Pequot settlements included two fortified villages (up to 70 wigwams), secondary villages (up to 30 wigwams), and hamlets (up to 5 wigwams) all organized around family lineages (McBride 1991:65).

The highest position in Pequot society was the sachem, which was an office that could be held by men and women alike. Sachems acted as civil officials, managing their community’s daily decisions (Starna 1990). The Pequot utilized kinship ties to reinforce economic and social interaction between themselves and surrounding Native American groups. The presence of Pequot relatives within the households of neighboring communities continually validated the obligations of these communities to the Pequot (Lavin 2002:174). Intermarriage reinforced cultural similarities between groups and continued to play an important role into the colonial period (Goodby 1998:163).

Central to the Pequot’s socioeconomic power, particularly by the sixteenth and seventeenth centuries, was their control of well-established trade routes and production of wampum. Extensive trade networks stretching throughout the Northeast had been established for thousands of years prior to the arrival of Europeans. It was this same trade network upon which the seventeenth- and eighteenth-century fur trade was built (McBride 1994b:12). Groups such as the Pequot and the Narragansett, with centralized polities, were the most capable of controlling wampum distribution (Bragdon 1996:47).

Political dynamics within Native societies began to change upon interacting with Europeans. The English preferred to do business with centralized political entities and at the same time colonists encouraged factional divisions within Native societies. Colonists pitted one nation against another as they sought to prevent a united tribal presence (Goodby 1998:163). “The tribe as such was a continually contested entity, debated internally and even in war rarely functioned as a unified whole” (Goodby 1998:164). Despite the intensification of conflicts between Native groups in New England, they would still shelter one another’s refugees. One example of this took place during King Philip’s War in the 1670s when the Narragansett sheltered Wampanoag refugees despite a long standing conflict between these two groups. Strong social ties remained between these groups despite periods of extended tension and conflict (Goodby 1998:164-165).

The Pequot War of 1636-1637 nearly exterminated the Pequot and effectively opened southeastern Connecticut for English colonization. This event, as Hauptman points out, is “still very much a present reality to these Indians” (Hauptman 1990:70). It was during this conflict that the infamous massacre at Mystic Fort occurred. Colonial forces bolstered by the Narragansett and Mohegan forces, attacked and set fire to the Pequot settlement at Mystic killing nearly 460 Pequot, most of which were women and children (Cave 1996; Mandell 2010). The Pequot War ended in September of 1638 with the forced signing of the Treaty of Hartford which officially declared the Pequot tribe as disbanded. The designation of Pequot was outlawed by the colony in an attempt to erase them from history (Den Ouden 2005:12; Hauptman 1990:76). Most of the remaining

Pequot were divided between the Mohegan and Narragansett, although some were transported to the Caribbean as slaves (McBride 1990).

By the 1650s the Pequot, now divided into two groups, separated from the Mohegan and Narragansett. Connecticut's answer for their Pequot "dilemma" was to "establish four Indian towns supervised by two Pequot 'governors'" (Campisi 1990:118). Cassacinamon led the Western (Mashantucket) Pequot, while Caushawashett led the Eastern Pequots. The Eastern Pequots were actually composed of two groups of Pequot: the Pauquatuck and Weeapauge. In 1661, Rhode Island settlers drove the Eastern Pequots across the Pawcatuck River into the town of Stonington, located in southeast Connecticut. Finally after much contention, Connecticut agreed to give the Eastern Pequots a small tract of land in this area. The colony purchased 280 acres in 1683 for the tribe near Long Pond on Lantern Hill (Campisi 1990:118).

Life on the Eastern Pequot reservation was not easy, and the Pequot continued to be engaged in conflicts and oppression from local European farmers. When the reservation was established in 1683, William Wheeler, the individual from whom the Connecticut government purchased the 280 acre reservation lands, retained legal rights to utilize the entire reservation to graze his cattle. The Pequot were expected to build fences to protect their crops from his livestock (Den Ouden 2005:243). Crops were often destroyed by livestock belonging to colonists while the colonists themselves destroyed fences built by the reservation populations, subjugated Natives through violence, and harvested timber from reservation lands (Den Ouden 2005:24-25). The Pequot utilized

the colonial court system, entering petitions and complaints, demanding protection from these encroachers no matter how ineffectual (Den Ouden 2005).

Censuses of the Eastern Pequot reservation's demographics throughout the eighteenth century, continuing to modern times, have varied greatly and often times misrepresent the true population of Eastern Pequots. Governor Talcott provided an estimated population figure of 218 Eastern Pequot individuals in 1725 (Lamb Richmond and Den Ouden 2003: 223). This stands in stark contrast to a 1749 census when only 38 individuals, most of whom were females, were listed as residing on the reservation (DeForest 1964:432). However, it was not uncommon for Native adults and children to have entered indentured servitude off the reservation (Mandell 2008; Silverman 2001). Pequot men in particular worked seasonal jobs off the reservation for local farmers as well as being employed as seamen or soldiers which would result in them being away from their families for years at a time (Bragdon and Simmons 1998:35; Mandell 2008; Silliman and Witt 2010).

Mandell (2008) notes that by the late eighteenth century, many Native individuals in southern New England had relocated off reservations to larger settlements or back to ancestral lands. This resulted in communities such as the Eastern Pequot appearing extinct until family units made a reappearance, since they existed as "a loose network of families living near their former reserves" (Mandell 2008:26). Thirty individuals were reported as living on the Eastern Pequot reservation in 1815 and 50 individuals were reported in 1825 (Mandell 2008:28); however this number fails to account for Eastern Pequot individuals who lived in surrounding communities since at that time "it was

nearly impossible for families living on the reservation to be completely self-sufficient” (Cipolla et al. 2007:44).

The Eastern Pequot’s restriction to the Lantern Hill reservation, as their cousins similar anchoring to the nearby Mashantucket reservation, led to changes in how the Pequot had traditionally structured their settlements and utilized the landscape. Archaeological evidence from the Mashantucket Pequot reservation (established in 1666) indicates that by the late eighteenth century, Mashantucket Pequot were practicing European subsistence practices “perhaps as a result of a reduction in land” (McBride 1990:108). At Mashantucket in the early part of the eighteenth century, the Pequots were still attempting to practice traditional subsistence strategies such as hunting, cultivating maize, and seasonally traveling to coastal areas (McBride 1990:109). Domesticated animals such as pigs, cows, and sheep appear in the archaeological record by the mid-eighteenth century and, by the nineteenth century, historic documents indicate the Pequot had shifted to purchasing large quantities of foodstuffs (McBride 1990:109).

Determining when the Eastern Pequot started to establish fixed residency or at least used the often-associated framed house derived from European settlers has been a difficult task. At Mashantucket wigwams were still utilized during the middle to late eighteenth century, but by 1848 historic accounts report only the presence of framed houses (McBride 1990:113-115). Throughout the eighteenth century and into the early nineteenth century Anglo observers described the Eastern Pequot as utilizing a variety of structures including wigwams, framed houses, and huts (Bragdon and Simmons 1998:54; DeForest 1964). Bragdon and Simmons (1998:35) assert that the huts may have been

“distinctive versions of Native framed dwellings” similar to those found at other nearby reservations (see McBride and Cherau 1996; McBride 1990). Although the Pequot began to adopt aspects of animal husbandry, there were traditional gardens, wigwams, sweat lodges and middens co-existing alongside European elements such as framed structures, animal pens, and field stone features (Silverman 2003:543).

### ***Reservation Archaeological Context***

Five domestic sites (Table 1) on the reservation that have been the subject of various archaeological studies are pertinent to this thesis (see Silliman 2009). These sites span the mid-eighteenth century to the mid-nineteenth century and include a potential wigwam (Site 102-124) dating between 1740 and 1760 (Hayden 2012); the remnants of a large framed house (Site 102-123) with two collapsed chimneys, a full cellar, and extramural features dating to the late eighteenth century (Hollis 2013); the remnants of a framed house (Site 102-125) with a collapsed chimney and no formal foundation or cellar dating to the late eighteenth century (Hayden 2012); the remnants of a framed house (Site 102-113) with collapsed stone chimney, a crawlspace, and extramural features dating to the early nineteenth century (Cipolla 2005); and the remains of a framed house (Site 102-128) with a large collapsed chimney, a cellar, and extramural root cellar dating from the early to mid-nineteenth century (Hayden 2012).

Table 1: Domestic sites discussed at the EPTN reservation.

<i>Site Number</i>	<i>Period of Occupation</i>	<i>Structure Type</i>
102-124	Ca.1740-1760	Potential Wigwam
102-123	Late 18 <sup>th</sup> Century	Framed House
102-125	Late 18 <sup>th</sup> Century	Framed House
102-113	Early 19 <sup>th</sup> Century	Framed House
102-128	Mid-19 <sup>th</sup> Century	Framed House

Stone features across the EPTN reservation were examined by Hasho (2012:62), who identified two phases in the construction of these introduced European technologies. The first phase involved the construction of homes which are observed archaeologically in the form of chimney falls. The following phase was the construction of stone walls, enclosures, and field stone features in abandoned spaces as agricultural practices intensified. She cautions against automatically associating stone features such as field stone features and walls with residential sites simply due to an apparent spatial relationship, as it appears the Eastern Pequot were selective in their implementing of these agricultural practices (Hasho 2012:76). As European technologies become more prevalent among the Eastern Pequot, these technologies manifest as an intensification of “farming in larger fields away from their current homes” (Hasho 2012:80).

Agriculture among the Eastern Pequot during the eighteenth and early nineteenth centuries is thought to have involved gardens and small fields located close to house sites and may not have had any form of fencing surrounding them, thus making them very difficult to identify archaeologically (Hasho 2012:82). Archaeological evidence suggests large-scale agricultural practices – that is, the fencing in of large tracts – at the Eastern Pequot reservation did not begin until the late nineteenth century (Hasho 2012:89). In addition to enclosures surrounding residential sites, some enclosures on the reservation contain no residential debris and instead are thought to have been utilized as agricultural fields (Hasho 2012:51) or for livestock containment. Hasho (2012:51) cites these enclosures in supporting her assertion that reservation inhabitants “were staying relatively

close to their home sites and leaving little evidence of artifact spread as far as nearby fields.”

Faunal assemblages from late eighteenth- and early nineteenth-century sites at the EPTN reservation further support the suggestion that intensification of European-style agricultural practices did not begin until the late nineteenth century. Faunal remains recovered from these sites have included domestic species, wild species, and coastal resources, with wild terrestrial animals being the least represented (Cipolla 2005; Fedore 2008). Analysis of early nineteenth-century assemblages indicates the Eastern Pequot were engaging in trade or direct acquisition based on marine resources originating from habitats up to six miles from the reservation (Cipolla 2008) while shellfish analyzed from midden at an eighteenth-century site demonstrated remarkable use and access of coastal resources (Hunter 2012). Comparison of the assemblages recovered from eighteenth- and early nineteenth-century domestic sites demonstrated only a slight increase on the dependence on domestic species (Fedore 2008).

Hayden (2012) performed a comparative analysis of spatial practices between three of the sites at the EPTN reservation: 102-124, 102-125, and 102-128. The potential wigwam site (102-124) contained two pit features inside the structure. One of these features appears to have been utilized for storage while the other was an area of refuse disposal (Hayden 2012:59). Outside the wigwam a third, less defined, refuse pit was identified approximately 5 m south of the wigwam (Hayden 2012:58-59). A distinguishing attribute of this extramural feature was its lack of diversity in domestic debris observed in the two internal pit features, indicating it “was reserved exclusively for



trash related to food production and consumption” (Hayden 2012:66). Analysis of artifacts recovered from this site indicates it was occupied between 1740 and 1760 (Hayden 2012:58).

The presence of wrought iron nails recovered from the wigwam suggest the presence of Euro-American style furniture, such as that depicted by Ezra Stiles 1761 in a drawing of a Niantic wigwam, or the addition of a structural element such as a door (Hayden 2012:69). The distribution of artifacts at this site such as gun flints and pipes has been interpreted as the residents engaging in habitual activities “within general extramural space, rather than in specifically prescribed locations” (Hayden 2012:71). It appears that in spite of the various external pressures that Eastern Pequots members were facing, the occupants of this site continued to structure and engage with residential space in ways similar to the preceding decades. Potential wigwam sites such as this indicates residents of the reservation were still engaging in mobility patterns that may have involved movement both on and off the reservation (Hayden 2012:110)

The late eighteenth-century site (102-125) had neither a stone foundation nor a detectable cellar (Hayden 2012:71). Instead, this house site would have consisted of a framed structure with stone chimney built upon the ground surface. The only feature discovered other than the chimney hearth was a large pit feature which would have been located within the house. This feature was not large enough to be classified as a cellar (Hayden 2012:72). The contents of the feature also indicated it was used for the disposal of refuse rather than storage (Hayden 2012:79). Additionally, an area of increased

artifact density was observed to the southeast down slope from the terrace that the remains of the house are situated upon (Hayden 2012:72).

Personal and domestic artifacts appear to be absent from spaces external to the house which may indicate very specific uses of extramural spaces versus indoor spaces (Hayden 2012:85-86). This is in contrast to earlier sites such as the potential wigwam (102-124) where extramural spaces were the location of everyday domestic and personal practices while the interior space appears to have been primarily a space for resting (Hayden 2012:86). Similarities between these two sites include the type of activities which occurred as well as the maintenance of a dedicated internal refuse pit and external refuse locus. The artifact assemblage itself is very similar between this and the wigwam site, the only difference being that the variety and size of the ceramics indicate increased involvement in colonial markets (Hayden 2012:111-112).

The early to mid-nineteenth-century site (102-128) is located upon a flat area with a steep slope to the northeast. Features at the site include a collapsed chimney, a cellar or subfloor storage area under the house, a root cellar, and a potential pit feature (Hayden 2012). The root cellar manifested on the surface as a bermed circular depression, lined with rocks on the entry side, and constructed in the hillside 10 to 15 m northeast of the chimney location (Hayden 2012:89). A potential pit feature located 10 m south of the chimney, characterized by darkly stained soil, was discovered; however further excavation of the feature was unsuccessful in characterizing its extent and nature. The feature contained only six pieces of faunal material and was void of pearlware as well as whiteware. This may indicate that although this feature was not used for an extended

period of time, its primary purpose was the disposal of domestic debris during the site's early occupation (Hayden 2012:97).

Artifact distributions at this site indicate that the occupants did not restrict particular activities or practices to extramural spaces versus interior spaces, as was seen in earlier sites such as 102-124 and 102-125. Also lacking was a designated refuse pit feature indicating less formalization in the disposal of refuse (Hayden 2012:106, 118). Hayden (2012:106, 118) asserts that the individuals occupying this site utilized a mixture of both internal and extramural spaces while performing their daily practices rather than relying on specifically designated activity areas. Following trends established at earlier sites, the artifact assemblage demonstrates increased interactions with local markets (Hayden 2012:117). Similarities between all three sites examined included the maintenance of a hearth as a place of both food preparation and refuse disposal, as well as an interior subfloor storage space which was later filled with refuse (Hayden 2012:118).

Although the Pequot's rights to the reservation land was contested by European colonists throughout the eighteenth century, the Pequot's assertion of their right to the land and the very existence of the reservation itself was "an important counterpoint to the claims of military conquest, for here was the Pequot identity and the existence of Pequot communities, not only acknowledged by colonial authority but inscribed in the colonized landscape" (Den Ouden 2005:15). The tribal community would be forced to continually prove their legitimacy and existence into modern times battling the results of

governmental censuses, termination policies, and doctrines of anticipated extinction (Den Ouden 2005:29).

The organization and habitual use of extramural spaces at the domestic sites discussed in this chapter would have played a pivotal role in this perpetuation of Native identity and their anchoring to the reservation. The structuring and use of extramural space would have been one element of their lives they could organize according to their own ideals, even while under the constant bombardment of colonialism. Regardless of the material culture or structural technologies, individuals could continue to interact with their surroundings in ways which perpetuated traditional cultural elements.

## CHAPTER 4

### PROJECT OVERVIEW AND METHODOLOGY

#### *Project Area*

Field work began at the reservation on Lantern Hill in the summer of 2003. Dr. Stephen Silliman of the University of Massachusetts, Boston established a collaborative archaeological program with the EPTN (see Silliman 2009; Silliman and Sebastian Dring 2008). Fieldwork has occurred over most of the last 10 summers in the form of field schools composed not only of students at the graduate and undergraduate level, but members of the EPTN community. In the summer of 2003 a pedestrian survey of the reservation was completed with the goals of (1) identifying locations to begin subsurface testing, (2) begin mapping visible archaeological surface features, and (3) identify areas of sensitivity to the Pequot which should be avoided, such as burial grounds. Consultation with modern tribal members regarding their knowledge and memories of the reservation assisted the survey effort in achieving these goals (McNeil 2005:6). Surface features identified through the survey included stone foundations, rock walls, collapsed chimney stacks and stone enclosures (Cipolla et al. 2007:46). Subsequent field schools have tried to study some of these sites found during initial survey and to expand from them in order to understand spatial distributions and to locate other less-obvious sites.



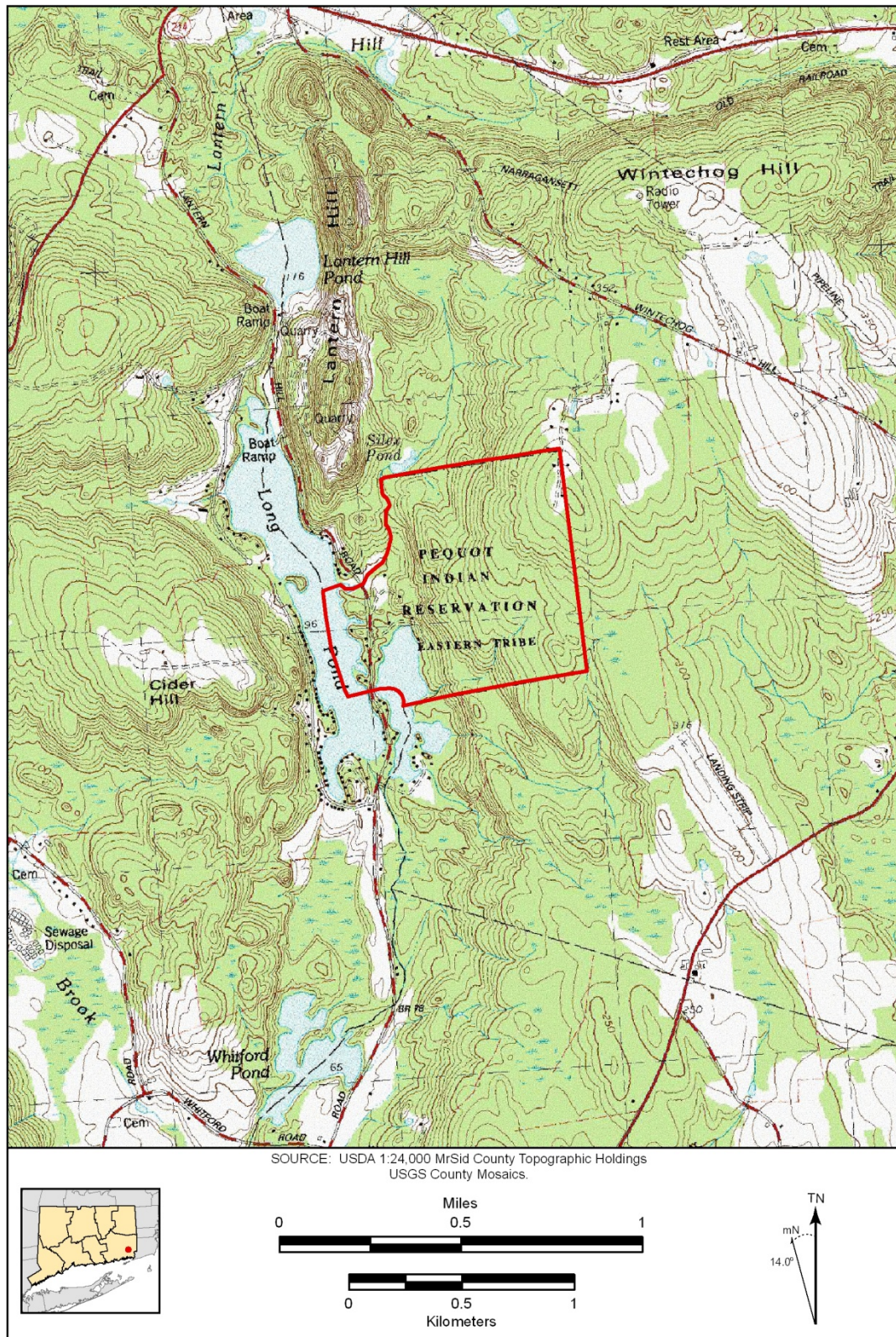


Figure 1: Location of the EPTN reservation.

In the summer of 2004 the University of Massachusetts, Boston field school conducted the second year of collaborative archaeological investigations at the EPTN reservation. Stephen Silliman directed a team of students and tribal members in a five-week investigation of a site located at the EPTN reservation's northern border. The project area (Sites 102-113 and 102-222) contained the remnants of a large European-style framed house with collapsed stone chimney, a residential refuse pit, several stone enclosures, stone walls and field stone features. Nearly the entire project area tested in 2004 was surrounded by a series of connecting stone walls, a portion of which also forms the northern border of the reservation. Test excavation units were placed around and within the foundation footprint while STPs were placed on a grid at various intervals (10 m, 5 m, and 2.5 m) across the project area (see Figure 2). The focus of this thesis is the collection of 286 STPs, excavated during the 2004 field season, rather than the excavation units to provide complementary information to earlier work (Cipolla 2005) and to investigate larger spatial patterns than what the house itself could offer.

The eastern portion of the project area, where the framed house remains are located, contains a variety of surface features. These features include a collapsed chimney and associated foundation footprint, stone walls, field stone features and several stone enclosures. It is situated on a sloped terrain of varying degrees with a westerly aspect. A substantial midden deposit enclosed in a pit was excavated on the southern side of the foundation's footprint (Cipolla 2005).

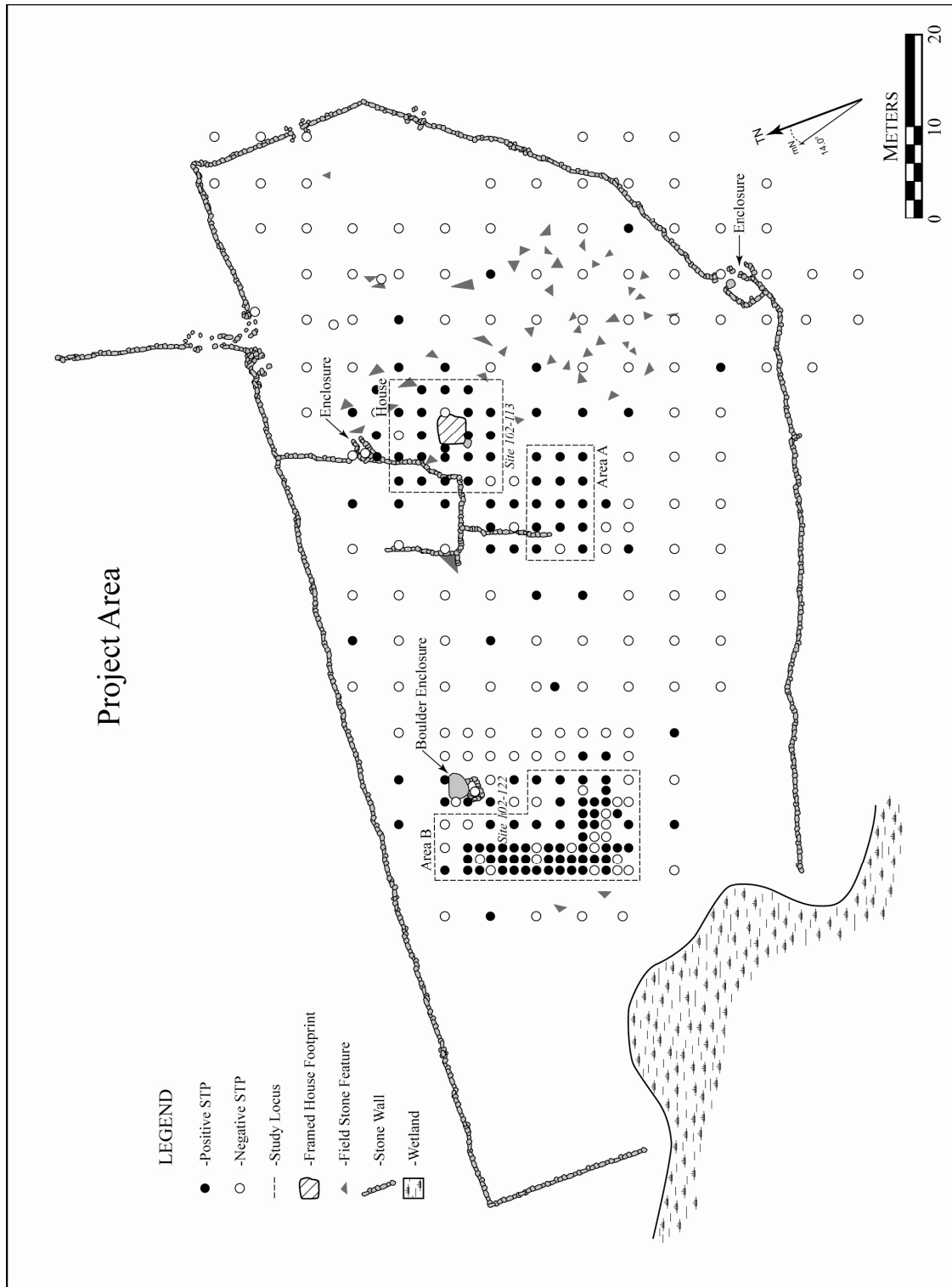


Figure 2: Map of the project area depicting the location of STPs and surface features. The triangular shapes associated with field stone features are stylistic only, with mapped points around roughly circular perimeters being connected here by straight lines.



Unlike the sloped landscape in the eastern portion of the project area, especially the transitioning between the two halves of the project area, the surface of the western portion is undulating with only a slight slope averaging three degrees. The southwest corner of the project area contains a year-round marshy wetland. The western portion of the project area lacks the prominent surface features which mark the landscape to the east. Instead, it contained one small rock enclosure utilizing a large boulder for its northern wall and two field stone features.

Of the 44 field stone features recorded, which should be most if not all of those in the project area, 41 of them lie in relatively close proximity to each other east of and immediately surrounding the foundation footprint. One very large field stone pile is situated upon an outcrop abutting a north-south trending wall northwest of the framed house.

Based on criteria established by McBride (1990), the project area appears to be that of a single farmstead similar to those at the Mashantucket Pequot reservation. Pequot farmsteads at Mashantucket typically contained several features common in Euro-American sites such as dwellings, outbuildings, fields, and walls. These farmsteads frequently contained multiple dwellings, consisting of wigwams and framed structures, and most likely contained more than a single family (McBride 1990:111-112). However testing in 2009 across the EPTN reservation, which included a portion of this project area, demonstrated that many of the extant stone features were not contemporaneous with one another (Hasho 2012).

Hasho's (2012) examination of features associated with the foundation footprint in the eastern portion of the project area (specifically, near Site 102-113) were not as conclusive as other portions of the reservation where testing revealed stone features in the form of piles and fences post-dated site occupations or at least their initial occupations. Cultural material was recovered from beneath two field stone features and a portion of wall located southwest of the house; however, testing beneath the juncture of a stone wall and the enclosure located north of the house was negative (Hasho 2012:51-53). These results indicate that the features post-date the initial occupation of this site, but whether they were constructed during occupation of the framed house or after its abandonment is unclear. The implications of the 2009 testing will be discussed in more detail in Chapter 5.

Cipolla (2005) examined faunal remains recovered from a residential refuse pit adjacent (south) of the house at 102-113. Utilizing artifacts found in association with the faunal remains, he dated the deposits to the early nineteenth century (Cipolla 2005:35-36). Cipolla (2005) documented a mixture of both wild and domesticated animals; however, a low percentage of particular species in the assemblage (deer for instance) may represent both the restrictive nature of the reservation on Eastern Pequot subsistence strategies as well as the "ecological impacts of colonial landscape transformations" (Cipolla et al. 2007:58). The assemblages further spoke to the impoverished nature of reservation life for the Eastern Pequot. The faunal assemblage contained the remains of livestock which had once been used as draft animals and were quite old. These remains

exhibited cut marks indicating the animals had been utilized as a food source despite the meat's tendency to be tough and generally undesirable (Cipolla et al. 2007:59).

The 102-113 faunal assemblage is similar to the eighteenth-century sites in terms of the wild and domestic species identified (Cipolla 2005:44; Fedore 2008:81). However, it appears that the occupants of this site were slightly more dependent on domestic species than those of the earlier sites. Additionally, similar proportions of faunal remains were crushed and calcined at both eighteenth- and nineteenth-century sites, with only domestic animal fauna recovered in larger pieces (Fedore 2008:83). As indicated previously, the high fragmentation and calcined nature of wild species, which results in the increased identification of domestic species, may be the consequence of traditional Native food practices concerning the way wild animal species remains are treated (Fedore 2008:93).

A variety of lithic materials was recovered from the excavation units placed within the refuse pit which is located on the south side of the framed house footprint. These included: one soapstone bowl fragment, one celt, and one argillite projectile point (Cipolla 2005:109; Silliman 2009:221), which date between the Terminal/Transitional Archaic and Middle Woodland periods, or what would be two or three thousand years prior (Silliman 2009:224). Although these artifacts date to the Late Archaic period they were found entirely encased within a nineteenth-century feature. In addition to the lithics, bone tools were also recovered from the excavations associated with the house including several knife handles, three unfinished calcined bone artifacts, and an awl (Cipolla 2005:107-109). The fact that the three calcined bone artifacts appear to be

unfinished is an indication they were produced during the house occupation (Cipolla 2005:107).

### ***STP Survey Methods and Results***

Utilizing a grid established for the EPTN reservation during the 2003 field season and still in use, the STPs in 2004 were laid out along a true cardinal direction 10 m grid across the project area. Each unit was designated in northing and easting coordinates from the arbitrary origin of the entire reservation (e.g., N775 E595), which was assigned to its southwest corner. However, as testing progressed, the STPs were tightened to intervals of 5 m and 2.5 m in sections of the project area in an attempt to illuminate patterns and features that the STPs placed at 10 m were discovering but failing to explain. These areas include in and around the stone enclosures, the area immediately surrounding the main framed house footprint, and two portions of the project area exhibiting a sudden increase of cultural materials without any visible surface features to explain their deposition. These areas include Area A which is located approximately 10 m to 15 m southwest of the framed house footprint and Area B located approximately 75 m west of the framed house footprint. The latter area appeared to be a unique residential site in the project area, exhibiting potential as the location of a wigwam site. Therefore, it received intensive field examination.

The STPs consisted of a 50-cm-x-50 cm square unit, excavated to a depth of 70 cm unless encountering bedrock or heavy rock concentrations. The excavation of STPs was performed through the use of shovels and trowels with all deposits screened through one-quarter inch mesh. The STPs were dug utilizing pedological horizons as non-

depositional stratigraphic levels. As a result, most STPs contained two levels: A horizon and B horizon, although the C horizon and glacial deposits (gley) were also encountered in a small percentage of the STPs. All cultural materials were located in either the A horizon or upper portions of the B horizon. A unit record was completed for each soil horizon which included an inventory of recovered artifacts, pedological observations, the STP's relationship to surface features, and the depth of the A horizon. Prior to the STP being backfilled, a tobacco prayer offering was completed by an EPTN member acting as a historic preservation officer (for further discussion on the collaborative process with the Eastern Pequot see Silliman and Sebastian Dring 2008).

A total of 286 STPs were excavated across the project area. Of these 136 (48%) contained cultural materials including ceramics, metal, clay pipes, and glass artifacts, as well as shell, faunal remains, and charred wood. The overwhelming majority of artifacts recovered were ceramic, accounting for 97% of the cultural constituents. As a result, laboratory analysis focused on this artifact category. Additional artifact categories were used to further inform the results of the ceramic analysis when needed.

### ***Laboratory Analysis***

I sought to achieve two goals through the analysis of the 286 STPs dug during the 2004 field season. (1) To establish a date range for the project area and its components, which was accomplished utilizing mean ceramic dates as well as ceramic types and vessel types to establish a terminus post quem (Deetz 1996:24-27; Hume 1969:11; South 1977) and to take a close look at any evidence of a prehistoric site component in the STP results. (2) To build an interpretation explaining the relationship between the various

components in the project area with emphasized analysis on the areas immediately surrounding the framed house footprint (Framed House Analysis Area), Area A, and Area B.

The first phase of the laboratory analysis was the examination of the physical artifacts. The STP ceramic assemblage was cleaned, dried, and placed in curation quality bags in the archaeology laboratory at the University of Massachusetts, Boston. Analysis of the assemblage was completed during the cataloging process. All ceramics were examined and identified according to standard material criteria such as ware, type, decoration, vessel portion, vessel type, burning, size (diameter), cross-mending, and count. Additionally, the catalogs containing the rest (non-ceramics) of the STP assemblage, excavation unit catalogs, and field forms were examined for evidence of a prehistoric site component.

The second phase of the STP analysis was a spatial analysis of various artifact densities utilizing a kernel density analysis. A kernel analysis takes point data and creates a conceptually smooth curved surface originating from each point, demonstrating the influence the points (STPs in this case) have on the space and other points surrounding them. Each point can be populated or weighted, altering its ability to influence its surroundings. An example of this population would be the total ceramic count from a given STP which could range from zero to several hundred ceramic sherds. Kernel analysis provides smoother surfaces than many other density analysis approaches and the results can be fine-tuned to illuminate data at a variety of different scales (Wheatly and Gilings 2002).

This analysis was completed using ESRI's ArcGIS (version 9.3.1) software. The kernel function utilized by ArcGIS is a quadratic kernel function based on Silverman's (1986:76) equation:

$$K_2(x) = \begin{cases} 3\pi^{-1} (1 - x^T x)^2 & \text{if } x^T x < 1 \\ 0 & \text{otherwise} \end{cases}$$

The kernel (K) and the window width (h) of the analysis are defined as:

$$f(x) = \frac{1}{nh^d} \sum_{i=1}^n K \left\{ \frac{1}{h} (x - X_i) \right\}$$

Without going into details on each variable, Silverman's K2 equation possesses a property which smoothes the results of an analysis regardless of a dataset's resolution. In other words, this analysis can be used on spatially large regional datasets as well as smaller spatially discrete datasets without "introducing appreciable errors" (Silverman 1986:90).

The kernel function in ArcGIS can be found within the program's spatial analysis/density tool box. Once the kernel density tool is selected, a command window opens allowing for specific parameters of the analysis to be defined (see Figure 3). The kernel density tool produces a raster file depicting an interpolated smooth surface radiating from each point.

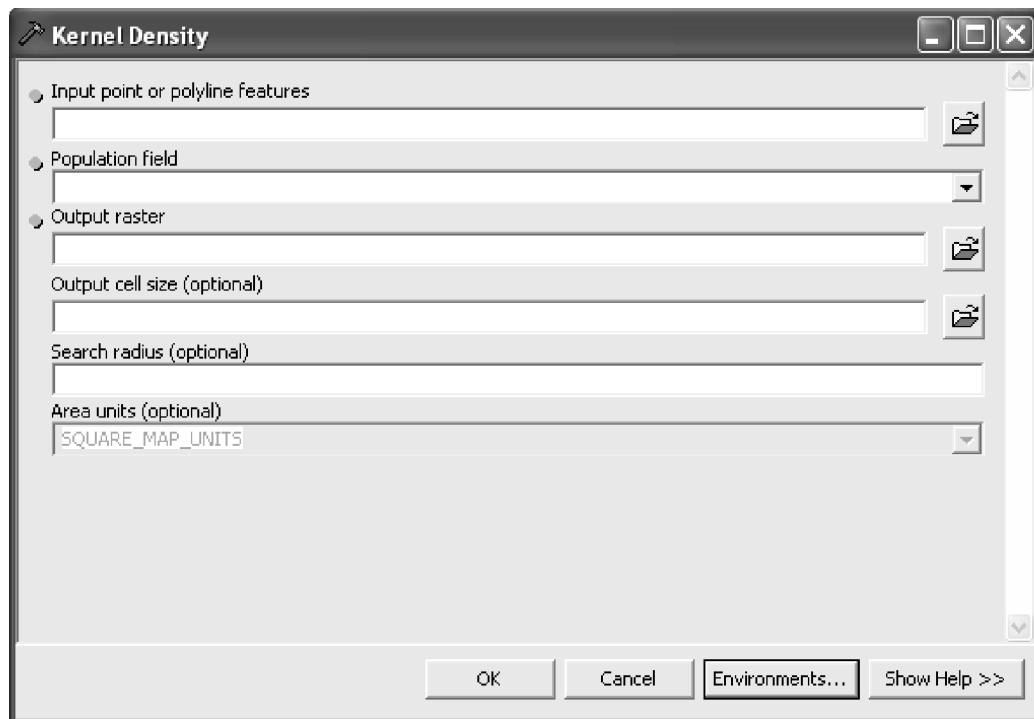


Figure 3: Kernel density command window in ArcGIS.

First, a file containing the locations and attributes of the STPs is selected. Next the option of selecting an attribute with which to populate each point of the analysis is offered. If no population is provided then each of the STPs would be given a value of one. This would result in every STP having an identical symmetrical surface surrounding it. Instead attributes such as the STP's total ceramic count, count of a particular ceramic type, or count of a particular ceramic sherd size is used to weight each STP. The output size of each raster square is set to 0.25 sq.m, the same size as each of the STPs. I chose this cell size to keep the resolution of the dataset and the resulting analysis consistent.

Ideally, cell size should always represent the smallest unit of interest (Sydoriak Allen 2000:103). The program's search radius defaults to the shortest distance between any two points, 2.5 m in this case. If the search radius is left at the default setting then only a small percentage of the STPs are capable of influencing each other. This results in



the STPs placed at more than 2.5 m apart having a discrete 2.5 m in radius circular surface surrounding each STP, thus making them unable to influence or be influenced by the next nearest STP. The default search radius was changed to 10 m in order to ensure every STP was equally capable of being part of the analysis. Finally the area unit of the map is set to square meters. This further ensures that the raster produced is standardized with the original dataset.

## CHAPTER 5

### RESULTS AND ANALYSIS

#### *Assemblage Summary*

In total 1,767 ceramic sherds were recovered from 136 STPs. Although there were instances of sherds cross-mended to other ceramic sherds within the same STP, no complete vessels were recovered. Ninety-seven percent of the ceramics were recovered from the A horizon, and only 3% were recovered from the upper reaches of the B horizon. No cultural constituents, ceramic or other, were recovered from levels below the upper portion of the B horizon. As one might expect from such a pattern, the subsurface survey did not detect any sites or even likely artifacts pre-dating the reservation period and certainly none dating several millennia ago.

Redware and creamware represent the ceramic type recovered in the most significant amounts, representing 33% and 35% of the sherd count in the collection, respectively (Table 2). Pearlware comprised nearly 20% of the ceramics. All together these three ceramic types represent 88% of the total ceramics recovered. Pearlware exhibited the highest percentage of decorated sherds, which is not surprising given the nature of these wares. Compare this to creamware, of which only 3% of the sherds are decorated, even though they comprise more than one-third of the assemblage. Decorated redware sherds (all slipware) were even less common, comprising only 2% of all

redware. The overall proportion of decorated ceramic artifacts represents only 12% of the total assemblage.

Table 2: Summary of ceramic types.

<i>Ware Type</i>	<i>Total Count</i>	<i>% of Total Assemblage</i>	<i>Total Decorated</i>	<i>% of Total Assemblage Decorated</i>	<i>% Decorated within Ware Type</i>
Redware	591	33.4	12	0.7	2
Jackfield Type	9	0.5	0	0	0
Delft	6	0.3	0	0	0
Pearlware	347	19.6	142	8.0	40.9
Creamware	621	35.1	21	1.2	3.4
Whiteware	15	0.8	6	0.3	40.0
Pearl/Cream/White	54	3.1	4	0.2	7.4
Pearl/Cream	26	1.5	6	0.3	23.1
Pearl/White	6	0.3	0	0	0
Brown Stoneware	65	3.7	13	0.7	20
Gray Stoneware	2	0.1	0	0	0
White Salt-Glazed Stoneware	11	0.6	3	0.2	27.3
US Porcelain	2	0.1	2	0.1	100
Indeterminate	12	0.7	0	0.1	0
Total	1,767	100	209	11.9	N/A

Diverse arrays of decorative styles were exhibited in the ceramic assemblage.

Decoration techniques such as hand painting, slipware, clouded wares, transfer prints, scratch blue, and various edge decoration motifs were observed (Table 3). Although 12% (209 sherds) of the collection could be definitively classified as having been decorated, 55% of the ceramics recovered were incapable of being classified as decorated or undecorated. These ceramics typically exhibited no decoration, but the sherds were too inconclusive to be placed in the undecorated category with any level of certainty, as they may have represented ceramics that utilized only edge decoration techniques. The remaining 33% of the ceramic collection was determined to be undecorated.

Table 3: Summary of decorated ceramic types.

<i>Decoration Style</i>	<i>Total Count</i>	<i>% of Total Decorated</i>	<i>% of Each Ware Represented within Decorative Style</i>
Hand Painted	95	45.5	81.1% Pearlware
			6.3% Creamware
			6.3% Whiteware
			2.1% US Porcelain
			4.2% Undertrained refined earthenware
Transfer Print	27	12.9	88.9% Pearlware
			11.1% Creamware
Mocha	27	12.9	85.2% Pearlware
			3.7% Creamware
			11.1% Undertrained refined earthenware
Shell Edged	15	7.2	66.7% Pearlware
			13.3% Creamware
			20.0% Undertrained refined earthenware
Clouded	13	6.2	100% Salt glazed brown stoneware
Slip	12	5.7	100% Redware
Under-glaze	6	2.9	100% Pearlware
Molded	5	2.4	80% Creamware
			20% Pearlware
Feather Edged	5	2.4	100% Creamware
Scratch Blue	3	1.4	100% White salt-glazed stoneware
Flow Blue	1	0.5	100% Pearlware
Total	209	100	

Determining the forms of vessels represented in the assemblage was difficult because 86% (1,521 sherds) of the ceramic sherds had a diameter of 2 cm or smaller. Only 2 ceramic sherds recovered had a diameter greater than 5 cm. Although the small fragmentation of vessels may give insight into site formation processes, it obscures the type and nature of vessels used in the project area. As can be seen in Table 4, the representative percentage of ceramics declines significantly above 2 cm in diameter.

Table 4: Summary of ceramic size.

<i>Ware Type</i>	<i>Diameter in cm</i>					<i>Total Count</i>
	<i>&lt; 1</i>	<i>1 to 2</i>	<i>2 to 3</i>	<i>3 to 5</i>	<i>&gt; 5</i>	
Pearlware	84	199	56	8	0	347
Creamware	224	318	67	12	0	621
Whiteware	2	11	1	1	0	15
Pearl/Cream/White	23	27	4	0	0	54
Pearl/Cream	9	15	2	0	0	26
Pearl/White	3	2	1	0	0	6
Brown Stoneware	17	25	11	10	2	65
Gray Stoneware	0	0	2	0	0	2
White Salt-Glazed Stoneware	1	7	2	1	0	11
Redware	197	331	46	17	0	591
Jackfield Type	0	6	2	1	0	9
Delft	4	2	0	0	0	6
US Porcelain	0	2	0	0	0	2
Indeterminate	5	7	0	0	0	12
Total Count	569	952	194	50	2	1,767
Assemblage Percentage	32%	54%	11%	3%	<1%	100%

Vessel form was identified for 20% of the ceramic assemblage. Of the 20% of the vessel forms identified, 46% were flatwares, 32% were hollowwares generally, 20% bowls, and 2% were tea cups. The inability to identify vessel forms for the majority of the assemblage (80%) is a result of the collection's fragmented nature as well as the type of vessels portions recovered. Approximately 78% of the entire collection was determined to represent a portion of a vessel's body; however, because of the fragmented nature of the collection, most of these sherds were too small to be ascribed a particular vessel form.

Unfortunately for dating purposes, redware is of very little value due to its ubiquitous distribution through time. The one exception to this is slipware, of which 12 sherds were recovered, dating to the mid-eighteenth century. Brown stoneware and porcelain were omitted from dating considerations because of similar temporal concerns.

Instead, the wares created by Josiah Wedgwood provide a much more reliable means of dating. These wares (pearl, cream, and white) were taken in consideration with other datable ceramics and decoration styles providing a mean ceramic date of 1801 for the project area within a standard deviation of 20.3 years. However, this date is deceiving when examining the types of wares present throughout the project area. For example, the presence of whiteware indicates the project area was still occupied after 1830. The presence of pearlware, especially when considered with the types of decorative elements present within the assemblage, suggests the date of 1800 may more accurately represent a possible start of occupation. Cipolla's (2005:3) examination of artifacts recovered from excavation units located within the framed house foundation and the exterior residential midden pit (including both ceramics and clay pipes) suggested the framed house was occupied during the late eighteenth to early nineteenth century. Overlapping date ranges from the STP ceramic assemblage indicate that the project area was occupied sometime beginning between the late 1790s and 1815, possibly remaining occupied until sometime near 1840 with whiteware serving as a *terminus post quem* date. Although they represent a small percentage of the assemblage (1.6%), heirloom ceramics (older and less frequently observed ceramics) could influence the mean ceramic date of 1801. These include white salt-glazed stoneware, grey stoneware, jackfield types, slipware, and tin glazed (delft) wares.

### ***Spatial Analysis Results***

The nature of an STP is essentially a presence/absence test. They allow us to determine over a broad area where cultural phenomenon may have occurred that is not

explicitly expressed by evidence on the surface. In addition to the analysis of individual ceramic attributes, the STP ceramic assemblage was further assessed using a kernel density analysis. As mentioned previously, while in the field STP intervals were tightened from 10 m to 5 m and 2.5 m in places where more spatial refinement was necessary due to unexpected density patterns or unclear clustering. The kernel density analysis was utilized to assist in determining if field crews were in fact encountering patterns differing from the typical background ceramic scatter found throughout the project area.

As a result of the kernel density analysis and examining the total number of ceramics recovered from each STP, three areas of interest become apparent (Figure 4). First, there is an expected high density ceramic spread in the immediate vicinity of the foundation footprint (Framed House Analysis Area). This spread occupies an area measuring approximately 25 m (north-south) by 25 m (east-west). The second two areas (A and B) exhibit an unexpected, given their distance from surface features such as the framed house footprint, increase in ceramic density. Area A is located approximately 10-15 m south of the framed house footprint and measures approximately 15 m (north-south) by 20 m (east-west). Area B is located approximately 75 m west of the framed house footprint, measuring approximately 60 m (north-south) and between 35-40 m (east-west). Both the framed house footprint with associated collapsed chimney and Area A are located at the western edge of a broad area of cultural deposition associated with the foundation footprint and its associated surface features.

I examined each of these areas independently in an attempt to determine the nature of their deposition, how these sub-areas relate to each other within the project area, and what they can add to the overall site interpretation. The kernel analysis results of total ceramic density within the project area (Figure 4) assisted in pinpointing which STPs to include when examining each of these three areas. The overview produced by this analysis allowed me to identify depositional spaces differing significantly from the baseline deposition observed throughout the site. Individual examination of the three areas includes a kernel analysis of total ceramic density, ceramic types, and ceramic sizes. The total ceramic density analysis was used to identify depositional patterns obscured in the kernel analysis of the entire project area. Kernel analysis of ceramic types was utilized to characterize and examine potential temporal shifts in the use of space. Finally, the kernel analysis of ceramic size was examined in the hope of gaining insight into site formation processes, including the potential to identify primary cultural deposits.



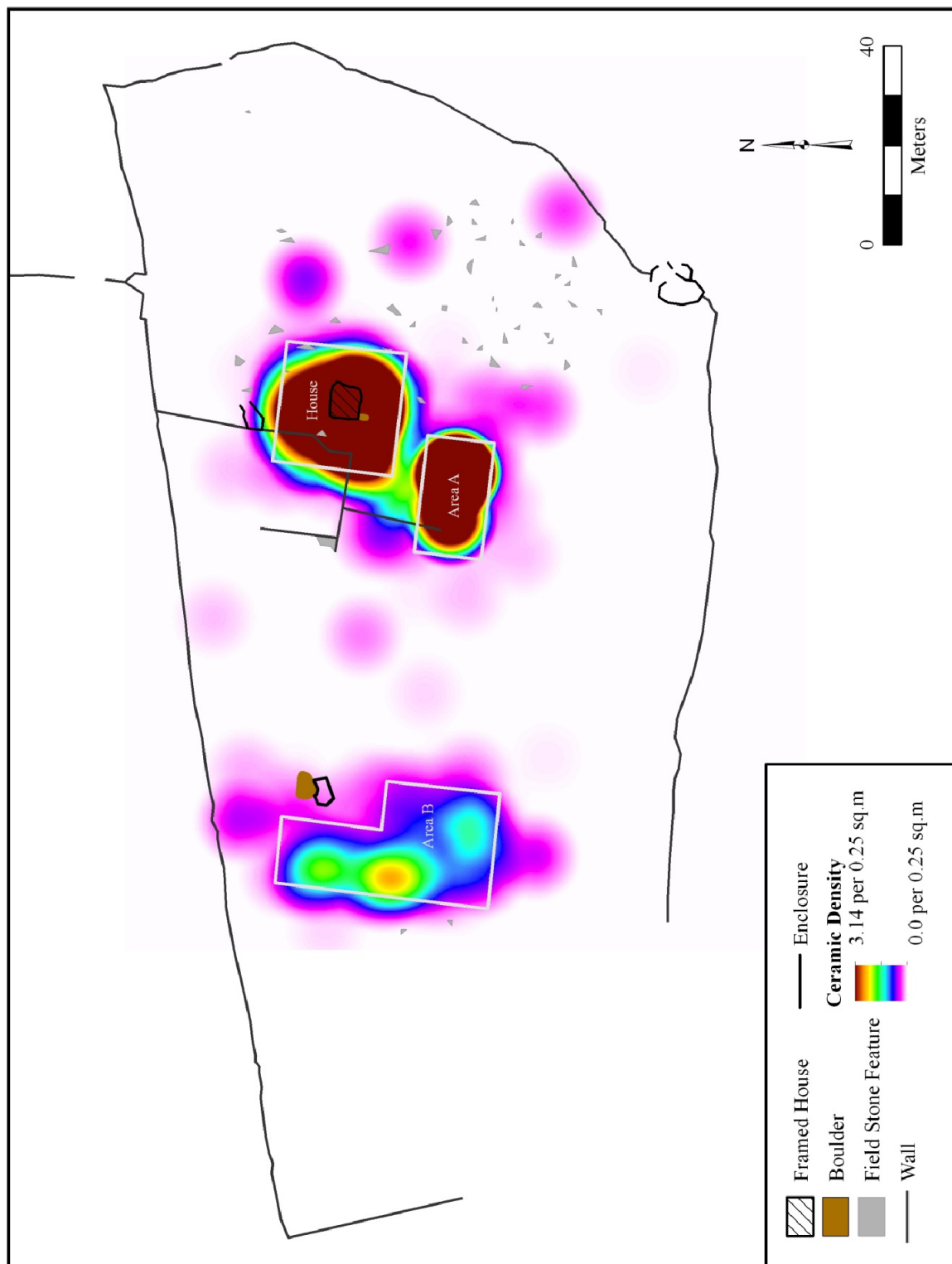


Figure 4: Results of kernel density analysis examining total ceramic counts from STPs.

### ***Framed House Analysis Area***

The area surrounding the framed house foot print was comprised of 23 STPs, all of which contained ceramics (Figure 5). Approximately 48% (847 ceramics) of the total project area assemblage was recovered from this area. Measuring approximately 6.5 m (north-south) by 7 m (east-west), a large stone pile situated near the center of the analysis area represents the remains of a large chimney which collapsed into the house footprint, a space containing a crawlspace but not a full cellar. One small boulder and midden pit are located on the southern side of the house footprint, as well as an enclosure located just outside of this area of analysis 13.5 m north of the framed house (*see* Figure 2). The area between the framed house footprint and the enclosure is fairly flat and open. One rock wall passes through the area while several others are located in the immediate vicinity. This is also true for the two field stone features within the analysis area; however the surrounding vicinity is littered with piles of field stones.

In 2009 test excavation units were placed under three stone features in the immediate vicinity of the Framed House Analysis Area; a fourth unit was placed under a stone wall segment located in analysis Area A (Hasho 2012). The three features tested near the framed house included two field stone features and the juncture of a stone wall and the enclosure located north of the house. Cultural material was recovered from beneath both of the field stone features, one of which is located approximately 10 m north of the house foot print (and within the Framed House Analysis Area), while the other is located approximately 10 m south of the house (just outside of the Framed House

Analysis Area). Ceramics from these test units were recovered in similar amounts to STPs excavated in the same vicinity in 2004.

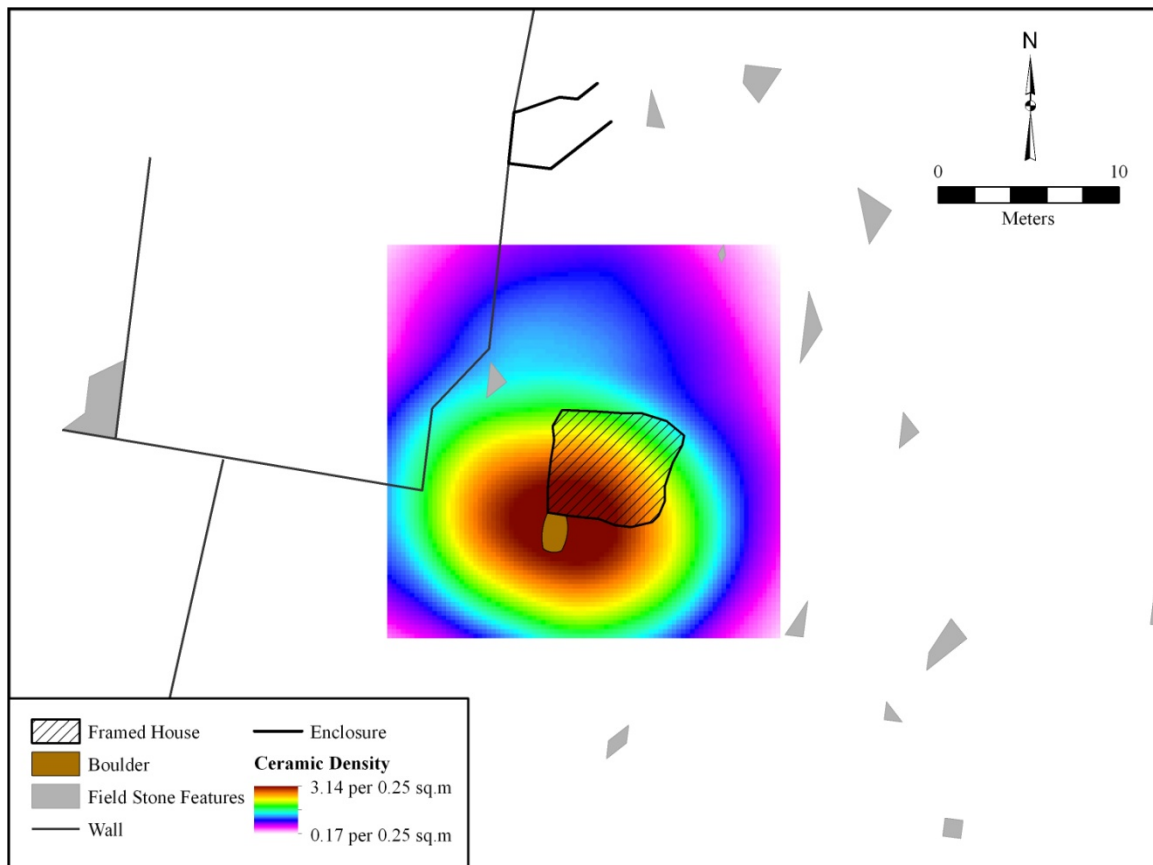


Figure 5: Results of kernel density analysis examining total ceramic counts in the Framed House Analysis Area.

The third unit, placed at the juncture of the north-south oriented stone wall and the enclosure was culturally sterile (Hasho 2012:52). STPs excavated within the enclosure were negative as well. This may be evidence that the enclosure was built during the same period as the house; therefore artifacts were unable to spread to its interior. However, STPs excavated adjacent to the enclosure only contained up to one ceramic sherd, if any at all, and no other artifacts. As a result it is unclear whether the presence of the enclosure had any effect on the distribution of artifacts. In other words,

this section of the project area already has very low artifact density, making this difficult to discriminate fully. STPs located south of the enclosure, along either side of the north-south trending wall the enclosure joins with, exhibited higher sherds counts.

Most of the STPs located on the same side of the stone wall as the house (eastern side) contained anywhere from 65% to 95% more ceramics than adjacent STPs on the opposite side of the wall (western side) from the house. There was one instance of an STP on the western side of the wall containing 40% more ceramic sherds than the STP on the eastern side of the wall. This wall is built along the edge of the flat upon which the house is situated. On the western side of the wall is a slope. It is unclear if ceramic counts in STPs along the western side of this wall are higher compared to those on the eastern side as a function of the wall or the terrain. The ceramic distributions do seem to indicate this wall was built, at the earliest, during the framed house's occupation. The antiquity of the enclosure is still inconclusive.

Artifacts dating between 3700-1000 B.C., which include one soapstone bowl fragment, one celt, and one argillite projectile point, were recovered from excavation units placed in the midden pit (Cipolla 2005:109; Silliman 2009:221, 224). The recovery of these artifacts has prompted the question as to whether the nineteenth-century site was established on top of a pre-existing prehistoric site. These artifacts were recovered from a context that included Euro-American style ceramics, pipe fragments, glass shards, and a variety of metal objects (Silliman 2009:221). Faunal remains from this feature primarily contained domesticated animals with lower percentages of wild animals (Cipolla 2005). No lithic or ground stone artifacts were recovered from any of the STPs excavated within

the Framed House Analysis Area or the project area. There was no midden identified anywhere within the project area which would indicate a potential prehistoric occupation. All of these factors indicate that the neither the project area nor Site 102-113 (of which the Framed House Analysis Area is situated in) reside on top of an earlier site potentially dating to the Archaic period.

### *Analysis*

A mean ceramic date of 1811 within a standard deviation of 19.7 years was derived for the Framed House Analysis Area. The presence of whiteware and high occurrence of later pearlware styles indicates the foundation area was still occupied after 1830. The overlapping ceramic date ranges appear to indicate a beginning occupation date for this area between 1800 and 1815. The house possibly remained occupied until circa 1840. Sixty-five percent of the project area's potential heirloom ceramics were collected from the Framed House Analysis Area, including white salt-glazed stoneware, jackfield types, slipware, and delft wares. All but one fragment of slipped redware came from this area of analysis, a majority of which were recovered from an STP within the midden pit on the south side of the house footprint. Unfortunately since the STPs were excavated by horizon, the vertical relationship of these ceramics was not recorded. An examination of ceramics recovered from excavation units placed in the midden pit (adjacent to the STP), in which vertical relationships between artifacts were recorded, found both whiteware and ceramics indistinguishable as either pearlware or whiteware in association and below ceramic types identified as heirloom.

Outside of the midden pit 42% of the heirloom ceramics within the Framed House Analysis Area assemblage were collected west and down slope of the house. Table 5 describes ware types and decorated percentages from the Framed House Analysis Area assemblage.

Table 5: Summary of ceramic types in the Framed House Analysis Area assemblage.

<i>Ware Type</i>	<i>Total Count</i>	<i>% of Total Assemblage</i>	<i>Total Decorated</i>	<i>% of Total Assemblage Decorated</i>	<i>% Decorated within Ware Type</i>
Redware	130	15.3	11	1.3	8.5
Jackfield Type	6	0.7	0	0	0
Delft	4	0.5	0	0	0
Pearlware	226	26.7	92	10.8	40.7
Creamware	374	44.2	13	1.4	3.5
Whiteware	5	0.6	4	0.5	80
Pearl/Cream/White	36	4.3	3	0.4	8.3
Pearl/Cream	5	0.6	3	0.4	60
Pearl/White	2	0.2	0	0	0
Brown Stoneware	45	5.3	13	1.5	28.9
Gray Stoneware	0	0	0	0	0
White Salt-Glazed Stoneware	5	0.6	1	0.1	20
US Porcelain	1	0.1	1	0.1	100
Indeterminate	8	0.9	0	0	0
Total	847	100	141	16.5	N/A

Creamware (44%), pearlware (27%), and redware (15%) represented 86% of the Framed House Analysis Area assemblage. Although these three same ceramic types dominate the total assemblage for the project area, the refined earthenwares were recovered in slightly higher percentages in the Framed House Analysis Area compared to the project area (creamware 35%, pearlware 20%). Redware, however, was more dominant in the overall project area assemblage, representing 33% of the ceramics collected. The distribution of redware across the project area may speak more to its

utilitarian nature, being employed for an array of uses, and thus utilized in multiple spaces. Both assemblages possess comparable amounts of indeterminate ceramics.

As depicted in Figure 5 the densest ceramic deposits came from the foundation footprint's southwest corner, within and adjacent to the midden pit. The kernel analysis results further details how each type of earthenware was distributed within the Framed House Analysis Area (Figure 6). Although redware was recovered throughout this area it was recovered in the most abundant quantities within the midden (this was also true for stoneware). Refined earthenwares exhibited a slightly different depositional pattern. The kernel analysis revealed that although pearlware centered around the midden, the distribution of pearlware extends to the west and north which is something not seen in the redware or stoneware analysis results.

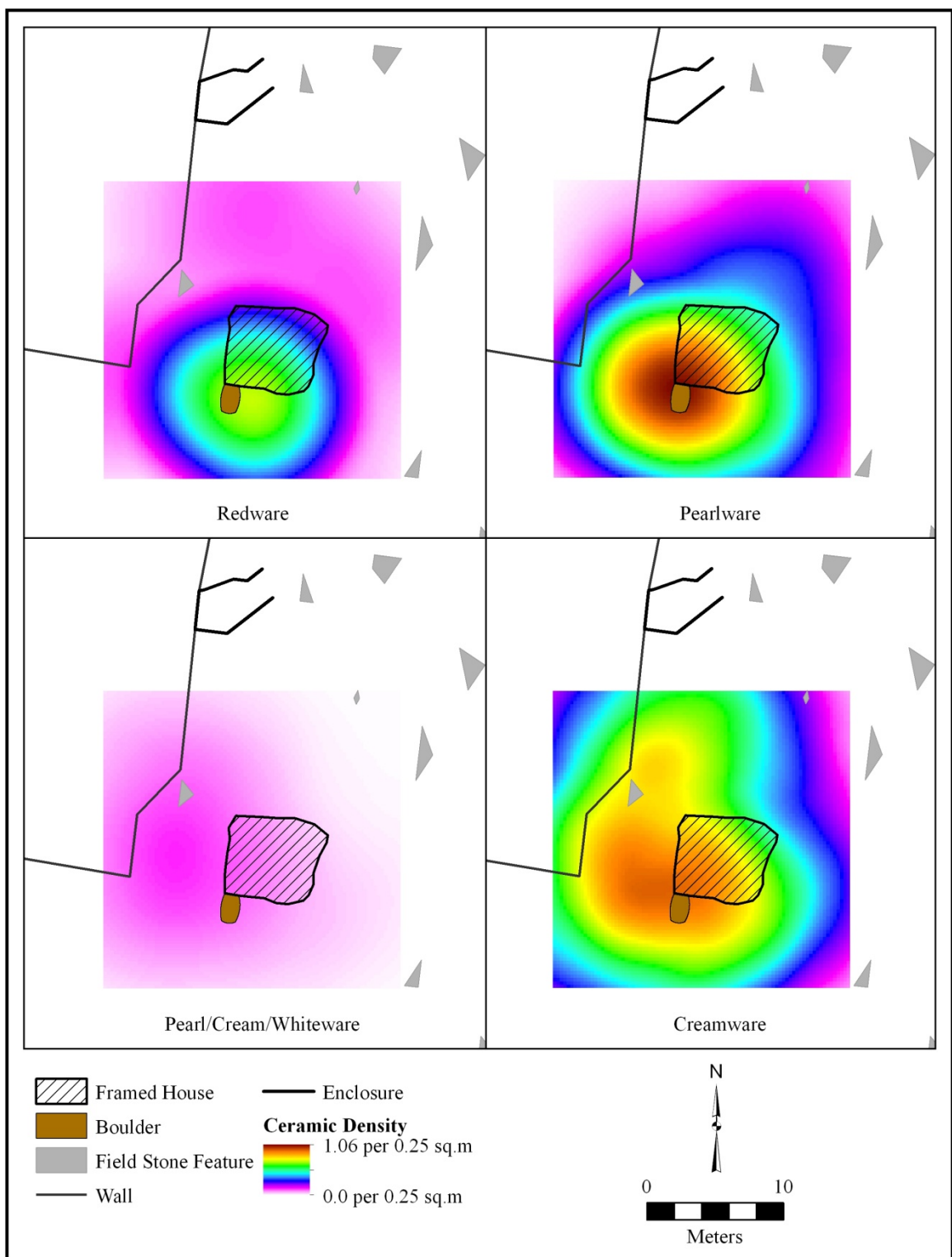


Figure 6: Kernel analysis of earthenwares within the Framed House Analysis Area.



The kernel analysis of ceramic sherds categorized as pearl/cream/whitewares (PCW), which are incapable of being classified as one of these three ceramic types with any certainty, demonstrates the main deposition of these ceramics is almost entirely on the western side of the foundation footprint. Creamware had the broadest distribution outside of the midden stretching across the entire Framed House Analysis Area. The kernel analysis found the density of creamware recovered from the framed house's west side to be equal to the amount of creamware recovered from the midden area. Additionally, elevated levels of creamware exist northwest of the house, a depositional pattern not seen in any of the other ceramic types analyzed. Only five fragments of whiteware were recovered, from one STP along the western most edge of this area.

Half of the ceramics recovered from the Framed House Analysis Area measured between 1 cm and 2 cm in diameter. Over one-third had a diameter of less than 1 cm, and only 15% were larger than 2 cm in diameter (Table 6). As with the overall project area interpretation, this made identifying vessel types difficult. The majority of ceramics recovered were too fragmented to be assigned a vessel type; however, analysis was able to identify the presence of hollowwares and teawares within this assemblage.

Table 6: Summary of ceramic size in the Framed House Analysis Area assemblage.

<i>Ware Type</i>	<i>Diameter in cm</i>					<i>Total Count</i>
	<i>&lt; 1</i>	<i>1 to 2</i>	<i>2 to 3</i>	<i>3 to 5</i>	<i>&gt; 5</i>	
Pearlware	54	131	35	6	0	226
Creamware	147	185	35	7	0	374
Whiteware	1	2	1	1	0	5
Pearl/Cream/White	17	15	4	0	0	36
Pearl/Cream	1	4	0	0	0	5
Pearl/White	0	1	1	0	0	2
Brown Stoneware	15	16	6	7	1	45
Gray Stoneware	0	0	0	0	0	0
White Salt-Glazed Stoneware	1	2	2	0	0	5
Redware	31	78	14	7	0	130
Jackfield Type	0	5	0	1	0	6
Delft	3	1	0	0	0	4
US Porcelain	0	1	0	0	0	1
Indeterminate	2	6	0	0	0	8
Total Count	272	447	98	29	1	847
Assemblage Percentage	32%	53%	12%	3%	<1%	100%

The fragmentation of the ceramics provides information about depositional processes occurring within Framed House Analysis Area. Each of the ceramic sizes, with the exception of those larger than 5 cm in diameter, underwent the kernel analysis. Only one ceramic sherd with a diameter larger than 5 cm was recovered from the Framed House Analysis Area. Ceramic size in the Framed House Analysis Area was examined not only to gain insight into site formation processes but to also characterize a known primary deposit assemblage's ceramic size and distribution. Unsurprisingly, the kernel analysis result (Figure 7) depicts the midden as the epicenter of large ceramic sherds. As the size of the ceramics decreases, they are distributed further to the north and west (down slope of the house).

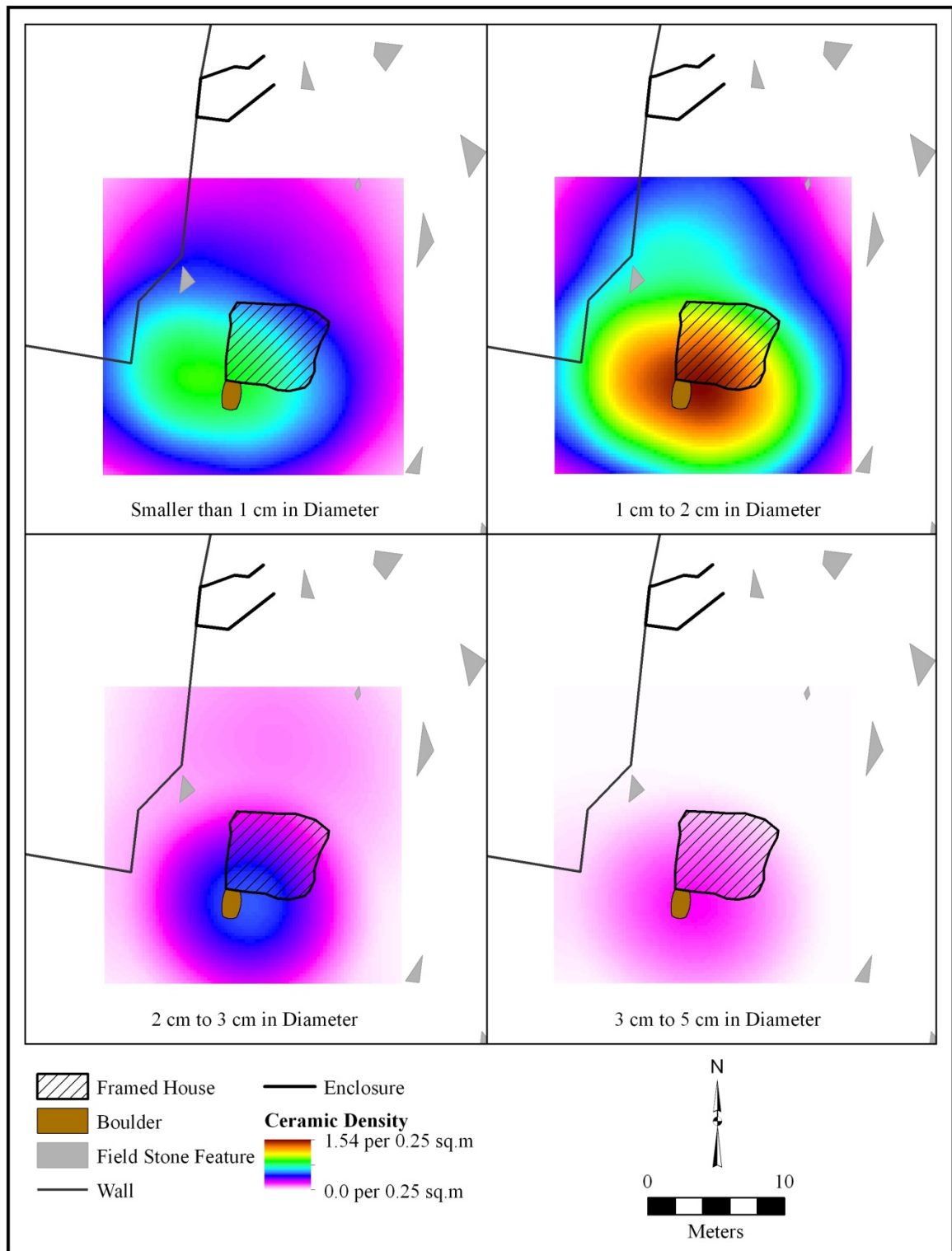


Figure 7: Kernel analysis of ceramic size within the Framed House Analysis Area.

Considering the slope located west of the framed house, it is expected that ceramic sherds not only cluster in this area but become increasingly fragmented as a result of the terrain. The presence of the midden explains why the kernel analysis results extend to the south of the house footprint; however, in both the ceramic size and type analysis obvious patterning exists to the northwest as well. Ceramics were recovered from STPs on the north side of the house footprint at nearly twice the rate of STPs located along the house footprint's east side. This area between the house and the enclosure, which is fairly flat and open, was probably utilized for a variety of activities.

Consistent throughout all of the kernel analysis results for the Framed House Analysis Area is a decrease in ceramic densities to the northeast of the house. The PCW ceramic distribution to the west of the house, extending down slope, is likely a result of the highly fragmented state of the ceramics collected in this area. The slope west of the framed house averages 12 degrees, dropping 15 m in elevation over a distance of 20 m. Nearly 50% of the PCW measured less than 1 cm in diameter and bore few diagnostic elements. The ceramic distribution extending towards the southwest corner of the house potentially indicates an entranceway near the framed house's southwest corner. Similar depositional patterns observed at other sites on the EPTN reservation have indicated the presence of south-facing doors, which would have been more successful in protecting the home from winter elements (Hayden 2012:121).

In Hayden's (2012) examination of residential sites before and after this site (102-113), domestic refuse pits were found in close proximity to the house. The sites dating to the eighteenth century (102-124 and 102-125) both contained refuse pits within the house

space as well as additional loci of refuse disposal to the south. A later nineteenth-century site (102-128) had a shallow storage space beneath the house which was eventually used for refuse disposal and an external debris pit located to the south of the house (Hayden 2012:105). While the majority of artifacts were recovered from discrete disposal features at eighteenth-century sites, the later nineteenth-century site exhibited depositional patterns which would more accurately be described as a sheet scatter of artifacts with one ambiguous extramural disposal feature.

The composition of the Framed House Analysis Area's elements fits nicely in between these earlier and later sites as it possesses both a designated refuse feature as well as a distribution of artifacts which could be characterized as a sheet scatter. As Hayden (2012:121) noted, it appears there was a preference to "spatially orient extramural disposal practices to the south of the dwelling." This is evidenced here by the refuse pit on the south side of the house, analysis Area A's location approximately 10 m south of the house (see below), and a sheet scatter of artifacts observed in the kernel analysis. Additionally, ceramic distributions extending from the house south towards analysis Area A may be indicative of foot traffic between these two areas, a pattern also observed by Hayden (2012).

This framed house continued a tradition of internal subfloor storage through its crawlspace space. Internal storage pits, later filled with refuse, were identified at both the potential eighteenth-century wigwam site and the site of a late eighteenth-century framed house (Hayden 2012). At least five domestic sites on the EPTN reservation (including this one) spanning from the mid-eighteenth to the mid-nineteenth century exhibited

internal subfloor storage spaces ranging from pit features to formal cellar spaces. This element has been consistently observed regardless of the structure type.

### *Area A*

Area A is located approximately 10-15 m south of the foundation footprint (Figure 8). An effort was made in the field to determine the nature of this deposit, identified at the time as showing an increase in artifact density, by placing additional STPs at 5 m intervals. Area A involved a series of 15 STPs, 14 of which contained ceramics. Although Area A lacks any discernible midden, 460 ceramic sherds, 26% of the total project area assemblage, were recovered from this area. One rock wall (oriented north-south) passes through the area which acts as a retaining wall against the slope. There are also numerous field stone features located to the east of Area A. The study area itself is situated upon a slope of approximately 11 degrees.

In 2009 a test excavation unit was placed under the rock retaining wall in the northwest corner of Area A (Hasho 2012). Artifacts, including two pieces of stoneware, were recovered from this test unit. As previously implied, a wall contemporaneous with an occupation or feature would act to restrict or limit the distribution of artifacts from one side to another (Hasho 2012). In addition to artifacts being recovered from beneath this portion of the wall, there is no evidence of it having affected artifact distribution. Ceramics were recovered in comparable amounts from the western (down slope) and eastern (up slope) sites of the wall, not only within Area A but along the entire length of the wall.

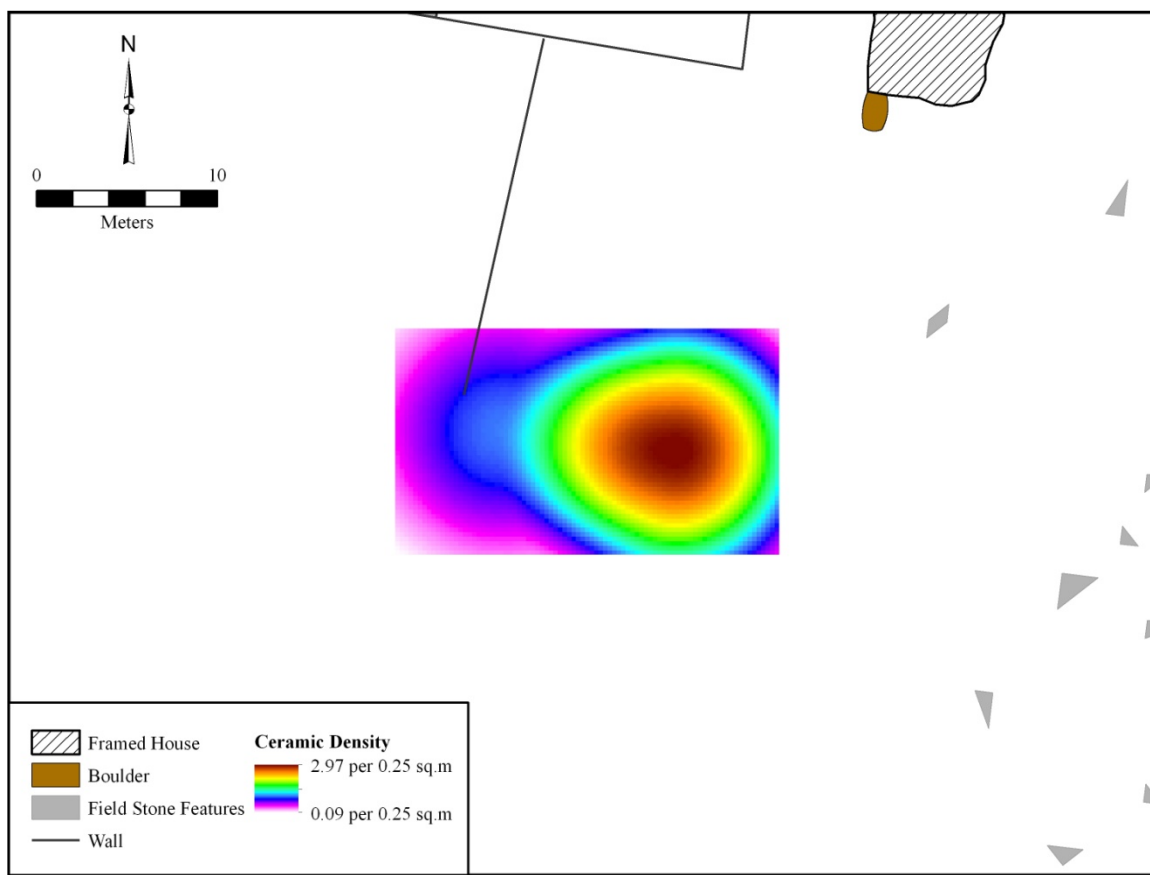


Figure 8: Results of kernel density analysis examining total ceramic counts in Area A.

### *Analysis*

Analysis Area A's mean ceramic date was 1795.6 within a standard deviation of 10.6 years. The standard deviation for this mean date is much tighter than those calculated for the entire project area or foundation footprint area. The ceramics recovered here were overwhelmingly standard, unslipped redware, totaling 86% (396 sherds) of Area A's assemblage, which unfortunately are unusable for establishing a deposition date because of their ubiquitous spatial and temporal distribution in the archaeological record (Table 7). Dating was based on 62 ceramics for which a date range could be established. This assemblage lacked ceramics with decorative elements which could be used to further refine the date of its deposition. Only one hand painted

pearlware fragment and one sherd of feather-edged creamware were recovered. Later temporal indicators found across the project area such as whiteware and ceramics decorated with transfer prints are also absent from Area A. It does, however, contain earlier ceramics such as white salt-glazed stoneware.

Table 7: Summary of ceramic types in the Area A assemblage.

<i>Ware Type</i>	<i>Total Count</i>	<i>% of Total Assemblage</i>	<i>Total Decorated</i>	<i>% of Total Assemblage Decorated</i>	<i>% Decorated within Ware Type</i>
Redware	396	86.1	0	0	0
Jackfield Type	0	0	0	0	0
Delft	0	0	0	0	0
Pearlware	12	2.6	1	0.2	8.3
Creamware	48	10.5	1	0.2	2.1
Whiteware	0	0	0	0	0
Pearl/Cream/White	0	0	0	0	0
Pearl/Cream	1	0.2	0	0	0
Pearl/White	0	0	0	0	0
Brown Stoneware	2	0.4	0	0	0
Gray Stoneware	0	0	0	0	0
White Salt-Glazed Stoneware	1	0.2	0	0	0
US Porcelain	0	0	0	0	0
Indeterminate	0	0	0	0	0
Total	460	100	2	0.4	N/A

One STP, N775 E595, contained 288 ceramic sherds, over half of Area A's assemblage. The kernel analysis results for redware is identical to the total density analysis seen in Figure 8. This is to be expected considering redware accounts for approximately 86% of Area A's total assemblage, a significant difference compared to redware percentages exhibited in the total project area (33%) and the Framed House Analysis Area (15%). In the total density kernel analysis the spread can be seen extending to the west (down slope). STP N775 E585, located 10 m west of STP N775 E595, contained the second highest deposit of ceramics (all redware) identified in Area



A. The one STP located between these two units only contained six ceramic sherds: one redware and five creamware. The ceramic counts from STPs falling on transects to the north and south of transect N775 (horizontally bisecting Area A) practically mirror each other's ceramic counts, containing between 1 and 11 sherds. The creamware kernel analysis depicts an evenly distributed spread across the eastern portion of Area A, with densities decreasing down slope to the west (Figure 9). Pearlware is localized to the northeast region of Area A (Figure 9), appearing to be more of an extension of the Framed House Analysis Area rather than an attribute of Area A. This further demonstrates Area A is associated with the framed house's early period of occupation.

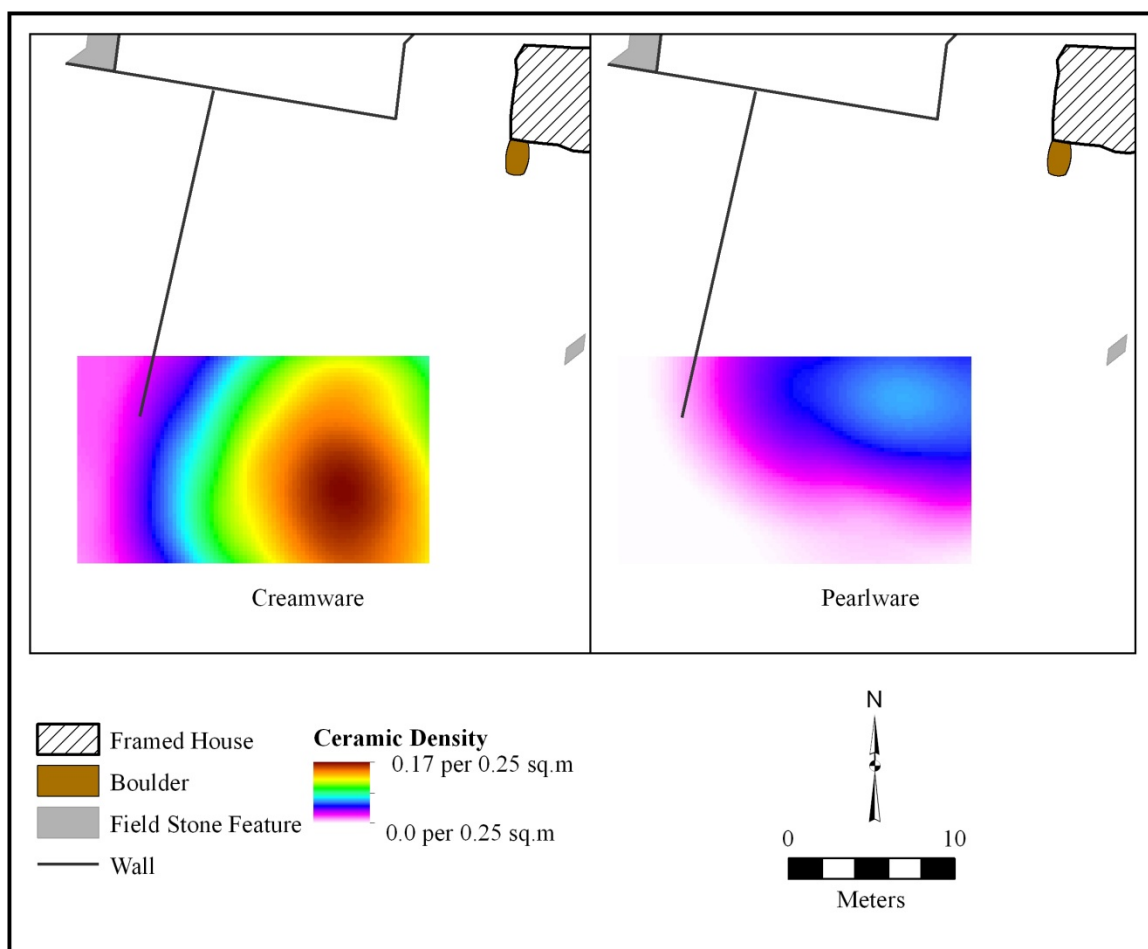


Figure 9: Kernel analysis of refined earthenwares within the Area A analysis area.

The ceramics recovered in Area A were very fragmented. Approximately 92% of the assemblage measured smaller than 2 cm in diameter (see Table 8). As with the previous analysis, this made identifying vessels types difficult. The majority of ceramics recovered was too fragmented to be assigned a vessel type; however, the analysis was able to identify hollowwares, flatwares, and more specifically bowls in this assemblage.

Table 8: Summary of ceramic size in the Area A assemblage.

<i>Ware Type</i>	<i>Diameter in cm</i>					<i>Total Count</i>
	<i>&lt; 1</i>	<i>1 to 2</i>	<i>2 to 3</i>	<i>3 to 5</i>	<i>&gt; 5</i>	
Pearlware	7	5	0	0	0	12
Creamware	21	24	2	1	0	48
Whiteware	0	0	0	0	0	0
Pearl/Cream/White	0	0	0	0	0	0
Pearl/Cream	1	0	0	0	0	1
Pearl/White	0	0	0	0	0	0
Brown Stoneware	0	1	0	0	1	2
Gray Stoneware	0	0	0	0	0	0
White Salt-Glazed Stoneware	0	1	0	0	0	1
Redware	142	221	27	6	0	396
Jackfield Type	0	0	0	0	0	0
Delft	0	0	0	0	0	0
US Porcelain	0	0	0	0	0	0
Indeterminate	0	0	0	0	0	0
Total Count	171	252	29	7	1	460
Assemblage Percentage	37%	55%	6%	2%	<1%	100%

Each of the ceramic size categories, with the exception of those larger than 5 cm in diameter, underwent the kernel analysis. As seen in Table 8, only one ceramic sherd measuring larger than 5 cm in diameter was recovered from this area. The kernel analysis of ceramic size was performed to further examine whether this locus represents a primary or secondary deposit and its spatial characteristics. Smaller ceramics are localized around STP N775 E595, which is probably a function of the sheer density of ceramics recovered from within this unit. In the kernel analysis of ceramics measuring between 1 and 2 cm in diameter, the density spread extends down slope to the west. Although STP N775 E595 (the unit with the second highest ceramic count) contains ceramics larger than 2 cm in diameter, it does not appear to have a significant effect in the kernel analysis of ceramics larger than 2 cm in diameter. None of the seven STPs surrounding N775 E595 contain sherds larger than 2 cm in diameter (Figure 10).

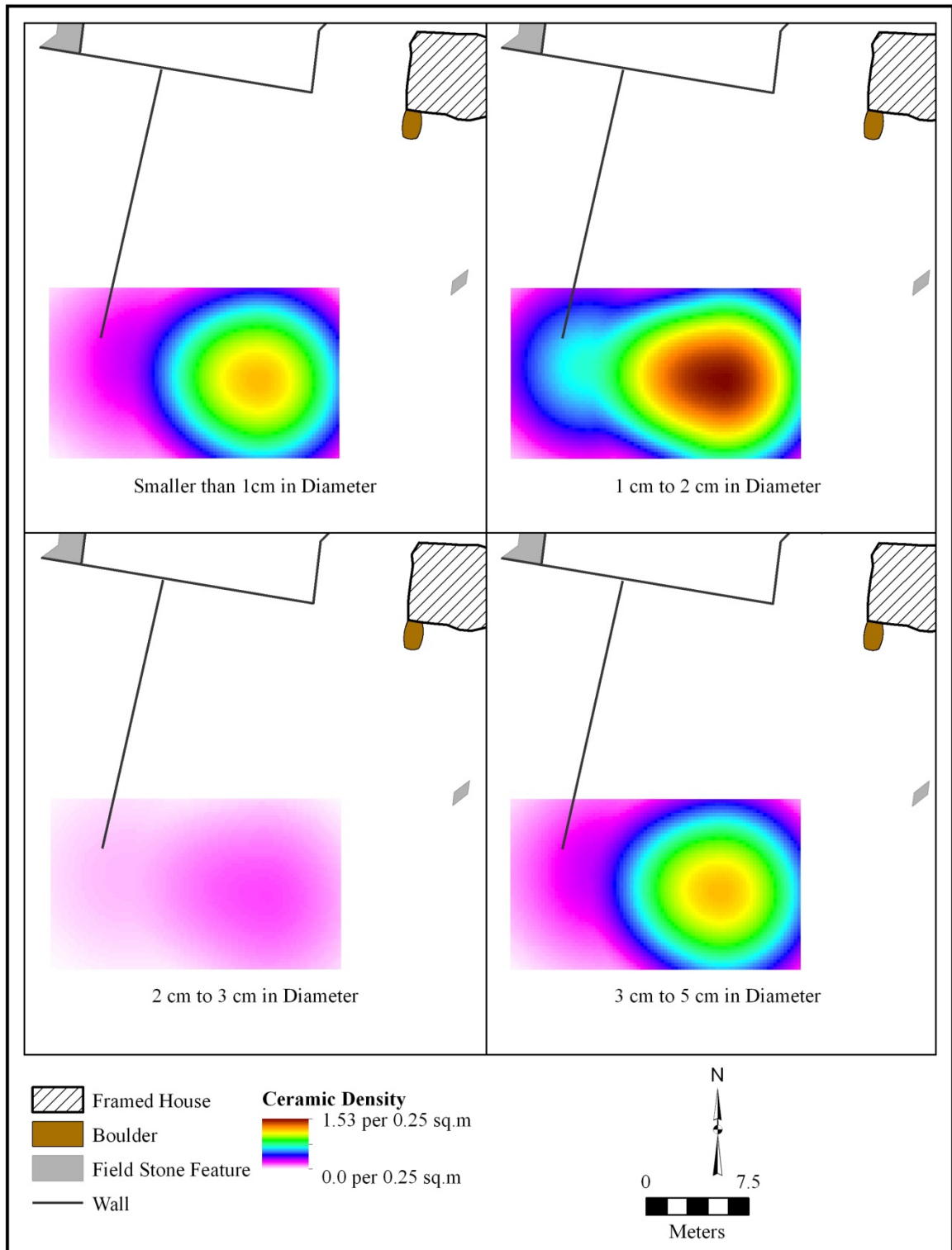


Figure 10: Kernel analysis of ceramic size within the Area A analysis area.

There are several possible explanations for Area A. Although no definitive midden was observed, it may represent either a disposal area away from the main household or an area associated with food preparation and/or storage. Faunal remains were recovered from seven STPs in Area A along with one piece of shell in an eighth STP. Most of the faunal remains were collected from the eastern half of Area A, in and around STP N775 E595; however, faunal material was also recovered in two STPs located in the northwest quadrant of Area A (down slope). Additionally, one pipe fragment was also collected from an STP containing faunal remains in the northwest portion of Area A. Two glass fragments were recovered from Area A: one small piece of window glass and the base of a pressed eight-panel tumbler dating to the early nineteenth century. The possibility is that Area A represents an outbuilding associated with food preparation or storage may explain the concentrations of redware found in this area. The slightly more fragmented nature of Area A further creates ambiguity as to whether it represents a primary activity locus or an area of residential disposal (perhaps still specifically associated with kitchen refuse). A third possibility perhaps is Area A represent an ephemeral occupation such as a framed structure or wigwam. Currently, though, little material evidence can be summoned to support (or even truly test) this. There is also an absence of metal and other structural indicators currently associated with European-style framed structures.

Refining the depositional date for Area A was difficult because of the lack of temporally diagnostic ceramics discussed earlier. Dating of this locus was based on a small subset of ceramics for which a date range could be established. It is possible that

Area A pre-dates the foundation footprint slightly, given the lack of later ceramics. This interpretation may support the idea of an ephemeral occupation, perhaps as the framed house was being constructed. However, it is definitely broadly contemporaneous with the framed house to some extent. The absence of ambiguous ceramic types (such as PCW) despite the assemblage's fragmentation may be an indicator of an association with the site's early occupation, prior to the arrival of later refined earthenwares (transitioning from pearlware to whitewares) which would be more difficult to identify with increased fragmentation. Additionally, as alluded to earlier, it does not appear that the pearlware could be considered an attribute in Area A and instead manifest as an intruding element extending from the Framed House Analysis Area. Similar to the pit feature at site 102-128 (also dating to the nineteenth century), creamware was the dominant refined earthenware.

The types of vessels identified (flatwares, bowls, and hollowwares) and high amounts of redware support the hypothesis that this area was associated with some aspect of food preparation. Ceramic distributions extending from the house south towards analysis Area A may be indicative of foot traffic between these two areas, a depositional pattern observed on other EPTN reservation sites (Hayden 2012). The concentration of artifacts in Area A and the distribution of artifacts observed between Area A and the framed house further indicate the south side of the house as a potential door location.

Although it is unclear exactly why, domestic refuse features and loci are commonly located 5-10 m south of reservation dwellings dating to both the eighteenth and nineteenth centuries. In the four instances where these have been identified, they

have all been ambiguous to some degree. The pit features are less defined and irregular when compared to refuse pits identified in interior household spaces. Area A deposition most resembles the area of increased artifact density associated with the eighteenth-century framed house (102-125); however, its assemblage is more similar to the later nineteenth-century site (102-128) in that it appears this area was not used for an extended period of time and potentially was only utilized in disposal of domestic debris during the site's early occupation.

### ***Area B***

In the 50 m between Area A and Area B, only 8 of 47 STPs excavated contained ceramics. The contents of these STPs fell into a random pattern indicating little if any significant relationship between each other. The STPs in which ceramics were recovered only contain 1-6 sherds. Ceramic types in these STPs included older ceramic types such as delft and white salt-glazed stoneware along with redware, brown stoneware, creamware and pearlware. The frequency of STPs containing ceramics increased dramatically 50 m west of Area A's western boundary (approximately 75 m west of the framed house footprint). This 50 m separation between ceramic deposits assisted in defining Area B, a third distinct area of cultural deposition within the project area. The terrain west of Area A slopes slightly as it extends west from the base of a slope (western edge of Area A), flattening as it approaches a wetland on the west end of the project area.

Many of the STPs in Area B contained only a few ceramics, but the distance of these STPs from the framed house and Area A, as well as the frequency in which artifacts were recovered from these STPs, prompted further investigation. A working hypothesis

in the field was that this area might contain a frameless residential structure such as a wigwam. Therefore, an effort was made in the field to determine the nature of these ephemeral deposits by first placing STPs at 5 m intervals, and when that had not produced clear evidence of architecture (e.g., postholes), then STPs were placed at 2.5 m intervals. Although STPs were tightened to these small intervals, neither postholes nor midden features were identified within Area B. Of the 77 STPs dug in Area B, 59 STPs contained ceramics.

Three surface features are spatially associated with Area B: a small stone enclosure attached to a large boulder and two field stone features. The field stone features are located approximately 5 m west of Area B, as currently defined. The enclosure is located north and east of Area B, approximately 5 m east of Area B's northwest corner, as currently defined. Ceramic density was sparse in Area B compared to Area A and the Framed House Analysis Area. There were only 8 STPs in Area B which provided 10 or more ceramic sherds; the maximum amount of sherds recovered from a single STP was 17. The ceramic density average in Area B was 3.27 ceramic sherds per 0.25 sq.m. Compare this to the Framed House Analysis Area which averaged 36.8 ceramic sherds per 0.25 sq.m or Area A which averaged 30.7 ceramic sherds per 0.25 sq.m. A total of 252 ceramic sherds, 14% of the total project area assemblage, were recovered from this area.



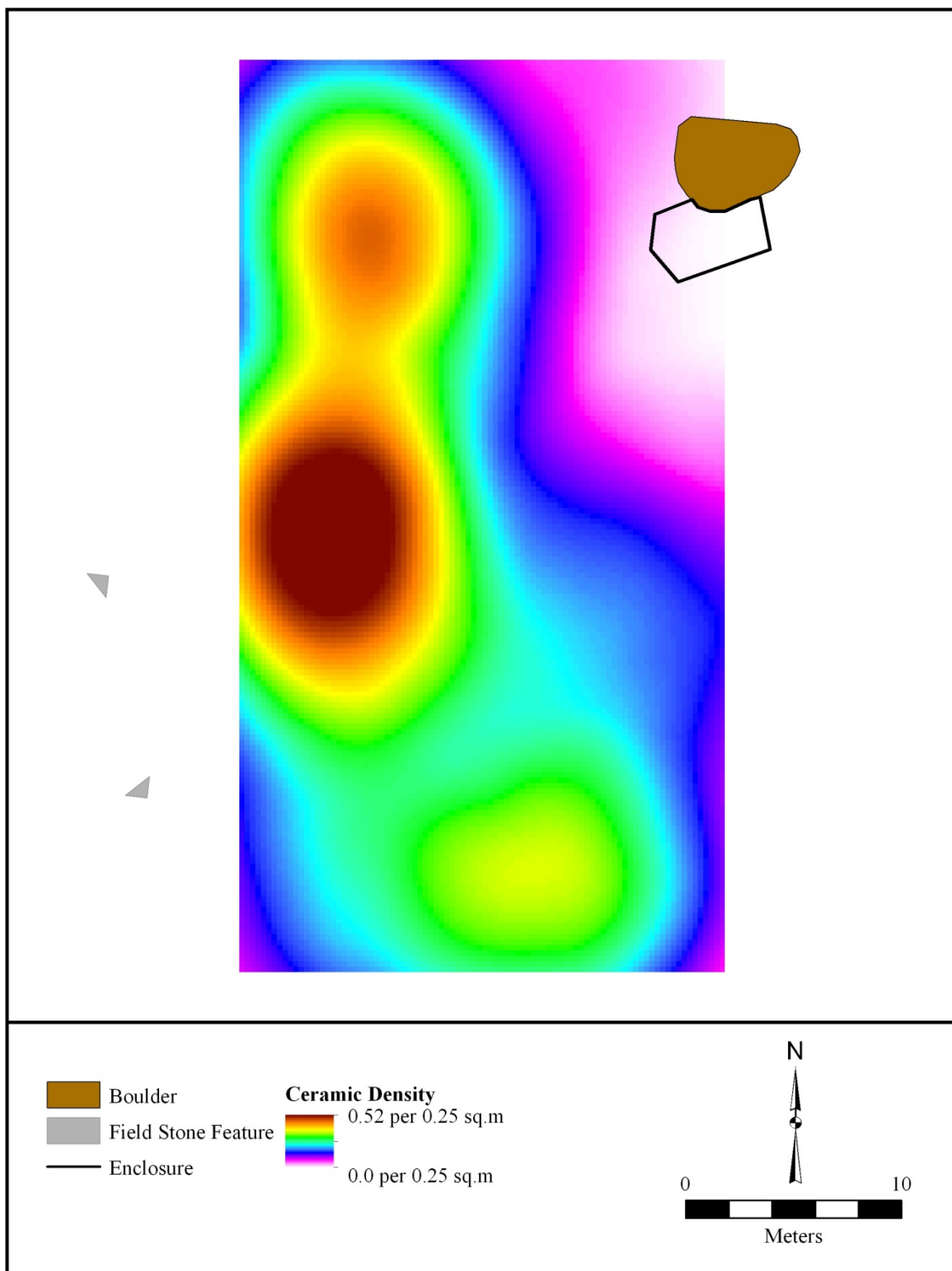


Figure 11: Results of kernel density analysis examining total ceramic counts in Area B.

None of the stone features in the vicinity of Area B have been subject to testing in order to confirm whether they are contemporaneous with or post-date Area B. As Hasho (2012) has cautioned, it would be presumptuous to automatically associate these features with the deposition of artifacts in Area B without prior testing of these features, but the two stone features likely fall outside of the distribution of artifacts and may prove to be inconclusive, even if tested. The enclosure is located approximately 13-16 m east of the high ceramic density area visible in Figure 11. This is a similar distance between the framed house footprint and its associated enclosure (13 m). Another similarity between the boulder enclosure and the enclosure associated with the framed house is the ephemeral nature of the artifact deposition surrounding them. One STP was placed within the boulder east of Area B. The STP was excavated near the southwest interior corner of the enclosure. No cultural constituents were recovered from this STP. Of the 5 STPs excavated adjacent and within 5 m of the enclosure's walls, only 5 ceramics (creamware and whiteware) were recovered from two STPs. One piece of fauna was recovered from a third STP, which lacked ceramics. As a result, it is inconclusive from solely examining artifact distribution as to whether or not the boulder enclosure is contemporary with Area B and what it might represent.

### *Analysis*

Creamware and pearlware were the dominant ceramic types recovered from Area B, each comprising more than one-third of the Area B assemblage (Table 9). Whiteware represented 3% of the assemblage in Area B compared to less than 1% of the Framed House Analysis Area assemblage or entire project area assemblage. Redware was also

recovered in lesser amounts from Area B. Only 12% of Area B's assemblage was redware compared to 15% of the Framed House Analysis Area assemblage, 86% of the Area A assemblage, and 33% of the entire project area assemblage. Although both delft and porcelain are absent in the Area B assemblage, Area B is the only place where gray stoneware was recovered within the project area. Also of interest were three pieces of white salt-glazed stoneware, one of which was scratch blue decorated. Additional older ceramics collected from Area B include slipped redware and jackfield type ceramics. Most of the stonewares came from the southern portion of Area B.

Table 9: Summary of ceramic types in the Area B assemblage.

<i>Ware Type</i>	<i>Total Count</i>	<i>% of Total Assemblage</i>	<i>Total Decorated</i>	<i>% of Total Assemblage Decorated</i>	<i>% Decorated within Ware Type</i>
Redware	30	11.9	1	0.4	3.3
Jackfield Type	2	0.8	0	0	0
Delft	0	0	0	0	0
Pearlware	79	31.3	34	13.5	43
Creamware	94	37.3	1	0.4	1.1
Whiteware	8	3.2	1	0.4	12.5
Pearl/Cream/White	6	2.4	1	0.4	16.7
Pearl/Cream	16	6.3	3	1.2	18.8
Pearl/White	4	1.6	0	0	0
Brown Stoneware	7	2.8	0	0	0
Gray Stoneware	2	0.8	0	0	0
White Salt-Glazed Stoneware	3	1.2	1	0.4	33.3
US Porcelain	0	0	0	0	0
Indeterminate	1	0.4	0	0	0
Total	252	100	42	16.7	N/A

Area B's mean ceramic date was 1816 within a standard deviation of 21 years.

After looking at overlapping date ranges for ceramic and decorative types, it appears the mean ceramic date of 1816 likely represents the date by which Area B was occupied.

The presence of whiteware indicates Area B was still being utilized after 1830,

demonstrating Area B was contemporaneous with the framed house. It is possible that Area B continued to be occupied after the framed house was abandoned; however, the date ranges from both areas suggest at the very least that their occupations overlapped.

Figure 12 provides the kernel analysis results for Area B earthenwares. The densest redware deposit occurred in the northwest portion of Area B, a second distinct area of increased redware density is located approximately 15 m to the southwest. A moderate distribution of redware linking the two areas together is also visible. Creamware is spatially distributed further to the west and south in Area B compared to redware. The kernel analysis results indicate three areas of increased creamware density. The northern and central areas visible in the creamware kernel analysis are approximately 5 m apart while the central and southern loci are approximately 10 m apart.

The result of the pearlware kernel analysis once again depicts an area of increased density approximately 10 m south of a large deposit to the north. The northern area of increased pearlware overlaps the northern and central areas of increased creamware density. Whiteware was found in discrete deposits at the northern and southern ends of Area B. It was recovered in such sparse amounts (3.2% of the assemblage) that the kernel analysis of whiteware provides minimal additional information. Finally, PCW was broadly distributed across Area B. The kernel analysis for PCW (visual kernel analysis results not provided) forms a distinct “L” shaped pattern within Area B similar to the creamware kernel analysis results.

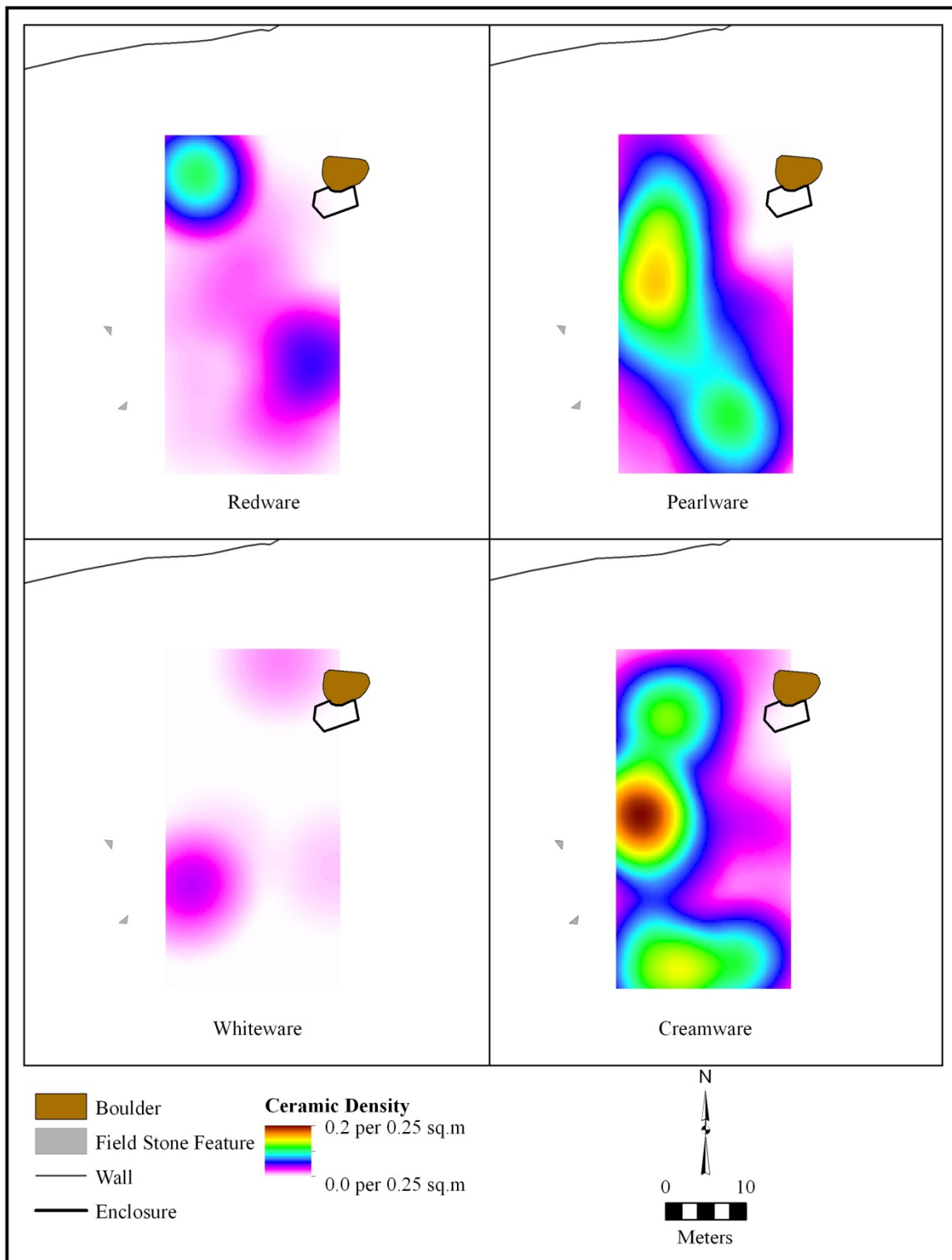


Figure 12: Kernel analysis of earthenwares within the Area B analysis area.

The fragmentation of ceramic sherds in Area B was proportionally similar to what was observed both in the Framed House Analysis Area and Area A assemblages. Ceramic sherds smaller than 1 cm in diameter represent 25% of the Area B's assemblage; ceramic sherds measuring between 1 cm and 2 cm in diameter represent 54%; and sherds measuring between 2 cm and 3 cm in diameter represented approximately 16% of Areas B's assemblage (Table 10). Finally, ceramics measuring between 3 cm and 5 cm in diameter only comprised 3% of the Area B's assemblage and no sherds larger than 5 cm in diameter were recovered. Despite the fragmentation of the ceramics in this area, vessel types including flatwares and hollowwares, in particular bowls and tea cups, were identified. As was observed in the Framed House Analysis Area, the amount of ambiguous ceramic types such as PCW is likely a result of the highly fragmented state of the ceramic assemblage.

Table 10: Summary of ceramic size in the Area B assemblage.

<i>Ware Type</i>	<i>Diameter in cm</i>					<i>Total Count</i>
	<i>&lt; 1</i>	<i>1 to 2</i>	<i>2 to 3</i>	<i>3 to 5</i>	<i>&gt; 5</i>	
Pearlware	18	44	15	2	0	79
Creamware	28	48	16	2	0	94
Whiteware	0	8	0	0	0	8
Pearl/Cream/White	3	3	0	0	0	6
Pearl/Cream	4	10	2	0	0	16
Pearl/White	3	1	0	0	0	4
Brown Stoneware	0	3	1	3	0	7
Gray Stoneware	0	0	2	0	0	2
White Salt-Glazed Stoneware	0	2	0	1	0	3
Redware	7	17	3	3	0	30
Jackfield Type	0	0	2	0	0	2
Delft	0	0	0	0	0	0
US Porcelain	0	0	0	0	0	0
Indeterminate	1	0	0	0	0	1
Total Count	64	136	41	11	0	252
Assemblage Percentage	25%	54%	16%	5%	0%	100%

Ceramics smaller than 1 cm in diameter and measuring between 1 cm and 2 cm in diameter were widely distributed across Area B (Figure 13). The kernel analysis results for ceramics measuring less than 1 cm in diameter and 1 cm and 2 cm in diameter exhibit the same patterns observed in the earthenware kernel analysis. There are three consistent loci of increased density with a moderate density (for this analysis area) spread of ceramics linking them together. A fourth area of moderate increase in ceramic density, situated in the eastern portion of Area B, is visible in the results of ceramics measuring less than 1 cm in diameter. This fourth area also manifested in the redware kernel analysis; however it should be noted that pearlware and creamware combined represent 72% of the ceramics measuring less than 1 cm in diameter while redware constituted only 11%. Therefore this fourth ephemeral area cannot be directly attributed to redware distribution.

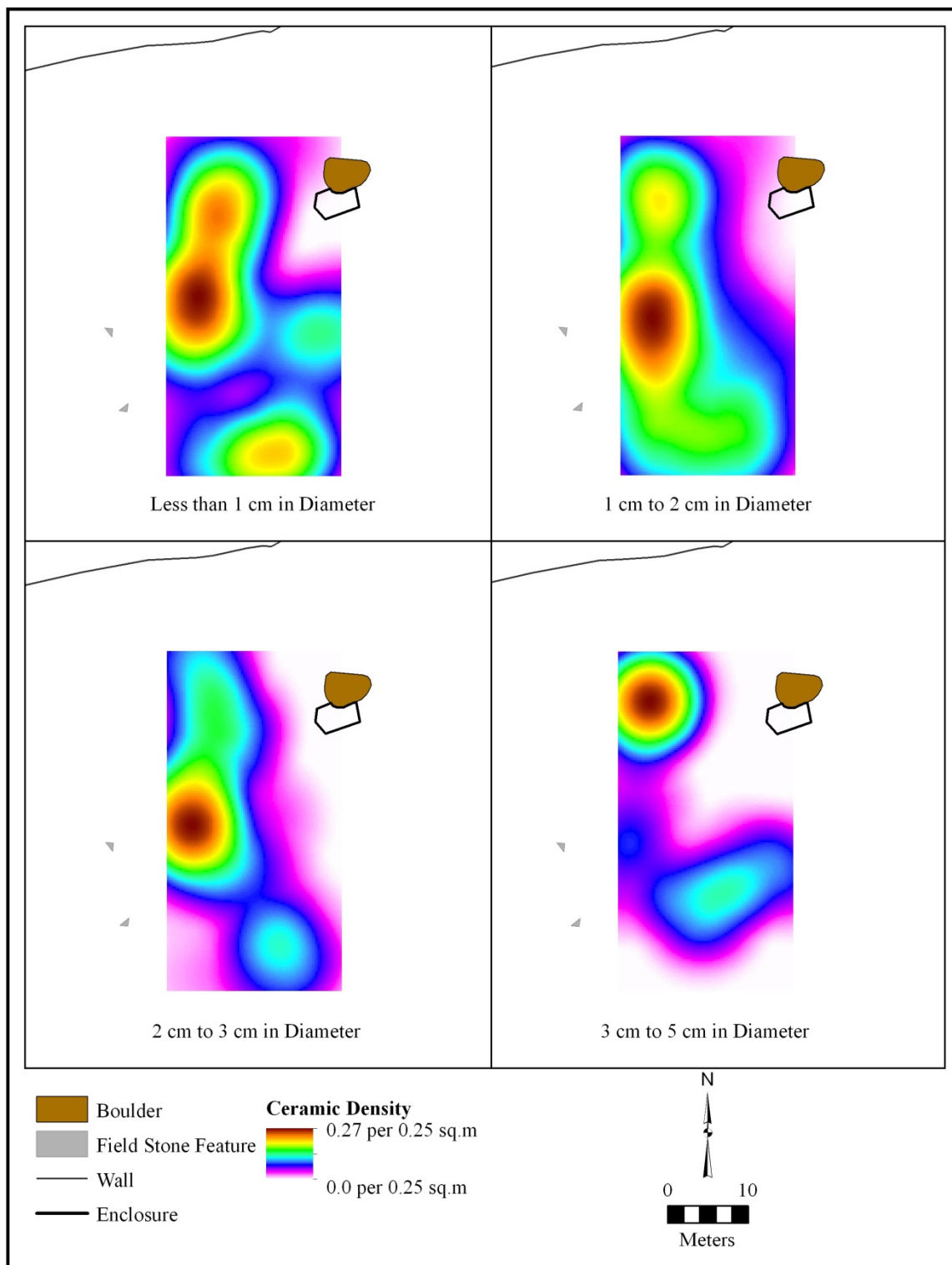


Figure 13: Kernel analysis of ceramic size within the Area B analysis area.



The kernel analysis of ceramics between 2 cm and 3 cm in diameter exhibited similar patterning as the Area B total ceramic counts kernel analysis results. The highest density area with sherds measuring 2 cm and 3 cm in diameter is located in the western portion of the Area B, extending from its center to the north, with an additional area of moderate to low density is visible in the southern portion of Area B. The kernel analysis of ceramic sherds measuring between 3 cm and 5 cm in diameter results exhibited 2 distinct areas of deposition. Although this is not surprising due to the small sample size of only 11 sherds, the kernel analysis results for sherds measuring between 3 cm and 5 cm in diameter are more meaningful than those of the whiteware kernel analysis which also had a small sample size (eight sherds). The results for sherds measuring between 3 cm and 5 cm in diameter once again call attention to the northwestern and southeastern portions of Area B, linked by a low density ceramic deposit.

In an effort to further illuminate the nature of the ephemeral deposits of ceramics in Area B, additional artifact categories were consulted. Clay pipe fragments, metal, glass shards and faunal remains were recovered from STPs in Area B. Metal objects collected from within Area B consisted of seven ferrous indeterminate utilitarian metal objects from two STPs located in Area B's central ceramic deposit (see Figure 11). A flatware handle belonging to either a spoon or fork was recovered just outside of Area B near the northwest corner of the boulder (east of Area B). Clay pipe fragments were also recovered from seven STPs located in the central and northwestern portions of Area B which were eliminated multiple times in the various kernel analyses.

Glass was recovered from 12 STPs in Area B with a total of 14 glass fragments. The glass artifacts represent tableware, medicinal, and alcohol vessels as well as one shard of window pane glass. The window pane glass originated from the northwestern portion of Area B, within the northern locus of increased ceramic density. In general, glass fragments were recovered sporadically throughout Area B. A kernel analysis of glass density across the project area exhibited an area of high density situated in the southern portion of Area B as well as a second area of moderate density outside of Area B, south of the boulder enclosure. Glass artifacts recovered from the area of moderate density near the boulder consisted mainly of alcohol vessels, a few tableware fragments, and one piece of window glass.

Faunal remains, including shell, were recovered from 21 STPs across Area B. Additionally three STPs adjacent to Area B in the vicinity of the boulder enclosure also contained faunal fragments. Areas of high density depicted in the faunal kernel analysis overlap the central and northern spaces identified by the ceramic kernel analyses. Located approximately 10 m apart, faunal distributions extend eastward from the loci of increase ceramic density. Perhaps one of the most interesting aspects of these results is that there is very little overlap between the faunal results and the area of ceramic deposition identified in the southwestern portion of Area B, which was fairly consistently observed throughout the various ceramic kernel analyses (Figure 14). The fauna recovered from the 2004 STPs has not been examined to date.

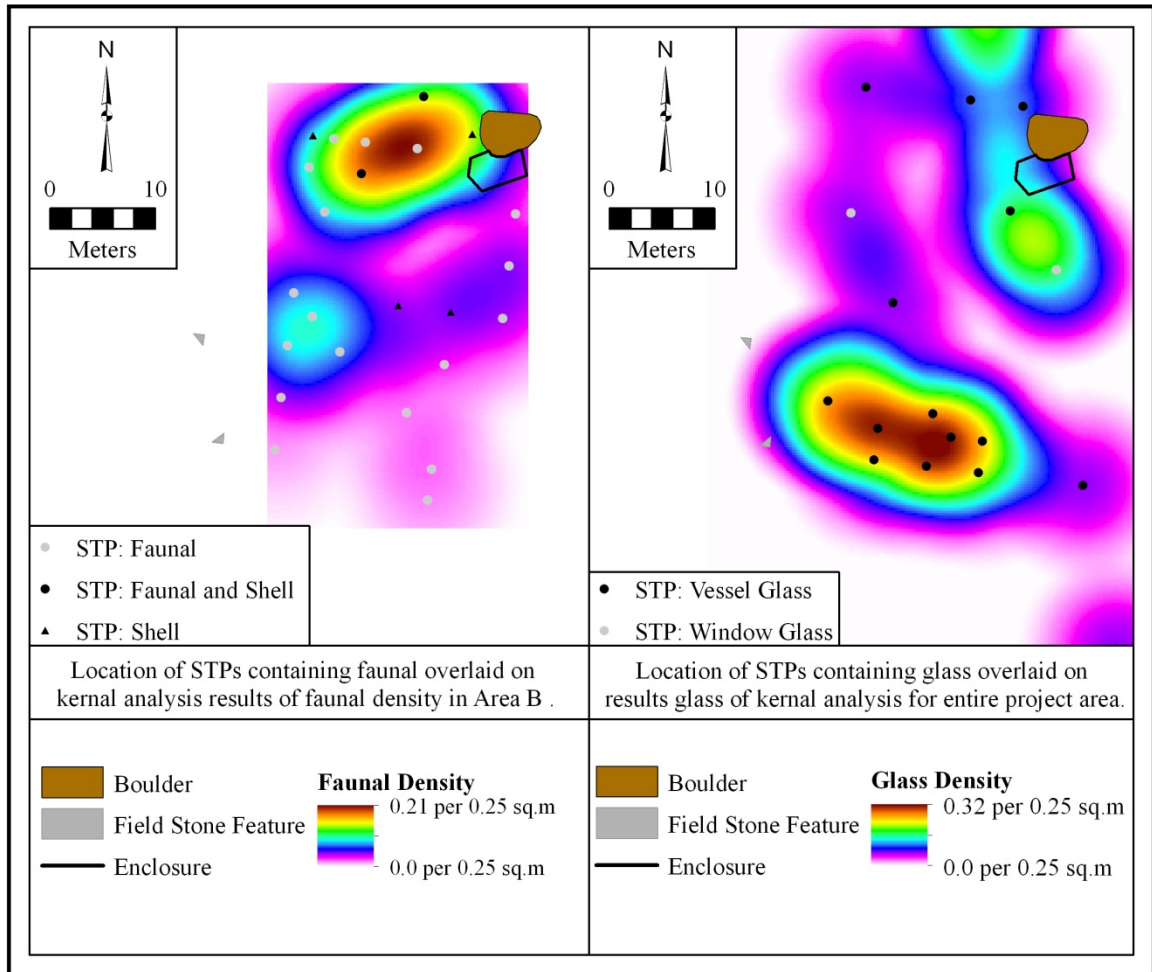


Figure 14: Kernel analysis of glass and faunal associated with the Area B analysis area.

The kernel analysis of Area B demonstrates that this area represents a separate, but perhaps simultaneous, occupation than that of the framed house. The Area B artifact assemblage is domestic in nature and does not contain artifacts which might indicate that it was a locus of specialized activity. The variety of vessel types (hollow wares, flat wares, bowls and tea cups) recovered from Area B indicate what would be expected to be found in association with an individual household. Furthermore, the transportation and deposition of domestic refuse over 50 m from the framed house footprint is highly unlikely, especially when the analysis of the Framed House Analysis Area identified a

sheet scatter of ceramic artifacts, a potential second area of domestic refuse deposition (Area A), and a midden pit abutting a potential house. Finally, the spacing between the highest area of ceramic density and the boulder enclosure, proportions of decorated to undecorated wares, and proportions of ceramic sizes all closely mirror what was observed in the Framed House Analysis Area which further speaks to Area B being a second inhabitation area within the project area.

The results of the ceramic density analysis supported by additional artifact categories of data indicate that at least one dwelling was located in the central portion of Area B. The central locus of increased ceramic density is approximately 10 m north of the southwestern area of increase ceramic density. This aligns with residential spatial patterns observed elsewhere on the reservation where extramural loci are identified 5-10 m in a southerly direction from the dwellings. This pattern (Hayden 2012) was observed on earlier eighteenth-century sites (including a possible wigwam and a framed house), a later nineteenth-century framed house site, and between the contemporaneous components located in the eastern portion of the project area (Framed House Analysis Area and Area A). However, extramural areas south of these sites usually include more abundant faunal remains than observed in the southern portion of Area B. Instead, faunal remains and shell were observed in higher amounts in the northern portion of Area B. Although ceramics smaller than 2 cm in diameter were widely distributed across Area B, ceramics larger than 2 cm in diameter were constrained to northern, central, and southern areas of increased density visible in Figure 11. The grouping and distribution of the assemblage further supports the argument that Area B represents a separate occupation

from the framed house as a distribution of artifacts linking the areas together, such as those between Area A and the framed house, were not observed here.

The lack of post holes, house floors, or other identifiable sub-surface features makes it difficult to determine the nature of the ephemeral structure(s). The absence of window glass and hardware from Area B could denote the presence of a wigwam rather than a European-style framed structure. Typically elliptical in shape, a 1761 account of wigwams in Niantic, Connecticut describe them as measuring approximately 5.34 m by 3.66 m, with one to two doors at one end and a fire pit below a smoke hole at the center of the structure (Sturtevant 1975:441). These dwellings held anywhere between 7 to 12 people and often times were occupied by more than a single family (Sturtevant 1975; Willoughby 1906). The site of a potential wigwam excavated at the EPTN reservation (Site 102-124), dating to the same period as the one at Niantic, had approximately the same inferred (due to lack of postholes) dimensions as those described in 1761 (Hayden 2012). At other residential sites on the EPTN reservation, artifact distribution has remained elevated for approximately 2-5 m immediately surrounding dwellings and features (Hayden 2012). That same pattern appears to manifest in the analysis of Area B when the approximate locations of wigwams (using the dimensions provided above) are plotted onto the total ceramic kernel analysis for this area.

The lack of a definite midden and the relative sparseness of the ceramic assemblage, when compared to the area surrounding the framed house, indicate an ephemeral occupation. Area B was either occupied for shorter time span or it may have been occupied seasonally. The 1761 Niantic account describes a wigwam which had its

outer covering stripped and vacated for the winter (Sturtevant 1975:442). The account describes the Niantic community as a mixture of wigwams and European-style framed structures. The community's population of 85 versus the number of structures (wigwams and framed houses) suggests not all of the dwellings were occupied simultaneously. This may indicate that some of the families were using the wigwams as summer housing and occupying the framed house during the winter (Sturtevant 1975:442).

Historic accounts of New England Native American agricultural practices describe each family possessing their own garden near a summer dwelling. These gardens measured 45-60 m by 15 m (Willoughby 1906:129). As was stated at the beginning of this section, Area B is located upon not only the most level portion of the project area but is also in close proximity to a wetland. The soil matrix contains few cobble and boulder sized inclusions than observed to the east. The soil in Area B was very moist during the summer, particularly in the southwestern portion, because of its proximity to the wetland. Considering its moisture content during summer months, this area probably would have fallen into disuse during wetter months. It is, however, a fairly ideal place for agriculture. Features such as the rock piles and boulder enclosure indicate Area B was utilized for agricultural in the past but it is uncertain whether or not that coincides with the ephemeral occupations observed in the archaeological record.

One potential explanation for Area B is as a seasonal summer garden locus. The ephemeral artifact deposits may be the result of limited use of the area during summer months sporadically over a series of years. There was probably only one wigwam constructed during the season of occupation; however the wigwam may not always have

been constructed in precisely the same place. The notion of multiple locations, over multiple seasons, helps to further clarify some of the enigmatic patterning seen in the kernel analysis. The northern most area of increased ceramic density, also containing an increase in ceramics measuring larger than 2 cm in diameter, may indicate a second dwelling or additional extramural locus. Either way, the centrally located area of increase ceramic density was probably the most extensively utilized space. A structural frame may have been left in place during the winter, stripped of its outer cover, and vacated just as described at Niantic in 1761 (Sturtevant 1975:442). If Area B was a locus related to traditional gardening activities, there would still be some production of features such as field stone piles. These gardens and small fields may not have had any form of fencing surrounding them, thus making them difficult to recognize archaeologically (Hasho 2012:82).

Ranging from irregular pits to areas of increased artifact density, the extramural refuse features identified south of residential sites on the EPTN reservation have been less formalized compared to refuse features within or adjacent to dwellings (Hayden 2012). The area of moderate ceramic density identified in the southeastern portion of Area B may be an even less formalized manifestation of the extramural deposits, deriving from seasonal occupation patterns. Inconsistent seasonal use of Area B would have resulted not only in the generation of less refuse (compared to a permanent dwelling) but also a less consistent pattern of deposition. These behavior patterns produce a broad undefined area of increased artifact deposition through the habitual organization of a space which is being irregularly used over time.

The single issue which is difficult to address to any satisfactory level is who was occupying this space and what, if any, was their relationship to the framed house located in the eastern portion of the project area. The ceramic analysis strongly indicates Area B was utilized during the same period as the Framed House Analysis Area and Area A. Both the Framed House Analysis Area assemblage and the Area B ceramic assemblage contained not only older, perhaps heirloom, ceramics such as white salt-glazed stoneware but also whiteware which dates much later. The fragmentation of the artifacts in Area B was also fairly similar to what was observed in the Framed House Analysis Area, a known primary deposit. One possibility is that Area B is a product of seasonal agricultural activities associated with the framed house occupants. The historic accounts provide evidence of both wigwams and European-style framed structures being used on a seasonal basis (Sturtevant 1975; Willoughby 1906). Alternatively, Area B could represent an entirely separate contemporaneous domestic site from the framed house. The proximity of these two sites to each other, dating to the same period of occupation, illustrates the potential diversity in Eastern Pequot sites during the early nineteenth century. Furthermore, they speak to the Eastern Pequot's attachment to the reservation. Regardless of adopted cultural materials or structural technologies, people persisted using a variety of strategies and were not monolithic in their adoption or application of these technologies.

With the continued use of wigwam structures by the Pequot at both the Mashantucket and the EPTN reservation throughout the eighteenth and into the nineteenth centuries (McBride 1990; Hayden 2012), it is not unreasonable to assume



seasonal settlement patterns persisted to some degree as well. Previous research at the EPTN reservation has suggested not only that agriculture among the Eastern Pequot during the eighteenth and early nineteenth centuries involved gardens and small fields located close to house sites (Hasho 2012:82) but that the Eastern Pequot were selective in their implementing of European-styles of agriculture and animal husbandry (Hasho 2012:76).

## CHAPTER 6

### INTERPRETATIONS AND CONCLUSION

This thesis was structured around the goal of identifying a method through which the 2004 STP survey could contribute to the historical narrative of the EPTN reservation. To that end, analysis in this thesis was structured by two primary objectives: (1) establishing a date range for the project area and its components, including examining the potential of a prehistoric site component; and (2) building an interpretation to explain the relationship between the various project area components. Traditional database ceramic analysis was supported by a kernel analysis examining ceramic density in hopes of further informing STP survey results. It was my hope that ambiguous patterns observed during fieldwork could further inform our understanding of how the occupants experienced and structured extramural spaces throughout the project area.

The kernel analysis identified three components within the project area which were further examined and compared to each other: the area immediately surrounding the framed house (Framed House Analysis Area), Area A, and Area B. The date range derived in the ceramic analysis for the entire project area (circa 1800 to 1840) was supported in the subsequent analysis of all three areas. The Framed House Analysis Area, Area A, and Area B were all found to be roughly contemporaneous. Prior archaeological evidence suggests a majority of stone features observed in the project area

were constructed after the vacancy of the house, during the mid-nineteenth century (Hasho 2012:89). Although artifacts dating thousands of years prior were recovered from a midden pit adjacent to the framed house footprint, encased in a nineteenth-century context, no further evidence was identified in the STPs to indicate the presence of a pre-existing prehistoric site component in the project area.

The organization of space associated with the Framed House Analysis Area continued traditions of internal subfloor storage and the utilization of southern loci (Area A) observed at other sites on the EPTN reservation. At nineteenth-century sites on the EPTN reservation, these southern loci appear to have only been utilized during the early period of the households' occupation. The general distribution of artifacts in the vicinity of the framed house footprint exemplifies a sheet scatter, which was also observed at another nineteenth-century residence, compared to earlier eighteenth-century sites where artifact distributions only exhibited high density in close proximity to site features (Hayden 2012). The Area B artifact assemblage was domestic in nature and did not contain artifacts indicating it was a specialized activity area. Area B is hypothesized to have contained an ephemeral structure (potentially a wigwam).

The kernel analysis was a useful additional tool for site interpretation. The analysis of total ceramic density across the project area assisted in identifying areas of interest for further analysis, verifying the existence of depositional patterns identified during fieldwork, defining and refining the extent of these areas (such as which STPs to include in further analysis and which to exclude). Initially the kernel analysis was performed for all ceramic classifications across the project area. Although these were

useful when comparing areas at the same scale, the magnitude of ceramic densities in areas such as around the framed house footprint obscured subtle patterning occurring in other locations such as Area B. The application of the kernel analysis worked well for both the Framed House Analysis Area and Area B. It was important in Area B to look at what was being classified as “high density” because of the rather slim nature of the assemblage. For instance, depending on the data set, an STP with two ceramic fragments in it could be classified as an area of high density while all the surrounding low density areas contained one ceramic per STP. It was particularly necessary in Area B to take these differences in dataset populations into account when reviewing the results. Although Area A possessed a high density ceramic population compared to Area B, spatially the scale was too small to identify depositional patterns. Several of the patterns observed in the results of the kernel density analysis are misleading and uninformative when reviewed against the individual STP data.

Historically situating the kernel analysis results allowed for the identification of spatial patterns and drawing of conclusions which would not have been otherwise possible. This process has allowed for the identification of subtle patterns of continuity and change which would have been lost in a sweeping temporal examination. For example, Area A was identified in the field and an understanding of it was further refined using the kernel analysis; however, without comparison to sites pre- and post-dating this site, it would have been impossible to recognize that Area A represents an element of Pequot domestic spatial organization. Although changes in spatial organization were observed at these sites, as domestic refuse pit features migrated from dwelling interiors to

exteriors, the organization of extramural spaces continued to be structured in striking similar patterns. The ambiguous and irregular nature of the southern extramural loci can also be viewed as a consistent attribute observed across time. The diachronic examination of the Framed House Analysis Area and Area A with other residential Eastern Pequot sites dating to within 100 years of its occupation drew attention to spatial organization patterns which were ephemerally expressed in Area B.

The kernel analysis of STPs transformed the data potential from a test of presence/absence to a data set capable of speaking to more nuanced spatial patterns across a broad area. Subtle patterns and features, discovered in STPs but failed to be explained through the tightening of testing intervals, and not subject to excavation were further explored. The kernel analysis of ceramic type and size classifications allows for the examination of temporal site components as well as site formation processes. Furthermore, it allows researchers to move beyond examining visible surface features to explore the evidence of habitual living patterns created as individuals interacted with their surroundings just as Robin (2002) has advocated. Employing this technique demonstrated the potential of a coarse dataset, such as STP testing, to not only identify extramural residential areas but to contribute to the ongoing development of a historical narrative at the EPTN reservation.

The diachronic examination of project area components with other reservation sites not only aided in interpretation, it demonstrated cultural continuity. Just as McBride (1994a) observed at Mashantucket, despite the adoption of European material culture and architecture, the spatial patterning of EPTN reservation domestic sites contains elements

which remain Eastern Pequot, in both contrast and similarity with neighboring Native American and Anglo communities. Trajectories of cultural continuity persisted through the organization of extramural spaces despite external colonial forces. Area A's relationship to the framed house as well as site attributes observed within the Framed House Analysis Area, testify to this continuity when historically situated within what is known about other EPTN reservation sites.

Although more ephemeral and less definitive, the interpretation of Area B as a potential summer garden locus is tantalizing when examining evidence of continuity in Pequot cultural practices. Historic documentation informs us that wigwams were still observed on the reservation during this period (early nineteenth century) and that Pequot agriculture involved small gardens and fields (DeForest 1964; Willoughby 1906). Furthermore, the potential significance of two separate contemporaneous domestic sites in such close proximity, possessing comparably similar artifact assemblages and spatial organization yet obviously different lifestyles, should not be overlooked either. These sites may provide insight into broader patterns of community or familial organization at the EPTN reservation during the early nineteenth century. Examining other ephemeral domestic deposits on the EPTN reservation may lead to the capability of definitively identifying the cultural processes which create these difficult to identify loci, as well as understanding the role they played in the persistence of Pequot cultural practices and community.

The extramural site elements and patterns of artifact deposition, observed in the project area and at other domestic sites on the EPTN reservation, would have been

produced through the habitual organization of residential space and its use over time.

Archaeologically, it is evident across the EPTN reservation that individuals continued to structure their daily lives, practices, and uses of space in ways which reinforce their identities as Pequots. The organization and habitual use of extramural spaces at this and other domestic sites would have played a pivotal role in the maintenance of Pequot cultural continuity, sometimes simply because it occurred on their land. This would have been one element of their lives they could structure according to their own ideals.

Through the utilization of changing and continuing spatial patterns, regardless of material culture or structural technologies, Pequot reservation residents were able to interact with their surroundings in ways similar to their ancestors while negotiating the contemporary realities of colonialism.

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