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## **BROAD REACH REVISITED: PRELIMINARY RESULTS OF THE 2006 DATA RECOVERY EXCAVATIONS**

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The Broad Reach site is located in southwestern Carteret County, about 5 miles east of the town of Swansboro. The site occupies at least 50 acres of a broad terrace immediately adjacent to the Bogue Sound south of Sikes Creek. It has been suggested that this section of the North Carolina coast was an area where the territories of at least Protohistoric, but possibly also prehistoric, groups overlapped—an area where the archaeological record shows a mix of traits typically associated with the Siouan, Algonquian, and Tuscarora that indicate either trade, borrowing, intermarriage, assimilation or a combination of the above. During brief field sessions in 1991 and 1992 Mark Mathis of the Office of State Archaeology and many other archaeologists and volunteers conducted salvage excavations on a portion of the Broad Reach site (31CR218). Mathis's studies were confined to the area of a planned marina, access channel, and spoil basin, but he believed that by working in the area just outside the established site boundary and core midden area, he would be able to examine the less "noisy" habitation area where features could be more easily assigned to components and postmold patterns could be more easily distinguished (Mathis 1993a). Mathis found hundreds of features, the outlines of several structures, and the remains of as many as 30 people placed in a variety of burial forms, and although he came back with a great deal of data he ended up with just as many questions as answers. The marina and access channel have been in use for awhile, but plans for the development of a subdivision were postponed for many years.

For five months in the spring to summer of 2006 TRC archaeologists were able to examine much more of the Broad Reach site, and although the area investigated included portions of the core midden area and the immediate periphery and can be characterized as "noisy," many structural and other features could be easily delineated and this area was most certainly within the habitation area. Investigations began with a Phase II that involved stripping a several meter wide swath along the proposed development's road system and within the planned sedimentation ponds. This determined that the site was indeed confined to about the southern 250 meters of the landform, primarily consistent with the extent of the shell midden, but extending farther to the north and capped in large areas by soil midden or overburden rather than shell midden. The shell midden was as thick as 25 cm in the south-central portion of the site and pinched out to the north and east, but continues onto the adjacent property to the west. The portion of the site containing the densest features was largely below the shell midden, and although it is tempting to say that this area was simply protected from the plow by the shell midden, the fact that large areas of intact features (including structural features) were found north of this core shell midden area and that during the Phase II stripping almost no artifacts or cultural features were located north of the southern 250 m of the landform strongly indicate that the site did not extend farther to the north even before historic agricultural activities began. That is, no indications were found that habitation or cemetery areas exist outside the periphery of the shell midden. No post molds or evidence of human remains were found during data recovery investigations on three sites located about 400 m to the north, providing further evidence that the habitation area associated with the Broad Reach site is confined to the area beneath and immediately adjacent to the shell midden.

During the data recovery, large areas east and west of the marina were stripped, beginning in the higher density areas observed during the Phase II and expanding out as feature density dictated. The data recovery was confined to the area north of the CAMA set back so an approximately 100 foot strip adjacent to the sound was not examined during this study. Considering how actively the shoreline is currently eroding, it is very likely that the site originally extended much farther south and the portion of the site examined during the data recovery is just the northern portion of a much larger site. At the end of the data recovery fieldwork at Broad Reach almost nine acres of topsoil, overburden, and midden had been stripped and 25 human burials, 16 dog burials, 30 pot busts, 744 shell pits, 1,585 soil filled pits, five lithic caches, 53 charcoal pits, and 22,265 post molds had been exposed (Figure 6-1). The southwestern corner of the study area contained the highest density of features, but the low and wet area between this corner and the marina access channel was virtually devoid of features and this pattern continued into the southwestern corner of the area east of the marina. Feature density also dropped off abruptly to the north across the project area and to the northeast in the area east of the marina.

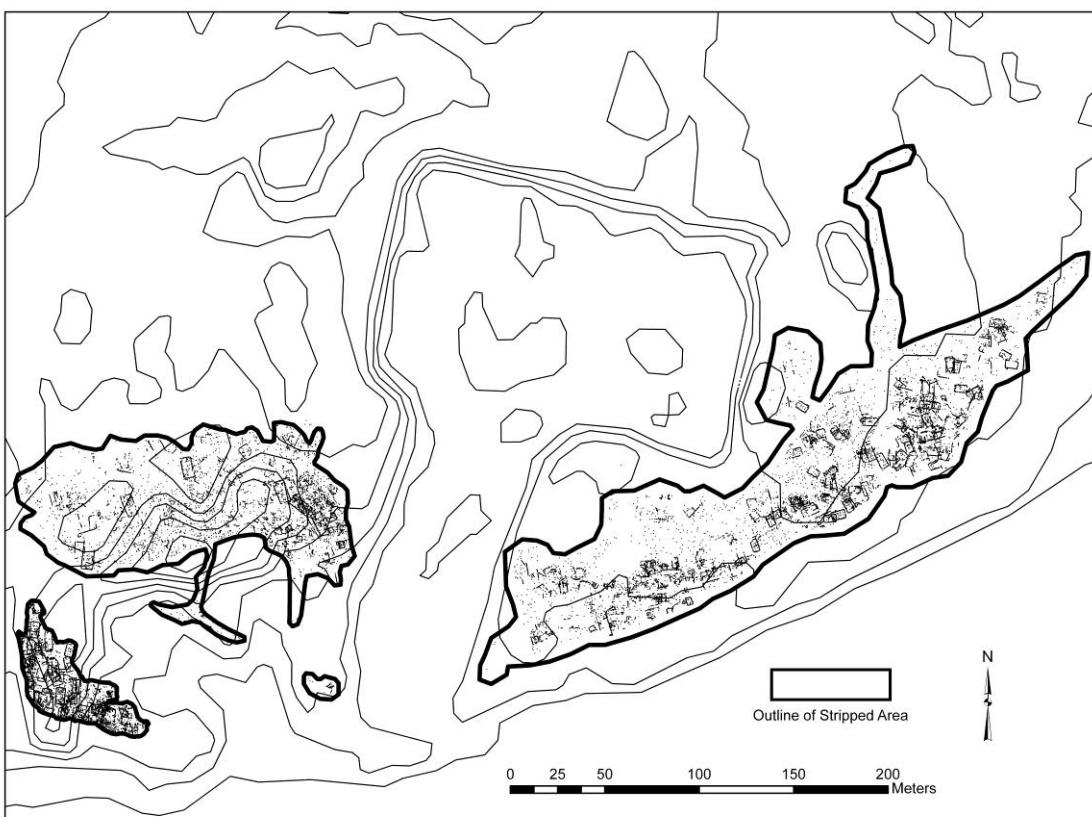


Figure 6-1. Plan map of Broad Reach Site showing features and stripped area outline.

## PIT FEATURES

The pits containing dense shell debris ranged from 30 cm to several meters in diameter and were found across the entire site. The vast majority of the shell observed in these pits and in the parts of the midden visible during the study was oyster, with some clam, and small amounts of scallop and whelk. Sixty percent of the almost 50 thousand faunal elements analyzed are some type of fish remains, including those of sturgeon, catfish, toadfish, bass, menhaden, burrfish, gar, flounder, croaker, drum, shark, and ray. Other fauna represented in features include six different types of turtle (including sea and snapping), Canada goose, hawk, loon, turkey, heron, finch, white tailed deer, red wolf, fox, raccoon, skunk, mink, cottontail, beaver, opossum, squirrel, harbor seal, and dolphin. Although few features contained obvious deer remains (MNI=4), thirty one features produced deer antler and it is likely that these were used as tools at the site. Obviously the shellfish, and to some extent the other marine resources, were the big attraction for the site, probably for all components represented. A few pits contained burnt and crushed shell, but by far most of the shell pits contained entire halves or large pieces of shell likely representing the remnants of individual episodes of roasting. Faunal preservation was excellent in the shell pits and many shell pits were excavated just because faunal material was observed in the mix.

Charcoal or smudge pits were very uniform in size and depth—about 30 cm in diameter and 20 cm deep. The function of these pits is debated, but they were clearly not used as bug repellent devices at this site since the constant wind was an effective deterrent of airborne bugs and only one charcoal pit was found on the three sites investigation a few hundred meters to the north where very little of the wind's effects could be felt and numerous flying bugs assailed the crew. Likely these features served as cooking pits in lieu of rock hearths, perhaps for drying fish or for pottery construction. A GIS analysis performed using a nearest neighbor clustering program showed that 41 of the 53 charcoal pits were within 10 meters of a structure—perhaps not saying a lot since there are so many structures—but also that half of the charcoal pits were clustered in three groupings that appear to be centrally located in relation to groups of structures. These may represent communal cooking or processing areas. The contents of these pits involved primarily burnt wood fragments, but *zea maize* fragments were found in at least three of the charcoal pits. *Zea maize* fragments were also recovered from other feature types, including one dog burial, two large soil filled pits, and one large shell pit. Wood charcoal from seven charcoal pit features sent for radiocarbon analysis returned calibrated intercept dates of A.D. 670 (Beta 249170), A.D.1280 (Beta-249173), A.D. 1280 (Beta-249166), A.D.1290 (Beta 249168), A.D.1400 (Beta 249172), A.D.1430 (Beta-249167), and A.D.1480 (Beta-249165). Although these features are clearly associated with the Late Woodland occupation of the site, only one of these pits contained cultural material—several White Oak sherds were found in the feature dated to A.D. 1430.

## STRUCTURAL FEATURES

Post mold patterns formed partial to almost complete outlines of one circular, 10 square, and almost 100 rectangular structures (Figures 6-2 and 6-3). Only 80 of the square to rectangular outlines have at least three walls and three corners and can be measured for maximum length and width with confidence. Many of these overlapped and it will not be possible to attribute all of the features falling inside a structure's post outline with that structure. The majority of the post molds were 6 cm in diameter in plan view, at least 12 cm deep, had either a pointed or a slightly



Figure 6-2. Close up of post mold patterns in a portion of the site east of the marina.



Figure 6-3. Close up of post mold patterns in the southwestern corner of the site.

rounded base, and contained shell fragments (Figures 6-4 and 6-5). One interesting pattern noted was that the posts in the walls of many of the structures excavated as individual units angled in toward the interior of the structure.

The largest structure uncovered during the 2006 fieldwork measured  $15 \times 6$  meters—the largest structure found during the 1991–1992 fieldwork had one wall that was almost 19 meters long, although this was not fully uncovered and may have involved more than one structure—and the smallest rectangular structure on the site measured  $3 \times 5$  meters. Common structure sizes include  $12 \times 5$  and  $4 \times 7$ , with  $8 \times 4.5$  the most common size in the southwestern corner of the site and  $4 \times 6.5$  the most typical for the area east of the marina. Clearly there was not a standard house size and clearly, although most are *longer* along one dimension than the other, most are not what we would actually call *longhouses*. These structures would have comfortably housed nuclear families and perhaps portions of an extended family, but not a large extended family, and are typical of Algonquian houses rather than Iroquoian houses in this regard. The one clear circular pattern is only 2.5 m in diameter and probably represents a special use structure. The small  $2 \times 2$  to  $3 \times 3$  meter square outlines are also good candidates for special use structures. Assuming that the larger square and rectangular structures were primarily houses and not special use structures—and that may not be true for all of them but is certainly true for many of them—they seem to have been tailored to the size or perhaps the status of the family they were meant to house.



Figure 6-4. View of typical structure outline in the southwestern corner of the site.



Figure 6-5. View of post mold profile along structure wall.

John White depicts structures of varying sizes at Pomeiooc, although as Loftfield and Jones (1995) note, the construction technique appears to be somewhat different from that used to construct houses at Broad Reach and other coastal Carolina sites and the site layout is much more centralized and organized than that observed at Broad Reach. White's depiction of the village of Secotan also shows a variety of structure sizes and a less centralized site layout, but the construction technique seems to be similar to that at Pomeiooc. Post molds at Broad Reach were spaced from 5 to 10 cm apart, but were typically at the shorter interval and most were only 6 cm in diameter. The frames of the structures depicted by White were constructed with much thicker saplings and these were placed much farther apart. Also, most of the structure outlines at Broad Reach had rounded corners.

Most of the structures at Broad Reach were outlined by a continuous series of posts with gaps only where large pit features overlapped. Because large pit features overlapped parts of structures it may be difficult to determine where openings or doorways might have been. Almost all of the rectangular structures are oriented with the long axis running roughly north-south. Prevailing winds are from the west and are constant, differing by day or time of day only in velocity. During the late spring and summer months this wind serves to clear this portion of the project area of bugs and keep it noticeably cooler than the area just a few hundred meters to the north. In the winter and early spring, however, this wind is a powerful and unfriendly force, making this location much colder than the area a few hundred meters to the north and throwing any soil or light debris not covered with vegetation into the air. If doorways were on the short end as depicted on many of the structures in White's drawings then structures oriented with the long axis north-south would have provided more protection from the elements during any season. As Loftfield and Jones (1995) note also, the close spacing of posts seen on many coastal Carolina structures including those at Broad Reach would have resulted in a stronger wall and may have afforded more protection from this wind.

Few structures have been found on other Coastal Plain sites that are identical to those at Broad Reach. The closest may be the structure uncovered at the Uniflite site in Onslow County that was  $13 \times 6$  m and had rounded corners and closely spaced posts (Loftfield 1979). Other presumed Late Woodland Coastal Plain structures have been found that are dissimilar to those at Broad Reach in some or all aspects, such as the partial structure outline uncovered at the Minnessott Beach marina near the Neuse River that was almost 10 m wide and had 6 to 10 cm diameter posts spaced 25 to 35 cm apart (Cassedy and Jorgenson 2005); the two structures at the Amity site had rounded corners and were similar in dimensions to those at Broad Reach, although posts are spaced farther apart (Gardner 1990); the structure at Hammocks Beach West was  $17 \times 4.5$  m and had posts spaced 30 cm apart (Daniel 1999); and the structure found at the Permuda site in Onslow County was  $8 \times 4$  m wide, but had squared off corners and widely spaced posts (Loftfield 1985). There is some indication thus far that the round structures are earlier than the square to rectangular structures, but further confirmation is needed.

## ARTIFACTS

Half of the over 11 thousand ceramics from the data recovery at this site are Hanover series sherds, one-third are White Oak series sherds, and the remainder are small amounts of Hamp's Landing, Mockley, Cape Fear, New River, Stallings Island, and Mount Pleasant. A few shell tempered burnished sherds were found, but these are considered to be White Oak specimens. The distribution patterns of White Oak and Hanover sherds are very similar in overall areal extent, but more features in the eastern portion of the site and more features in the southwestern corner of the site produced White Oak sherds and more features in the area just west of the marina produced Hanover sherds (Figure 6-6). Only a few radiocarbon dates have been obtained for the 2006 Broad Reach investigations so far—wood charcoal from a feature containing White Oak sherds returned a calibrated intercept date of A.D. 1430 (Beta-249167) and wood charcoal from six features containing Hanover sherds returned calibrated intercept dates of A.D. 220 (Beta-251291), A.D. 230 (Beta-251298), A.D. 250 (Beta-249180), A.D. 250 (Beta-251296), A.D. 400 (Beta-249171), and A.D. 1160 (Beta-249176). Radiocarbon dates obtained from material collected during Mathis's studies include a calibrated intercept date of A.D. 430 (Beta-58941) for Hanover, and dates of A.D. 1280 (Beta 58945), A.D. 1350 (Beta-58943), A.D. 1350 (Beta-58944), and A.D. 1412 (Beta-58946) for White Oak.

As is typical of coastal sites, only about 2,500 lithic artifacts were collected during the data recovery at Broad Reach. Just for comparison, almost the same number of features were excavated at the Contentnea Creek site in the Inner Coastal Plain as at Broad Reach—roughly 600—and 48,000 lithics were recovered from that site (Millis 2009). As another point of reference—2,100 lithic artifacts were found in a single feature at the Long Point site, which is just a short distance up the White Oak River from Broad Reach (Shumate et al. 2000). Three-quarters of the lithic material from Broad Reach is quartz, and smaller amounts of quartzite, chert, and rhyolite were found. Almost one-third of the lithic artifacts are pieces of debitage, but many of the more than 100 battered cobbles found must have been used for purposes other than lithic reduction since so little evidence of lithic reduction activity was found. Sixty three of the 74 projectile points found are Swannsboroughs (following Loftfield's spelling) and another 12 Swannsborough points were recovered during the 1991–1992 fieldwork. The Swannsborough points were found across the site, but one-third of them were found in the small area stripped in the southwestern corner. An area of about 30 by 100 meters was stripped in this portion of the site and in addition to the large number of Swannsborough points, this area also contained a high

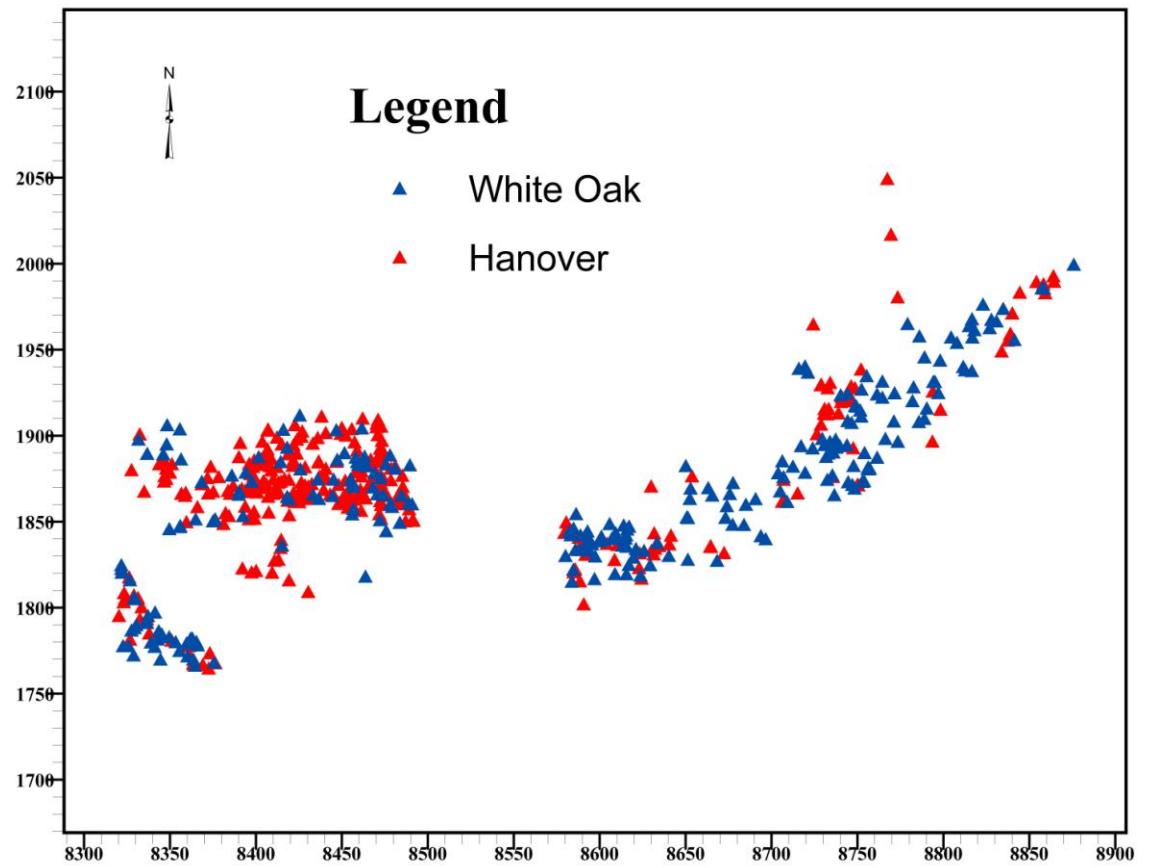


Figure 6-6. Distribution of features containing White Oak and Hanover sherds.

density of rectangular structures, the largest shell pit, and a predominance of features containing White Oak sherds. Swannsborough points were the majority type at Long Point site as well, where they were associated with radiocarbon dates from A.D 480 to 1040 (Shumate et al. 2000), and a radiocarbon date of A.D. 980 is associated with three Swannsborough points from Hammocks Beach West (Daniel 1999). Cassedy et al. (2001) point out the similarities in the morphology of the Swannsborough points to that of the Middle Woodland Yadkin, Potts, and Nomini types, but although Middle Woodland period ceramic types were recovered from Broad Reach, there appears to be a stronger association between the Swannsborough type and the Late Woodland White Oak component.

## HUMAN BURIALS

The remains of 25 individuals were found during the 2006 fieldwork. Mathis noted in 1993 (Mathis 1993b) that the only burial types missing from this site are extended individuals and isolated cremations—three isolated cremations were identified during this investigation. These were in shallow to deep circular pits that appeared to be typical soil-filled pits on the surface. They each contained what appeared to be the remains of one individual scattered throughout the pit. Two of these were in fairly close proximity in the northeastern portion of the study area and the third was on the west side of the marina. Only one individual was found in

what might have originally been intended as an ossuary, but no true ossuaries were encountered during the 2006 excavations. This individual was found in a small separate pit within a 5 m diameter pit (the largest pit on the site and in the southwestern corner) that was covered with a layer of midden soil and then a layer of oyster shell. Seven other apparently empty pits were found in this large pit, but no other human remains were discovered. Other burials found during the 2006 fieldwork include 14 individuals placed in single interments in oval pits, one burial containing the partially burned remains of an adult and a child, and five persons individually interred in various shaped pits. Human burials were found across the site, but several are in close proximity to others and a definite cemetery area was located in the western portion of the site. This cemetery appears to be associated with the Hanover occupation of the site. Two individuals in this cluster were found with almost complete Hanover pots, Hanover sherds were found with two other individuals in this cluster and the six closest features to this cemetery also produced Hanover sherds. In addition to the Hanover sherds found with four of the individuals interred in this cemetery, pit fill containing three other human burials produced Hanover sherds—all of these were also on the west side of the marina. Fill containing five of the human burials east of the marina and the one cremation burial west of the marina yielded White Oak sherds.

A variety of grave goods were found during the earlier investigations, including shell and copper beads, clam shells, a stone cup, shark teeth, and turtle shells. One individual found during the 2006 excavations was interred with a turtle shell below the mandible. Three individuals were interred with a hammerstone, and in addition to a hammerstone, one individual was also interred with a gorget and 22 shark teeth. A few clam shells were found in the burial pits of three individuals and because these were found at the base of a pit containing only soil, they were regarded as potential funerary offerings. Oyster shell is by far the most predominant type of shellfish present on the site and the clam shells and hammerstones may have been rare enough to be considered worthy funerary offerings.

## CANINE BURIALS

Dog burials are probably the most intriguing features at Broad Reach. The remains of 16 dogs were found during the 2006 investigation. All of the dogs were found in relatively shallow soil-filled pits, although it is not clear whether the pits were excavated solely for the purpose of burying the dogs. Half of the dogs were laid in the pit on their side and the other half were disarticulated to an extent that it is possible that they had been defleshed prior to burial (Figures 6-7 and 6-8). Hanover sherds were found in the fill of pits containing six of the canine burials, and White Oak sherds were found with two of the canine burials. Two dog burials were found within the western cemetery and the remainder were spread across the site, although more were found west of the marina than east of the marina. Only preliminary results are available for the study of the dog remains, but some interesting observations were made—pathological changes on numerous vertebral elements suggest that several of the dogs carried or hauled heavy loads and the stable isotope analysis results show all of the dogs within the range of C<sub>4</sub> plant consumption, typically indicating a strong maize component to the diet (Heather Lapham, personal communication 2008).



Figure 6-7. View of canine burial Feature 3573.



Figure 6-8. View of canine burial Feature 24570.

## SUMMARY

As with many multicomponent sites, occupations by different groups did overlap horizontally and further analysis of the data is necessary to attempt to assign features to specific components. Thus far, features do not seem to conform to Mathis's model of shell midden accumulation and habitation progression across the landscape—that is the presumed earlier (Hanover) habitation area does not seem to be south of the presumed later (White Oak) habitation area. In fact, the area containing the most Hanover sherds and the cemetery area associated with Hanover occupation is located north of the densest White Oak occupation. Twenty post molds contained Hanover sherds, but 42 post molds contained White Oak sherds. If the Hanover at this site is earlier than the White Oak—and the radiocarbon dates we have so far indicate that it is—then it is a little easier to explain how a Hanover sherd ended up in the fill of a White Oak structure post than how a White Oak sherd ended up in the fill of a Hanover structure post, making a stronger case for the structures to be associated with the White Oak occupations. One other line of evidence is the distribution of these ceramic types—White Oak sherds were predominant in the southwestern corner, which is the area of the densest structure outlines, and also in the area east of the marina where many other rectangular to square structure patterns were found. Hanover sherds were predominant in the area west of the marina where, with the exception of the easternmost portion, there are large areas with no discernable structure patterns.

The 2006 investigations have added even more dimensions to an already complex picture of human burial practices at this site and it may be that some of the differences in burial types are related to the timing of the death, the manner of death or some internal groupings such as clan or status rather than broader temporal or cultural patterns. Clearly though, at least some of the burials can be associated with a particular pottery type and radiocarbon and osteological data will provide additional clues for grouping burials on the site and hopefully patterns will emerge. One thing we can be reasonably sure of is that the occupations at Broad Reach occurred during the prehistoric and Protohistoric periods—not a single historic period artifact was found in any of the features at Broad Reach.

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