COASTAL SITES ON TOLLESBURY WICK MARSH, TOLLESBURY, ESSEX

An Archaeological Survey by
The Royal Commission on the
Historical Monuments of England

REQUEST SURVEY

May 1995

ROYAL COMMISSION ON THE HISTORICAL MONUMENTS OF ENGLAND

CONTENTS

LIST OF FIGURES

1. INTRODUCTION

In May 1995 the Royal Commission on the Historical Monuments of England surveyed a number of sites on Tollesbury Wick Marsh (TL 975 100), on the Blackwater estuary in Essex. The survey was carried out following a request from Essex County Council who are providing advice on the management of the marsh following its designation as a National Nature Reserve. The sites had never previously been surveyed, and were not recorded in the National Monuments Record, and the purpose of the survey was to accurately record the surviving features as a basis for further research.

Tollesbury Wick Marsh is located in Tollesbury parish, on the northern bank of the Blackwater estuary, 5km before it empties into the North Sea (Figure 1). The marsh, which lies at 2.0m above OD, is bounded by water along most of its circumference and is connected to the higher ground at its western corner. The area is an SSSI and a National Nature Reserve, and is a rare survival of coastal grazing salt marsh. The marsh is currently used by the landowner for low density sheep and cattle grazing.

The marsh has been enclosed by a sea wall at least since 1777, which appears to have been constructed in an attempt to capture hitherto unenclosed marshland (Chapman & André 1777) (Figure 2). The area enclosed is riddled with a relict creek system, elements of which still contain water.

Three sites were surveyed and a further four sites were investigated on the ground but not surveyed .

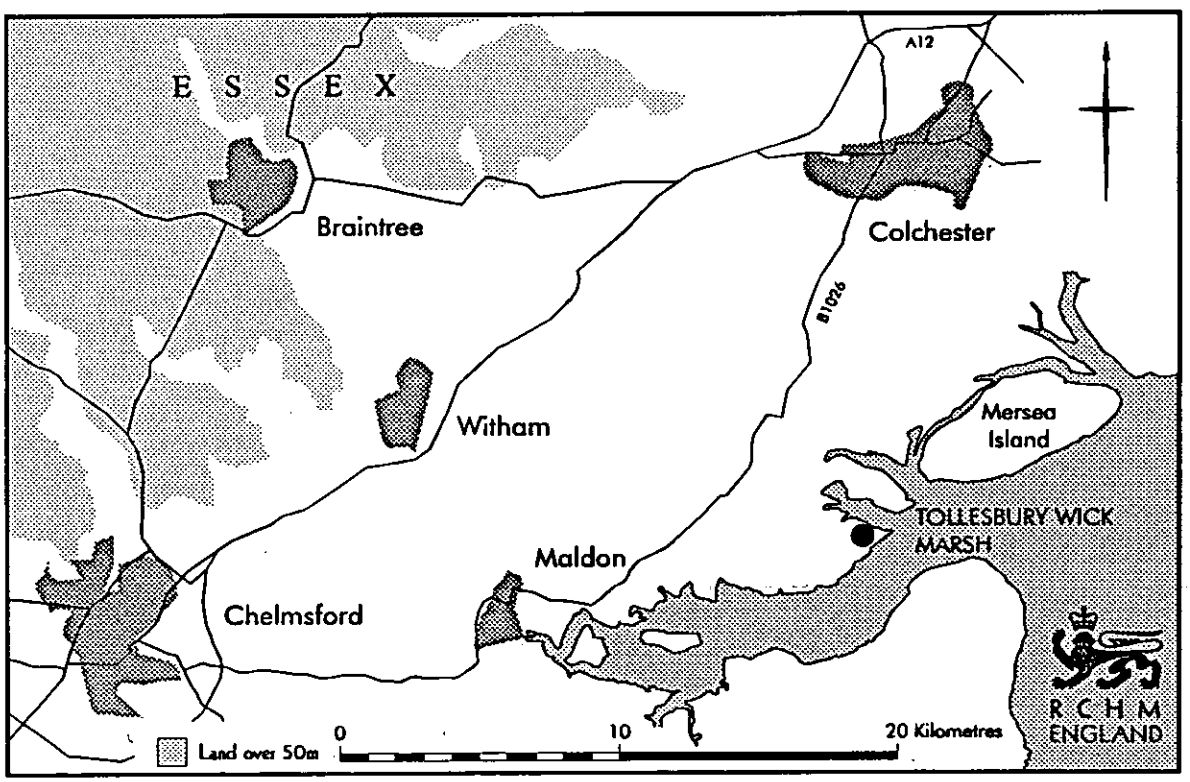

Figure 1: Location map

2. ARCHAEOLOGICAL HISTORY

The area was surveyed by Essex County Council using aerial photographs, prior to the RCHME survey; see Figure 3 (Strachan 1995). The resulting aerial photographic transcription includes the major components of the fossilised creek system (visible on aerial photographs) and all archaeological and historical features.

Three sites were selected for earthwork survey, comprising two possible redhills (Figure 3, D & I), and an enclosure which had been noted during a reconnaissance visit (Figure 4). These sites were recorded by divorced survey at 1:500 scale.

A trial excavation of the two possible redhills was undertaken by the Essex County Council Field Archaeology Group in May 1995, which concluded that the mounds were not redhills, but may be the remains of Medieval salterns (Garwood 1995, 5).

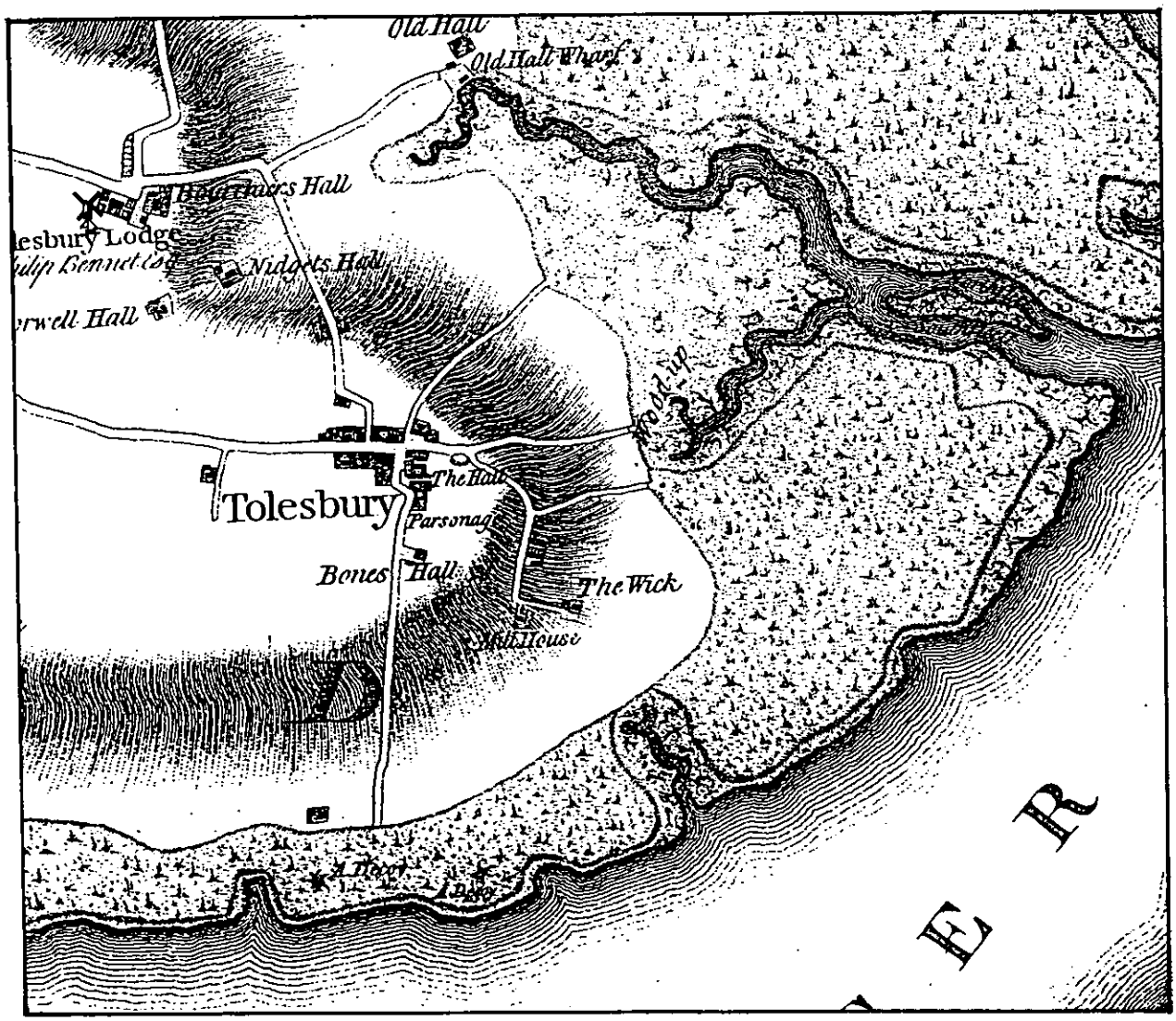

Figure 2: Extract from A Map of the County of Essex by Chapman and André 1777, by kind permission of Phillimore and Co. Ltd, Chichester, West Sussex

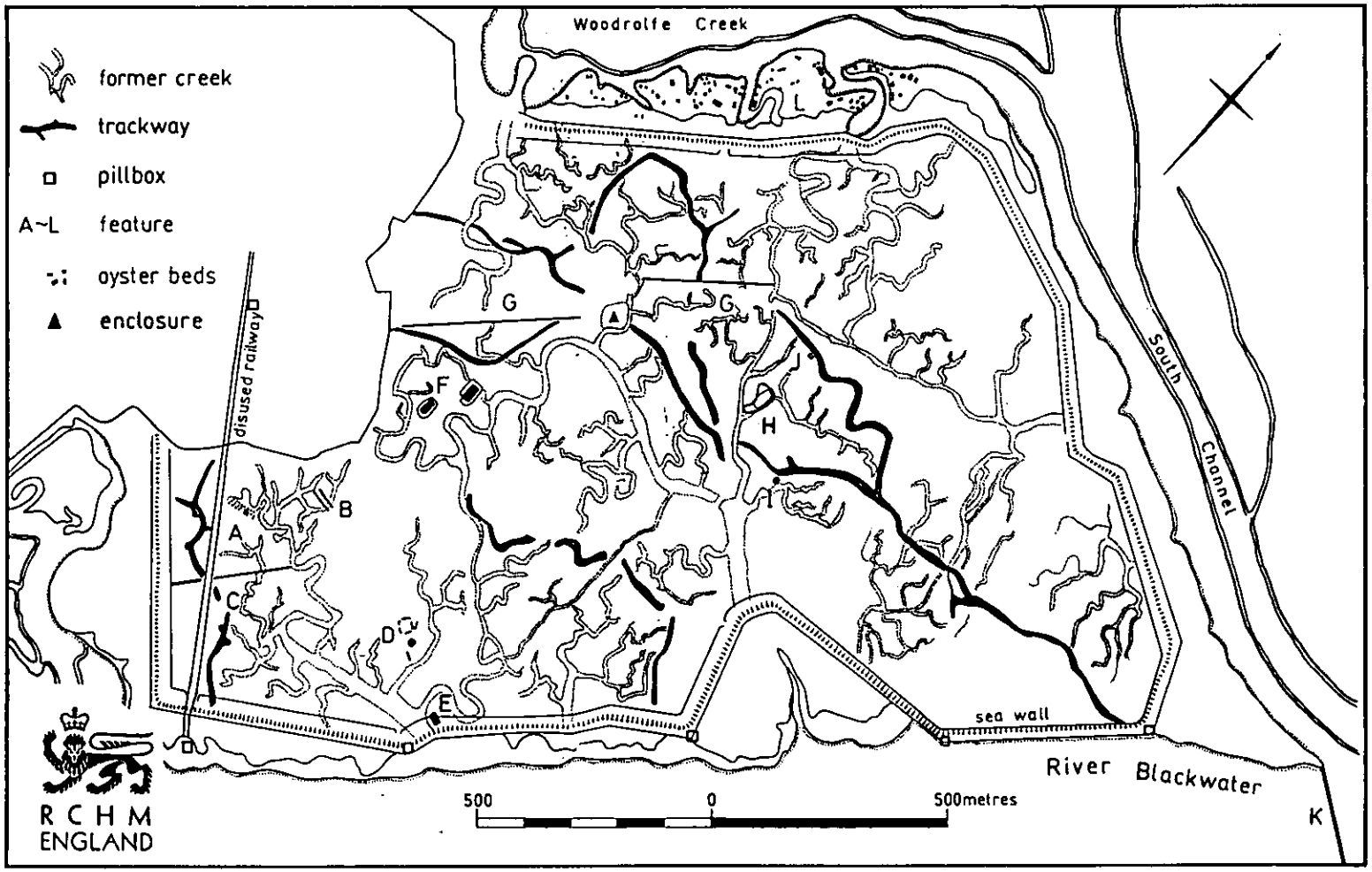

Figure 3: Air photographic transcription of Tollesbury Wick Marsh originally plotted at 1:10,000 (after Strachan 1995, Figure 2)

3. ARCHAEOLOGICAL DESCRIPTION AND INTERPRETATION

For names and letters which appear in bold in the text, see the relevant plan.

Enclosure (Figure 4)

TL 9736 1018: A sub-rectangular ditched enclosure. Two sides of the enclosure are defined by an extant creek while the remaining two on the northwest and southwest sides are narrower, straighter and shallower, and were clearly excavated to create the enclosure. In the southwest side a causeway between the two excavated ditches provides access to the interior.

The enclosure is essentially rectilinear, measuring 49.0m by 45.0m, though the course of the creek has caused a substantial outward bulge in the eastern corner. The creek is on average 7.0m wide and 1.5m deep to the water line, while the artificial ditches are generally 3.0m-4.0m wide and are between 0.8m and 1.5m deep. The causeway is 7.0m wide and is defined by square-ended ditch terminals.

The interior is uneven, and was overgrown with tall grass at the time of survey. A slight irregular platform measuring 18.0m by 8.0m by 0.4m high is situated close to the causeway. This platform probably supported a structure of some kind, though no evidence of this remains on the surface.

The enclosure is depicted in 1874 (Ordnance Survey a) with a water-filled inlet from the creek to the interior. This inlet leads towards three rectangular enclosures of unknown function, possibly buildings, ponds or sheep pens. The surviving platform does not correspond with any of these features.

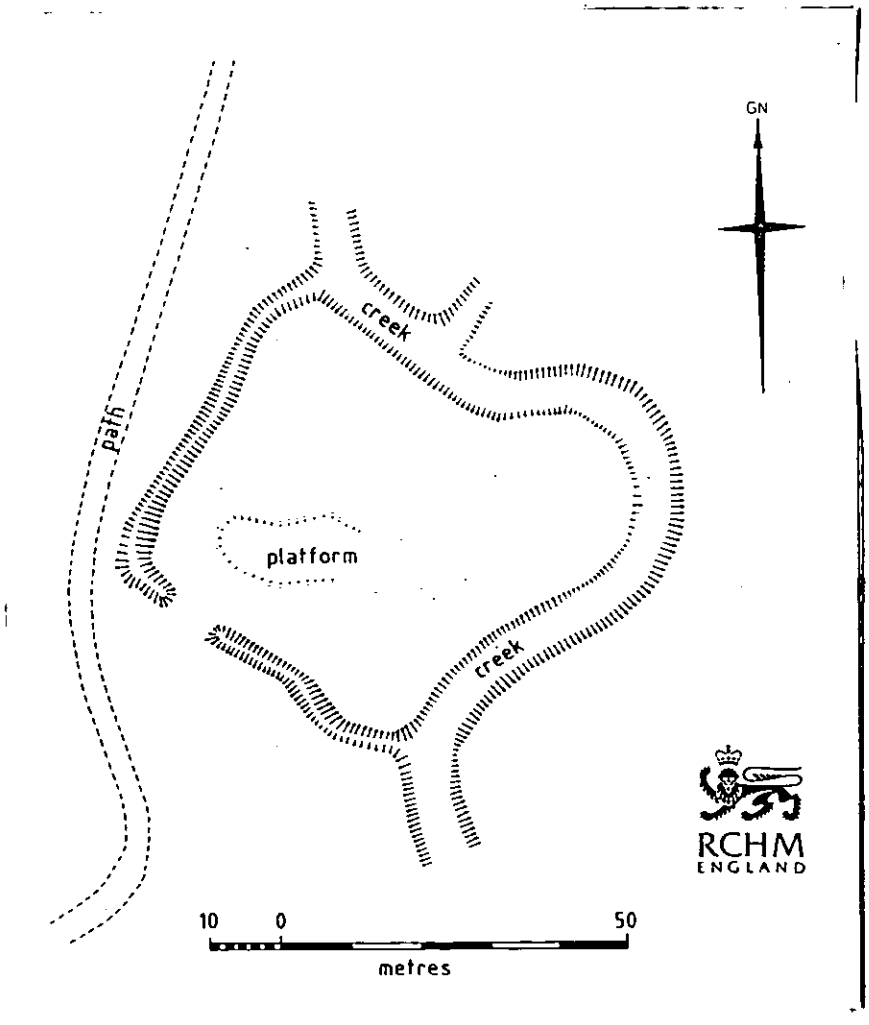

Figure 4: RCHME plan of enclosure

Mound (Figure 5; Figure 3, I)

TL 9782 1016: A roughly circular mound measuring 18.0m by 15.0m by 1.5m high, surrounded on all sides by the relict creek system. Some of these creeks may have altered the shape of the mound, especially on its eastern side, where what appears as a lower mound scarp may in fact be an upper creek scarp. On top of the mound is a shallow hollow, 2.0m in diameter and 0.4m deep: this may be the result of an undocumented excavation. On its eastern side a slight break in slope is almost certainly due to the effects of natural soil slippage, and other slight undulations (not surveyed) are erosion patches caused by cattle and sheep. The mound is not recorded on Ordnance Survey maps of any date.

Essex County Council Field Archaeology Group carried out an evaluation of this mound. They investigated a test pit on the southern side and concluded that the mound was not a redhill, due to the lack of the diagnostic powdery red earth typically found in them, but was possibly a saltern of unknown date (Garwood 1995, 5). There is at present no evidence to support this interpretation, which should be treated with caution given the lack of similarities between it and documented salterns. [For a fuller discussion of salt working sites see below.]

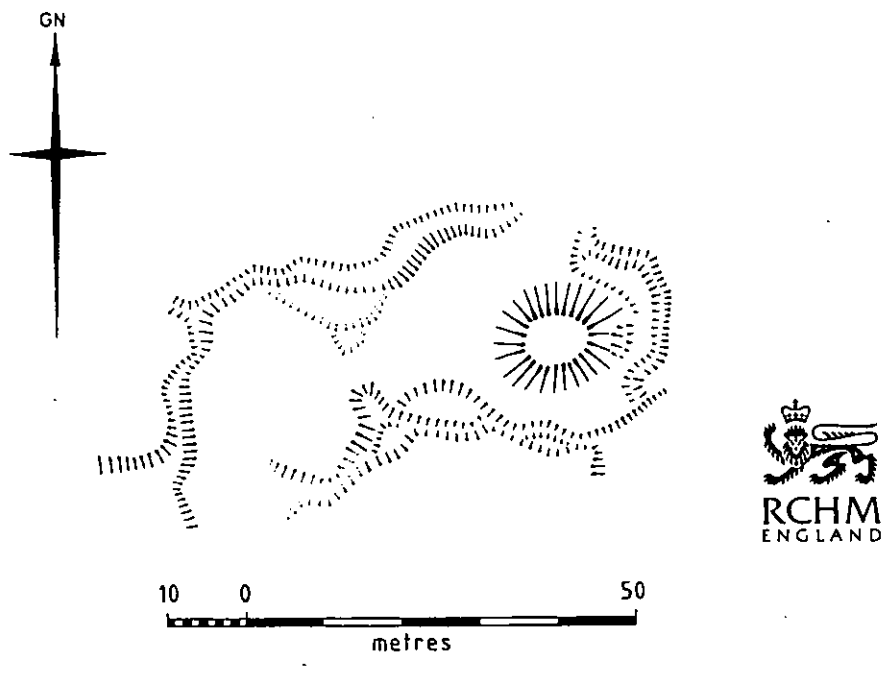

Figure 5: RCHME plan of mound

Site D (Figure 6; Figure 8; Figure 3, D)

This complex site is located at TL 974 094 at the south-eastern tip of a natural spur of slightly higher ground (2.5m OD) which appears to be largely devoid of relict creeks. The spur, therefore, may have formed a corridor of dry land leading across the creek system, perhaps providing access to the site.

The site occupies an area 130.0m by 75.0m on the western side of an extant creek. That this creek was formerly wider and deeper is confirmed by the prominent scarp, up to 0.9m high, set back between 1.5m and 10.0m from its western edge. Smaller, now relict, creeks lead off from the main one to form a dendritic pattern which feeds and, in the majority of cases, terminates in a series of artificial rectilinear pond-like features of varying sizes (there are probably thirteen, henceforth referred to as ponds). A central element of the site seems to be the grouping of five ponds, fed by three separate creeks, around a small circular mound a and associated lower platform b. A second, larger mound c lies 20.0m to the south-east of the first and further ponds former a looser arrangement on the northern, eastern and southern sides of the main cluster. From the air the central cluster creates the effect of a ditched enclosure (NMR CPE/UK/ 1922/3050).

Figure 6: Plan of Site D

The ponds

The majority of the ponds are roughly rectangular depressions with rounded corners. Several have partial embankments around them, possibly created from excavated spoil. The creeks enter the ponds via narrow entrances, usually in one corner, and in two cases these are very well defined (nos 11 and 16) and suggest regulation of the water flow by sluice gates.

Generally, the base of each pond is flat but a few have low internal features such as slightly raised areas, either at the far end of the pond (no 8) or in the centre (nos 3, 7, 11 and 12). Most of these are probably the result of post-use water erosion but some may be connected with an original function. In nos 7, 11 and 12 they appear to define two separate areas: in no 12 this division is enhanced by the narrowing of the pond walls and in nos 7 and 11 by a build-up of soil on the pond floor, effectively narrowing it at this point. No 8 has a scarp 0.2m high defining a slight 'platform' at its south-western end.

Ponds 5, 13, 15 and 17 are very dubious, given their small size, depth and lack of definition. Ponds 4, 6, 7, 8, 11, 12, 14 and 16 are very clear and well-defined, while ponds 9 and 10 are reasonable. The situation regarding ponds 1 and 2/3 is complicated by the fact that their true extents are not known; however all three (or two if 2/3 is a single entity) were obviously once similar to their better preserved neighbours.

The main characteristics of the ponds in terms of shape, size, entrances and the presence or absence of internal features is summarised in Figure 7. Figure 8 provides an interpretative plan of the features.

Figure 7: Table outlining pond characteristics

Pond	Shape	Size	Depth	Internal features	Corner entrance
1	incomplete?	17.5m x 7.0m	0.5m	N	N (a)
2	amorphous	11.0m x 7.0m	0.6m	N	N (b)
3	rectangular	17.5m x 5.5m	0.5m	Y	Y
4	rectangular	10.5m x 6.0m	0.7m	N	N
5	amorphous	4.5m x 2.5m	0.2m	N	N
6	rectangular	10.0m x 6.0m	0.8m	N	Y
7	rectangular	18.0m x 7.0m	1.0m	Y	Y
8	rectangular	22.5m x 6.5m	0.8m	Y	Y
9	rectangular	5.0m x 3.5m	0.7m	N	Y
10	rectangular	8.0m x 3.0m	0.5m	N	Y
11	rectangular	16.5m x 7.5m	0.9m	Y	Y
12	irregular	13.5m x 7.0m	0.5m	Y	Y
13	amorphous	4.5m x 3.0m	0.2m	N	N
14	rectangular	14.5m x 7.0m	0.7m	N	Y?
15	amorphous	7.0m x 4.0m	0.2m	N	N
16	rectangular	25.0m x 7.5m	1.0m	N	Y
17	amorphous	6.5m x 4.0m	0.2m	N	N

(a) Half of the southern edge of this pond, together with the entrance, is not visible.

(b) The relationship between ponds 2 and 3 is not clear: they may have been parts of the same pond, though they now look separate

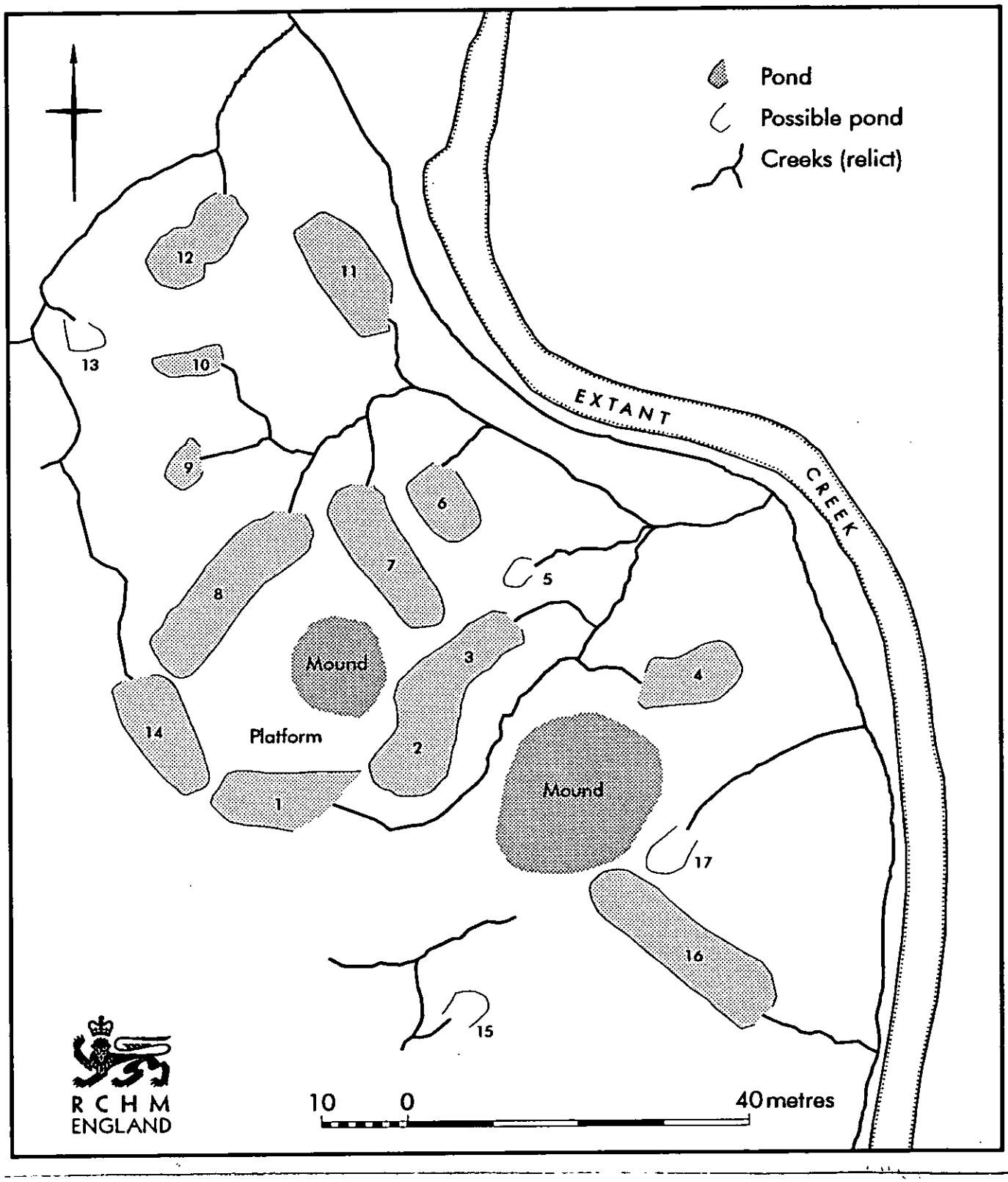

Figure 8: RCHME: interpretative plan of Site D

The mounds

Mound a, slightly oval with dimensions of 12.0m by 10.5m by 0.6m high, is placed on the eastern side of a flat, pentagonal 'platform' b which is defined by the surrounding ponds and which has dimensions of approximately 26.0m by 18.0m. The neat right angle at the south-eastern corner of the platform, together with the slight scarp which separates its south-western side from pond 14, suggest that both platform and mound formed a discrete functional area.

The second mound c is sub-circular and measures 19.0m in diameter by 1.3m high. It is possible that a, b and c may have supported structures.

A casual examination was made of the creek system off the spur to the south-east of this complex. Here, it was noted that the ends of relict creeks have frequently been shaped into rectangular forms which resemble small ponds or tanks. Similar forms issue from the sides of creeks. There was no pattern or nucleation observed in the location of these features but it suggested that the main (surveyed) complex might represent the centre of a more widely dispersed activity.

Interpretation

The site is not depicted on any known map and there is no directly linked documentary or archaeological evidence. Given these circumstances, a careful interpretation of the site is not possible. However, in the following discussion a range of coastal industries are explored and their possible relevance to the site pointed out.

Redhills are the remains of late Prehistoric and Roman salt working sites commonly found along the Essex, and to a lesser extent, Kent coastline. The mounds are called redhills because they are made up of fire-reddened debris. The mounds usually have a layered structure, representing the various burnt 'floors' separated by deposits of alluvial silt (Rodwell 1979, 133). The 'floors' supported hearths for the boiling of brine, while close by are sometimes found clay-lined tanks, thought to be for evaporation of brine prior to boiling (de Brisay 1975, 6). The tanks are often found in groups of three, and are generally no more than 2.0m in diameter by 1.0m deep, with rounded profiles (Rodwell 1979, 137; Fawn *et al* 1990, 8).

The recent trial excavation of mound b confirmed that it was not a redhill, but failed to produce any evidence for alternative interpretations, though it suggested that the mound might be the remains of a later saltern (Garwood 1995, 5). The fact that the ponds are unlike any known redhill evaporation tanks certainly supports the conclusion that the site is not a redhill.

Two groups of marsh mounds in Essex were investigated in the early twentieth century, which appear to show a number of parallels with the Tollesbury Wick Marsh site. A group of twenty rounded and irregular mounds close to Hullbridge were partially excavated in 1913: the mounds were closely associated with large rectangular tanks, about which very little appears to have been recorded (Reader in Christy & Dalton 1928, 39). However, Reader compares the Hullbridge site with a smaller site at Tolleshunt D'Arcy, near Tollesbury, where a small mound next to a relict salt water creek, is surrounded by three rectangular tanks, the largest of which measures 60 feet by 30 feet (18.3m by 9.1m). These measurements are comparable to some of the Tollesbury Wick Marsh ponds. Although the very simplified plan of the Tolleshunt D'Arcy site does not suggest that the ponds had entrances or that minor branches of the creek fed into them, this may well have been the case. It is also suggested that a bank, 180 feet (54.9m) south of the site, may have regulated the flow of water into the tanks.

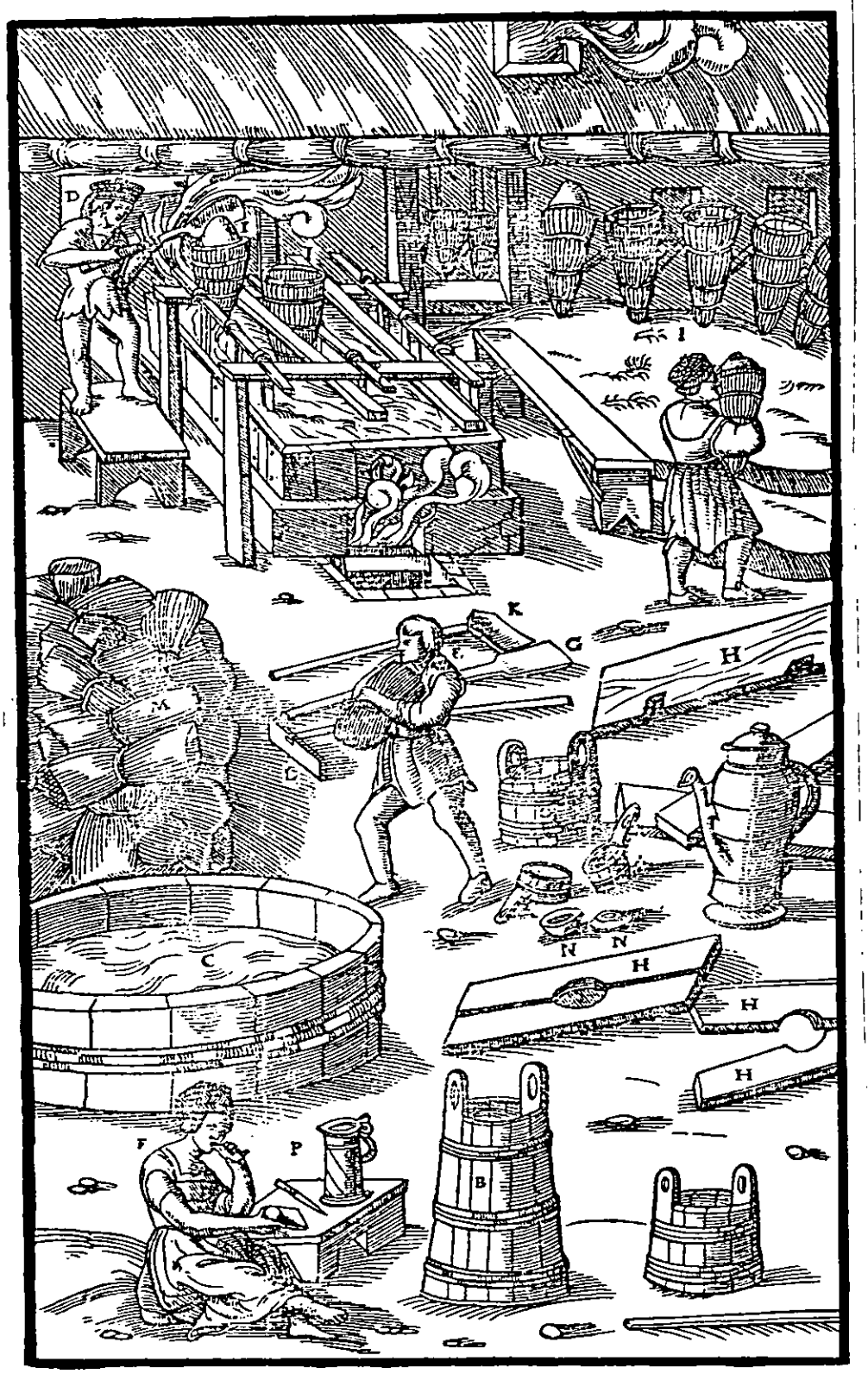

Figure 9: Medieval salt working (Agricola 1556, 553)

The site at Tolleshunt D'Arcy appears to have several similarities to the much larger system at Tollesbury Wick Marsh: a low-lying site; proximity to a salt water creek system; rectangular tanks with slight banks around them; and a mound which may not have been the main focus of activity. Reader concluded that the features at Tolleshunt D'Arcy (and therefore the site at Hullbridge and another near Maldon) were the remains of Medieval salt-working sites (Reader in Christy & Dalton 1928, 53-5).

However, more recent work on Medieval salterns suggests that the industry produced easily recognisable salt mounds, called salterns. These are very large, irregular mounds, which cover vast areas, and are typified by those found in Lincolnshire (Pattison & Williamson 1986; H Winton pers comm). These salterns bear little or no resemblence to the features surveyed on Tollesbury Wick Marsh.

At Tollesbury Wick Marsh, Ordnance Survey 1st Edition maps refer to the area outside the sea wall as 'Saltings' (Ordnance Survey a), which might suggest that there was a long tradition of the industry on the Marsh. However, since the term Saltings is frequently taken to mean salt marsh, this argument may be spurious.

One of the most definitive descriptions of Medieval salt-making is by Brownrigg (1748, 136), who outlines the procedures (see Figure 8 for a Post-Medieval depiction of salt working). In Brownrigg's descriptions, large pits are used to leach the salt from sand, after which the brine is boiled to collect the salt. The pits are described as being 18 feet (5.5m) long by 3 feet (0.9m) wide and 1 foot (0.3m) deep. These are roughly the same length as some of the smaller ponds at Tollesbury Wick Marsh (ponds 5, 9 and 13), though much narrower. However, one of the features of the pits described by Brownrigg is that they had pipes in the bottom of them, and this is not evident in the ponds surveyed.

Salt production is only one of several possible interpretations of the site at Tollesbury Wick Marsh. The ponds look very like small Medieval fishponds, but their location on the coastal strip does not encourage such an interpretation.

Oysters and other shellfish were a valuable food resource during the Medieval and Post Medieval period, and oyster wintering beds are commonly found along the Essex coastline, including an extensive system along the Woodrolfe Creek, immediately north of Tollesbury Wick Marsh (Figure 3). Oyster beds are generally found in a linear arrangement or as single entities (D Strachan, pers comm), not in such a clustered and irregular pattern as the ponds at Tollesbury Wick Marsh. However, some of the features in the 'outer' area (not surveyed) were arranged alongside the creeks in a linear pattern, and it is possible that these may have been associated with oyster or other shellfish cultivation.

In a discussion of monastic fisheries, Bond explores the role of marshland fisheries during the Medieval and Post Medieval period. There is no comprehensive description of marshland fisheries, but one comment is worth noting:

> *"It remains difficult at present...to assess adequately the changing economic status of marshland laced with pools and fish weirs and drained pasture land."* (Bond 1988, 83)

He demonstrates that marshland was an important resource during the Middle Ages, and moreover that pools formed part of the fishing process. Whether or not these pools bear any resemblance to the ponds on Tollesbury Wick Marsh is not clear, but it is worth bearing in mind when considering the interpretation of the site.

The system of ponds on Tollesbury Wick Marsh is extensive and highly developed, and it is possible, though not clear, that the mounds performed a supporting role in the process. The location of the site on the coastal strip on a spur of slightly higher land within the salt marsh is significant. The utilisation of the existing creek system was deliberate and organised, suggesting that salt water played a crucial part

in the operation. It is probable that some form of water control existed, possibly in the form of sluices, along the main creeks and at the pond entrances, and this highlights the fact that the tidal nature of the creek system was important. It is possible that water flowed from one pond to another, and this certainly would have required some form of control. The ponds themselves can be broadly compared to Medieval salt pans, fishponds, oyster beds and possibly other coastal industries, but not as yet linked with certainty to any one. That some coastal industry took place on the site seems clear, but which one is as yet unanswerable.

It remains possible that more than one industry took place here, either contemporaneously or seasonally, or at different times during the history of the site. Further work, especially in the form of excavation, would help to determine exactly what processes occured.

Similarly there is little evidence of date. The site is not prehistoric, nor is it a redhill as previously thought. Whatever its function, the site on Tollesbury Wick Marsh is almost certainly Medieval in origin, though it may have continued in use into the Post Medieval period. A map of 1777 shows the sea wall in existence by this date, and the site had almost certainly gone out of use by then (Chapman & André 1777).

Other sites on Tollesbury Wick Marsh

The following sites were investigated in the field but were not subject to accurate survey.

1) TL 977 104 (Figure 3, J)

A rectangular pond measuring 14.0m by 10.0m by 0.7m deep with a creek entering it at one corner (but unlike the ponds described above). The pond has been drained of water, and the creek shows signs of having been dammed at the entrance to the pond. A slight bank at the northeast corner of the pond may be part of the creek system.

This pond is unlikely to have provided water for cattle given that it would have contained salt water. The function of the pond is unknown.

2) TL 977 102 (Figure 3, H)

This possible enclosure (Strachan 1995, 4) is a natural meander in the creek system.

3) TL 970 093 (Figure 3, A)

Three straight parallel lines of pits aligned diagonally to one another. The pits are circular and vary considerably in their condition, the best example measuring 3.8m in diameter by 0.9m deep. They are best preserved at the western end and degenerate towards the east until they form shallow scoops 3.0m in diameter by 0.2m deep. The pits are between 6.1m and 7.7m apart at the western end of the lines. Most of the pits occur on the eastern side of the old railway line (which they cut), and only two were located on the western side.

It is probable that these pits are the remains of a World War II land minefield, as these were typically arranged in this pattern. This interpretation is supported by other World War II activity on the marsh, including pillboxes on the sea wall (Figure 3) (Roger Thomas, pers comm).

4) TL 969 093 - TL 972 090 (Figure 3, C)

A sinuous linear embanked feature runs from the high ground north of Tollesbury Wick Marsh towards the sea. Never more than 1.0m high (slightly higher than the surrounding area) and averaging between 9.4m and 11.0m wide, the bank has a cambered top. There is no sign of borrowing from either side of the bank; at places it does seem as though there is a slight ditch inside, but this is the remains of an old creek.

The bank becomes denuded and broken as it nears the sea, suggesting that it has suffered from coastal erosion, and was therefore outside the sea wall for at least part of its history. The bank is similar to some other trackways which cross the Marsh, and it is probable that it was a causeway providing access across the salt marsh to the sea. There is no evidence to support the suggestion that it may mark the line of an older sea wall.

4. SURVEY AND RESEARCH METHODS

The archaeological survey was carried out by Moraig Brown and Paul Pattison of the RCHME. Hard detail and major features were surveyed using a Wild TC1610 Electronic Theodolite with integral EDM. Data was captured on a Wild GRM 10 Rec Module and plotted via computer on a Calcomp 3024 plotter. Further details of the plan were supplied at 1:1000 and 1:500 scale using conventional graphical methods. The report was researched and written by Moraig Brown and edited by Paul Pattison, and the final report was assembled by Trevor Pearson. The site archive has been deposited in the National Monuments Record Centre, Kemble Drive, Swindon SN2 2GZ.

4. ARCHAEOLOGICAL SITE GAZETTEER

NMR No	Period	Description	Grid Reference
TL 90 NE 11	MO	Not named. Possible World War II land minefield	TL 970 093
TL 90 NE 12	UN	Not named. Raised trackway	TL 969 093 - TL 972 090
TL 90 NE 13	UN	Not named. Probable coastal industrial site of unknown date and function	TL 974 094
TL 91 SE 67	UN	Not named. Enclosure	TL 9736 1018
TL 91 SE 68	UN	Not named. Mound	TL 9782 1016

6. BIBLIOGRAPHY AND SOURCES

Agricola G 1556 — *De Re Metallica*, **Book XII** Translation by HH & LH Hoover 1912

Aston M 1988 — *Medieval Fish, Fisheries and Fishponds in England* BAR British Series **182 (i)**

Barford PM 1988 — 'After the Red Hills: Salt Making in Late Roman, Saxon and Medieval Essex' *Colchester Archaeological Group Bulletin* **31**, 3-8

Bond CJ 1988 — 'Monastic fisheries' *Medieval Fish, Fisheries and Fishponds in England* ed M Aston BAR British Series **182 (i)**, 69-112

Brownrigg W, 1748 — *The Art of Making Common Salt*

Chapman J & André P 1777 — *A Map of the County of Essex*

Christy M & Dalton WH 1928 — 'On two large groups of marsh-mounds on the Essex coast' *Transactions of the Essex Archaeological Society* **XVIII**, 27-56

Crossley D 1990 — *Post-Medieval Archaeology in Britain*

de Brisay K 1979 — 'The Red Hill at Tollesbury, Essex: Final Report' *Colchester Archaeological Group Bulletin* **22**, 2-8

Fawn AJ, Evans KA, McMaster I & Davies GMR 1990 — The Red Hills of Essex: Salt-making in Antiquity *Colchester Archaeological Group Bulletin* **30**

Garwood A 1995 — Tollesbury Wick Marsh, Tollesbury, Essex: Archaeological Evaluation (Essex County Council unpublished report)

Gouletquer PL 1974 — 'The Development of Salt Making in Prehistoric Europe' *Essex Journal* **8,1**, 2-14

Kenney J 1994 — Salt Working Mounds in the Harty Marshes, Isle of Sheppey, Kent (RCHME unpublished report)

Ordnance Survey

a 1874 1st Edition map sheets Essex LV.6, Essex XLVI.14

b 1875 1st Edition map sheets Essex XLVI.15-16

c 1897 2nd Edition map sheets Essex LV.2-3

d 1974 1:2500 map sheet TL 9610-9710

e 1975 1:2500 map sheets TL 9608-9708, TL 9609-9709,TL 9809, TL 9810-99

f 1978 1:10,000 map sheet TL 91 SE

g 1981 1:10,000 map sheet TL 90 NE

Pattison J & Williamson IT 1986 — 'The saltern mounds of north-east Lincolnshire' *Proceedings of the Yorkshire Geological Society*, **46, Part 1**, 77-9

Rodwell WJ 1966 — The Excavation of a Red Hill on Canvey Island *Essex Archaeological Society Transactions*, **2.1 (3rd series)**

Strachan, D 1995 — Tollesbury Wick Marsh: air-photo interpretation (Essex County Council unpublished report)

Wilkinson TJ 1987 — 'The Archaeology of the Essex Foreshore: The Hullbridge Project' *Essex Journal*, **22.2**, 29-33


ROYAL
COMMISSION
ON THE HISTORICAL
MONUMENTS
OF ENGLAND