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## PREHISTORIC SETTLEMENT PATTERNS ON THE NORTH KENT COAST BETWEEN SEASALTER AND THE WANTSUM

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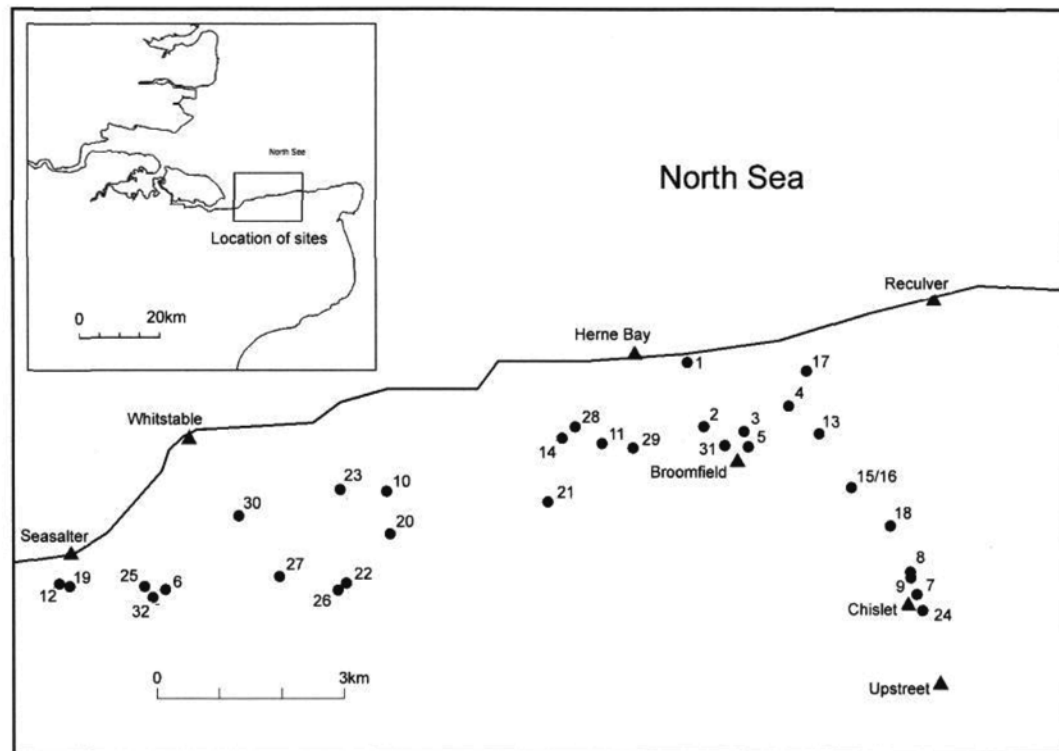
The area of the north Kent coast addressed in the following study comprises the London Clay-dominated coastal flats, levels and low hills lying north of the Blean, west of the Wantsum Channel and east of Seasalter Level (**Map 1**). The area measures approximately 15km (10 miles) east-west and 4km (2½ miles) north-south, this representing 60km<sup>2</sup>. Archaeological remains dating from the Mesolithic to the Roman period were examined with the intention of determining whether significant changes in settlement/occupation patterns could be discerned over this protracted period and, if so, whether the factors underlying those changes could be identified.

A total of 32 sites were investigated and are listed below (Reculver, despite its Late Iron Age origin, has been excluded because of its largely military function during the Roman period, see Rivet and Smith 1981, 446-7; Philp 1959, 105). The statistical evidence derived from the sites is necessarily indicative rather than precise and, as new sites are constantly being uncovered, the list cannot be fully comprehensive. It is also probable that some of the sites represent parts of the same large, widespread settlements, others evidence of relatively transient occupation activity. Despite this it is proposed that the sample is large enough for significant conclusions to be drawn in terms of period-specific settlement activity and for new insights to be gained into the way settlement patterns have changed in the area over several thousand years.

### Background

The archaeological potential of the study area was considered to be low until recently, probably because of its desolate and thinly settled nature during recent and historical times, as this description of the parish of Herne, in the eastern part of the coastal levels, makes clear:

This parish is situated about six miles north-eastwards from Canterbury, in



Map. 1 The distribution of the 32 sites covered in the text and listed in Table 1.

a wild and dreary country; there is a great deal of poor land in it, covered with broom ... (Hasted Vol. VIII, 1800, 84)

The poor state of preservation of many archaeological features in London Clay provides another reason why so few prehistoric remains have previously been recognized in the study area (Oswald *et al.* 2001, 84-85). However, much archaeological investigation has now taken place prior to road building, pipeline installation, house building and other developments. For example, in 1995 an 8km -long and 12m wide swathe of land was stripped along the western margin of the Wantsum Channel in advance of the installation of a new wastewater pipeline (Parfitt and Hutcheson 1995; Parfitt 1996, 16-18, see Sites 1, 2, 3, 4, 7, 8, 9, 13, 16, 18 and 24 below). This provided an opportunity to examine in a detailed and non-predictive way the prehistoric archaeology of the eastern part of the coastal levels in the study area. As a consequence of this and other work it is now clear that the study area was characterized by a complex process of settlement development and supported many later prehistoric settlements for more than a thousand years.

#### List of sites

The date-ranges provided below are based on pottery or flintwork analysis and the following contractions apply:

<i>Meso</i>	Mesolithic	before c.4000 BC
<i>Neo</i>	Neolithic	c.4000 - c.2000 BC
<i>E/MBA</i>	Early/Middle Bronze Age	c.2000 - c.950 BC
<i>LB/EIA</i>	Late Bronze/Early Iron Age	c.950 - c.500 BC
<i>E/MIA</i>	Early/Mid Iron Age	c.500 - c.300 BC
<i>M/LIA</i>	Mid/Late Iron Age	c.300 - c.150 BC
<i>LIA</i>	Late Iron Age	c.150 BC - c.AD 50
<i>ERP</i>	Early Roman Period	AD 43 - c.150
<i>MRP</i>	Mid Roman Period	c.AD 150 - c.250
<i>LRP</i>	Later Roman Period	c.AD 250 - c.400

TABLE 1. THE 32 SITES  
[National Grid Reference TR, site centre]

Date Range	Features	Comments
1. Beacon Hill, Beltinge [1865 6845]		
<i>LB/EIA</i>	Ditches, pits, post-holes	Cliff-top settlement
<i>E/MIA</i>	ditto	Continued settlement
<i>LIA/ERP</i>		Low-level activity



Date Range	Features	Comments
2. Blacksole Farm [1925 6735]		
<i>EMBA</i>	Ditches, pits, post-holes	Field system and enclosures on large site
<i>LB/EIA</i>	Ditches, pits, post-holes, kiln or hearth	On-site pottery production indicated for all periods
<i>LIA/ERP</i>	Ditches, pits, urned cremation	
<i>MRP</i>	Ditch with imported finewares	Nearby high-status settlement indicated
3. Bogshole Lane A, Beltinge [1980 6695]		
<i>LBA</i>	Residual potsherds	Indicates deforestation
<i>MLA</i>	Penannular gullies, ditches, pits, post-holes	Well-preserved round house
<i>LIA/ERP</i>	Ditches	Field system, low-level. Occupation pre c.AD 150
4. Bogshole Lane B, Beltinge [2045 6765]		
<i>Neo</i>	Pit	Isolated Neo feature
<i>LB/EIA</i>	Residual potsherds	Deforestation indicated
<i>LIA/ERP</i>	Gully, ditches, pits, post-hole	Ditches aligned as in Bogshole Lane A
5. Bogshole Lane C, Broomfield [1975 6720]		
<i>Meso</i>	Residual flintwork	
<i>EMBA</i>	Ditches, pits, metalled trackway, bronze hoard massive re-cut pit of possible ritual function	Hoard dated c.850 - c.700 BC
<i>EIA</i>	Pottery only	Continued ritual use?
<i>LIA</i>	Ditch, surface spread of Pottery	Re-occupation as small farmstead
<i>EMRP</i>	Small rectangular posted structure	Ditto ... ends mid third century AD.
6. Borstal Hill [1045 6470]		
<i>LIA/ERP</i>	Pits, ditches, calcined flint spreads	Probably outlier of LIA Sunset Caravan site (see below)
7. Chitty Lane, Chislet [2250 6465]		
<i>Neo</i>	Gully	28 sherds Peterborough ware c.3300 - c.2500 BC] (Gibson and Kinnes 1997, 68-9)
<i>LB/EIA</i>	Pit	

Date Range	Features	Comments
8. Church Lane A, Chislet [2255 6485]		
<i>LB/EIA</i>	ditches, pits, post-holes	Part of large settlement. Intense/protracted settlement
9. Church Lane B, Chislet [2225 6955]		
<i>M/LIA</i>	ditched, gullies, pit	Multiphase settlement
<i>LIA/ERP</i>	Pottery only	Continued occupation
10. Churchwood Drive, Chestfield [6425 6635]		
<i>M/LBA</i>	Ditches, sunken-floored hut with internal hearth Many animal bones, seashells, calcined flints, neonate cremation burial 920 BC – 795 Cal. BC	Large-scale woodland clearance Multi-phase field system, small farmstead
<i>EIA</i>	Ditches	Continued occupation
11. Eddington [1725 6665]		
<i>Neo</i>	Two polished axeheads and other flintwork from ill-defined features	
<i>EBA</i>	Linear and curvilinear gullies two parts of possible round barrows	Large-scale woodland clearance
<i>LB</i>	Large oval enclosure; possible round barrow; circular causewayed ditches	Continued occupation; evidence for bronze working
<i>LIA</i> <i>E/MRP</i>	Ditches, rectangular enclosures, pits, five cremation burials, post-holes, ritual pit containing massive flat-sided sandstone block.	Resumed occupation, field system. Ends mid fourth century AD
12. Grove House, Seasalter [0895 6475]		
<i>LIA/ERP</i>	Ditches, pits	Small-scale occupation
13. Hawthorn Corner, May Street [2135 6720]		
<i>EIA/MIA</i>	Single pit	Date-range c. 600 - c. 200 BC
14. Herne Bay High School [1700 6680]		
<i>LB/EIA</i>	Ditches, pits, trackway, post-holes	Probably large, long-lived settlement
<i>EIA/MIA</i>	ditto	
<i>LIA/ERP/MRP</i>	Ditches, pits	

Date Range	Features	Comments
15. Highstead A [2140 6680]		
<i>Meso</i>	Residual flintwork	Large site
<i>BA</i>	Defensive ditch, palisaded ramparts, fortified gateway	50 x 50m 'fortified farmstead', <i>c.</i> 950 - <i>c.</i> 850/750 BC
<i>LB/EIA</i>	Two adjacent, ditch-enclosed farmsteads, with pits, post-holes, etc.	<i>c.</i> 850 - <i>c.</i> 550 BC, possibly contemporaneous
<i>EMIA</i>	Unenclosed group of five circular huts, clay-lined pits, two rectangular huts, rectilinear, posted structure	<i>c.</i> 600 and <i>c.</i> 500 BC. Site abandoned ( <i>c.</i> 350 - 200/150 BC)
<i>LIA</i>	Rectangular ditch-and-bank enclosure, round house, rectangular hut, ditches, small enclosure	In two phases
<i>LIA/ERP/</i> <i>LRP</i>	Enclosure enlarged, imported fine wares, hypercausted bathhouse, painted wall plaster, roof tiles, small cemetery	<i>c.</i> 75 BC - <i>c.</i> AD 50  <i>c.</i> AD 125 →
16. Highstead B, Chislet [2150 6625]		
<i>Meso</i>	Residual lithics	
<i>LB/EIA</i>	Pits, post-holes	Possibly eastern part of Highstead A site (see above)
17. Hillborough Caravan Park, Reculver [2065 4805]		
<i>Meso</i>	Much flintwork in palaeosol	
<i>MLBA</i>	Ditches	Ritually deposited vessels ( <i>c.</i> 1100 - <i>c.</i> 700 BC)
<i>MLIA</i>	Gullies, post-holes, stake-holes	( <i>c.</i> 300 - <i>c.</i> 150 BC)
<i>LIA/ERP</i>	Pottery only	( <i>c.</i> 150 BC - <i>c.</i> AD 50)
18. Hoath Road, Boyden Gate [2205 6530]		
<i>LB/EIA</i>	Hearth/fire pit, pits, ditches, quarries	
19. Ladysmith Grove [0905 6475]		
<i>LBA</i>	Large pit	Contained loom weights and/or fishing weights

Date Range	Features	Comments
20. Molehill Road, Chestfield [1425 6575]		
<i>LBA</i>	Residual pottery	Suggests deforestation
<i>LLA/ERP</i>	Pits, post pits, penannular gully, wheat and barley chaff, daub, animal bone, also two kilns with pots and kiln furniture inside	Settlement and pot production site ( <i>c.</i> 50 BC - <i>c.</i> AD 100).
21. Owl's Hatch Road [1650 6625]		
<i>ERP</i>	Pits, two hearths, quarry Ditches, gullies, post holes, Mayen lava-stone, quern Fragments, potsherds	Date from pottery <i>c.</i> AD 50/100 - <i>c.</i> AD 250/300 Agricultural settlement, Residual Bronze Age pot
22. Radfall Corner, Chestfield [1345 6472]		
<i>LBA/EIA</i>	Post holes, daub spread, metalled trackway, wheel ruts	Circular hut (diameter 8m) next to trackway, site on northern promontory of the Blean
23. Ridgeway, Chestfield [1335 6625]		
<i>Neo</i>	Pits, potsherds	
<i>LBA</i>		Residual Neo axe head
24. Sarre Penn, Chislet [2315 6435]		
<i>LB/EIA</i>	Ditches	Field system
<i>ERP</i>	Potsherds only	Small-scale re-occupation
25. Sunset Caravan Park and Church Lane East site [1025 6475]		
<i>LBA</i>	Pits, post holes, quarries,	Very large, many buildings, large-scale pottery production, long-lived settlement, strategic position, date-range <i>c.</i> 850/750 BC - <i>c.</i> 150 AD. Much pot, including imports (Late Bronze/ Early Iron Age Italian situlate wares Dressel 1B amphorae)
<i>EIA</i>	kilns, hut gullies (circular	
<i>MIA</i>	and rectangular), flint	
<i>LLA</i>	spreads, ditches, daub,	
<i>ERP</i>	bone, seashells.	
26. South Street, Whitstable [1325 6455]		
<i>EIA</i>	Large ditch, pits, post holes, two hearths, bone,	Prob. circular hut, diameter 9m, flint grits for pot temper, pottery charred grain, radiocarbon date 1260 BC - 920 Cal. BC, farmstead, near Radfall Corner site Reoccupied and abandoned again during Late Iron Age (8 pits, 72 potsherds)
<i>M/LBA</i>	daub	
<i>LLA</i>		

Date Range	Features	Comments
27. South Street Roman Building [1230 6470]		
<i>ERP</i>	Walls, tile, painted wall plaster, tile wasters, pottery	Cellar (3.35m by 2.43m, height 0.91m surviving). Part of villa/ large farmstead, 1st/2nd century
28. Texas Superstore Site [1721 6715]		
<i>LBA/EIA</i> <i>MLIA</i> <i>ERP/MRP</i>	Enclosure ditch, pits,	Next to Eddington site (Site 11)
29. Underdown Lane [1815 6705]		
<i>E/MIA</i> <i>MIA</i> <i>LIA/ERP</i>	Pits, cremation, post holes, gullies, enclosure ditches, much burnt flint, large Ditches	Pottery dated <i>c.</i> 550 - <i>c.</i> 350 BC and <i>c.</i> 100 BC - <i>c.</i> AD 200. Four-phase occupation, but somewhat confused
30. Whitstable Community College [1165 6575]		
<i>MLIA</i> <i>LIA/ERP</i>	Three MIA pits, one ditch, four LIA/ERP pits, L'-shaped ditches, pottery, Rom. tile	'late prehistoric and Roman rural features'
31. Willow Farm [1955 6710]		
<i>BA</i>		Lithic evidence
<i>LB/EIA</i>	Pits, ring ditch (hut), circular eaves gully, diameter 7m in rectangular, open-ended enclosure ditch	Date-range <i>c.</i> 900 - <i>c.</i> 600 BC
<i>LIA/MRP</i>	Sunken-floored building, enclosure ditch, rubbish pits, ditches	Date-range <i>c.</i> 50 BC - <i>c.</i> AD 250
32. Wraik Hill [1035 6445]		
<i>LIA/ERP</i>	Pits, ditches, burnt flint spreads, prob. kilns, fire-damaged potsherds, burnt daub ditch-enclosed hollow way	Probably part of Site 25 and Site 6 (large pre-Roman settlement). Date-range <i>c.</i> 150 BC - <i>c.</i> AD 70

### Sources:

- 1 Parfitt and Hutcheson 1995; Parfitt 1996, 16-18.
- 2 Allen 2005a.
- 3 Parfitt and Hutcheson 1995; Parfitt 1996, 16-18.
- 4 Parfitt and Hutcheson 1995; Parfitt 1996, 16-18.
- 5 Allen 2001, 12; Helm 2003b, 23.
- 6 Allen 2001b, 12.
- 7 Parfitt and Hutcheson 1995; Parfitt 1996, 16-18; Gibson and Kinnes 1997, 68-9

- 8 Parfitt and Hutcheson 1995; Parfitt 1996, 16-18.  
 9 Parfitt and Hutcheson 1995; Parfitt 1996, 16-18.  
 10 Allen 2002, 23-27.  
 11 Shand 2002, 18-23.  
 12 Allen 2006.  
 13 Parfitt and Hutcheson 1995; Parfitt 1996, 16-18.  
 14 Crank 2000a, Crank 2000b, Houliston 1998.  
 15 Bennett, Couldrey and Macpherson-Grant 2007; Alcock, 1970, 14-25; (possible shrine)  
 Grimes 1948, 74; Brooks and Bedwin 1989, 9; Allen and Willson 2001, 10-11.  
 16 Parfitt and Hutcheson 1995; Parfitt 1996, 16-18.  
 17 Bishop undated.  
 18 Parfitt and Hutcheson 1995; Parfitt 1996, 16-18.  
 19 Willson 2002, 10.  
 20 Wooldridge and Lyne 1998.  
 21 Allen, Parfitt and Rady 1997, 26-27.  
 22 Parfitt and Allen 1990.  
 23 Ward 1987, 22.  
 24 Parfitt and Hutcheson 1995; Parfitt 1996, 16-18.  
 25 Allen 1999; Allen and Willson 2001, 10.  
 26 Parfitt and Allen 1990.  
 27 Jenkins 1962, 190.  
 28 Macpherson-Grant 1991, 24 and 1992, 40-41.  
 29 Gollop 1999; Shand 2004; Oxford Archaeological Unit 2000; Wessex Archaeology  
 2001; Wright 2003; Allen 2004, Allen 2005b.  
 30 O'Brien *et al.* 2004.  
 31 Helm 2000.  
 32 Allen 1999, 11

## Synthesis

The following table presents the list of settlement/occupation sites investigated in the study area and the period(s) to which those settlements date, marked by a cross. (The contractions for the relevant periods provided above apply.)

TABLE 2. PERIODS OF OCCUPATION/SETTLEMENT FOR EACH SITE

		MESO	NEO	E/MB	LB/EIA	E/MLA	M/LIA	LIA	ERP	MRP	LRP
1	Beacon Hill				+	+		+	+		
2	Blacksole Farm			+	+			+	+	+	
3	Bogshole Lane A			+		+		+	+		
4	Bogshole Lane B		+		+			+	+		
5	Bogshole Lane C	+		+	+			+	+	+	
6	Borstal Hill							+	+		
7	Chitty Lane		+		+						
8	Church Lane A				+						
9	Church Lane B						+	+	+		

		MESO	NEO	E/MBA	LB/EIA	E/MIA	M/LIA	LIA	ERP	MRP	LRP
10	Churchwood			+	+						
11	Eddington		+	+	+			+	+	+	+
12	Grove House							+	+		
13	Hawthorn Corner				+	+	?				
14	Herne Bay High				+	+		+	+		
15	Highstead A	+		+	+	+		+	+	+	+
16	Highstead B	+			+						
17	Hillborough	+		+			+	+	+		
18	Hoath Road				+						
19	Ladysmith Grove				+						
20	Molehill Road				+			+	+		
21	Owl's Hatch								+		
22	Radfall Corner				+						
23	Ridgeway		+		+						
24	Sarre Penn				+			?	+		
25	Sunset Caravan				+	+	+	+	+		
26	South Street			+	+			+			
27	South Street (RB)								+		
28	Texas Superstore				+		+	+	+	+	
29	Underdown					+	+	+	+		
30	Whitstable Comm.						+	+	+		
31	Willow Farm			+	+			+	+	+	
32	Wraik Hill							+	+		

### Analysis

Expressed as a percentage of the total 32 sites, the period-specific number of settlement/occupation sites in the study area are:

Period	No. examples	%
Mesolithic	4	12.5
Neolithic	4	12.5
Bronze Age	9	28.1
Late Bronze/Early Iron Age	22	68.7
Early-Mid Iron Age	7	21.8
Mid-Late Iron Age	6	18.7
Late Iron Age	20	62.5
Early Roman Period	22	68.7
Mid Roman Period	6	18.7
Late Roman Period	2	6.2

Thirteen Late Bronze/Early Iron Age sites were re-occupied after 350 years or more during the Late Iron Age, nineteen Late Iron Age sites continued into the early Roman period, six into the mid Roman period and two into the late Roman period. Only Site 25 (Sunset Caravan Park, Whitstable) may have been continuously occupied from the Late Bronze Age to the early Roman period.

The evidence overall suggests that settlement activity was very sparse during the Mesolithic and Neolithic. Only one site at Hilborough (Site 17) provided *in situ* (as opposed to residual) lithic evidence for protracted occupation/settlement (Bishop undated, 2-3), and only three sites (4, 7 and 11) provided clear artefactual and stratigraphic evidence of Neolithic and Early Bronze Age activity. Sites 4 and 7 produced datable Neolithic pottery (Parfitt and Hutcheson 1995; Parfitt 1996, 16-18) and Site 11 produced two Neolithic axeheads and exposed probable Late Neolithic/Early Bronze Age earthworks in the form of two linear and six curvilinear gullies (Shand 2002, 18-23). If projected, two of the curvilinear gullies described rough circles of approximately 30m diameter and possibly represented the remains of round barrows slighted by erosion and plough damage. Also exposed was part of another ring ditch containing Late Bronze Age pottery.

In addition, a large, roughly circular pit (average diameter 14.5m, depth over 2.3m) of possible ritual function was exposed at Site 5 in Broomfield (Allen 2001c, 12; Helm 2000; Helm 2003b, 23). Apart from some residual Mesolithic material, the associated flintwork was of Early Bronze Age appearance, as was most of the pottery, although the presence of pottery of Mid Bronze and Early Iron Age date suggested use over a long period.

Significant, larger-scale settlement accompanied by extensive woodland clearance appears to have begun in the Mid Bronze Age and increased later in that period. For example, Site 10 (Churchwood Drive, Chestfield) exposed the remains of an extensive (32,400m<sup>2</sup>) multi-phase ditched field system, including enclosures, dating from c.1500 BC to c.600 BC (Allen 2002, 23-27). The remains of a hut were exposed partly lying within a shallow linear depression, all that remained of an earlier ditch. The hut remains were in the form of a sunken, sub-rectangular floor (4m east-west and 2.1m north-south) covered by fire-crazed flints and 135 Late Bronze/Early Iron Age potsherds (c.900 BC - c.600 BC), these surrounding and covering the remains of a substantial circular internal hearth/fire. Exposed nearby was a small, roughly circular pit containing charcoal and calcined bone fragments, probably a neonate cremation burial. The burnt bone provided a radiocarbon date of 920 BC - 795 Cal. BC (Late Bronze Age).

Similarly, Site 26 (South Street, near Whitstable) produced the remains of a Mid/Late Bronze and Early Iron Age settlement (Parfitt and Allen 1990). The settlement was probably ditch enclosed (part of a large ditch was exposed to the west), and may have been associated with two round barrows situated approximately 750m to the south-west (O.S. 1965, 284).



Evidence for two hearths was exposed, along with a large quantity of Late Bronze and/or Early Iron Age potsherds, daub fragments and bone from cattle, sheep and horse, most of the latter recovered from rubbish pits surrounding a roughly circular cluster of six postholes, probable the remains of a hut of about 9m diameter. Associated radiocarbon-dated material yielded a date of 1260 BC - 920 Cal. BC.

The presence of charred cereal chaff and grain indicated that cereal cultivation as well as animal husbandry took place and *in situ* pot manufacture was also indicated. Overall, the evidence suggested that this was the site of a single-dwelling farmstead established during the Mid/Late Bronze Age (c.1200 BC) and abandoned during the Early Iron Age. Like Site 14, this site provided a fine example of the rapid growth in settlement and associated activity in the study area during the Late Bronze/Early Iron Age (c.950 - c.500 BC), and twenty-two (68.7%) of the 32 sites investigated provided similar, if less copious evidence.

In contrast, only seven sites could be dated using ceramic typologies to the Early-Mid Iron Age, with five (1, 13, 14, 15 and 25) representing activity continuing from the previous period. A similar situation is evident in the Mid-Late Iron Age, with only six sites (3, 9, 25, 28, 29 and 30) of that period being represented. A significant change in settlement pattern is therefore indicated for the Early to Mid Iron Age. Perhaps the best example of the few sites of the Early-Mid Iron Age was Site 3 (Bogshole Lane A, near Beltinge), which produced gullies, ditches, post-holes, pit complexes, a four-poster structure and the remains of an Early-Mid Iron Age round house with over 2000 potsherds, most dated to c.500 - c.300 BC (Parfitt and Hutcheson 1995; Parfitt 1996, 16-18). However, in common with many sites, the residual presence of pottery dated to c.1000 - c.800 BC suggested that deforestation had occurred in the vicinity during the Late Bronze Age. A rare Mid-Late Iron Age site is well represented by Site 25 (Sunset Caravan Park, Whitstable), where 34 features in the form of ditches, pits, linear quarries and fire pits/hearths produced over 1,500 potsherds dated to between c.500-150/100 BC (Allen 1999).

Late Iron Age settlement activity (probably beginning about 150 BC and mostly continuing into the early Roman period) appears to have increased dramatically, albeit not to Late Bronze/Early Iron Age levels, with twenty such sites (62.5%) having been identified. Six, Sites 9, 17, 25, 28, 29 and 30, produced clear evidence of settlement activity continuing from the Mid-Late Iron Age but the evidence as a whole pointed to the establishment of many new settlements. However, two very large sites, Site 25 (Sunset Caravan Park, Whitstable) and Site 15 (Highstead A), provided copious evidence for expanded and intensified settlement activity in the study area during this period. The first lay on a strategic promontory on the western margin of the study area (Allen 1999; Allen and Willson 2001, 10). The second occupied a lower but similarly strategic position on the

eastern margin on a site that had also been intensively settled during the Mid to Late Bronze Age and Early-Mid Iron Age (Bennett, Couldrey and Macpherson-Grant 2007).

The Claudian invasion of AD 43 appears to have had little immediate impact on the settlement pattern in the area, as nineteen of the twenty Late Iron Age sites (59.4%) survived into the second century AD. All but one of these (Owls Hatch Road) were almost certainly of Late Iron Age foundation. However, changes clearly occurred from about AD 150, as only six sites survived beyond that approximate date, and only two (Sites 21 and 27) were apparently newly founded in the early Roman period. Furthermore, only two sites (11 and 15) appear to post-date about AD 250, suggesting that a dramatic change in settlement pattern was underway. Indeed, the study area appears to have been largely de-populated by the third century.

## DISCUSSION

The varying combinations of factors leading to the changes in settlement patterns described above are probably too complex to be entirely ascertainable. Nevertheless, the basic contributory factors themselves can be identified with some confidence and these are discussed below.

### *The environment*

A previous study has shown that the coastal margin and inter-tidal flats of the Swale, north of the study area, were once resource-rich and populated dry land, with the present coastline having been established during the medieval and post-medieval periods (Allen 2000, 178-180; Masefield *et al.* 2003). The land loss was part of an on-going process in which a vast area of similarly low-lying, resource-rich land (originally the land bridge between Britain and the Continent) was lost to the sea (Coles 1998, 45-81). It may be inferred that marine encroachment had a direct effect on settlement patterns in the study area as the population on a contracting coastal plain was compelled to migrate inland to higher ground. A contributory factor in the Mid/Late Bronze Age was probably climatic deterioration (Champion *et al.* 1992, 279; Parker Pearson 1993, 99-100), which may have hastened sea-level rise. The evidence presented above, with 68.7% of the sites dating to the Late Bronze/Early Iron Age, suggests a sharp rise in settlement levels in the study area during the latter part of this period.

### *Trade and commerce*

The principal trade route connecting the Continent and south-east Britain consisted of the interconnected waterways of the Rhine, the Strait of

Dover and the Thames. The Wantsum Channel and the Swale comprised parts of that route, which was used to transport metal, probably in bulk, from the Alps (the source of copper ore) and elsewhere into the Thames Basin (Northover 1982, 45-72). The evidence is plentiful for cross-Channel trade in bronze in the form of scrap as well as finished goods during the Mid and Late Bronze Age (O'Connor 1980, 225-229; Cunliffe 2001, 55-6).

The many Late Bronze Age hoards discovered on the margins of the Wantsum Channel and the Swale illustrate their importance as part of that route (see, for example, Perkins 1991, 259-261; 1992, 303, 2006, 279-294; Yates 2004, 13-15). In the Swale, amongst many other hoards (see Allen 2000, 173), a large sixth- or seventh-century BC hoard, including socketed axes moulds, was recovered on the Isle of Harty (Hawkes, ed., 1955, GB. 18, 3, 1-3). In the study area a bronze hoard dating to c.850 - c.700 BC was found at Broomfield at Site 5 (Bogshole Lane C):

These hoards form part of the evidence of an efficient industry on the north Kent coastal plain and on either side of the Thames estuary which produced prolific quantities of weapons and tools, but which also incorporated a system for the collection and recycling of scrap metal probably both from England and the Continent. (Lawson 1995, 277)

It is therefore likely that the proliferation of Late Bronze/Early Iron Age settlements in the study area resulted, at least in part, from the growth of this maritime and riverine trade route. Indeed, the absence of settlement concentrations away from riverine or maritime trade routes appears to have characterised settlement patterns in Europe generally during this period (Collis 1997, 62-102), indicating the crucial role that trade had in influencing settlement patterns. This phenomenon is clearly evident in north Kent, where known Late Bronze and Early Iron Age settlements on or near rivers and the coast far outnumber any others (see the distribution maps in Yates 2004, 13-17).

The evidence in the study area points to a dramatic decrease in the number of settlement/occupation sites during the Early-Mid Iron Age. This may be related in part to the closure of the Continental riverine trade routes and a widespread downturn in trade-related economic activity in South-East Britain (Darvill 1995, 156-7; Cunliffe 2001, 422), in West-Central France (Duval 1984; Wells 1985, 70), in North-East France and Belgium (Demoule and Ilett 1985, 211) and in the Lower Rhine region (Wightman 1985, 14-15).

As we have seen, settlement activity in the study area resumed during the Late Iron Age to a degree approaching that of the Late Bronze/Early Iron Age, and in c.55 BC Caesar considered population levels in the maritime region of Kent to be high, even by Roman standards:

The number of the people is countless, and their buildings exceedingly numerous, for the most part very like those of Gaul: the number of cattle is great. (Caesar *c.*50 BC, V, xii)

This phenomenon may have been related in part to the re-establishment of trade links between the burgeoning, Rome-dominated economies of the Mediterranean with the regions to the north (Vaussanvin 1990, 184-187, 190-195; Cognot 1996, 188-190). Caesar also provides first-hand evidence of this in respect of Kent and, importantly, also mentions that much migration into south-east Britain had previously taken place from Belgic Gaul:

The island [Britain] is triangular, with one side opposite Gaul. One angle on this side, which is in Kent and to which nearly all ships go from Gaul, faces east... (Caesar V, xiii).

Factors related to trade and commerce may also have been partly responsible for the drastic reduction in settlement sites during the mid and later Roman period, possibly as a consequence of the establishment of ports at Dover (*Portus Dubris*), Richborough (*Rutupiae*), Rochester (*Durobrivae*) and possibly near to Faversham, near Syndale (*Durolevum*). However, other factors as discussed below were probably more important causes of the reduction.

### *Agriculture and industry*

The evidence from Sites 8, 10, 22 and 26 suggests that widespread and systematic deforestation was initiated during the Mid/Late Bronze Age in order to establish grazing and/or cultivatable land, a phenomenon that was also widespread in the Thames Basin during this period (Yates 2001, 75-77). The analysis of borehole samples from Seasalter Level, just to the west of the study area, suggests that tree clearance was not achieved by the slash-and-burn method, which leaves a clear record in the form of carbon deposits, but by axe or ring-barking, with grazing probably then acting to maintain the cleared areas as open pasture (Williams 1999, 60).

In the ill-drained study area, the establishment of ditched drainage systems accompanied this process, the ditches also acting as field boundaries. This expansion of agricultural activity, and the increase in population, must inevitably have increased the demand for ceramic vessels to contain, for example, salt and milk, butter and other dairy products, with a consequent impact on local pottery industry. Indeed, the evidence uncovered from Site 2 (Blacksole Farm), Site 20 (Molehill Road), Site 25 (Sunset Caravan Park), Site 26 (South Street) and Site 32

(Wraik Hill) indicates that large- and small-scale pottery production took place in the study area during the Late Bronze/Early Iron Age, and again during the Late Iron Age.

The sharp decline in settlement/occupation sites during the mid-to-late Roman periods probably relates in part to the development of the villa system, in which the main concentrations of villas and other large rural settlements lie west of the study area, along Watling Street and the Medway Valley, and on the coast to the south and east (Detsicas 1983, 34). The eventual adoption of nearby Canterbury as a Roman cantonal capital (Rivet and Smith 1981, 353-4) was also a probable factor behind the demographic shift, as was the development of Reculver from a Late Iron Age settlement into a Saxon Shore Fort. Certainly, by the later Roman period, greatly reduced levels of occupation appear to have occurred, such that there is less evidence for settlement activity in the study area than for the Neolithic.

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