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Editor’s Note

In October 1957, the Massachusetts Archaeological Society published an unusual version of the Bulletin, one that contained a single article. Entitled ‘A Review of Cape Cod Archaeology’, Ross Moffett summarized the results from his excavation of twenty-three sites on the Outer Cape, primarily in Truro. With its depth of information and excellent photographs, this work quickly became a classic. It has continued to inform and inspire ever since.

Last fall marked the 50th anniversary of Moffett’s ‘Review’ and, in honor of that event, this issue of the Bulletin is dedicated to the same topic. Much has happened on Cape Cod since 1957 and while a single issue of the Bulletin cannot hope to summarize it all, these six articles provide a good sample of the kind of work that has followed Moffett’s lead. Frank McManamon starts with a review of Ross Moffett himself and his importance, not only to archaeology, but to protection of the landscape as well. Bill Moody presents information on one of the few subjects Ross Moffett did not discuss – PaleoIndians, and evidence for their presence on Martha’s Vineyard. Jeff Boudreau provides a thoughtful assessment of ‘small stemmed points’ – what they are and what they are not. Lenny Loparto discusses how the changes in landscape, especially as a result of sea level rise, helped to shape where Native people chose to live. I provide a summary of the Taylor Hill site and discuss what this Middle Woodland burial ground implies about social organization and cultural change. Finally, Leslie Shaw gives us a synopsis of her work at the Willowbend site in Mashpee, an area of Cape Cod that Moffett never explored. This issue concludes with a remembrance of the late Marie Eteson who served as Chair of the Cape Cod Chapter of the MAS for many years.

I had originally hoped to publish this issue on the 50th anniversary date, making it Volume 68 (2). However, due to many circumstances, it was not possible to complete it until this spring. As a result, while this issue is Volume 69 (1), it also serves as last year’s Number 2. Many people helped to make this special issue of the Bulletin possible and I am pleased to acknowledge them here. In addition to the authors, these include several individuals and three organizations - Gray and Pape, Inc., The Public Archaeology Lab, Inc. and UMASS Archaeological Services – who made generous financial contributions to help underwrite the cost of this issue. Special thanks also go to Josephine C. Del Deo of Provincetown, Ross Moffett’s good friend and artistic executor, for her assistance and permission to reproduce two of Moffett’s works from her biography Figures in a Landscape: The Life and Times of the American Painter, Ross Moffett, 1888-1971 published in 1994. To all those who have helped keep Ross Moffett’s work and spirit alive, I extend my sincere thanks.

James W. Bradley
Laying the Foundation: Ross Moffett and Cape Cod Archaeology

Francis P. McManamon

Getting to Know Ross Moffett

I met Ross Moffett for the first time in 1978. Anyone who knows even a little about Moffett will regard this statement as outrageous; Moffett passed away in 1971. Unfortunately for me, I did not get to know him personally, but I feel as if I know him through reading his archeological notebooks, papers, and articles, and from recollections about him that I have heard from others or have read (Figure 1).

In any case, between 1978 and 1981, I spent a lot of time at the R. S. Peabody Foundation for Archaeology in Andover, Massachusetts, where Moffett had placed his archeological collections, notes and related material for care and curation. The then-Director of the Foundation, Richard S. “Scotty” MacNeish, allowed me access to the collections and archives so that I could examine the collections from Cape Cod. I was doing this because the National Park Service (NPS), for whom I was then the regional archeologist, was planning a park-wide archeological survey at Cape Cod National Seashore. It would be the first overall investigation of the archeological record of the park since Ross Moffett had provided a summary of his knowledge about sites on the outer Cape in 1962 (see below).

Beginning in October, 1978, and continuing until June, 1979, I spent twenty-two days at the Foundation working on Moffett’s collections. Reviewing his field notes, maps, and profile drawings, I tried to delimit different site components when possible. The collections from Small’s Swamp, Warren’s Field, Pilgrim Spring, Freeman Paine, and Seth’s Swamp were particularly useful with quite a bit of contextual information about the site area, stratigraphy, and excavations available in Moffett’s notebooks and field records.

Examining the collections and records gave me a good introduction to the type of material culture we were likely to encounter in the fieldwork and where at least some of the sites were located. Moffett’s collection and notes supplemented with much more detail the state archeological inventory files of the Massachusetts Historical Commission, which were also inspected as part of the background study for the park inventory project.

During the course of the Cape Cod National Seashore Archeological Survey, we revisited and recorded more about the sites in the Moffett collection in 1981 and 1983. The information we were able to gain from these efforts assisted in planning for the fieldwork and devising the sample stratification used as part of the investigation method and procedures. The collection work was used to develop the lithic artifact catalog system used for the survey. It provided background information about the artifact types, lithic raw materials, and soil stratigraphy likely to be found in the survey area (McManamon 1984:5-8). The information from chronologically typed projectile points in the Moffett collections also was used to determine dates for some of the sites discovered and evaluated by the survey (Borstel 1984:233-236).

“Notes on the Archaeology of Cape Cod”

The research using Ross Moffett’s collections and notebooks done at the R. S. Peabody Foundation between 1978 and 1983 as part of the Cape Cod National Seashore Archeological Survey was not the first example of the NPS tapping into Moffett’s knowledge about Cape Cod archaeology (Johnson 1997:35-39). In the late 1950s, when the creation of a National Seashore on Cape Cod was being considered,
NPS regional archaeologist John Cotter prepared a short report about the archaeology of outer Cape Cod relying heavily on Moffett's 'A Review of Cape Cod Archaeology' for information about the prehistoric period archaeology (Cotter 1958 a & b).

Even more directly, in 1962, after Cape Cod National Seashore (Cape Cod NS) was established, Moffett provided the NPS with a twelve-page summary of the archeological sites on the outer Cape. Entitled "Notes on the Archaeological Survey for the National Park Service," the report identified the locations of 115 archeological sites on four accompanying maps. The maps are the USGS 7.5 minute-scale maps for Provincetown, North Truro, Wellfleet, Orleans, and the northern part of Chatham. Moffett also included photos of some of the site areas with his report and maps. The site descriptions are very brief, only a few sentences or statements in most cases. In the last two pages of his summary, Moffett outlines the prehistoric periods on the Cape, typical artifacts associated with each and major sites that have occupations during these periods.

On the first page of his summary, Moffett notes the potential of two general areas for public displays and interpretation of the Cape's archeological record. He writes:

"For whatever plans the Park Service may have for displays and for conveying information regarding the prehistoric period, the area around Small’s Swamp and Pilgrim Spring in the Pilgrim Heights section of Truro would seem to be outstanding. There, within a relatively small area, the whole of the prehistoric era is represented. Fortunately, the topography there has not been greatly modified by modern bulldozing and house building. The attractive section of Fort Hill and Indian Rock, in Eastham, might be next in importance for such a purpose" (Moffett 1962:1).

Moffett's observations in this regard have borne out. Although ancient times and Native American settlement of the outer Cape have not yet become major interpretive themes at Cape Cod National Seashore in general, they are at two locations; in the Salt Pond Visitor Center at Nauset Marsh and in display panels at Pilgrim Heights. It is also the High Head and Nauset Marsh areas of the National Seashore where we
discovered the densest concentration of archeological sites and the richest archeological deposits in the fieldwork done for the survey.

More Possibilities

There still is a great deal of potential for fruitful archeological description and analysis in the Moffett collection, housed at the R. S. Peabody Museum in Andover. The collection contains not only large numbers of artifacts from sites that he excavated or collected, but detailed notes, profile drawings, excavation unit plans, and site maps. These site collections and notes are a true gold mine of archeological data awaiting professional attention, and amenable to much fuller analysis than was undertaken as part of the survey that I directed. I am sorely tempted to revisit the Museum’s collection area and pick up where I left off with the collections description and analysis, armed now with all the compatible information we gathered during the seashore survey.

Fred Johnson, a distinguished American archeologist of the twentieth century, who worked closely with Ross Moffett wrote this about him (Figure 2):

“...I visited with the Moffetts during the ‘off seasons’ in Provincetown. They were most hospitable in their modest little house. Both were artists Ross having migrated there from a farm in Iowa during the 20s. His description of life at the time would fill a book what with the now famous painters and actors that were living there. However, he developed a habit of taking long quiet walks covering in considerable detail most of the outer Cape....These walks became a kind of archeological surface survey that led to restricted and planned excavation, test trenching really. He was self-taught. He was a very shy man but very able and as he read and expanded became well informed about northeastern archaeology emphasizing always eastern Massachusetts. His
characteristic reticence kept him from offering his often good ideas covering the interpretation of the material found and it took some time and effort to really know and appreciate his intelligent approach to the prehistory of the outer Cape (Johnson 1982)."

These are fond words, written by a colleague who also was a friend. Johnson and Moffett excavated together at the Freeman Paine site in Wellfleet, one of the collections awaiting more attention by Northeastern archeologists. We all can appreciate the quiet intelligence of Ross Moffett as we carry on with the kind of important work that he moved forward during his lifetime.

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Living on the Edge: PaleoIndians on Martha’s Vineyard

William Moody

Introduction

In the initial years of archaeological investigation on Martha’s Vineyard, the published reports generally failed to acknowledge the presence of PaleoIndians along this section of the terminal moraine. Undoubtedly, however, the region just south of the ice sheet’s final advance was used by nomadic bands from an early date since substantial marine resources were available and these would have supplemented the traditional hunting of land animals as they moved along the coastal corridor. The deglaciation and retreat of the Wisconsin ice sheet is generally acknowledged to have begun around 21,000 BP (Oldale 1992:39). And after the area became ice-free, the terminal moraine that bisects Martha’s Vineyard would also have provided ancient toolmakers with a wide variety of lithic materials deposited by the glacier from points as far north as Maine and Canada. For example, geologists have determined that even beach sands in the region include components that originated atop Mt. Washington in New Hampshire.

During the last twenty-five years, I have conducted extensive research on the lithics used by the aboriginal people of southern New England. Over the past four years, my survey activities have focused on Vineyard sites in particular and these clearly indicate a range of lithic materials that substantially surpasses what I have observed, collected, and recorded on the mainland. These lithics include several well-known volcanics such as the Marblehead felsite, Hingham red felsite, and Saugus ‘jasper’. However, also noted in the Vineyard lithic assemblage are some unusual types of felsite rarely seen by the author elsewhere in the region. These include Kineo felsite from the Moosehead Lake region of Maine and the flow-banded rhyolite from Mt. Jasper at Berlin, New Hampshire. Vineyard lithic assemblages also contain a wide range of other ‘exotics’, ones that are visually similar to: the Diamond Hill vein quartz in Rhode Island, Braintree slate and hornfels from the Blue Hills in Milton, Massachusetts, various New York cherts such as Onondaga and Normanskill, Pennsylvania jasper, and Midwestern cherts including possible Flint Ridge varieties. Also present are varieties of argillite, slate, basalt, quartz, crystal quartz, unidentified cherts, chalcedony, agate, and steatite. I have collected examples of all these lithics, both as finished tools and as debitage. Several thousand pieces of lithic debitage, with site-specific designations, have been surface collected and retained for study.

In addition to its lithic diversity, Martha’s Vineyard contains a great variety of landforms and natural resources. The topography of the island’s 100 square miles is quite varied, with hills and valleys, coastal cliffs, and a large outwash plain as well as numerous brooks, freshwater ponds, swamps, marshes, swales, and frost bottoms. The coastal margins include large embayments with substantial shellfish beds as well as anadromous fish runs that have continued from prehistoric times to the present day. The coast of Martha’s Vineyard is still recognized as one of the finest saltwater fishing destinations in North America. Populations of waterfowl are immense, especially during the migration periods each year. Seals, too, would have been common along the coast in earlier times as they are today. The archaeological record indicates that land animals hunted by Native inhabitants included white-tailed deer, beaver, muskrat, fox, mink, raccoon, otter, and gray squirrel (Ritchie 1969). Hunting opportunities on the island continue to be plentiful as today’s bow hunters, shotgun and black powder enthusiasts can attest.
Previous Studies

In his search for the first inhabitants of the island, William Ritchie asserted that there was no indication of PaleoIndians on Martha's Vineyard. He steadfastly claimed that fluted points were "unreported from Cape Cod and the offshore islands" and that "no reliable evidence is known to me for a late Paleo-Indian Plano horizon" (Ritchie 1969:212). However, in the years since Ritchie's publication, evidence has continued to come to light that both fluted-point makers and later inhabitants who made unfluted Late Paleolithic points were present on both Martha's Vineyard and Cape Cod. It is also likely that additional traces of these earliest inhabitants lie submerged beneath the adjacent coastal waters. Until around 8,000 years ago, it was still possible for Native people to reach what is now the Vineyard by foot (Dunford and O'Brien 1997:37). And even after sea level rise separated the island from the mainland, Native people frequently crossed Vineyard Sound by boat. Today, Martha's Vineyard continues to diminish in size due to coastal erosion and rising sea levels, and many well-known prehistoric sites are lost to the ocean's relentless onslaught.

Another reason why previous investigations failed to find evidence of PaleoIndians on Martha's Vineyard is that these excavations concentrated almost exclusively on coastal shell middens, which generally contain only Archaic and Woodland period refuse (Byers and Johnson 1940; Ritchie 1969). From the first documented excavation in 1912 until the early 1990s, at least sixteen of the recorded twenty-three archaeological surveys were conducted at shell midden sites (Richardson and Petersen 1993). Also, until 1983, there is little indication that professional researchers sought to study the numerous, and often extensive, surface collections amassed by local avocational archaeologists and "relic collectors". If those collections had received more careful attention, it is possible that PaleoIndian artifacts would have been recognized.

Fluted Points from Martha's Vineyard

During the past four years, my wife, Whitney, and I along with our close associate, Bob Trotta, have made regular surveys of the fields on Martha's Vineyard. We have also communicated directly with several of the island's local collectors. From time to time, we have heard reports that fluted points were found (although some collectors remain reluctant to make their collections available for study). Based on his own research of Vineyard collections, Dr. James Richardson of the Carnegie Museum of Anthropology, has been able to document at least eight fluted points from the Vineyard (Richardson and Petersen 1993).

Two fluted points are reported here. The first is a complete example in the collection of Mabel Medowski (Figure 1, left). The Medowski point is part of a small family collection made by Mrs. Medowski's great uncle, Daniel Vincent, during
the 1890s in the towns of Chilmark and Gay Head at the west end of the island. This finely made point is 101mm long and 34mm wide at its base. The basal concavity is 7mm deep and the longest flute extends 47mm from the base. Since this point is mounted in a case, only one side could be examined. This side has a long preliminary flute underlying the final flute and at least one additional small flute on the left side. This point is made from an unusual gray-green rhyolite with tan inclusions and noticeable banding. Visually, it is identical to a variety of the Mt. Jasper rhyolite quarried by ancient toolmakers near today’s Berlin, New Hampshire (Gramly 1977).

The second fluted point is in the collection of the Martha’s Vineyard Museum. It is the distal portion of a fluted point that appears to have been broken at mid-section in ancient times. The basal portion is missing (Figure 1, right). This point is 64mm long and 32mm wide. Its maximum thickness adjacent to the flute is 5mm. It is made of chert, probably a New York variety, possibly Normanskill from the Hudson Valley. This point was found by Jeff Chapman in the Edgartown area, at the west end of the island.

In addition to the two reported here, I have verbal reports of another fluted point from Edgartown and at least two more in a Chilmark collection. I hope to document these more thoroughly and there are undoubtedly others out there.

**Late PaleoIndian Points**

Following the demise of the fluted point tradition, a variety of lanceolate and triangular projectile points suggests the presence of a substantial Late PaleoIndian population. These points often exhibit basal grinding and heavy patination. Interestingly, it was Ross Moffett who first suggested that points with these characteristics might be PaleoIndian, and he illustrated two examples from Cape Cod (Moffett 1957:1, Plate 2, #1, 2). At least two other possible Late PaleoIndian examples have been reported. James Richardson notes an exceptional lanceolate point from the Lagoon Pond area made from Pennsylvania jasper (Richardson 1985:39 Figure 4, #8). At the Lucy Vincent Beach Site, Elizabeth Chilton and Dianna Doucette excavated a “Dalton-like” point of white quartzite (Chilton and Doucette 2002).

I have found several artifacts on Martha’s Vineyard that I believe are of Late PaleoIndian origin. These are illustrated in Figure 2 and described as follows: **Top Row (left to right)—a)** a lanceolate point (or preform) with well defined flute on obverse, heavily patinated felsite, found on saltwater pond site in West Tisbury; b) a possible Crowfield point, small flute on obverse, apparent basal grinding, heavily patinated tan Mt. Jasper rhyolite, found in West Tisbury on glacial outwash plain near the island’s south coast; c) a lanceolate point, basalt, found on site near saltwater pond in Oak Bluffs; d) a lanceolate point, heavily patinated felsite, re-sharpened several times, beveled, found on site near saltwater pond in Oak Bluffs; e) a lanceolate point, water worn and heavily patinated black chert, with apparent basal grinding, found at coastal site on Chappaquiddick; f) a lanceolate point, heavily patinated felsite, found on site near saltwater pond in Oak Bluffs; g) a Dalton-like lanceolate point, water worn and heavily patinated, made of green chert, with apparent basal grinding, found at coastal site on Chappaquiddick; h) a Beaver Lake-style point, re-worked into endscraper, heavily patinated gray-green chert, heavy basal grinding apparent, found on site near saltwater pond in Oak Bluffs. This particular site in Oak Bluffs, which is the find site for several of the Late Paleo artifacts pictured, is also near a never-failing freshwater spring. It is known to have produced at least one fluted point (Richardson 1985).

**Middle row (left to right)—i)** a lanceolate point resembling the Midwestern Quad style, heavily patinated brown chert with black inclusions, apparent basal grinding (This was found by my wife at coastal site on Chappaquiddick); j) a
lanceolate point with shallow flute on obverse, basal grinding apparent, heavily patinated pink felsite possibly quarried from a large nearby glacial erratic, found on site near saltwater pond in Oak Bluffs; k) a lanceolate point, heavily patinated felsite, with apparent basal grinding, found on interior brook site in West Tisbury; l) an eastern Agate Basin type, found on site near saltwater pond in Oak Bluffs, lithic material is unknown (note that the distal end has been restored); m) a Dalton-like lanceolate point, heavily patinated black felsite, shallow flute on obverse, basal grinding apparent, found at coastal site on Chappaquiddick; n) a lanceolate point, heavily patinated felsite, found on coastal site in Chilmark; o) a lanceolate point made on a large flake giving the appearance of a flute running the entire length of the obverse, heavily patinated green chert, heavy basal grinding apparent, found on interior brook site in Oak Bluffs.

Bottom row—crescent knife, heavily patinated tan felsite, found on site near a saltwater pond in Oak Bluffs.

Figure 3 (next page) illustrates two of several Late Paleo points in the collection of Bob Trotta. The point to the left has a classic Dalton shape although one ear is missing due to an ancient break. It shows signs of multiple re-sharpening episodes, has basal grinding and is made of a heavily patinated, green argillite. The second point was found by an agricultural worker. It is
Figure 3. Two possible Late Paleo points from the Trotta collection.

Dalton-like with a well-defined flute on the obverse and is made of a high quality white quartz. Both points were found on the same interior brook site in Oak Bluffs as the point illustrated in Figure 2, o.

Although these Late PaleoIndian point types show up in relatively small numbers in the surface collections, they are certainly more common than the earlier fluted styles. Although some of these forms need to be documented from well-dated, excavated sites, enough examples have been reported to demonstrate that Late PaleoIndians were present on Martha’s Vineyard. In addition to distinctive point styles, I have also found several other tool forms typical of PaleoIndian assemblages, such as unifacial scrapers and knives. Among these are one example with a fluted base and another made from what has been identified as Upper Mercer flint from Ohio.

Conclusion

In conclusion, further study of PaleoIndian artifacts in existing collections on the island is needed, especially those collections with well-documented provenience. Equally important is a long-term, professional study of sites other than shell middens. Special attention should be given to sites along the terminal moraine itself, on the glacial outwash plain, and adjacent to any of the ancient spring-fed stream valleys that dissect the plain. With care and persistence, the mystery of the first human inhabitants of Martha’s Vineyard will continue to be unraveled, bit by bit and point by point.

Acknowledgements

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Rethinking Small Stemmed Points

Jeff Boudreau

Introduction

During the preparation of A New England Typology of Native American Projectile Points (Boudreau 2008), a careful examination of small stemmed points was deemed necessary. Central to the decision to make this effort was a long standing paradox, in the writer’s mind, presented by small stemmed points—how could the makers of these most common of all artifact types be so elusive within the prehistoric cultural matrix of New England? Does the “narrow point” tradition represent the cultural remains of a distinct, Late Archaic population that coexisted apart from the many successive phases of the Laurentian and Susquehanna traditions as proposed by Ritchie (1971) and Dincauze (1968, 1971)?

In order to address this question, two inquiries were made. The first was simply trying to determine what, in fact, is a small stemmed projectile point and what are the types represented. At the time, in the midst of creating a volume on typology, this seemed of vital importance. The second was to examine small stemmed points against the broader backdrop of archaeological understanding in the Northeast.

Projectile Points or Not?

Among the more difficult tasks for the typologist, has been typing small stemmed points. As a class, small stemmed points seem to appear in an unlimited number of forms. The reason for this is simple. Historically, if we found a misshaped, 10cm long biface made of felsite, without any indication of use, we confidently typed it a reject. Yet, if we found a misshaped, 3cm long, quartz biface, we classified it as a small stemmed point. This is understandable, but at the same time, unacceptable. Clearly, many of these so-called small stemmed points could never have functioned as projectile points. If they are not projectile points, what are they?

I have argued that prehistoric weapon systems required an, often unrecognized, degree of precision in the manufacture of projectile points (Boudreau 2005). In order to maintain predictable missile flight paths, broken points had to be replaced with points that were virtually identical in the haft element and in weight. And certainly, a sharp, symmetrical blade would maximize penetration. This would seem to be common sense. It is also reasonable to expect that functional points would require a high level of workmanship. Does the evidence support this? How might functional points be distinguished from non-functional points? First, consider broken points as a group of artifacts that stand in contrast to unbroken points. Beyond the obvious, broken points, especially those with impact fractures, present at least some evidence of having been functional through their use and breakage. To these, add point tips and midsections, which presumably returned to camp within the carcass of prey animals. This would be another indication of functionality. Point fragments, when compared to complete points exhibit superior workmanship.

With this in mind, it may be that many complete ‘points’ were never intended for use on a projectile and were put to some other purpose. A distinct group of what are often termed small stemmed points provide a good example. At first glance, these artifacts appear to be functional small stemmed projectile points. However, closer inspection reveals that as much as 4mm of the tip has been worn away through a graving or drilling operation (Figure 1).
Figure 1. Wading River points with evident use wear.

such blunted tips, it is unlikely that these were projectile points. An initial investigation indicates that this tool type is common and further experimentation may show whether these were used to score slate for snapping, cut grooves in long bones or for some other similar task.

Previous Classification Attempts

Many researchers have struggled with the most appropriate way to describe these points. Moffett used perhaps the simplest system describing some points as small stemmed and others as medium or large stemmed (Moffett 1957:2). Somehow, only the small stemmed description seems to have stuck and it has since become a cornerstone in regional typologies (Hoffman 1991:17-18). In 1984, researchers from the Massachusetts Historical Commission tried to subdivide small stemmed points into more discrete and useful categories. This attempt focused on basal shape and the presence/absence of grinding to define four types of small stemmed points (Johnson and Mahlstedt 1984). This system was devised to assist in the analysis of very large artifact collections on a statewide basis, especially where little or no provenience data were available. It was not meant for analysis of small lithic assemblages, although it has been used in that manner. Although well intended, the MHC system has not provided additional clarity since its varieties substantially overlap with other, better-defined types. For example, MHC Types I and II, which have square bases, primarily represent Merrimack and Wading River respectively. Merrimack points, in the writer’s opinion, are not small stemmed points and have their own distinct basal treatment of thinning and stem grinding. Type I also includes Poplar Island points which are a distinct type (Ritchie 1971:44-45) and, while rare in the collections surveyed, they do occur. MHC Types III and IV are lobate stemmed points and include Ritchie’s Squibnocket Stemmed points. Type III points have stem grinding; type IV do not. Aside from the fact that Squibnocket Stemmed points do not have stem grinding, there is no need to re-name them either. Indeed, the presence or absence of stem grinding may not even be that significant. Grinding may have been a personal preference, but even if it was a technological trait, it was part of the hafting, not the reduction sequence. Hafting one of these projectile points probably began with the careful pressure retouch of the point’s haft element. The haft itself would serve as a template during the retouching process until the point could be neatly seated in its groove or socket. Only then would it make sense to grind stem edges. Grinding both rounds and toughens edges making any further careful pressure retouching difficult.

In spite of the confusion of names and seemingly endless variety, small stemmed projectile forms occur, surprisingly, in only a few distinctive types. And no one has played a more important role in defining these than William Ritchie. Based on his excavations on Martha’s Vineyard, Ritchie defined two types of small stemmed points: Squibnocket Stemmed and Wading River. The Squibnocket Stemmed points (Figure 2, next page) have weak to nonexistent shoulders and “markedly tapered stems” (1971:126). If Squibnocket Stemmed points are straightforward, Wading River points are less so. It appears that all other small stemmed points recovered by Ritchie were
Examination of the Wading River points illustrated by Ritchie shows examples with no shoulders, one shoulder, two shoulders, straight base perpendicular to or at an angle to the stem sides and one example with a perfectly rounded base (Figure 3).

It is clear that Ritchie himself saw overlap between his categories and others already in use. For example, at the Hornblower II site, Ritchie observed that “from the deeper levels came a quartz industry comprising small, narrow, stemmed points of the Bare Island type” (1965:140). These same points he later defined and renamed the Wading River type (Ritchie 1969), based on their smaller size. Ritchie also mentions four narrow, lobate stemmed points from the Vincent site that he thought may be a variant of the Wading River type (1969:215). Though he states, “it is important to note that none is of quartz, the almost exclusive material of the Wading River type”, he still classified a quartz, lobate stemmed point as Wading River (1969:146 fig. 11). There is also a small form of Rossville (Ritchie 1969:74 fig. 18-19) that Brennan (1967) called a Spike Stem and assigned to his Taconic tradition, that represents a small stemmed type (Figure 4).

A comment needs to be made here on the relationship of small stemmed points to the Orient and Lagoon types. Dincauze (1975) sees the re-emergence of small stemmed traits (assuming they ever went away) in the Orient and Lagoon types. Orient Fishtail points typically have a well-thinned base. This is inconsistent with small stemmed point technology. Small stemmed point width to thickness ratios, generally range from 1:1 to about 2.8:1. This range indicates a striking angle of nearly 90°, which in essence, is not much more than trimming a suitable blank to shape. In this case, the preparation of striking platforms is relatively unimportant when compared to those designed to allow lower striking angles that produce width to thickness ratios of 4:1 and greater. Lagoon points, likely a local response to Adena, may not have been used primarily as projectile points. Their typical variation in form suggests multiple uses. This is consistent with small stemmed points.
Ritchie’s other great contribution to the small stemmed story was his work at Lamoka Lake in New York. In his 1971 revision of New York Projectile Points, Ritchie noted that the Wading River type has some typological affinities with stemmed Lamoka points, “especially in those specimens having a rough, ‘unfinished’ base, preserving traces of the rind of the pebble from which they were fashioned” (1971:132). In fact, the various forms of Wading River points illustrated by Ritchie (1969) are analogous to Lamoka points illustrated by Ritchie (1961 rev. 1971). The chief difference between the Lamoka type and the Wading River type is that Lamoka includes a side-notched variety (Figure 5). When speaking of the Squibnocket Complex, recognized in Stratum 3 at the Hornblower II site, Ritchie (1969:215) states, “There is no sure evidence for the use of side-notched points, although two specimens of the kind were found”. This is a curious statement. Those two points (1969:36, fig. 22-23), with their convex bases certainly resemble Lamoka side-notched forms. One might suspect that Ritchie created the Wading River type to obscure the evidence from Hornblower II that refuted his unshakable belief that Lamoka preceded the Laurentian tradition. Stratum 3 at Hornblower II was above a component that produced Laurentian points.

A Technological, not Cultural Tradition?

Ritchie’s work at Lamoka Lake and on Martha’s Vineyard has served as a basis for much broader comparisons. In defining “narrow-bladed” points, the only diagnostic of his Taconic tradition, Brennan observed that the best known examples were the Lamoka and Bare Island types but that similar points were found from Georgia, where Wauchope lists them as “stemmed narrow blade,” to Martha’s Vineyard, where Ritchie calls them Wading River points, to the classic Lamoka site and thence to Michigan, where they are called Dustin points (Brennan (1967:5). Even a brief review of the literature indicated that the “narrow point” tradition has a very broad extent. To the above forms may be added the Dewart Stemmed from Pennsylvania, the Bradley Spike from Tennessee (Kneberg 1956) the Swan Lake from Alabama (Cambron and Hulse 1960) the Durst Stemmed from Wisconsin (Wittry 1969) and the Sylvan Lake complex of eastern New York (Funk 1965). The distribution of Lamoka points shown in Justice (1987:129), extensive as it is, fails to include all of these related forms. The type definitions for both the Bradley Spike and Swan Lake specifically mention unfinished bases
displaying a pebble rind. It is clear that the “narrow-point” tradition (Dincauze 1971), be it valid or not, was not just an Atlantic Slope phenomena.

It may be that to understand the small stemmed or “narrow point” tradition, we need to view this as a technological, rather than a cultural, tradition. Given their widespread distribution, small stemmed points appear to be a technological manifestation that transcended cultural boundaries rather than defined them. At the heart of the concept is the Lamoka point in its many forms. Ritchie recognized that these points were the product of a “pebble” industry (1971:30) and this insight takes us directly to the essence of small stemmed points and the over-arching technology that created them.

This was a different approach to lithic technology, one that permitted the production of numerous, small tool forms from “pebbles” of a particular size. Suitable pebbles could be found virtually anywhere or easily carried in a tool kit. Brennan (1967) identified projectile points, knives, scrapers and perforators among his Taconic forms. It is likely that all members of a family were versed in the production of pebble tools. This technology allowed for a diminished reliance on outcrop quarries and permitted maximum flexibility in movement, both in a spatial and temporal sense. Flexibility permitted adjustments in the timing, or sequence, of visits to important sites within a seasonal round. Yearly variations in weather patterns could most certainly affect the maturation date of food resources or the arrival of migratory animal resources and the relative paucity or richness of those resources.

The development of this “pebble” technology appears to have coincided with a climactic optimum and the increasingly rich resource base it produced. Within the course of seasonal rounds, regardless of location or time of year, one could always find one or more pebbles that could be converted easily into whatever tools were required. This “Swiss Army Knife” concept of pebble technology is helpful in understanding the seemingly unlimited number of small stemmed forms from a new perspective.

Dincauze may be correct in suggesting that the “narrow point” tradition developed in southern New England. Certainly the Stark point, with its simple design and suitability for manufacture from inferior lithics, is a precursor of a reliance on “parochial” raw materials within a “central-based, seasonal wandering settlement pattern” (Dincauze 1975). Evidence from the McWade site, located on the south side of Massachusetts Bay, suggests that there may have been a direct link between the Neville complex and small stemmed points (Boudreau and McWade 2007:23). The assemblage is comprised of surface recovered artifacts eroding from the base of an embankment exposed only at low tide. Thirty-eight stemmed points and tips have been recovered from the site. One is a Neville, twenty-seven are Neville Variant, several are ambiguous due to basal damage and five are small stemmed points. What is most remarkable about those small stemmed points is three have haft elements identical to those on three of the Neville Variants. These appear to be small Neville Variants and two are made of quartz. Were they not found in this context, I would type them as Wading River points. This does not demonstrate that pebble technology originated in southern New England. Indeed, it was used across a large expanse of eastern North America and may have developed independently in multiple locations. However, it does seem clear that for a considerable period of time and over a large geographic area, many day-to-day needs were well served by this “pebble” technology.

Funk has stated, as did Ritchie before him, that “Lamoka as a culture is not present in eastern New York or New England” (1976). Dincauze noted that most, “ground stone tools in the Laurentian definition are known to occur in narrow-point associations in this region” (1975). She concluded they could not be considered diagnostic of the Laurentian. While the above may be true, Lamoka and Laurentian points are here. Cox and Wilson, when speaking of
Brewerton points in Maine, stated they always occur with small stemmed points (1991). And at that time, there were no known 'pure' Brewerton sites in Maine. They concluded that Brewerton points were part of the small stemmed tool kit. It is possible that evolving knife or point forms, with roots in various cultures across the landscape, were adopted into the enduring “pebble” tool kit.

For years, the small stemmed point was viewed as a diagnostic of the Late Archaic. When commenting on Stratum 1, at the Peterson site, which produced Levanna points associated with Wading River points, and a date of AD 1565±90, Ritchie noted “The occurrence in Stratum 1... of other types of points, chiefly the Wading River, revives the problem of the possibility of persistence of this form into quite late times”(1969:176). Since then, a series of dates have confirmed the persistence of the Wading River form throughout the Woodland period (Hoffman 1991:17-19). What then may be concluded about the diagnostic value of small stemmed points? Without a dated context, all that may be safely said about them is how old they could be, but not how old they are.

**Conclusion**

Over the past fifty years, the term “small stemmed point” has become a catch-all name for a wide range of small tapering bifaces usually made from quartz. Careful examination indicates that many of these were not projectile points at all but rather incomplete pieces, rejects or other kinds of tools such as gravers or drills. For those pieces that were used as projectile points, the majority are Lamoka points, which are also known by a number of other names across eastern North America. And, wherever found, the majority of these “pebble” tools were not projectile points. Yet, if Ritchie’s “pebble” technology concept is correct, ironically, from a certain perspective, it doesn’t matter. Whether a particular artifact is one of Brennan’s (1967) projectile points, knives, scrapers or perforators, is of no consequence, as they all could have been made from the same “pebble”.

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Transitional Archaic Land Use at Namskaket Marsh, MA

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Introduction

This paper summarizes several aspects of archaeological and environmental research on the Namskaket Marsh locale in Orleans and Brewster, Massachusetts. The marsh is centered around Namskaket Creek which forms a portion of the town boundary between Orleans and Brewster (Figure 1). While archaeological research in the area dates back to the mid-20th century, most research in the Namskaket locale occurred as a result of Cultural Resource Management studies during the 1980s. Systematic archaeological research in the Namskaket area began in the early 1980’s with the Phase I intensive survey for a new wastewater treatment facility in Orleans (Bower and Loparto 1982). That study located two potentially significant ancient Native American sites and resulted in a Phase II site examination of the Oak Ridge (19-BN-490) and Namskaket (19-BN-491) sites (Loparto 1984). Both were located on the site of the proposed treatment facility and, when avoidance during construction was not possible, a Phase III data recovery of the site was implemented. Most of the environmental and archaeological research discussed in this paper is a result of the research conducted at the Oak Ridge site although other sites around Namskaket Marsh are included. Among these are sites located on the Brewster side of the marsh that were studied under the Brewster Wetlands Protection Bylaw.

The goal of this paper is to show that, as sea level rose and inundated the Namskaket Creek area, a series of environmental conditions were created that were very attractive Native Americans. Ancient Native American settlement and subsistence continued during the Transitional Archaic and the initial portion of the Early Woodland Period while the marsh and barrier beach grew and inter-tidal zone/open water estuary diminished. Extensive use of the area by Native people apparently ceased sometime during the Early Woodland Period, probably after 2600 BP when Namskaket Marsh and its barrier beach took on their present day appearance.

Environmental Background

During the Late Wisconsin Period (20,000-18,000 BP) continental glaciers in the North American area reached their maximum limits. Sea level low stands during that period may have approached -50 m below the present day level. Recent reconstructions of the rate of sea level rise indicate that by 10,000 BP sea level was at -40 m and rising very rapidly. By 9500 BP sea level was about -30 m and by 6000 BP, it had reached -10 m. Over the last three thousand years, the rate of sea level rise slowed significantly approaching its present position about 1000 BP (Uchupi et al 1996:22-23, 47).

As sea level rose, new estuaries and marshlands were created while older ones were drowned, eroded or buried by sediments. Many of these
marshes may have extended 30 km or more out onto the continental shelf where, based on bathymetrical readings, a mid Wisconsin shoreline may have been present. Saltmarsh peat aged at 11000 years BP has been recovered on Georges Bank from a depth of 193 feet (Emery and Garrison 1967).

In addition to sea level rise, ocean currents also helped form coastal marshlands by creating barrier beaches. These restricted the flushing of enclosed bays and harbors, and trapped the sediments that eroded from neighboring land areas. In Cape Cod Bay, coastal currents along the northern Cape shoreline are from west to east forming barrier beaches in that direction. As increasing sea level reached near its present level, an irregular shoreline and the presence of marine scarps between the Barnstable and Namskaket marshes may have increased the amount of coastal erosion and deposition in the area.

A complete reconstruction of the history of Namskaket marsh was not possible during the field research at the Oak Ridge site. We were unable to sample the peat deposits in the marsh and, unfortunately, the pollen cores from the area did not extend back to the period of occupation for the Oak Ridge site or to the early stage of development for the marsh. As a result, much of the reconstruction for the Namskaket Marsh is hypothesized and based on extensive studies at Sandy Neck and the Barnstable Marsh located 21 km (12 miles) to the west. Although Barnstable Marsh and the Sandy Neck barrier beach are much larger than their Namskaket counterparts, sea level rise occurred at the same rates in both areas and both marshes have barrier beaches formed by the same west to east coastal currents.

Redfield has noted that the earliest portions of the Barnstable Marsh presumably developed in the inter-tidal zone along the margins of the upland and the Sandy Neck sand spit (1965). In the Barnstable Marsh, some of the oldest peat is dated at 3600 BP and is found along the southern border of the marsh. Here, layers of high marsh peat more than 20 feet thick are found resting on glacial deposits of sand or clay. Marsh deposits in those areas could date to 4000 BP. Namskaket Marsh probably began to form about this same period. While regional and local pollen cores reported by Newby, Webb and Webb (1985) during research for the Oak Ridge site were inconclusive regarding formation of the marsh, the researchers did note that the Namskaket Marsh probably began forming at 3000 BP after post-glacial rise on sea level had stabilized. They note that, at the time of occupation, the Oak Ridge site was an upland location above grassy meadow of high marsh peat (characterized by *Spartina patens*) that graded to an inter-tidal marsh (characterized by *Spartina alterniflora*). Shoreline indentations characterize much of the Namskaket Marsh periphery in a similar way as in the Barnstable Marsh.

Internal development of the Namskaket Marsh is difficult to reconstruct, however, the formation of the barrier beach must have accelerated marsh growth and the loss of inter-tidal area. A recent reconstruction of Sandy Neck indicates that, approximately one-half of the barrier beach's current length occurred during its first ~1000 years or between roughly 3793 and 2693 BP (Uchupi et al 1996:42 A&B). Most of the remaining portion of Sandy Neck formed during the next ~1000 years or between roughly 2393 BP and 1793 BP (ibid. p.42 C&D). While growth of the barrier beach slowed considerably after this, the loss of open water and inter-tidal zone behind Sandy Neck continued. The high marsh area also grew rapidly after most of the barrier beach was formed.

Namskaket Marsh probably followed a similar pattern of development. It is also possible that, because of its smaller size, the Namskaket Marsh and barrier beach complex may have matured or reached it's maximum growth earlier than the marsh and beach at Barnstable. In any event, it is likely that much of the barrier beach at the Namskaket Marsh formed by 2500 BP and that and much of the high marsh area had already developed.
The presence of estuaries and salt marshes adjacent to uplands provided a wide variety of resources that would have been attractive to Native people. Regional and local pollen records obtained from four cores taken during the Oak Ridge site investigations indicate the presence of pine and oak trees interspersed with some beech, birch, hemlock and hickory during the site’s period of occupation. White-tailed deer and a variety of other mammals were probably present in the uplands surrounding the marsh as well as around the marsh itself. Upland areas also presented a wide variety of plants for gathering including acorns, hickory and beechnuts from the surrounding forest. Numerous plants were also available in the growing marshland as were a wide variety of waterfowl. During the early stages of marsh development, marine mammals including small whales, porpoises and seals may have been present. However these pelagic species would become less common as the barrier beach developed. A wide range of shellfish including soft-shell clam, scallop, quahog, oyster, razor clams and possibly sea clams may also have been available, although their frequency and distribution would also have changed as the marsh grew and inter-tidal area diminished. Numerous species of marine and fresh water fish were also seasonally available throughout the history of marsh growth. Exposed areas of glacial till along stream beds, the coast and marsh shoreline also contained numerous types of rock cobbles which Native people could use in the tool making process. In sum, Namskaket Marsh was an environment that would have attracted Native people for many reasons.

The Oak Ridge Site

Without archaeological data, environmental reconstructions and resource potential tell us little about how Native people actually used an area such as Namskaket Marsh. During the past twenty-five years, researchers have excavated and collected data from six sites that border...
Namskaket Marsh and these provide a basis for understanding Native occupation in the area. While four of the sites were not diagnostic, the other two - the Oak Ridge site in Orleans and the Marshall site (19-BN-659) in Brewster - contained evidence from the Transitional Archaic through Early Woodland, the period during which Namskaket Marsh formed.

Oak Ridge site was a relatively large, multi-component site that contained a high density of artifacts in five discrete areas (Figure 3). At least two components belonging to the Transitional Period of Late Archaic cultures were present. The first, Area IV, was characterized by Coburn-style bifaces (Boudreau 2008:32; Dincauze 1968:22-23). Coburn bifaces are usually dated between 3600 and 3000 BP and considered part of the Susquehanna Tradition. The second component, Area II, was characterized by Orient style bifaces (Boudreau 2008:35; Ritchie 1971:39). Orient bifaces usually date between 3000 to 2600 BP. At Oak Ridge, one feature at Oak Ridge produced a radiocarbon date of 2730±140 BP and may have been associated with these points. The most recent occupation at Oak Ridge, Area V, was an Early Woodland component represented by the presence of grit-tempered ceramics and a radiocarbon date of 2630±90 BP.

Methodology. Systematic archaeological testing at the Oak Ridge site included excavation of 243.75 m² excavated to a minimum depth of 50 cm. A total of 168 50 X 50 cm test pits were excavated using random walk transects and systematic grid sampling. This, effectively, created a 10 m grid across the site. Five workshops or activity areas were identified within the overall 1.51 hectare (or 3.73 acre) site area. All areas were horizontally and vertically distinct with no overlap between them. No evidence of plowing was observed. Excavations continued within each workshop area until its periphery had been reached. Workshop peripheries were determined on the basis of relative horizontal and vertical artifact densities within each area. During the data recovery, excavations focused on the main artifact concentrations within each workshop as well as on the peripheral area around each concentration. In this manner, each workshop was excavated as completely as possible.

In order to address specific research questions, the excavation methodology employed at the Oak Ridge site went beyond the standard archaeological practice. In addition to opening up wide areas for excavation, a detailed vertical record was also made. Accordingly, each excavation unit was excavated in 5 cm levels. At first, this process was used from the surface to depths of 70 to 80 cm. However, this method proved excessively time consuming given the total amount of area to be excavated. Also, initial analysis during Phase II and initial analysis of Phase III, indicated that there were few, if any, artifacts from 0-10 cm or below 50 cm. Although this distribution varied from workshop to workshop, the major concentration always occurred between 10 and 40 cm. As a result, it was decided to excavate from 0-10 cm as one level, then use the more discrete 5 cm levels between 10 and 50 cm, and revert back to 10 cm levels below 50 cm. Detailed horizontal provenience was also important to implement the research design proposed for this site. Each 1 x 2 m² unit was excavated in 50 cm² blocks or quads. The location of individual artifacts was measured in whenever possible. This methodology was used consistently throughout the excavation process.

Results. Phase III Data Recovery excavations at the Oak Ridge site recovered at least 14,356 pieces of prehistoric cultural material. These include eighty-three bifacially flaked lithic artifacts (including fragments) and 14,273 pieces of debitage or chipping debris in five size categories. Non-local felsites, probably from the Blue Hills area, were the predominant lithic materials although some argillite, quartzite and a trace of quartz were also present. Combined with artifacts recovered during the Phase II site examination level testing, a total of ninety-two bifacially flaked lithic artifacts and 15,912 pieces ofdebitage were found. Other culturally related materials recovered include burnt rock, a few ceramic sherds and some calcined bone.
Of the five areas excavated, three had distinctive cultural components. In chronological order these were: Area IV - a lithic workshop for the production of Coburn-style bifaces, Area II - a workshop for a Orient-related bifaces, and Area V - an occupation area with non-diagnostic lithics and a small amount of grit-tempered ceramics. The other two areas, I and III, were smaller. Aside from a single Orient point from Area III, no diagnostic artifacts were recovered.

Area IV, the largest of the workshops, was a dense concentration of lithic debris. Production of Mansion Inn blades, predominantly of the Coburn and Dudley varieties, appears to have been the major activity. Artifacts recovered were primarily early and mid-stage bifaces plus the associated debitage. The initial stage of manufacture included large preforms or rough bifaces of raw material in transportable size (Dincauze 1968:15). These were probably reduced from large cobbles elsewhere and brought to the site. The presence of cobble cortex on many of the flakes recovered support this conclusion. Virtually all the biface fragments recovered were felsite; a single argillite example was the exception. The felsites from which most bifaces were made occur commonly in the Harwich Outwash Plain deposits and could have been easily collected along the marsh, the beach or from streambeds. These initial preforms were then reduced to bifacially flaked blanks through a series of thinning stages. Most of these specimens recovered are rejects with hinge and step fractures that prevented further thinning or broke the piece. No finished bifaces were recovered, however, several late stage preforms for Coburn and Dudley-style bifaces could be reconstructed from fragments (Figure 3).

Production of these bifaces appears to have been to goal of tool manufacture in the Area IV workshop. A few examples showed additional thinning or bifacial retouch and could be used as knives and scrapers without further modification. Additional retouching could have converted these bifaces into projectile points, knives, spear points, drills and awls. Although Dincauze has described these late stage bifaces as the basic small tool of the people who made them (1968:17), there is little evidence that this area was used for general occupation purposes. Aside from a small number of retouch flakes, there is no evidence that more specialized tools were made from these bifaces. Interestingly, the other bifaces found in Area IV represent, what have often been considered as, other cultural traditions. These include two Orient-style tips, two quartz points (one Wading River, the other triangular) and an additional fragment of an impact fractured quartz point (Figure 4, next page). Since no quartz debitage was found, these quartz points may have been part of a tool kit used on the site by those who made the Coburn bifaces. A scraper/chopper made from a large felsite spall was the only non-bifacial implement recovered.

Coburn blades are well documented from Cape Cod. In fact, the Coburn site, where they were
Orient points are a common occurrence on Cape Cod sites. Moffett recognized these “specialized elongate, side-notched” points as a distinctive Late Archaic form. While not referring to these as “Orient points” (Ritchie did not publish on the Orient complex until 1959), he noted that these points were found in the lowest level at the Rose site in Truro along with a piece of steatite bowl (1957:2, Plate 2, #6, 7 and 15). Orient points have also been found at several other sites around Namskaket Marsh.

Area V was the final portion of the Oak Ridge site occupied by Native people. It also provided the clearest evidence for a range of activities, not just lithic reduction. Area V was nearly as large as Area II and although few diagnostic artifacts were recovered, it appears to date from the Early Woodland Period. A few small fragments of undecorated, grit-tempered pottery were found along with debitage, several felsite point tips, and one Rossville-style base (Figure 6). The only other feature found at the Oak Ridge site was also located in Area V. This pit feature extended from 25 to 38 cm below grade and contained charcoal, a charred nut hull, a few very small pottery fragments and debitage. Charcoal from this feature returned a radiocarbon date of 2630±90 BP (Beta 016008).

Evidence of a Changing Landscape?

Native American occupation at the Oak Ridge site appears to have been associated with initial submergence of the Namskaket Creek area and the early stages of development of the marsh ecosystem. The Coburn-related occupation of the site at Area IV appears to have occurred as the barrier beach and marsh began to form between ~3500 and 3000 BP. Most of the area was probably an open water estuary at that time with an inter-tidal zone around its landward periphery. The Orient-related occupation at Area II appears to have been slightly later, perhaps between ~3000 and 2600 BP. During this period, the barrier beach and marsh were still actively growing and the inter-tidal zone...
Hunting may have also been an important activity at the Oak Ridge Site during this period. In addition to deer and other terrestrial mammals, this would have been an excellent location for hunting sea mammals on a seasonal basis. From the high ground at the head of the marsh where the site is located, one could see a significance stretch of the Cape Cod Bay shoreline as well as the marsh. Drift whales, seals or other prey, once sighted, may have been hunted then butchered at the shoreline and later transported to the site after initial processing. The site may have served as a sort of 'hunting stand' where Native peoples waited for game and performed auxiliary tasks such as tool making and repair while waiting. One line of evidence that may support this is the recovery of several point tips from each of the three major occupation areas. While these could be the result of production failures, it is also possible that these returned to camp in the carcass of successful kills and were discarded during butchering.

By Early Woodland times, Native use of the Oak Ridge site appears to have decreased dramatically. This may have been a consequence of the ongoing formation of the barrier beach and enclosure of the marsh. Whatever the reason, the evidence suggests that

around this time, between ~2700 and 2500 BP, Native occupation shifted away from Namskaket and possibly towards other adjacent areas such as Nauset Marsh (Bradley 2005:47-48) or Pleasant Bay.

This pattern is also reflected at the other sites known around Namskaket Marsh. For example, at the Marshall site on the Brewster side of the marsh, Late Archaic and Early Woodland occupations, represented by Orient and Meadowood projectile points have been identified, however, there is no sign of later occupations. Conversations with local collectors have also identified another large site, possibly a base camp, in the same general area. Many Atlantic, Coburn and Orient points as well as soapstone bowl fragments have been found there but, again, no later material.

**Conclusion**

Native American presence at the Oak Ridge Site was restricted to the Transitional Archaic and Early Woodland periods, and appears to have been closely related to changes in sea level and the formation of Namskaket Marsh. Stone tool production was the primary activity documented at the site although it is likely that this was associated with active hunting, perhaps of marine mammals, as well. With its well-defined work areas, the Oak Ridge site

![Figure 5. Orient points, drills and preforms from Area II.](image)

![Figure 6. Tips and a Rossville base from Area V](image)
also provides important documentation for the production of Coburn and Orient style bifaces. What is less clear is how specialized sites like Oak Ridge fit into the broader patterns of the Transitional Archaic and Early Woodland. To answer that question, other kinds of sites from these periods, such as those with clearly defined occupation areas, middens and mortuary components, will need to be identified.

In her 1968 landmark study *Cremation Cemeteries in Eastern Massachusetts*, Dincauze observed that “the Coburn variety was the latest within the Mansion Inn type” (1968:22-23). She also speculated that Coburn blades may have been an immediate ancestor of the Orient Fishtail and that the spatial separation of Orient Phase sites and Coburn sites is “only apparent” (ibid. p.86). The Oak Ridge site provides tangible evidence that these two traditions were, indeed, closely related.

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Taylor Hill: A Middle Woodland Mortuary Site in Wellfleet, MA

James W. Bradley

Introduction

In his Review of Cape Cod Archaeology, Ross Moffett provided one of the first definitions for what we still refer to as the ‘Middle Woodland’ period. Moffett believed that “the first intensive populating of the Cape region” occurred during this time and that these sites were characterized by “nearly all of the earlier shell heap and black midden accumulations” associated with grit-tempered pottery and stemmed points (1957:5). This understanding of the Outer Cape’s archaeological record was based on Moffett’s meticulous excavation on twenty-three sites. However, because his work predated 14C dating and the development of the, now, commonly used typologies (that his work helped to inspire), Moffett’s contribution to our current understanding of Cape Cod archaeology remains under-appreciated.

This paper has two objectives. The first is to update Moffett’s assessment of the Middle Woodland period by reviewing more recent archaeological work on the Outer Cape. This includes several 14C dates, including two from sites that Moffett excavated, Holden and Rose. The second is to add information on an aspect of Middle Woodland culture that Moffett did not address – mortuary behavior. Whether intentional or not, Moffett did not excavate burials, unlike several of his contemporaries. One site in particular, Taylor Hill in Wellfleet, provides a basis for evaluating this component of Middle Woodland chronology and culture.

Environmental Context

Taylor Hill is located on the northern shore of Wellfleet Harbor, the largest embayment on the eastern side of Cape Cod Bay (Figure 1). Like the rest of the Outer Cape, the Wellfleet Harbor area has been formed through a series of geological processes. The dominant land feature is the Wellfleet Plain deposited during the late Pleistocene as a delta in Glacial Lake Cape Cod. On average 16 m (50 ft) above present day sea level, this outwash plain is characterized by a rugged kame and kettle topography. It is dotted with ponds and is cut in several places by sharply defined valleys. Some of these survive as rivers, such as the Pamet and Herring, others are dry valleys (Oldale 1992:67-74; 88-92).

After glaciation, sea level rise and the subsequent processes of erosion and deposition have been the most significant factors in shaping Wellfleet Harbor. The Atlantic has risen dramatically since the end of the Pleistocene, nearly 50 meters (150 ft) over the last 10,000 years. Although the initial rate of sea level rise was very rapid, it has slowed to about 1 meter per millennium over the last two thousand years (Uchupi et al 1996:32). Even at this reduced rate, the impacts were profound as low elevation terraces were gradually submerged and fresh water streams and marshes became brackish.

The slowing of sea level rise was of particular
importance in shaping the Wellfleet Harbor area. As sea level stabilized, the effects of erosion, especially the carving off of unconsolidated glacial settlements by long shore currents and their deposition as barrier bars and spits further down the beach, became more pronounced. This process, known as long shore drift, created Wellfleet Harbor whose western side is defined by a tombolo, or a string of former islands (Bound Brook, Griffin, Great and Great Beach) connected by sand spits. Behind this barrier, the gradually rising sea level created an extensive network of protected tidal flats, creeks and marshes.

The result was a concentrated area of exceptional environmental diversity. Within a few miles of Wellfleet Harbor, a wide range of pelagic, inter-tidal (both sea beach and salt marsh), brackish to fresh water, and terrestrial biomes exist. As the archaeological record indicates, Native inhabitants knew the resources of all these environmental zones and had the ability to exploit them skillfully.

**Past Investigations**

Over the past one hundred and twenty-five years, many archaeological investigations have occurred in the Taylor Hill area. This area includes the edge of the Wellfleet Plain between Mill Creek on the west and Mayo Creek on the east as well as the related dunes and shoreline features at the head of Wellfleet Harbor.

**1885.** The site is first mentioned as a ‘shell heap’. Special note is made on the presence of “the long narrow native oysters, now extinct on the New England coast, but whose shells make up by far the larger part of the great shell heaps of Maine” (Chase 1885:896).

**1895.** Human remains are encountered when foundations for Mr. Loring Baker’s cottage on Taylor Hill are excavated (Torrey and Bullen 1946:66).

**1911.** Howard Torrey, an avocational archaeologist from Wakefield, MA, begins to collect in the Taylor Hill area.

**1915-16.** Torrey excavates a ‘shell heap on north shore of small pond in rear of Chequesset Inn’. Recent re-examination indicates that, at this point, Torrey collected only lithics; no ceramics or faunal materials are included in his collection. Lithics include a celt, two anvil stones and many bifaces. These include several (10) large triangular points, three lobate bifaces, and one stemmed (Fox Creek) point along with many incomplete and broken pieces (Collections of the Robert S. Peabody Museum).

**1917.** Torrey finds a burial eroding out on Taylor Hill ‘near top of hill on northeast side of pond north of Chequesset Inn’. He excavates the exposed portion.

**1919.** Torrey returns to Taylor Hill with Professor G. L. Kittridge and excavates remainder of burial. It is a double burial, ‘a woman and child lying back to back, each of their limbs drawn up [flexed] and head towards the south, the woman facing the west, the child the east, with the [stone] effigy at the point where the bases of the skulls nearly touched’ (#1129, Torrey catalog, RSPM). The remains and original effigy were sent to Kittredge’s private museum in Barnstable; Torrey kept a cast. The effigy was illustrated by Willoughby (1935:163, Fig. 89. e & f) (Figure 2). Torrey described this burial further by Torrey in a letter of March 14, 1930 to Warren K. Moorehead:

“I know of a village site upon which several Indian skeletons have been uncovered by
erosion. Several years ago I found two there buried in a common grave, probably a woman and child, each buried on its side in a folded position, and back to back with skulls almost touching. Between the two skulls there was a perforated stone, resembling a large flat bead, and this had a human effigy carved on each side. The grave contained nothing else” (Archives of the Robert S. Peabody Museum).

1930. Torrey and Moorehead excavate a ‘scattered burial’ that contains a large, fully grooved stone axe (#1788, Torrey catalog, Robert S. Peabody Museum). On September 30, 1930, Torrey wrote to Moorehead asking him to intercede with property owner for continued permission to excavate. The area is described as ‘the richest site on Wellfleet Bay’ and the place where ‘a double effigy associated with a double burial’, as well as the axe, were found.

1945. Burials are found during construction under Roderick Angus’ summerhouse (the former Baker cottage) on Taylor Hill. Howard Torrey and Ripley Bullen salvage the remains. The burials are unusual. One contains a flexed adult male with associated funerary objects including a celts, a whetstone and shark’s tooth as well as teeth from a young child. Portions of a second adult male, disarticulated and bundled, are found intruded on the first interment. A report on these burials is published (Torrey and Bullen, 1946).

1947(?). Torrey excavates another burial on the Angus property. Without Bullen’s presence, fewer notes were made and, unfortunately, no description of mortuary treatment or orientation survives. Since this burial was also complex, it is described more fully here. The primary interment was an elderly male with several associated funerary objects. These included a large sea scallop shell (Placopecten magellanicus) on the cranium, a cache of deer and raccoon bones and several felsite “triangular” points. The property owner kept the latter. The cache contains forty-eight pieces of bone and antler, thirty-nine (81%) are deer (Odocoileus virginianus), all possibly from one small deer 2-4 years old, and nine (19%) are raccoon (Procyon lotor), with four individual animals represented. This cache is unusual in that unmodified bone, split bone, modified bone and finished objects were present (Table 1). Radiocarbon dating of an unmodified deer right metacarpal from the cache produced a date of 1094 BP. A sample from the elderly male in this burial returned a radiocarbon date of 1399 BP.

As was the case with the remains Torrey uncovered in 1945, this excavation also included

<table>
<thead>
<tr>
<th>Species</th>
<th>Unmodified Bone</th>
<th>Split Bone</th>
<th>Modified Bone</th>
<th>Bone/Antler Artifact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deer (possibly all from one small animal)</td>
<td>left ulna</td>
<td>left radius</td>
<td>8 metapodial fragments, 3 longbone fragments</td>
<td>left radius, cut on proximal end right radius, cut on distal end fragment of split metapodial, one end ground</td>
</tr>
<tr>
<td>Raccoon #1 (large adult)</td>
<td>right humerus</td>
<td>left humerus, cut on distal end right femur, cut on proximal end</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raccoon #2 (very large adult)</td>
<td>right humerus</td>
<td>right femur, cut on proximal end</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raccoon #3 (adult)</td>
<td>right humerus</td>
<td>left femur, cut on proximal end</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raccoon #4 (juvenile)</td>
<td>right humerus</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL (n=48)</td>
<td>n=22 (45.8%)</td>
<td>n=11 (22.9%)</td>
<td>n=7 (14.6%)</td>
<td>n=8 (16.7%)</td>
</tr>
</tbody>
</table>
more than one person. The second individual was a sub-adult male and represented primarily by long bones as well as pelvis and cranial fragments. Portions of a third individual, an adult female, were also recovered.

1962. In his “Notes on the Archaeological Survey for the National Park Service” dated June 28, 1962, Ross Moffett described this area as the ‘Chequesset Inn-Taylor Hill site’ or Site 29 on the Wellfleet Quadrangle. He described the site as ‘largely destroyed by building and road grading’. The Massachusetts Archaeological Society (MAS) designation for this site is M-42N-15.

1968. Cape Cod Chapter of the MAS begins excavations at the Daniels site, a large midden located between Taylor Hill and the large dune on the south. Although the site had already been heavily disturbed, a significant amount of material was recovered. The surviving notes and materials were housed at the Cape Cod Museum of Natural History and examined through the courtesy of staff archaeologist Fred Dunford.

Although provenience records are incomplete, the materials indicate a late Middle Woodland to early Late Woodland occupation. Lithics included eight projectile points: three large triangulars (quartz), two Fox Creek stemmed (quartz), two Woodland corner notched (one felsite, one of exotic yellow jasper) and one Greene (felsite). The small assemblage of ceramics (11) were primarily shell tempered ware with a smooth surface although examples of fabric impressed and cord wrapped stick, as well as linear dentate on grit tempered ware, were also found. Three bone awls and a fragment of incised bone comb were also recovered. Of particular interest is a fairly large sample of faunal remains. Although dominated by terrestrial mammals, primarily white tailed deer, this assemblage reflects the exceptional environmental diversity of the Wellfleet area (see Table 7 below).

1971. As part of Daniels site excavation, Guy Mellgren and John Gaston discover a ‘Red Paint burial’ on crest of the dune south of Taylor Hill. This appears to be the same area where Torrey found burials in 1919 and 1930. From surviving photographs, this burial was characterized by extensive red paint (or burned soil) and a scatter of calcined bone. Mortuary offerings included a celt, one large triangular point, whetstones and other bifaces. The current location of these objects is unknown.

1978. The ‘Chequesset Inn-Taylor Hill site’ is listed in Massachusetts Historical Commission site file as 19-BN-106

1992. The Massachusetts Historical Commission (MHC) was called on march 10, 1992 to salvage burials found in the course of septic system work. Designated the Gleason site (previously the Baker/Angus cottage), these burials are in the same location as those previously recovered by Torrey in 1945 and 1947. Four multiple interments containing eight individuals are
recovered. These include a wide range of ages and mortuary treatments. Funerary objects appear to have occurred only with Burial #1. These included a bone awl, three celts, three whetstones, at least four bifaces and mended platform pipe (Figures 3 and 4). Samples from three individuals were radiocarbon dated and returned dates ranging between 1310±40 and 1210±40 BP².

To summarize, over the past one hundred years, a series of Middle Woodland mortuary and habitation sites have been recorded and excavated in the Taylor Hill area. These included two distinct burial areas: Taylor Hill itself (the Baker/Angus/Gleason property) and the top of the adjacent dune, as well as at least two habitation/midden areas - the Daniels site and a second area at the base of the dune near the pond. Additional middens, now destroyed, appear to have extended east and north of Taylor Hill along the slope overlooking Mayo Creek (Torrey’s ‘cart path’ locus).

A total of nine burial features with at least eighteen individuals represented have been documented from the two burial areas (Table 2, next page). This makes Taylor Hill one of the largest Middle Woodland burial grounds reported in southern New England. Two traits make these burials unusual. One is density. Most, if not all, of the burials at Taylor Hill have been found in an area no more than 10m². Given this density, it can certainly be argued that Taylor Hill was a defined burial ground and not just a random group of burials. Another factor that makes these burials unusual is the diversity in mortuary treatment. Of the nine burial features, seven were multiple interments and two were apparent cremations. Six had funerary objects, while three did not. Of the eighteen individuals represented, three were flexed, six were bundled, seven were fragmentary and two were cremated. The individuals in these burials represent a full population range, male and female, infant to elderly. What does this mortuary diversity mean? And how do the Taylor Hill burials compare with other mortuary sites in the area, specifically the nearby Indian Neck Ossuary?

Other Mortuary Sites

While there are no other Middle Woodland burial sites on Cape Cod or in Southeastern Massachusetts that have all the traits present at Taylor Hill – density, diversity of mortuary treatments, population range, funerary objects and chronology, at least four other sites share some of these traits (Figure 5, next page).

The Indian Neck Ossuary. The best known, and closest, is the Indian Neck Ossuary located on the east side of Wellfleet Harbor 2km southeast of Taylor Hill. Salvaged by National Park Service archaeologists in 1979, the ossuary contained the remains of at least sixty-seven individuals who had been ritually interred in one large, compact feature (McManamon, Bradley and Magennis 1986). As at Taylor Hill, several mortuary treatments occurred within this feature. The upper level was composed of the bundled and fragmentary remains of at least fifty-six individuals. Below this was a
Table 2. Summary of Taylor Hill burials by locus

### A. Top of the dune locus

<table>
<thead>
<tr>
<th>Burial No.</th>
<th>Individual No.</th>
<th>Excavators</th>
<th>Age</th>
<th>Sex</th>
<th>Mortuary Treatment</th>
<th>Associated Funerary Objects</th>
<th>^14C date</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>1</td>
<td>Torrey &amp; Kittridge, 1919</td>
<td>adult</td>
<td>female</td>
<td>flexed, facing west</td>
<td>stone effigy</td>
<td>undated</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Torrey &amp; Kittridge, 1919</td>
<td>child</td>
<td>unknown</td>
<td>flexed, facing east</td>
<td>stone effigy</td>
<td>undated</td>
</tr>
<tr>
<td>II</td>
<td>3</td>
<td>Torrey &amp; Moorehead, 1930</td>
<td>unknown</td>
<td>unknown</td>
<td>'scattered', a cremation?</td>
<td>large grooved axe</td>
<td>undated</td>
</tr>
<tr>
<td>III</td>
<td>4</td>
<td>Melgrin &amp; Gaston, 1971</td>
<td>unknown</td>
<td>unknown</td>
<td>scattered with red ochre, a cremation?</td>
<td>ground stone tools and bifaces</td>
<td>undated</td>
</tr>
</tbody>
</table>

### B. Taylor Hill locus

<table>
<thead>
<tr>
<th>Burial No.</th>
<th>Individual No.</th>
<th>Excavators</th>
<th>Age</th>
<th>Sex</th>
<th>Mortuary Treatment</th>
<th>Associated Funerary Objects</th>
<th>^14C date</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV</td>
<td>5</td>
<td>Torrey &amp; Bullen, 1945</td>
<td>adult</td>
<td>male</td>
<td>semi-flexed, facing east. multiple recovery with 6 &amp; 7</td>
<td>celt, hone and shark's tooth</td>
<td>undated</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>Torrey &amp; Bullen, 1945</td>
<td>adult</td>
<td>male</td>
<td>bundle burial, with evidence of trauma</td>
<td>none</td>
<td>undated</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>Torrey &amp; Bullen, 1945</td>
<td>infant</td>
<td>unknown</td>
<td>fragmentary remains; teeth only</td>
<td>none</td>
<td>undated</td>
</tr>
<tr>
<td>V</td>
<td>8</td>
<td>Torrey, 1947</td>
<td>adult, 55-60</td>
<td>male</td>
<td>unknown. 50% present primarily cranium and long bones, multiple recovery with 9 &amp; 10</td>
<td>scallop shell on cranium, cache of bone and antler objects, bifaces</td>
<td>1399±49 BP</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>Torrey, 1947</td>
<td>sub-adult, 16-17</td>
<td>male</td>
<td>unknown. 50% present primarily long bones, pelvis and cranial fragments</td>
<td>?</td>
<td>undated</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>Torrey, 1947</td>
<td>adult, 25-30</td>
<td>female</td>
<td>unknown. cranial and pelvis fragments</td>
<td>none</td>
<td>undated</td>
</tr>
<tr>
<td>VI</td>
<td>11</td>
<td>MHC, 1992</td>
<td>adult, 50-55</td>
<td>male</td>
<td>unknown, recovered from back dirt, 70% present including cranium and long bones, bundle burial? recovered with 12</td>
<td>platform pipe, bifaces, celts, whetstones, bone awl</td>
<td>1210±40 BP</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>MHC, 1992</td>
<td>adult, 40-55</td>
<td>female</td>
<td>fragmentary remains, no long bones</td>
<td>1310±40 BP</td>
<td></td>
</tr>
<tr>
<td>VII</td>
<td>13</td>
<td>MHC, 1992</td>
<td>juvenile, 10</td>
<td>female</td>
<td>cranium only, multiple interrment with 14</td>
<td>none</td>
<td>undated</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>MHC, 1992</td>
<td>juvenile, 3-4</td>
<td>female</td>
<td>fragmentary</td>
<td>none</td>
<td>undated</td>
</tr>
<tr>
<td>VIII</td>
<td>15</td>
<td>MHC, 1992, west group</td>
<td>adult, 45-50</td>
<td>male</td>
<td>bundle burial. multiple interrment with 16</td>
<td>none</td>
<td>1230±40 BP</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>MHC, 1992, west group</td>
<td>infant</td>
<td>unknown</td>
<td>fragmentary remains, femur and tarsals only</td>
<td>none</td>
<td>undated</td>
</tr>
<tr>
<td>IX</td>
<td>17</td>
<td>MHC, 1992, east group</td>
<td>adult, 38-43</td>
<td>male</td>
<td>bundle burial, multiple interrment with 18</td>
<td>none</td>
<td>undated</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>MHC, 1992, east group</td>
<td>adult, 30-35</td>
<td>female</td>
<td>fragmentary remains, cranial and upper arm fragments</td>
<td>none</td>
<td>undated</td>
</tr>
</tbody>
</table>
cremation level in which the remains of at least nine, recently deceased individuals had been placed. Like Taylor Hill, the ossuary contained the full range of population (Table 3, next page). Unlike Taylor Hill, no funerary objects were found in the ossuary. Two samples from the unburned portion of the ossuary were radiocarbon dated. One sample returned a date of 1490±80 BP. This date is older than those from the Taylor Hill burials. The other sample dated 915±120 BP, younger than the Taylor Hill dates. In spite of the differences, the Indian Neck Ossuary generally appears to be the kind of secondary communal burial into which the Taylor Hill interments might ultimately have been placed.

The Grove Field Ossuary. While ossuary burials have seldom been reported in southern New England, a second example is known from Cape Cod. Found in Bourndale at the western end of Cape Cod in 1911, this discovery is known primarily from newspaper accounts. Although details are scarce, it appears that this burial feature contained the disarticulated and partially cremated remains of at least fifteen individuals. No funerary objects were reported and this burial feature remains undated (Bradley 1989).

The Seaver Farm Burials. In 1969, William Taylor salvaged a series of burials on the Seaver Farm site in Bridgewater, MA. While most of these are related to the site's Transitional Archaic occupation, three of the burials appear to date from the Middle Woodland period (Taylor 1970). All three burials contained single individuals although little bone had survived in the acidic soil. There was no evidence that the remains had been cremated. Burial #6 contained the remains of a juvenile of undetermined sex and elaborate funerary objects including two platform pipes, a whetstone, a large biface of exotic material, a rose quartz pebble and two marine shells that appear to have been modified into vessels (Taylor 2007). A sample of bone from this burial returned a conventional $^{14}C$ date of 1510 BP or somewhat older than the Taylor Hill dates. Burial #7 also contained the remains of a juvenile of undetermined sex and a more modest set of funerary objects. These included four shark teeth, which the excavators believed had been used as projectile points, a small flake knife and some related debitage. Burial #8 contained the remains of an adult male (?). A quartz small stemmed point was found where the feet would have been while two large felsite bifaces had been placed under and adjacent to the cranium (Taylor 1970:7-8). These large bifaces are very similar to those recovered from Burial #6 at Taylor Hill (Figure 6, next page).

The Eel River Burial. Another burial, or group of burials, with similar funerary objects was discovered during commercial sand removal in Plymouth and reported by Jesse Brewer (Brewer 1944). Since the site was heavily disturbed, little information is available on the remains or their mortuary treatment. Brewer noted that only a few teeth were found. However, the assemblage of funerary objects was impressive and contained several large bifaces very similar to those from Seaver Farm,
Table 3. Comparison of Populations from Taylor Hill and the Indian Neck ossuary.

<table>
<thead>
<tr>
<th>SITE</th>
<th>n</th>
<th>Newborn</th>
<th>Infant</th>
<th>Juvenile</th>
<th>Sub-adult</th>
<th>Adult</th>
<th>Elderly</th>
<th>Unknown</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taylor Hill burials</td>
<td>18</td>
<td>11%</td>
<td>6%</td>
<td>11%</td>
<td>6%</td>
<td>39%</td>
<td>16%</td>
<td>11%</td>
<td>100%</td>
</tr>
<tr>
<td>Indian Neck ossuary (unburned)</td>
<td>56*</td>
<td>0</td>
<td>23%</td>
<td>18%</td>
<td>7%</td>
<td>39%</td>
<td>13%</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Indian Neck ossuary (cremation)</td>
<td>9*</td>
<td>11%</td>
<td>0%</td>
<td>22%</td>
<td>11%</td>
<td>34%</td>
<td>22%</td>
<td>0</td>
<td>100%</td>
</tr>
</tbody>
</table>

*Ossuary numbers are adapted from McManamon, Bradley and Magennis 1986:81-82

two platform pipes and an incised fragment from a third, several pendants and gorgets, two quartz crystals and a series of other lithic tools including a whetstone, two celts and a variety of smaller flaked bifaces. Brewer felt that all these objects came from “a single deposit” and may have been buried with red ochre as well. Many of these objects, especially the large bifaces, platform pipes, whetstones and celts, are very much like those found at Taylor Hill (Figure 7).

The Purcell site. A final site located in West Yarmouth and salvaged by archaeologists in 1966 shares a very different set of traits with the Taylor Hill burials (Schambach and Bailet 1974). Like Taylor Hill, this was a group of six, closely spaced burials. Unlike Taylor Hill, all were “quite shallow”, dug into a pre-existing midden and appear to have contained a single flexed individual. Analysis of the remains indicated that one was an infant, one was a juvenile, one an adult female, two were elderly females and the last an elderly person of undetermined sex (ibid. p.21 Table 1). None of these burials contained funerary objects. What makes this site so unusual is the unequivocal evidence that at least three of these individuals (the adult and two elderly women) had died violent deaths. These individuals had lithic or bone points imbedded in either their vertebra or long bones. One also had a fatal cranial wound. While none of these burials were radiocarbon dated, two factors link this site with Taylor Hill. First, the conical bone points found in the vertebrae of the individuals in Burials #2 and 3 are quite similar to those from the cache of bone and antler objects associated with Burial V at Taylor Hill. Second, Taylor Hill also had a burial with evidence of traumatic death. One of the individuals excavated by Torrey and Bullen from Burial IV was an adult male with pre-mortem cranial damage, a triangular point in pelvis area and a series of cut marks on the ribs, both tibiae, both ulnae and right radius (Torrey and Bullen 1946:66-67).

To sum up, there appears to be an overall, late Middle Woodland mortuary assemblage, one that contains some combination of the following objects: Lithics. Flaked: large ovate to pentagonal bifaces plus a variety of smaller stemmed and/or triangular points. Ground: implements including whetstones, celts, adzes and grooved axes but also platform pipes (often with evidence of extensive curation), pendants and gorgets (with one and two holes) and effigy figures. Quartz crystals, hematite concretions (often referred to as ‘paint pots’).
and red ochre may also be present. Bone and antler. Split bone awls, harpoons, projectile points, other modified and unmodified bone are often present. Shark’s teeth have also been reported from several sites. Marine Shell. Unmodified, large scallop shells as well as ones that have been perforated (as gorgets) or otherwise modified are included as are large whelk shell occasionally modified into ‘vessels’. To date, shell beads have not been reported.

At present, there is no evidence that native copper articles were included in this mortuary assemblage. Also, pottery vessels and smoking pipes do not appear to have been used as funerary objects. In general, this mortuary assemblage appears to be related to occupation sites with Fox Creek-style lithics and CP 3/4 ceramics. These sites appear to date from the period ~1600 to 1100 BP. While the burials that contain this assemblage also appear to date from this time period, determining their chronology more precisely is another matter.

**Constructing a Chronology**

Establishing dates for the Middle Woodland period in general, and for a site like Taylor Hill in particular, is a complex task. In part, this is because \(^{14}C\) dates tied to well-documented artifact assemblages have only become available in recent years. When Moffett defined the ‘Middle Woodland’ period in 1957, he based it on the site characteristics and artifact traits he had observed. How old these sites actually were was not known.

Seriation. One of Moffett’s lasting contributions was the creation of the first large, and consistently described artifact inventory from the Outer Cape. Based on this, he was able to summarize patterns of continuity and change in ceramics and lithic points. These, in turn, became the foundation for many of the typologies currently used in the Northeast. While subsequent excavations and radiocarbon dating have filled out the cultural sequence that Moffett proposed in 1957 and added a clearer sense of time depth, they have not changed the basic structure.

In terms of the Middle Woodland (or Second Ceramic Period as he termed it), Moffett described both the pottery and lithics in detail. The ceramics, he argued, were invariably grit-tempered and exhibited a great deal of variety in decoration with rocker stamping and push-pull motifs especially common (1957:5). This assessment stood largely unchallenged until the early 1980s when Frank McManamon’s archaeological survey of the Cape Cod National Seashore provided an initial set of radiocarbon dates and additional technological information (Childs 1984)

A second system for analyzing New England ceramics was developed by the late Jim Petersen.
Table 4. Proposed ceramic periods for Outer Cape.

<table>
<thead>
<tr>
<th>Attributes</th>
<th>CP-1</th>
<th>CP-2</th>
<th>CP-3</th>
<th>CP-4</th>
<th>CP-5</th>
<th>CP-6</th>
<th>CP-7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary design</td>
<td>rarely decorated</td>
<td>dentate rocker and pseudo scallop shell stamping</td>
<td>dentate rocker stamping and scallop shell impressed/drag</td>
<td>scallop shell impressed, cord wrapped stick</td>
<td>cord wrapped stick</td>
<td>various styles: scallop shell stamping, combing, incising</td>
<td>incising</td>
</tr>
<tr>
<td>Design placement</td>
<td>upper half of vessel</td>
<td>upper two-thirds to three-quarters</td>
<td>upper two-thirds to three quarters</td>
<td>upper exterior</td>
<td>upper exterior</td>
<td>neck and collar</td>
<td>neck and collar</td>
</tr>
<tr>
<td>Interior surface</td>
<td>fabric paddled</td>
<td>smooth</td>
<td>smooth</td>
<td>smooth</td>
<td>smooth</td>
<td>channelled or smooth</td>
<td>smooth</td>
</tr>
<tr>
<td>Temper</td>
<td>grit</td>
<td>grit, high fired</td>
<td>grit, lower fired</td>
<td>grit</td>
<td>shell</td>
<td>shell</td>
<td>shell</td>
</tr>
<tr>
<td>Thickness</td>
<td>thick, 6-10mm</td>
<td>thin, 4mm</td>
<td>thicker, 6-8mm</td>
<td>thick</td>
<td>thick</td>
<td>markedly thinner</td>
<td>thin</td>
</tr>
<tr>
<td>Rim</td>
<td>simple rim, round profile</td>
<td>slightly everted, squared off profile</td>
<td>everted, round profile</td>
<td>thickened lip, incipient lip, incipient collar</td>
<td>simple rim, squarish profile</td>
<td>incipient collar, squarish profile</td>
<td>distinct collar</td>
</tr>
<tr>
<td>Neck (shoulder)</td>
<td>straight</td>
<td>straight</td>
<td>straight or slightly excursive</td>
<td>straight or slightly excursive</td>
<td>straight or slightly excursive</td>
<td>excursive</td>
<td>excursive</td>
</tr>
<tr>
<td>Body</td>
<td>conoidal</td>
<td>conoidal</td>
<td>conoidal</td>
<td>conoidal</td>
<td>conoidal to globular</td>
<td>globular</td>
<td>globular</td>
</tr>
<tr>
<td>Contour Twist</td>
<td>S</td>
<td>not known</td>
<td>not known</td>
<td>S</td>
<td>Z predominant</td>
<td>Z</td>
<td>not known</td>
</tr>
<tr>
<td>Estimated chronology</td>
<td>3000-2150 BP</td>
<td>2150-1650 BP</td>
<td>1650-1350 BP</td>
<td>1350-1100 BP</td>
<td>1100-650 BP</td>
<td>650-400 BP</td>
<td>400-300 BP</td>
</tr>
</tbody>
</table>

and Dave Sanger. This system uses a more detailed vocabulary to describe the physical attributes, fabrication details and decoration of ceramic vessels from the northern portion of the Gulf of Maine. Expanding on Moffett's work, Petersen and Sanger proposed a series of seven 'Ceramic Periods' between ~3000 years ago and the Historic Period (Petersen and Sanger 1991). In 2003, Petersen and I began to apply this system to Moffett's ceramics from Cape Cod. Although Jim's tragic death cut this project short, it was clear that a series of comparable 'Ceramic Periods' could be defined for the Outer Cape (Table 4) and that Moffett's original seriation of pottery forms and decoration was remarkably accurate.

A similar process has occurred with lithics. Moffett restricted himself to straightforward descriptions, such as corner-notched or stemmed, rather than creating 'types' as Ritchie did in New York and on Martha's Vineyard. Still, his excavated data provided a substantive basis for the typologies developed by Ritchie (1971) and Funk (1976) in New York as well as those devised by William Fowler for the MAS (1963; Hoffman 1991) and the MHC (1984). In terms of the Middle Woodland, Moffett observed that the "stemmed points, so prevalent in this horizon,"varied considerably in shape and that triangular points, when found, were of "the early type" (1957:5). Now, of course, we would describe these as Rossville, Lagoon, Fox Creek, Greene and Levanna points (Boudreau 2008).

Radiocarbon. As useful as the seriation of ceramics and lithics is, its real power is not evident until linked with radiocarbon dates. While Moffett did not live to see this happen, it is now possible to demonstrate the validity of his seriations with absolute dates. Radiocarbon analysis has provided an extensive array of dates for Cape Cod archaeology over the past thirty years. Still, interpreting a $^{14}$C date is tricky since many factors can influence what is
reported and what it means. These range from simple problems, such as contamination and inadequate sample size, to more complex ones such as carbon pathways and reservoir effect. Just the choice of material to be dated can have a profound effect on the result. Different materials, such as charcoal, marine shell, animal bone and human bone, even when taken from the same archaeological context, will rarely produce the same date. Other variables include the error factor (the ± that follows a date) and which laboratory did the analysis. Finally, a radiocarbon date must be calibrated if it is to be compared with calendar time. As Bob Funk used to say, half jokingly, 14C dates are our best relative 'absolute' measure of chronology. With these factors in mind, how do the dates from Taylor Hill and other comparable sites line up?

Towards a 'Middle Woodland' Chronology. One way to deal with these problems is to standardize samples and reporting as much as possible. In other words, compare like specimens whenever possible. To do this, fourteen Middle Woodland dates from the Outer Cape discussed are summarized in two tables. One has seven 14C dates obtained from charcoal or terrestrial mammal bone, and the second has seven 14C dates obtained from human remains (see Tables 5 and 6, next page). The question is - how well do these dates fit together?

Initially, this does not seem to be a problem. The Middle Woodland period on the Outer Cape has usually been dated between -2000 and 1000 BP. As Table 5 indicates, the 14C dates from charcoal and deer between 2000 and 1000 BP fall in the same sequence as indicated by the ceramic and lithic evidence. The same holds true for the dates from human remains in Table 6. The problem emerges when we try to combine these tables. Burial V at Taylor Hill illustrates the difficulty. While the human remains from this burial produced a date of 1399±49 BP, the deer bone from the same context dated 1091±51 BP, or in the range of three hundred radiocarbon years younger.

Diet and Reservoir Effect. Reconstructing Native diet, and how specific foods might affect radiocarbon dates, was one of Betty Little's passions. Of particular interest was the degree to which marine foods (shell fish, fin fish and marine mammals) add 'old' carbon to the diet resulting in artificially 'old' 14C dates. This led her to an intensive study, not only of Native diet, but of ways to calculate an appropriate 'reservoir age' for coastal sites in southern New England (Little 1993; 1995; 2002).

One way to do this is to compare dates from paired samples of, say, wood charcoal and marine shell from the same archaeological context. In a 1993 article, Betty analyzed fifteen such paired sets and determined that an appropriate reservoir correction for marine samples from Cape Cod was ΔR=95±43 14C years (1993:469-70). In other words, the radiocarbon date from a marine sample would appear to be nearly 100 years older than that from an equivalent terrestrial sample.

In order to apply this marine correction to human remains, paired samples of human bone and bone from a terrestrial browser, such as a deer, were required. Betty had one set of paired samples from Nantucket. Burial V at Taylor Hill provided her with a second. While Betty had not completed this work by the time of her death, she was able to prepare an initial report on her findings (2002). Based on these two paired samples, she determined that the marine correction for the Wellfleet and Nantucket individuals was ΔR=95±45 14C, a finding remarkably close to her original estimate.

Betty's work also included an analysis of the diet for the Wellfleet and Nantucket individuals. Based on the isotopic values of carbon and nitrogen, Betty concluded that the Wellfleet individual had a diet that was 49% marine in origin, a figure that fits well with the faunal remains recovered from the nearby Daniels site (Table 7). By comparison, the Nantucket individual had a diet that was 92% marine in origin (Little 2002).

With Betty's marine correction factored in, it becomes a little easier to align the 14C dates in
Table 5. Middle Woodland dates from charcoal and deer bones

<table>
<thead>
<tr>
<th>^{14}C date</th>
<th>Material dated</th>
<th>Site</th>
<th>Context/Assocations</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1920±40 BP</td>
<td>deer antler</td>
<td>Holden, Truro</td>
<td>upper level, 'Middle Woodland'. CP2/3 ceramics. Rossville and Lagoon points.</td>
<td>Moffett 1951a5</td>
</tr>
<tr>
<td>1100±60 BP</td>
<td>charcoal</td>
<td>Rose, Truro</td>
<td>Zone I, 'Late Woodland 1'. CP4/5 ceramics. Triangular and Jack’s Reef points.</td>
<td>Moffett 1951b5</td>
</tr>
<tr>
<td>1094±51 BP</td>
<td>deer bone</td>
<td>Taylor Hill, Wellfleet</td>
<td>cache of bones from Burial V. Triangular points?</td>
<td>this article</td>
</tr>
</tbody>
</table>

Table 6. Middle Woodland dates from human remains

<table>
<thead>
<tr>
<th>^{14}C date</th>
<th>Burial context</th>
<th>Site</th>
<th>Associations</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1510±40 BP</td>
<td>Bu. 6, juvenile</td>
<td>Seaver Farm, Bridgewater</td>
<td>platform pipes, whetstone, biface of PA jasper, marine shell vessels.</td>
<td>Taylor 2007</td>
</tr>
<tr>
<td>1490±80 BP</td>
<td>ossuary, sample #1</td>
<td>Indian Neck, Wellfleet</td>
<td>none</td>
<td>McManamon et al 1986:18</td>
</tr>
<tr>
<td>1399±49 BP</td>
<td>Bu. V, elderly male, individual #8</td>
<td>Taylor Hill, Wellfleet</td>
<td>large scallop shell, cache of bone, &quot;triangular&quot; points.</td>
<td>this article</td>
</tr>
<tr>
<td>1310±40 BP</td>
<td>Bu. VI, adult female, individual #12</td>
<td>Taylor Hill, Wellfleet</td>
<td>none</td>
<td>this article</td>
</tr>
<tr>
<td>1230±40 BP</td>
<td>Bu. VIII, adult male, individual #15</td>
<td>Taylor Hill, Wellfleet</td>
<td>none</td>
<td>this article</td>
</tr>
<tr>
<td>1210±40 BP</td>
<td>Bu. VI, adult male, individual #11</td>
<td>Taylor Hill, Wellfleet</td>
<td>platform pipe, large bifaces, ground stone tools.</td>
<td>this article</td>
</tr>
<tr>
<td>915±120 BP</td>
<td>ossuary, sample #2</td>
<td>Indian Neck, Wellfleet</td>
<td>none</td>
<td>McManamon et al 1986:18</td>
</tr>
</tbody>
</table>

Tables 5 and 6. At least for the Taylor Hill individuals (and perhaps those from the Indian Neck Ossuary as well), the actual ages in Table 6 are probably in the range of one hundred years younger than their ^{14}C dates indicate. This would place the Taylor Hill burials in a fairly tight cluster between ~1300 – 1100 BP.

Implications

One of Moffett’s key observations was that the transition from Middle Woodland to Late Woodland (what he called 'Late Woodland I' or the Third Ceramic Period) occurred “abruptly and with a marked change” in material culture. In ceramic terms, this meant that the grit-tempered pottery of the Middle Woodland was replaced by a coarser, shell-tempered ware with a fabric-impressed exterior and decorated with a series of cord-wrapped stick impressions. In lithic terms, stemmed points largely disappear and are replaced by broad triangular ones (1957:5-6). While subsequent investigation have borne this out, it remains unclear what caused these changes, how quickly they occurred, and what they signify in terms of broader cultural patterns.

Environmental factors. There is no question that the environment was fundamentally
important. As sea level rise slowed and shoreline features stabilized, it appears that Native people began to settle into the landscape in a different way. As Moffett observed, this is when the first evidence of midden formation occurs. Examination of those middens indicates that these sites were increasingly occupied on a year-round basis. The Daniels site is a good case in point. Art Spiess’ analysis of the nearly 1000 faunal fragments recovered documents a diverse group of marine and terrestrial mammals, turtles, bird and fish, one that represents the full range of biomes available to the people who lived on the site (Table 7, next page). Aside from the fact that shell fish data were not available, the Daniels faunal assemblage is quite comparable to that recovered from a Late Woodland (650±115 BP) midden on Indian Neck, one where an argument for year-round occupation has been made explicitly (Bradley and Spiess 1994).

This depth of resources was significant. With ample food, Native population could grow. Most of the individuals buried at Taylor Hill were mature adults and appear to have been in good health. Analysis of the population from the Indian Neck Ossuary indicated the same thing – these were robust and healthy people (McManamon, Bradley and Magennis 1986:20).

A stable, more predictable environment had another important consequence. As Native people began to settle in specific areas and utilize them on a year-round basis, a clearer sense of territoriality began to emerge. This is most evident in the growth of site clusters around the major estuary/marsh systems. These clusters contain not only the visible evidence of settlement (occupation and special processing sites as well as middens) but designated burial grounds such as Taylor Hill as well. Wellfleet Harbor was certainly the focus of, at least, one such Middle Woodland settlement cluster. Others on the Outer Cape included High Head and Corn Hill in Truro, Nauset in Eastham/Orleans, and Pleasant Bay in Orleans/Chatham. All the sites in these clusters can be considered ancestral Wampanoag, and are generally similar in terms of material culture and settlement pattern. Still, there are differences among them (see examples in McManamon 1984, II:408; Dunford 2001), and each of these clusters retained its own individual identity well into the Historic Period (MHC 1987:62).

Regional Cultural factors. This pattern of more concentrated year-round settlement, larger population, and emergence of territoriality undoubtedly had profound cultural consequences. Larger populations usually imply the emergence of new forms of leadership. Whether these should be termed ‘sachemships’ or ‘chiefdoms’, someone had to organize labor so that specific resource opportunities could be exploited efficiently and effectively 6. While these included predictable events such as seasonal fish runs or cooperative hunting, other opportunities were more variable. On the Outer Cape, these included storm deposits of surf clams or other shellfish and the mass stranding of marine mammals. The latter were especially significant (Little and Andrews 1982) and may have been the largest source of animal fat in Native diet (Bradley, Spiess and Early 1998). However, since stranded animals were often available for only one tidal cycle, good leadership was essential if such an opportunity was to be utilized.

The burials from Taylor Hill and the other related sites provide some insight into what appear to be rapidly changing, or at least quite diverse, mortuary practices on the Cape and Southeast Massachusetts between ~1500 and 1000 BP. On one hand, there are ossuaries. These are perhaps the most egalitarian of mortuary features in that everyone appears to have been buried together regardless of age, gender or rank. However, the other burials clearly indicate that different people did receive different mortuary treatment. Some of the individuals from Taylor Hill (#5, 8 and 11, all of whom were older males) as well as those from Seaver Farm and Eel River had lavish mortuary offerings. It certainly appears that these were individuals of ‘high status’, whatever that term might have meant. Others appear to have been buried with care but without funerary objects.
Then there are those whose remains show evidence of trauma and deliberate death. These include individual #6 from Taylor Hill and the six people from the Purcell site. If the arguments for increasing territoriality and emerging leadership are correct, then it is likely that a much stronger sense of group identity, or ethnicity, existed as well. This would make designated burial grounds even more important, not just as places of interment but, as Fred Dunford has observed, as ‘deliberate markers of ancestral place, of one’s claim to the land’. Increased ethnicity, the sense of Us as opposed to Them, also helps to explain why some individuals received such harsh treatment and death.

**Long Distance Cultural Factors.** As important as environmental and regional cultural factors were, it would be a mistake to under-estimate the influence of forces far beyond the region. Huge changes occurred in the culture of Cape Cod’s Native people during the Early and Middle Woodland periods. Ceramic technology, tobacco and pipe smoking, and the introduction of new cultigens are among those that we can see. Others may be more subtle. While mortuary ceremonialism probably had been practiced on the Cape for as long as humans were present, it takes on a different level of visibility during the Middle Woodland. As Brian Fagan has noted, there are strong indications that the Adena, and later Hopewell, trade networks extended out of the Ohio Valley into the Northeast, and that these brought a distinct assemblage of mortuary behaviors and materials with them. In the Ohio Valley, Hopewell influences span the period from ~2150 to 1550 BP (1991:366-80). While Fagan suggests that these “exchange networks never penetrated far into New England” (ibid. p. 413), the Taylor Hill and related burials argue the contrary. Indeed, many of the defining characteristics of the mortuary assemblages from these sites – platform pipes, vessels made from marine shell, sharks teeth and lithics from Pennsylvania – indicate ideological as well as material continuity with Hopewellian centers far to the west.

What does this combination of local, regional and long distance factors mean? Why was there such a distinct change in material culture around 1100 BP? Were only ideas and objects moving, or were people moving as well? At present, we simply don’t know. These changes raise more questions than they answer.

However, the mortuary data again provide us with a clue. When Betty Little first reviewed the ¹⁴C data from the Indian Neck ossuary, she asked me if a mistake had been made when the samples were selected for dating. Was it

### Table 7. Faunal Remains from the Daniels site

<table>
<thead>
<tr>
<th>TAXON</th>
<th>NISP*</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sea mammal</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dolphin</td>
<td>8</td>
<td>109.3</td>
</tr>
<tr>
<td>seal</td>
<td>2</td>
<td>28.8</td>
</tr>
<tr>
<td>subtotal</td>
<td>10</td>
<td>138.1</td>
</tr>
<tr>
<td><strong>Terrestrial mammal</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>deer</td>
<td>56</td>
<td>807.6</td>
</tr>
<tr>
<td>beaver</td>
<td>10</td>
<td>5.9</td>
</tr>
<tr>
<td>raccoon</td>
<td>2</td>
<td>4.8</td>
</tr>
<tr>
<td>fox</td>
<td>2</td>
<td>3.1</td>
</tr>
<tr>
<td>large,</td>
<td>534</td>
<td>532.6</td>
</tr>
<tr>
<td>unidentifiable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>subtotal</td>
<td>604</td>
<td>1354</td>
</tr>
<tr>
<td><strong>Turtles</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>109</td>
<td>41.6</td>
</tr>
<tr>
<td><strong>Birds</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Great Auk</td>
<td>3</td>
<td>4.2</td>
</tr>
<tr>
<td>small duck</td>
<td>4</td>
<td>2.9</td>
</tr>
<tr>
<td>large duck</td>
<td>2</td>
<td>0.8</td>
</tr>
<tr>
<td>goose</td>
<td>1</td>
<td>1.3</td>
</tr>
<tr>
<td>shearwater</td>
<td>1</td>
<td>0.3</td>
</tr>
<tr>
<td>unidentified</td>
<td>27</td>
<td>15.6</td>
</tr>
<tr>
<td>subtotal</td>
<td>38</td>
<td>25.1</td>
</tr>
<tr>
<td><strong>Fish</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sturgeon</td>
<td>98</td>
<td>52.1</td>
</tr>
<tr>
<td>sculpin or</td>
<td>34</td>
<td>6.5</td>
</tr>
<tr>
<td>flounder</td>
<td>9</td>
<td>4.1</td>
</tr>
<tr>
<td>striped bass</td>
<td>6</td>
<td>8.1</td>
</tr>
<tr>
<td>cod, large</td>
<td>5</td>
<td>0.5</td>
</tr>
<tr>
<td>cunner</td>
<td>2</td>
<td>9.3</td>
</tr>
<tr>
<td>sting ray</td>
<td>1</td>
<td>0.1</td>
</tr>
<tr>
<td>herring</td>
<td>70</td>
<td>20</td>
</tr>
<tr>
<td>unidentified</td>
<td>225</td>
<td>32.7</td>
</tr>
</tbody>
</table>

*NISP – number of identified specimens present

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Bradley: Taylor Hill
possible that a piece of deer bone had been submitted instead? I said, no, the sample submitted to Geochron was the distal portion of a right tibia, and that no deer bone was associated with the ossuary. I asked her why she was concerned and she replied that, in terms of isotope values, the sample that produced the 915±120 BP date did not look like any of the other human samples she had seen from southern New England. Specifically, there was no evidence of a marine component in the diet. If this was from the ossuary, she concluded, it had to be from a person who had not grown up on Cape Cod or near the coast.

Conclusion

Taylor Hill is a concentration of late Middle Woodland habitation and mortuary sites located at the head of Wellfleet Harbor on Cape Cod. Documented through a series of avocational and professional examinations over the last 100 years, the evidence suggests that the late Middle Woodland period (~1300-1100 BP) was a time of intense social re-organization, population expansion and possibly movement, in the southern end of the Gulf of Maine. Specifically, Taylor Hill appears to exemplify the beginning of a pattern of territorially-based, year-round occupation on the Outer Cape that continued up through European contact.

Endnotes

1. Two radiocarbon dates were obtained from samples of the Taylor Hill burial (V) excavated by Torrey in 1947 excavation. Both dates are 13C corrected and uncalibrated. The first sample was a femoral shaft fragment from the elderly male (individual 8) and returned a date of 1399±49 BP (GX-20619-G-AMS). The second sample was an unmodified deer right metacarpal from a cache associated with this individual. It returned a date of 1094±51 BP (GX-20620-G-AMS).

2. Three radiocarbon dates were obtained from samples recovered by the MHC during salvage at Taylor Hill in 1992. These dates are 13C corrected and uncalibrated. The first sample was from the adult male (individual 11) in burial VI and returned a date of 1210±40 BP (GX-25019-AMS). The second sample was from the adult female (individual 12) also in burial VI and returned a date of 1310±40 BP (GX-25020-AMS). The third sample was from the adult male (individual 15) in burial VIII and returned a date of 1230±40 BP (GX-25021-AMS).

3. The radiocarbon dates from the ossuary are complex and difficult to interpret. Five dates were obtained before the remains were reburied. Three were dated by Geochron Laboratories; two others were analyzed by Teledyne Isotopes. For consistency purposes, I have used only the dates run on bone collagen. The dates from sample #1, 1490±80 BP (I-13,477) and sample #2, 915±120 BP (GX-777-G) dates are 13C corrected and uncalibrated. All the dates are discussed in McManamon et al 1986:18.

4. The radiocarbon date for burial #6 at Seaver Farm was obtained through the courtesy of William Taylor. A surviving fragment of maxilla returned a conventional 14C date of 1510±40 BP (Beta-226114). This date is 13C corrected and uncalibrated.

5. Samples from the Holden and Rose sites were radiocarbon dated courtesy of the R. S. Peabody Museum of Archaeology in Andover, MA. The specimen from Holden was an antler fragment (RSPM #252/2330) from the Moffett’s ‘Upper level’. The date of 1920±40 BP (Beta #190225) is 13C corrected and uncalibrated. The charcoal from the Rose site came from a pit feature in ‘Zone 1’ that contained shell tempered, cord wrap stick pottery (RSPM #252/441). The date of 1100±60 BP (Beta #177513) is 13C corrected and uncalibrated.


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Finally, I owe particular thanks to two friends, now deceased, Elizabeth Little and John Peters. Although they approached the study of the past in a very different ways, each believed in archaeology. Betty inspired my interest in coastal resources and did her best to explain the mysteries of 14C dating, stable isotopes and diet reconstruction. We had planned to report on Taylor Hill together; I hope I've gotten it mostly right. I met Slow Turtle during excavation of the Indian Neck ossuary in August 1979. Although John did not want to see burials disturbed, he believed that archaeology could help Wampanoag people learn more about their ancestral past. He also felt strongly that archaeologists had a responsibility to share what they learned when burials had to be excavated. In this spirit, he allowed me to date samples from Taylor Hill. This project could not have been done without Betty's and John's encouragement and assistance, and this paper is, respectfully and affectionately, dedicated to their memory.

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Woodland Period Occupations at the Willowbend Site, Mashpee, MA

Leslie C. Shaw

Introduction

Archaeologists working in the coastal regions of the Northeast have long engaged in a debate concerning the seasonality and permanence of coastal settlement and the intensity of marine resource exploitation. The models that have been developed to explain the use of coastal environments in southern New England have ranged between intermittent and seasonal use and year-round settlements, with many of the possibilities in between also suggested (e.g., Bernstein 1993; Ceci 1979; Kerber 2002; Lightfoot 1985; Luedtke 1988; McManamon and Bradley 1988). The Willowbend Site (19-BN-286) in Mashpee, Massachusetts, on the south shore of Cape Cod adds to this discussion by providing a detailed study of use at a single site that has a clear stratigraphy that is backed by ten radiocarbon dates. The information recovered through excavations at Willowbend supports the interpretation that people used this site on a seasonal basis during the Middle Woodland (2000-1050 BP) and Late Woodland (1050-650 BP) periods.

While there have been many archaeological excavations on Cape Cod and the islands of Nantucket and Martha’s Vineyard, the research at Willowbend has tended to open up new questions about site seasonality and permanence rather than offer a single clear pattern. What this might indicate is that the people occupying the region during the 1350 years of the Middle and Late Woodland periods used flexible and varied strategies that allowed for quick responses to weather and resource variability. Permanent settlements on the outer Cape during the Late Woodland could have occurred, while at the same time a strategy of seasonal movement of settlement continued to be used in other areas of the region. These movements would have covered relatively short distances, possibly within a single drainage, and only a few moves would have been needed each year. The reasons for moving camp may have had more to do with non-food factors, such as exposure to the southern sun in the winter or access to fresh water, than to the immediate proximity of the site to a specific food resource. Cape Cod is a particularly compressed area in terms of habitats, with a 15km walk from the southern coast to the northern shore, which crosses through a variety of riparian, lacaustrine, and forest habitats (Dunford and O’Brien 1997). Therefore, a variety of habitats and resources would be accessible to occupants of Cape Cod, regardless of camp location. The site of Willowbend seems to fit this model of a seasonally utilized camp. The evidence for the cessation of site use around 730 BP may reflect a change in settlement strategy, possibly one associated with the incorporation of domesticated plants as part of the food resources used.

Background

The site of Willowbend was located during a cultural resource management survey of a parcel of land planned for housing construction along Shoestring Bay in southern Mashpee, Massachusetts, with the survey and research conducted through the University of Massachusetts Archaeological Services in Amherst (Shaw 1989). Willowbend (originally numbered Fox Run 3) is situated on a small terrace along a small stream, with steep-sided slopes rising on the north and east sides of the site. Although the bay is only about 200 meters to the south, this protected terrace with southern exposure is topographically ideal for occupation during cold and stormy weather.
The terrace, measuring 700 square meters, is covered with shell-bearing deposits that extend from just below the surface down to a maximum of 45cm below the surface. Cultural materials were also found below the shell deposits, but in lower frequency. One important aspect of this site is that at depths in excess of 25cm below the surface the stratigraphy is extremely well preserved, with distinct layers and features present. The recovery of artifacts and food refuse from well-defined contexts has allowed for a number of specific interpretations to be made (Shaw 1994). This includes a refinement of some of the projectile point types used in southern New England during the Woodland period. It also has provided associations of subsistence refuse, tools, and features that reflect use and discard over a relatively short period, with each distinct layer possibly representing a single season of occupation.

As in many New England shell midden sites, the upper shell deposit did not exhibit microstratigraphy, probably due to mixing from root action, burrowing by rodents, freezing and thawing, compression, and/or differential decomposition of shell (e.g., Sanger 1981; Stein 1983). There was no evidence that this terrace had been plowed in the historic past. The distinct deposits in the lower levels allowed for the recovery of artifact and organic materials in clear association with each other. The methods that have been used for shell midden site excavation in the past have often been inadequate to retrieve materials from distinct lenses within a midden (e.g., Sanger 1981; Spiess 1988). For the Willowbend site, a method of stratigraphic recording was adapted from the Harris Matrix approach (Harris 1979), a system developed to keep track of irregular deposits in a complex stratigraphy, such as those that might be encountered in historic sites. The Harris Matrix system was modified slightly for use at Willowbend to accommodate the specific conditions found in a shell midden (Shaw 1994). The first step was to excavate two perpendicular 50 cm wide trenches (a 10 meter trench oriented north/south and a 15 meter trench oriented east/west) to provide a continuous stratigraphic profile (Figure 1). Then 2 by 2 meter units were excavated off this

**Figure 1.** A map of the 1988 excavation units at the Willowbend Site (19-BN-286).
The Sequence of Human Occupation

The earliest evidence for occupation at Willowbend dates to the end of the Late Archaic period (6000-3000 BP) and the Early Woodland period (3000-2000 BP). Artifacts associated with these periods were recovered primarily in the sand layers located below the shell midden. The recovery of Late Archaic and Early Woodland artifacts at various depths within the sand and a lack of developed soil horizons suggests that prior to around 2500 BP this terrace may have had only semi-stabilized sand deposits exposed at the surface, with minimal soil development. The types of artifacts recovered, which are primarily projectile points, and the very low frequency of occupational debris, such as lithic flakes, faunal remains, or shell, can be used to suggest that the terrace was used for short-term, specialized activities. During this time, the area was probably a small, sandy terrace adjacent to a stream. The ocean would probably have been some distance from the site, with the modern Shoestring Bay either being much smaller or only a freshwater drainage. It is probable that the low frequency of marine shell in the early

Figure 3. The distribution of pit features at the Willowbend Site.
The Willowbend site does offer new information on the Rossville type. This form was found in both the sub-midden sand and the lower stratified levels of the shell midden. These lower shell deposits were dated by radiocarbon to the Middle Woodland (Table 1). This would indicate that while the use of some projectile point types were dropped from use at the end of the Early Woodland, the Rossville form continued to be used at least through the early part of the Middle Woodland.

Nine copper beads were also found at Willowbend, with five of similar dimensions found in the lower sand level in Unit 24 but there was no evidence of a defined feature in this location. The four other copper beads were found at various locations across the site in Middle Woodland midden layers. While there are no known native copper outcrops in eastern Massachusetts, there are a number recorded in Connecticut and the Connecticut River valley (Levine 1999). Copper beads are often thought to be associated with Early Woodland ceremonial trade (Ritchie 1969), but the evidence from Willowbend would indicate that copper was also traded in later times.

The ceramic assemblage from the site does include a small number of Early Woodland types, including Vinette I sherds from Features 13 and 19 (Figure 3). One complete vessel, crushed into 132 fragments, was recovered in Feature 20, in a context that was radiocarbon dated to the Early Woodland (2400±150 BP, Beta-31992, 13C corrected). This vessel has not been fully reconstructed but it appears to have been a small bowl with an everted rim. The grit-temper is particularly coarse and the vessel is thick-walled, with a generally uniform thickness on the rim of 4-5mm and expands out to 8-9mm in thickness on the neck and body. Both the interior and exterior surfaces of this vessel are smoothed with some randomly oriented and likely unintentional scratches.

Feature 20 was discovered in this lower, unstratified sand layer and it clearly dates to

![Figure 4. A sample of Rossville projectile points recovered from the Willowbend site; examples a and b were recovered from lower middens, c from Feature 5 floor, and d from sub-midden sand.](image-url)
Table 1. Radiocarbon dates from the Willowbend site.

<table>
<thead>
<tr>
<th>Sample No.*</th>
<th>(^{14}C) Date BP</th>
<th>(^{13}C)-Adjusted</th>
<th>Unit</th>
<th>Context description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beta-25143</td>
<td>780+100**</td>
<td>730+100</td>
<td>TP 686</td>
<td>from lower shell lense</td>
</tr>
<tr>
<td>Beta-31991</td>
<td>800+70</td>
<td>770+70</td>
<td>15NW</td>
<td>from black sand in Feature 29 (living floor)</td>
</tr>
<tr>
<td>Beta-25144</td>
<td>1100+60</td>
<td>1040+60</td>
<td>TP 686</td>
<td>Feature 686-2, associated with lower midden levels</td>
</tr>
<tr>
<td>Beta-25147</td>
<td>1140+70</td>
<td>1100+70</td>
<td>TP 692</td>
<td>Pit Feature 692-1 fill (from flotation)</td>
</tr>
<tr>
<td>Beta-25145</td>
<td>1150+130**</td>
<td>1120+130</td>
<td>TP 688</td>
<td>Pit Feature 22 fill (from flotation)</td>
</tr>
<tr>
<td>Beta-31995</td>
<td>1180+100</td>
<td>1130+100</td>
<td>34NE</td>
<td>from black sand in Feature 5 (living floor)</td>
</tr>
<tr>
<td>Beta-31993</td>
<td>1230+80</td>
<td>1180+80</td>
<td>27NW</td>
<td>from dense shell lense at base of midden</td>
</tr>
<tr>
<td>Beta-25146</td>
<td>1230+70</td>
<td>1190+70</td>
<td>TP 690</td>
<td>Pit Feature 690-1 fill (from flotation)</td>
</tr>
<tr>
<td>Beta-39549</td>
<td>1230+80**</td>
<td>1190+80</td>
<td>22SE</td>
<td>from sand layer below shell midden (from water screeened matrix)</td>
</tr>
<tr>
<td>Beta-31994</td>
<td>1250+90</td>
<td>1200+90</td>
<td>27SE</td>
<td>from black sand in Feature 5 (living floor)</td>
</tr>
<tr>
<td>Beta-31992</td>
<td>2450+150**</td>
<td>2440+150</td>
<td>26NE</td>
<td>Pit Feature 20 fill</td>
</tr>
</tbody>
</table>

*All samples are of charcoal; **Indicates extended counting time on small samples (but not AMS date).

the Early Woodland occupation on the basis of associated ceramics and one radiocarbon date. The feature (Figure 3) was a pit that contained the fragmented, thick-walled, grit-tempered ceramic vessel discussed above, five pigment stones (graphite and hematite), four deer antlers with the tines removed, six soft-shell clam valves (several of which had a reddish stain) and several bones (Shaw 1989:25). The bone sample included 10 deer phalanges, a beaver incisor, and several turtle bones (representing two sizes of turtle). A radiocarbon date of 2400±150 BP (Beta-31992, \(^{13}C\) corrected) was obtained from charcoal from the lower feature fill (Table 1). The pit feature, with its specialized array of objects, is unique in southern New England. Given the types of objects associated with the feature, it might have related to ritual activity and/or was a cache of special materials that the people depositing them had intended to retrieve later in time.

A human burial was found very deep in the sand deposit and it is probably associated with the Early Woodland use of the site. The cultural affiliation of the burial cannot be confirmed because avoidance and protection of the burial was chosen over excavation in an agreement mediated between the Massachusetts Historical Commission, the Massachusetts Commission of Indian Affairs, and the project developer. The burial was first identified when the cranium was exposed; no other portions of the burial were excavated. The evidence for the grave itself was only apparent within about 20 cm of the burial when the sand color became mottled. There was no indication that the grave had been excavated through any of the shell layers, which is why it is suspected that this burial dates to the Early Woodland occupation. This burial is located several meters away from Feature 20, and the two do not appear to be directly related.

Sometime after about 2500 BP, there is evidence for slightly more substantial soil development on the terrace. This corresponds with the time that estuarine habitats were expanding greatly
along the Cape Cod coast due to the stabilization of the shoreline with the slowing of sea level rise (Dunford and O'Brien 1997). It was also at this time that the Willowbend site saw more repeated and longer-term occupations with Middle Woodland (2000-1050 BP) residents using shellfish as one of their food resources. Based on the well-defined stratigraphy in the lower midden levels, the distinct artifact types, and a series of radiocarbon dates, the majority of the shell-bearing deposits were laid down in the 660-year period between 1290 and 630 BP (660–1320 AD). The ceramic and lithic artifacts recovered from the shell midden deposits reflect the typological changes that have previously been documented for this region, but they also indicate new types and associations.

The lowest levels of shell date to the middle part of the Middle Woodland. The shells in these levels are much more complete than those in upper levels, which might indicate that the midden accumulated quickly during this time, limiting the amount of shell crushing, either by human or natural agency. These deposits in the lower levels of the site do not cover the whole terrace area but seem to be limited in size. Once a deposit was identified during excavation, it was followed out as a separate stratum in order to maintain the highest degree of artifact association information possible. Keeping track of the horizontal and vertical extent of these lower deposits was a complex procedure, but the use of the Harris Matrix method of recording was helpful.

All but three of the 26 pit features are associated with the Middle and early Late Woodland occupations on the basis of stratigraphic association, associated artifacts and, in four cases, radiocarbon dates (Figure 3; Table 1). The pit features varied somewhat in form, with six shallow, "bowl-shaped" pits and eight deep, straight-sided pits, and as is common with pit features associated with shell middens, there was often evidence of multiple phases of use for the pits. Three pit features had a globular shape (Features 4, 7 and 9) and appear to have been used for steaming shellfish. There were some articulated clam valves remaining at the base of these features, with a lens of almost soil-free shell above this that could have represented the refuse from the meal.

Two features with a large and dispersed form were interpreted as domestic activity areas or structure floors, and were directly below shell layers (Figure 5). They are associated with the Middle Woodland occupations, and two radiocarbon dates from Feature 5 indicate use around 1165 years ago. The one that was almost fully excavated (Feature 5) was a sandy layer containing small flecks of charcoal, thus making this area very black in color. The sand was not brought in, but represents the natural sand deposit on the terrace. There were several places within this black area that were made up of a reddish or reddened sandy silt, possibly indicating the locations of open hearths. These features were surrounded by and covered by midden.
The Middle Woodland period (2000-1050 BP) in southern New England is represented by a number of projectile point types found in regional collections, but it is poorly understood, due in large part to the low frequency of sites or clearly defined occupation levels dated to this time (Moore 1997; Mulholland 1984). The projectile point and ceramic typology for this period was originally based largely on classifications derived from New York state (Funk 1976; Ritchie 1971) although recent excavations on Cape Cod, Martha's Vineyard and Nantucket are helping to refine the regional typology. Here again, the Carns site provides a strong excavated context for the use of Fox Creek and Greene points on the Outer Cape between 1600-1100 BP (Bradley 2005:48-49, 121).

Middle Woodland components are often identified on the basis of introduced traits, such as Fox Creek and Jack's Reef points, or the presence of exotic lithic raw material types, especially a yellow/brown chert or jasper from Pennsylvania. These traits are thought to have been introduced into southern New England through far-reaching exchange networks (Barber 1982; Mulholland 1984). Very little is understood about the indigenous aspects of Middle Woodland components, which would establish continuity with the Early Woodland period. These problems in identifying Middle Woodland components are probably responsible for the relatively low frequency of sites of this period recorded for southern New England (Mulholland 1984).

The largest occupation of the Willowbend site occurred during what traditionally has been considered the latter half of the Middle Woodland and early part of the Late Woodland. Results from the analyses of collections from Willowbend have identified several key trends for this period in lithic projectile point types. The first is that the Fox Creek types, which are considered to be similar to a form found in coastal New York (Moore 1997), were probably incorporated into an otherwise local artifact tradition. Three examples of Fox Creek Stemmed points were recovered from the Willowbend Site (Figure 6). And as was mentioned earlier, a form similar to Rossville continued in use through at least part of the Middle Woodland.

Another important observation from the stratified and dated levels at Willowbend is that triangular bifaces were well established in the region by the latter half of the Middle Woodland and were not just a Late Woodland type as often expected. Ritchie (1971:31) notes what he calls the triangular Levanna point first appearing in New York state around 1250 BP and becoming more common by 1050 BP. These dates correspond quite closely to those seen at Willowbend, indicating a very rapid spread of this type across much of the Northeast. It remains to be determined whether this type is associated with the introduction of bow and arrow technology regionally. The sample of seventy-one triangular bifaces recovered at Willowbend clearly indicates that there is a significant overlap in size between the Late Archaic Squibnocket triangular points and the late Middle Woodland to Late Woodland Levanna types, as defined quantitatively by Ritchie (1969, 1971). In addition to the confusion due to the overlap in size, there is also an overlap in the use of quartz as a primary lithic material source. For many years, the Squibnocket Triangle was often identified based on the fact that it was made of clear or white quartz, a material type commonly used in this time period across southern New England. Of the seventy-one triangular points from Willowbend (Figure 6, next page), 36 (51%) are made of white quartz. Both the size overlap and the similar preference for lithic material type between Late Archaic and Woodland triangular types makes the use of either type as a temporal marker invalid. Clearly more sites with tight stratigraphic context are needed to determine if there are typologically significant differences between them.

The analysis of the bone, shell and floral remains from stratigraphically distinct layers and features at Willowbend has provided key information on both strategies of adaptation to the Cape Cod environment and also
composed primarily of quahog (*Mercenaria mercenaria*), which made up 72% of a shell sample from this layer. The difference in species from the upper and lowest levels of the midden may indicate that the water in Shoestring Bay was slightly warmer at the earlier date, with changes in temperature and the silting in of the bay encouraging soft shell clam populations to increase in the later period (Braun 1974; Sanger and Sanger 1986). While shellfish can be collected at any time of the year, as a resource they offer a predictable and accessible protein source during lean winter months, and a heavy use during the winter has been noted at some sites (Bernstein 2002).

The faunal remains from Willowbend also fit a pattern expected for winter occupation. Fish remains were common in several contexts, but these were almost exclusively of very small fish. The majority of identifiable elements are tomcod (*Microgadus tomcod*), a small anadromous fish that spawns at the mouth of small streams between November and February (Bigelow and Schroeder 1953) and a species of the herring and/or alewife family (*Clupeoidea*). Alewife spawn in the spring, also in small streams. White-tailed deer (*Odocoileus virginianus*) was by far the most common mammal species found in most site contexts. The fragmentation of the deer bone varies across different contexts, with the least fractured bone found in the lowest shell layer (Stratum DD). Mammal species other than deer were represented in very low numbers at Willowbend, and include raccoon (*Procyon lotor*), fox (*Vulpes fulva*), otter (*Lutra canadensis*), beaver (*Castor canadensis*), rabbit (*Sylvilagus sp.*) and a small carnivore, probably a weasel. All these could be hunted or trapped during the winter, and

**Figure 6.** Three Fox Creek projectile points recovered from the Willowbend site include two (a & b) from Feature 5 living floor, and a third (c) from the shell midden. A total of 71 triangular projectile points (examples d-f) was recovered from Willowbend and most were clearly from Middle and Late Woodland period contexts.

The identification of shellfish species found in the upper crushed shell deposit (Strata A and B) indicated that soft shell clam (*Mya arenaria*) was most common, comprising 74% to 87% of the analyzed shell samples (Shaw 1989). A largely undisturbed shell lens at the base of the midden deposits (Stratum DD) was

suggestions of seasonality of site use. From these data studies, a winter occupation is proposed for the Middle Woodland and early Late Woodland periods, and this is further supported by the location of the site on a terrace protected from northeast winds. The small stream at the edge of the site could have provided a year-round source of fresh water, and it was likely also from this stream that tomcod (*Microgadus tomcod*) were collected during their December spawning runs. Additional studies, such as shell thin-sectioning and completion of the floral sample analysis, will provide additional seasonality information in the future.

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although they can be eaten, their winter coats of fur may have been a major reason for their capture. Within the faunal samples analyzed, there is an absence at the site of migratory birds, sea mammals, large sea birds, and deep-sea fish, all resources that may have been seasonal in nature in their availability or ease of capture (Chilton and Doucette 2002).

The floral remains from Willowbend reflect only native plant use, with no introduced domestic species identified (Appendix A by Tonya Largy, in Shaw 1989). Although a very extensive program of flotation and fine mesh water screening was used, the floral assemblage is small. There is no evidence, at least in the deposits analyzed, that late summer or fall resources - such as berries or nuts - were being used in great numbers. Although negative evidence is relatively weak, when the floral data are combined with the faunal data, they generally support a picture of winter site use, beginning after the most productive fall months.

The Willowbend site appears to have fallen out of use soon after 730 BP (1220 AD) on the basis of ceramic data from the site and the distribution of radiocarbon dates. The very first evidence of maize in floral samples from archaeological sites in southern New England comes at around 1000 BP and it was probably incorporated only as a supplemental resource (Cassidy and Webb 1999; Chilton 1999). There have been arguments that as agriculture became more integrated into the annual subsistence that people might have shifted settlement patterns to focus on river floodplains. Whether the abandonment of Willowbend as a winter camp relates at all to the introduction of agriculture to the region is certainly impossible to determine although it may offer an important data set for use in this debate.

Conclusion

The many shell midden sites found along the coast of New England often date to the Woodland period. While there are clear environmental reasons for this, the most notable among these were the slowing of sea level rise and the development of estuaries around 3000 BP (Dunford and O'Brien 1997), the ways in which people scheduled their movements, and variation in the types of resources used. Cape Cod offered a particularly unusual environment when compared to the environments found along the rest of New England's coast, and it is here that the earliest evidence for permanent, year-round villages has been proposed (McManamon and Bradley 1988). But there is also clear evidence for seasonally specific sites on the Cape during the same time, which underscores the importance of variation in subsistence and settlement strategies.

One important factor in the discussion of seasonality in Woodland sites of Cape Cod has been the relative advantage of creating a permanent settlement (Little 1988; Luedtke 1988; Thorbahn 1988). What were the advantages to the people of Cape Cod, or of southern New England in general, in the shift to permanent villages? The introduction of domestic plants and horticultural practices has been one explanation, as has the growing need for the management of social relations in the face of increasing population density. While archaeologists seek to identify clear patterns through time, the Woodland peoples of Cape Cod may well have recognized the need to stay flexible and may have shifted strategies of both settlement and resource use in response to short-term climatic variations. While there has been increasing evidence for maize agriculture in southern New England by around 1000 BP (Cassidy and Webb 1999; Chilton 1999), archaeologists have yet to determine the extent to which cultigens were used and how such use could have blended with adaptations already in place. The apparent abandonment of Willowbend as a winter camp towards the end of the Late Woodland may be tied to changes in response to agriculture, however if this is the case then we must remember that the site remains only one archaeological example, and much more work needs to be done.
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Spiess, Arthur E.

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Thorbahn, Peter F.
On October 5, 2006, a long time member of the Massachusetts Archaeological Society and supporter of Cape Cod archaeology passed on. Marie Lelia Ostenkamp Eteson died of an illness associated with lung cancer at her home in Orleans. She was eighty-six.

Among her many credits were two substantial contributions on Historic period Wampanoag sites to the *Bulletin of the Massachusetts Archaeological Society*. The first was “The Mattaquason Purchase Site, (M48N6), North Chatham” which appeared in 1978, Volume 39(1). While several members of the Cape Cod Chapter participated in the excavation, it was Marie that maintained the inventory of artifacts, oversaw the analyses and coordinated the report writing. In 1982, she completed a second article, “The Hayward’s Portnimicut Site (19-8N324)” in Volume 43 (1). In a subsequent *Bulletin*, the late Barbara Luedtke described Marie’s work as “a model of archaeological responsibility, and also an encouraging demonstration of how much can be done with relatively undocumented material”. An additional testimony to Marie’s influence is her mural that depicts Cape Cod Native peoples living in the Stony Brook area of Brewster. This mural now hangs adjacent to the entry hall of the Robbins Museum in Middleborough.

Marie was, indeed, a “Woman for all Seasons”. She graduated from The School of the Worcester Art Museum, and then worked as a draftsman at the Underwood Sound Laboratory at Harvard University. During World War II, she served as a cartographer in the Women’s Army Corps yet also found time to study drawing and oil painting in Paris. After the War, she established a business called ‘The Pottery’ in Worcester, then moved it to Orleans on Cape Cod in 1951. In Orleans, Marie was an active member of the community. She worked with her husband, Jim, serving as the book-keeper for his Marine Radio-telephone Electronics business, while continuing to paint, create sculpture and make pottery. All this was in addition to her passionate pursuit of archaeological endeavors and the tending of her spirituality at the Episcopal Church of the Holy Spirit.

In those days, Marie could often be seen, leaving the yard of her historic Cape Cod home, on the way to a local market in her pony cart. She was an intellectual and an artist; a person who was never static. Although these two aspects of her personality sometimes collided, she was always an inspiration to those who knew her.

*Marilyn Crary*
CONTRIBUTORS

JEFF BOUDREAU is a former chairman of the Cohannet Chapter of the M.A.S. As a flint knapper, he has conducted replicative studies of quartz Squibnocket points, felsite Neville points and, most recently, several forms of fluted points. He is also the official M.A.S. photographer.

JAMES W. BRADLEY is president of ArchLink and director emeritus of the R. S. Peabody Museum of Archaeology in Andover, MA. He has written extensively on archaeological topics across the Northeast.

MARILYN CRARY is a former officer and Trustee of the Massachusetts Archaeological Society and, along with her friend Marie Eteson, was a key member of the Cape Cod Chapter. She lives in Eastham.

LEONARD W. LOPARTO is a staff archaeologist with the Massachusetts Historical Commission. He received his MA in Anthropology from Brown University in 1985 and has done extensive archaeological field work on the Cape and Islands. He lives in Orleans.

FRANCIS P. McMANAMON is Chief Archeologist for the National Park Service and Departmental Consulting Archeologist for the U.S. Department of the Interior in Washington, D.C. He directed a multi-year survey of the Cape Cod National Seashore during the 1980s and has published several volumes resulting from that work.

WILLIAM MOODY's interest in archaeology began nearly 50 years ago when he discovered his first projectile point on his grandparents' property along the Alafia River in Riverview, Florida. He is a past Trustee of the Massachusetts Archaeological Society and has written a number of articles for the MAS Bulletin, as well as for several other journals.

LESLIE C. SHAW has taught in the Department of Sociology and Anthropology at Bowdoin College in Brunswick, Maine for the past ten years and done research in Central America, North America, and on Easter Island. Although currently directing an excavation project at a large Maya city in the tropical forest of northwestern Belize, she continues to work in New England with a special focus on Woodland period sites.
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