Where Have All the People Gone? A Puzzle from Middle and Late Iron Age Essex

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A survey of 211 Iron Age roundhouses from twenty-five settlements across Essex shows a steep Late Iron Age fall in numbers from a Middle Iron Age peak. It cannot be explained by the replacement of the roundhouse with an architectural form that left little trace in the ground because the roundhouse remained a living architectural tradition until the late Roman period in the county. Nine of these twenty-five settlements were abandoned in or before the Late Iron Age, but have next to nothing in the way of pre-conquest artefacts that could have come from houses of that date which had not survived. The fall in roundhouse numbers is interpreted as a population contraction of at least 50% over the period c. 125–25 BC. Political upheaval may have been partly responsible. No environmental changes could be identified as contributory factors. Population retreat in the county explains the dearth of Late Iron Age settlements and the absence of large cemeteries.

INTRODUCTION

Our understanding of the development of human societies needs to acknowledge the importance of population levels and their fluctuations (Chamberlain 2006, 177–87). However, important as the population issue must have been, it hardly features in the current research agenda for the Iron Age (Haselgrove et al. 2001), and it received only cursory treatment in recent surveys of the whole field (Haselgrove and Pope 2007; Haselgrove and Moore 2007). An adventurous essay on this subject by Cunliffe (1978) has found few successors, and the popular topics of settlement patterns and agrarian landscapes are not really substitutes for this study. Even so, a consensus has emerged arguing for a significant growth in population across the Iron Age, with the increasing encroachment of occupation sites on land that had hitherto been viewed as marginal (Cunliffe 1978, 15; Fowler 1981, 259; Bell 1996, 12; Haselgrove et al. 2001, 29). An integral part of this positive vision of demographic inflation is the celebration of the achievements of later prehistoric agriculture in Britain (Fowler 1981, 255–56). More recently, there has been a recognition that there are important regional differences in the development of settlement patterns and that the first century BC in particular was a mosaic of both settlement dislocation and expansion (Haselgrove and Guichard 2013, 320–21). This paper examines the light that Middle and Late Iron Age Essex can shed on the topic of demographic fluctuations through the quantification of roundhouse
numbers. In particular, by looking at individual settlement histories that can now be revealed thanks to recent decades of sustained fieldwork. The Essex in question is the historic county with its boundary on the River Lea in what is now Greater London.

THE CHRONOLOGY OF THE ESSEX IRON AGE

The thesis expounded here is based on a study of dateable Iron Age roundhouses in Essex, and for that reason some account should be given of the phasing and chronology of the Iron Age for the county. Changes in pottery typology and fabrication allow us to divide the Essex Iron Age into four phases (Tables 1 and 2) (Sealey 1996; 2007a, 27–31; 2007b, 55–56; 2013, 36, 38–39). Earliest Iron Age pottery is the decorated post-Deverel-Rimbury ware formerly thought of as Late Bronze Age (Needham 2007, 40, 55). It is succeeded in Essex by the distinctive Early Iron Age Darmsden-Linton style. That in turn gives way to the more diverse Middle Iron Age traditions of the county. The writer has adjusted the start date of Middle Iron Age pottery from c. 300 BC (Sealey 2007b, 55) to c. 350 BC in the light of three radiocarbon dates from Hunts Hill Farm in Upminster parish (Sealey 2016, So1 in the online supplemental data, http://dx.doi.org/10.1080/00665983.2016.1110782). The widespread adoption of the grog-tempered and wheel-thrown wares of the Late Iron Age known as Aylesford-Swarling is securely anchored in the first century BC. It is present in cremation graves from c. 75 BC but does not significantly impact on domestic assemblages from settlement sites until c. 50 BC (Sealey 2007a, 27–31). This late dating of Aylesford-Swarling pottery north of the Thames had already been argued by Drury (1978, 131, 133) and endorsed by Thompson (1982, 9–10, 16).

| Table 1 | The period divisions of the Essex Iron Age |
|---------|------------------------------------------|
| Phase   | Date          | Duration in Years |
| ESTIA   | c. 800–600 BC | c. 200            |
| EIA     | c. 600–350   | c. 250            |
| MIA     | c. 350–50 BC | c. 300            |
| LIA     | c. 50 BC–c. AD 43 | c. 100          |

| Table 2 | Later prehistoric and early Roman period abbreviations in the tables |
|---------|-----------------------------|
| IA      | Iron Age                   |
| ESTIA   | Earliest Iron Age          |
| EIA     | Early Iron Age             |
| MIA     | Middle Iron Age            |
| LIA     | Late Iron Age              |
| EROM    | Early Roman                |
PROXY POPULATION INDICATORS

In default of data on the population of Iron Age Essex from documentary or epigraphic sources, one has to turn to archaeological evidence for population levels, to what are called proxy indicators. The question is to decide what is the most satisfactory proxy indicator for Essex.

We may begin with the Later Prehistoric Pottery Collections Gazetteer (Earle et al. 2007). *Prima facie,* the far greater number of reports of Late Iron Age pottery as against those of Middle Iron Age date (Table 3) might imply an expansion of population. However, there are important reservations to viewing the data in this way. Middle Iron Age pottery was not defined as such until 1978 and its fragility has militated against its survival (Drury 1978, 51–52, 127–29); earlier finds were not always recognized as such and went under-reported. Indeed, in one instance the pottery was confused with Anglo-Saxon material (Hawkes 1995, 24).

Other lines of evidence might be taken to support an interpretation of Late Iron Age demographic rise. Cremation burials are seldom found in the Middle Iron Age, and only become conspicuous in the Late Iron Age. Likewise the many salterns on the coast known as Red Hills are a late phenomenon and many of the records of Late Iron Age pottery come from these sources. No one lived in cemeteries and no houses have been reported from the Red Hills, so these records of Late Iron Age pottery can have no direct bearing on population levels and they distort the picture linked to relative visibility in mortuary and industrial practices.

More importantly still for archaeological visibility and the biases it creates for demographic inferences, Late Iron Age pottery was made on the wheel. A potter using the wheel can make pots in a fraction of the time it takes to make them by hand. Ethnographic data shows that the increase in output can be quite staggering (Arnold 1985, 208–11). This means that there was much more pottery in circulation in the Late Iron Age and that there was more of it to find its way into archaeological features than was the case with Middle Iron Age wares. The higher visibility of Late Iron Age pottery is further enhanced by some of it having been fired in rudimentary kilns to give a more durable product (Swan 1984, 55–59).

We should also bear in mind that the records in the Later Prehistoric Pottery Collections Gazetteer include reports of pottery from fieldwalking and chance finds. Significantly, at Stansted airport, a check on the results of fieldwalking was provided by excavation. It transpired that 30% of the sites with surface scatters of sherds had

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**Table 3** Finds of Middle and Late Iron Age pottery from Essex  
(after Earle et al. 2007)

| Period   | Number of Records |
|----------|-------------------|
| MIA      | 95                |
| MIA to LIA | 20              |
| LIA      | 184               |
no corresponding subsoil features and could not therefore be elevated to the status of settlements (Brooks 1993, 44). As such, pottery scatters can have no direct bearing on population levels. For these reasons it would be misguided to turn the data of the Later Prehistoric Pottery Collections Gazetteer into a statement of population levels.

Site numbers based on Historic Environment Records and other sources are regularly cited in discussions of population levels. The most developed application of the technique comes from a major study of Iron Age Gaul north of the Loire (Malrain et al. 2013); in Essex, it was used to evaluate the Stansted region (Havis and Brooks 2004b, 521). But with good reason the validity of the site as a concept in archaeology has been called into question (Butzer 1982, 230; Haselgrove 1985, 14; Clay 2002, 9–10) and the translation of site numbers into numbers of people is an all but insurmountable exercise (Jongman 2007, 122–23). The extraction of settlements per se from site records is more beguiling if the intention is to gauge population levels. However, direct comparisons of site numbers for the phases of the Iron Age would be misleading because so few settlements have been excavated in their entirety; and in any case they would vary in size and life-span. Moreover, a shift to or from a nucleated to or from a dispersed settlement pattern — and for that matter any change in settlements that affected the overall density of occupation — could frustrate any attempt to recover accurate population levels from settlement numbers. This is because there might be more dispersed habitations than nucleated settlements, but with comparable aggregate populations (Drury 1978, 129).

One way to circumvent these methodological difficulties would be to look at excavated structures that relate directly to populations, to the circular structures we call roundhouses. Before proceeding, the question of whether or not all houses were indeed residential should be addressed. At Cat’s Water (Cambs.) phosphate levels in roundhouses showed that half of them were actually livestock pens (Pryor 1984, 218, 223). No phosphate analyses have been attempted for Essex roundhouses and in default of evidence to the contrary, it is assumed none of them were permanently used as byres. Nor is there much reason to think that Essex roundhouses were regularly built as shrines, rather than homes. An exception is a building beneath the Romano-Celtic temple at Harlow (Bartlett 1988a, 9–10, fig. 4; 1988b, 163–65). Roundhouse F185 at Witham Ivy Chimneys also lay underneath a Romano-Celtic temple and it too was proposed as a shrine (Turner 1999, 231), but it was half a millennium earlier and so continuity or resurrection of veneration seems unlikely. We may therefore reasonably assume that roundhouses in Essex were by and large domestic residences. The question of how those houses served as homes, and the ways that might affect roundhouse numbers as indices of population levels is discussed below when quantification is addressed.

The advantage of using roundhouses as a proxy population indicator for Essex is the large number known for the county. A sample of 211 dateable roundhouses from across the county has been used as the basis for looking at shifts in populations levels, and confining the exercise to Essex lends sharper focus to the issues explored because of the restricted geographical scope.
ROUNDHOUSE INCIDENCE IN ESSEX IN THE LIGHT OF THE STANSTED AIRPORT, A_{120} AND A_{130} HIGHWAYS PROJECTS

In Essex there have been three major examinations of the landscape, at Stansted airport (Havis and Brooks 2004a; 2004b; Cooke et al. 2008) and along stretches of the A_{120} and A_{130} highways (Timby et al. 2007; Dale et al. 2007) (Illus. 1). The project excavation strategies were geared to the retrieval of all settlements, irrespective of period; and for that reason the results can be taken as representative of ancient levels of settlement density (Tables 4 and 5; Sealey 2016, S02 in the online supplemental data, http://dx.doi.org/10.1080/00665983.2016.1110782).

The Middle Iron Age lasted three times as long as the Late Iron Age. This means that if roundhouses were distributed evenly across both periods, we would need to divide the number of Middle Iron Age houses by three to get a fair comparison with house incidence in the Late Iron Age. If we divide the twenty Middle Iron Age roundhouses of Table 5 by three, we have a notional figure of 6.6 Middle Iron Age roundhouses to every three Late Iron Age roundhouses. That represents a fall in roundhouse numbers of 3.6, a decline of 54%. This discrepancy has every appearance of an anomaly, and one that needs explaining.

ILLUS. 1 Location Map for the Stansted Airport, and A_{120} and A_{130} Highway Excavations
To explore the issue further the writer examined the development of selected sites in Essex to see if there was other evidence creating a coherent pattern of contraction in roundhouse numbers between the Middle and Late Iron Age. Attention was confined to excavated settlement sites revealing five or more roundhouses because it was hoped that this minimum number might be enough to shed light on settlement history.

### Table 4
Roundhouses numbers from selected excavations in Essex by Iron Age phase (after Havis and Brooks 2004a and 2004b, Dale et al. 2007, and Cooke et al. 2008)

| Site                                      | Period          | House Numbers |
|-------------------------------------------|-----------------|---------------|
| Stansted airport LTCP western end         | MIA             | 5             |
| Stansted airport LTCP western end         | MIA to LIA      | 1             |
| Stansted airport LTCP eastern settlement  | LIA             | 1             |
| Stansted airport LTCP eastern settlement  | LIA to EROM     | 4             |
| Stansted airport NP                       | MIA             | 2             |
| Stansted airport MTCP                     | MIA to LIA      | 1             |
| Stansted airport M11                      | MIA to LIA      | 1             |
| Stansted airport M11                      | LIA to EROM     | 1             |
| Stansted airport ACS                      | MIA to LIA      | 9             |
| Stansted airport CIS                      | MIA             | 1             |
| Stansted airport LBS                      | MIA             | 1             |
| A120 Highwood Farm                        | MIA             | 3             |
| A120 Highwood Farm                        | IA              | 1             |
| A120 Grange Lane                          | MIA             | 2             |
| A120 East of Parsonage Lane               | MIA             | 1             |
| A120 East of Little Dunmow Lane           | MIA             | 4             |
| A120 East of Little Dunmow Lane           | LIA             | 2             |
| A130 Sandon Brook                         | EIA to MIA      | 3             |
| A130 Curry Hill North                     | EIA             | 1             |
| A130 Curry Hill Central                   | EIA or MIA      | 4             |
| A130 Curry Hill Central                   | MIA             | 1             |

### Table 5
Incidence by phase of the roundhouses in Table 4

| Period                | House Numbers |
|-----------------------|---------------|
| IA                    | 1             |
| EIA                   | 1             |
| EIA to MIA            | 7             |
| MIA                   | 20            |
| MIA to LIA            | 12            |
| LIA                   | 3             |
| LIA to EROM           | 5             |
| Total                 | 49            |

A SURVEY OF SELECTED IRON AGE SETTLEMENTS IN ESSEX
Fourteen settlements met this criterion (Sealey 2016, S03 in the online supplemental data, http://dx.doi.org/10.1080/00665983.2016.1110782; Illus. 2; Tables 6–8). Structures from the Sheepen site at Colchester (Hawkes and Hull 1947, 46–47, 65–67, 73, 123–24, pl.4 no.2) are not included because of reservations about their status as houses (Rodwell 1978, 38–39). Two subsets have been extracted: those settlements abandoned in or before the Late Iron Age (Table 7) and those that ended early in the Roman period (Table 8).

ROUND AND RECTANGULAR HOUSES

The decline in the number of Late Iron Age roundhouses in Essex might be explained by the replacement of the roundhouse by rectangular houses. A major component of such structures were sleeper-beams that rested directly on the ground surface or in a shallow slot such that they were particularly vulnerable to plough damage, and so seldom leave any archaeological trace (Rodwell 1978, 26–27, 39). Our most comprehensive information about the architecture of such buildings comes from Hertfordshire.
(Partridge 1981, 36–40, 49–52; Neal et al. 1990, fig. 27, 25–27, 29, 32–34). In Essex, examples include those from Kelvedon (Eddy and Turner 1982, 8–9) and Elms Farm at Heybridge (Atkinson and Preston forthcoming). Those at Heybridge were erected inside ditched rectangular compounds. Their sleeper-beams were recognized by the shallow slots they left; such features were slight, and tended to peter out at both ends.

### Table 6 Roundhouse numbers from Iron Age settlements in Essex with five or more roundhouses

| Site                              | ESTIA | EIA | MIA | MIA | LIA | LIA | Totals |
|-----------------------------------|-------|-----|-----|-----|-----|-----|--------|
| Curry Hill Central                | 4     | 1   |     |     | 5   |     | 5      |
| East of Little Dunmow Road        | 4     | 2   |     |     | 6   |     | 6      |
| Hunts Hill Farm                   | 8     | 6   |     |     |     | 14  | 14     |
| Ivy Chimneys                      | 1     | 6   |     |     |     | 7   | 7      |
| Little Waltham                    | 17    | 1   | 18  |     |     |     | 18     |
| Lofs Farm                         | 11    |     |     | 11  |     |     | 11     |
| Moor Hall Farm                    | 4     |     |     | 3   |     | 7   | 7      |
| Mucking                           | 3     | 4   | 9   | 40  | 4   | 60  | 60     |
| St Osyth                          | 19    |     |     |     |     | 19  | 19     |
| Slough House Farm                 | 7     |     |     | 1   | 8   |     | 8      |
| Stansted ACS                      |       |     | 9   |     |     | 9   | 9      |
| Stansted LTCP western             | 5     | 1   |     | 6   |     |     | 6      |
| Stratford Olympic Park            | 7     |     |     |     | 7   |     | 7      |
| Uphall Camp                       | 11    |     |     |     |     | 11  | 11     |
| **Totals**                        | 15    | 11  | 13  | 131 | 14  | 4   | 188    |

### Table 7 Roundhouse numbers from settlements in Table 6 abandoned in or before the Late Iron Age

| Site                              | ESTIA | EIA | MIA | MIA | LIA | LIA | Totals |
|-----------------------------------|-------|-----|-----|-----|-----|-----|--------|
| Curry Hill Central                | 4     | 1   |     |     | 5   |     | 5      |
| Hunts Hill Farm                   | 8     | 6   |     |     |     | 14  | 14     |
| Little Waltham                    | 17    |     |     | 1   | 18  |     | 18     |
| Lofs Farm                         | 11    |     |     |     | 11  |     | 11     |
| Moor Hall Farm                    | 4     |     |     | 3   |     | 7   | 7      |
| St Osyth                          | 19    |     |     |     |     | 19  | 19     |
| Stansted ACS                      |       |     | 9   |     |     | 9   | 9      |
| Stratford Olympic Park            | 7     |     |     |     | 7   |     | 7      |
| Uphall Camp                       | 11    |     |     |     |     | 11  | 11     |
| **Totals**                        | 12    | 6   | 4   | 69  | 9   | 1   | 101    |
Thirty-five years after Rodwell’s paper on the subject, it is no longer possible to envisage a scenario in which the rectangular house in Essex was a late innovation that drove the roundhouse to extinction. This is because we now know that the roundhouse remained a living architectural tradition well beyond the Roman conquest. Thus Roundhouse S9 at Orsett was built at about the time of the Roman invasion itself (Carter 1998, 23–24, 121, 123–27, 167–69) and there were ten more at conquest period Heybridge Elms Farm (Atkinson and Preston 1998, 94, fig. 5). Late fourth-century roundhouses of Iron Age type from Stansted airport testify to the tenacity of the tradition (Cooke 2008, 170, 173).

The problem remains of how many rectangular houses there were in Late Iron Age Essex. Even where no direct evidence for them has survived, their original presence can be suspected. A case in point comes from Enclosure 30248 at East of Little Dunmow Road, Site 50 of the A120 excavations (Powell 2007, figs 2.32–34, 65–67). It began as a rectangular ditched compound by 14 m, but was subsequently reduced in size. In its final phase it was open on the south-east, and so can hardly have been the livestock corral the excavators claimed. The wealth of finds from the ditches suggests occupation in the immediate vicinity, and it may well have been the setting for a rectangular house built on sleeper-beams. It resonates with the small rectangular compounds of mid-first century AD date suggestive of homesteads from the Hutchison and Greenhouse Farm sites in south Cambridgeshire (Evans et. al. 2008, fig. 2.16, 87, 138). Although there were domestic structures of rectangular plan in Late Iron Age Essex that have left little trace in the ground, they did not displace the roundhouse. Consequently, we need to consider the fall in roundhouse numbers from a different perspective.

### Table 8

| Site                                | MIA | MIA to LIA | LIA | Totals |
|-------------------------------------|-----|------------|-----|--------|
| East of Little Dunmow Road          | 4   | 2          | 6   |        |
| Slough House Farm                   | 7   | 1          | 8   |        |
| Stansted LTCP western               | 5   | 1          | 6   |        |
| Totals                              | 16  | 1          | 3   | 20     |

**THE CASE FOR POPULATION DECLINE IN MIDDLE TO LATE IRON AGE ESSEX**

Having discounted a shift in architectural form as the explanation for roundhouse decline, we need now to consider population decline as an explanation for the fall in roundhouse numbers from their Middle Iron Age peak. A shift from dispersed Middle Iron Age to nucleated Late Iron Age settlements does not explain the contraction in roundhouse numbers because settlement nucleation is a Middle rather than Late Iron Age phenomenon in Essex (see Sealey 2016, S03 in the online supplemental data, [http://dx.doi.org/10.1080/00665983.2016.1110782](http://dx.doi.org/10.1080/00665983.2016.1110782)). The Middle Iron Age villages at
Little Waltham, Slough House Farm, Stratford Olympic Park and Uphall Camp were nucleated (Drury 1978; Wallis 1998; Powell 2012; Greenwood 1988; 1989; 2001) likewise the Stansted ACS village that spanned the transition from the Middle to Late Iron Age before abandonment by c. 25 BC (Havis and Brooks 2004a) (Illus 3, 8 and 9). Hunts Hill Farm, Moor Hall Farm and St Osyth are more loosely nucleated (Cotton et al. 2011; Germany 2007) (Illus 4, 5, 6 and 7). There is simply nothing on a comparable scale for Late Iron Age Essex, and if such settlements were anything like the norm then they would have turned up in the A120, A130 and Stansted airport area excavations.

Another facet of settlement nucleation is the emergence of oppida in the Late Iron Age. It has been suggested that their appearance in Picardy might account for a fall in the number of rural settlements there in the first century BC (Malrain et al. 2013, 116). It is difficult to apply this to Essex where Camulodunum is the only settlement usually thought of as an oppidum; and only four roundhouses have been found there since 1945 (Crummy 2011). Notwithstanding its wealth of artefactual remains, even the Sheepen site at Colchester (Hawkes and Hull 1947) might not represent significant permanent settlement. Willis has suggested instead it might have been a venue for festivals, feasts and religious observances (Willis 2007, 121–22). The only ancient source to convey a sense of Iron Age Camulodunum is Cassius Dio (Roman History 60.4), who called it a basileion: a royal seat. This word carries no implication of a concentration of population within or around the oppidum.

Nine of the fourteen Essex settlements with five or more roundhouses were abandoned in — or before — the Late Iron Age (Table 6). Even if the inhabitants had adopted rectangular houses in the Late Iron Age built on sleeper-beams that have left no structural traces, finds from that occupation would persist in the plough soil and other site features to suggest their presence. However, such evidence is only forthcoming at Chipping Hill in Witham where Late Iron Age material culture is well represented, but where site features do not include houses (Turner 1999) (Sealey 2016, SO3). Nor is there any sign of the ditched compounds on these nine settlements that might have been the settings for houses, as seems to have been the case at East of Little Dunmow Road. Bearing in mind the number of settlements with a fall in roundhouse numbers and the distribution of those settlements across Essex, the direction in which the evidence points is to a major and county-wide contraction in population.

**The Quantification of Relative Population Levels by House Counts**

The very many roundhouses reported from Essex offer an opportunity to quantify the scale of Middle to Late Iron population decline proposed here. However, even if house numbers are taken as a satisfactory proxy indicator of population levels, it is as well to be aware of their limitations and constraints as evidence.

Roundhouses vary in diameter and an increase in diameter leads to an exponential increase in floor area (Lambrick 2009, 141; Harding 2009, 284–85). Consequently, it would be best to use floor areas as proxy population indicators, rather than simple house numbers. Unfortunately, the application of the technique to Essex showed that it was
ILLUS. 3  The Curry Hill Central, Little Waltham and Stansted ACS Settlements
© Essex County Council
impractical, and the attempt was not pursued. This is because roundhouses can survive as one or more penannular features. Where only one penannular feature is present, it might have been an eaves-drip gully, a wall trench or the setting for an internal ring of posts that supported the roof. In practice, it is usually impossible to decide between these possibilities. The situation is aggravated in Essex because structural posts seem to have been invariably salvaged for firewood when the house was abandoned. It is understandable that the excavators of penannular gullies in the county are often non-committal about their interpretation (Havis and Brooks 2004b, 531; Powell and Biddulph 2007, 73) and for that reason floor areas cannot be recovered and used as a proxy population indicator (Sealey 2016, S04 in the online supplemental data, http://dx.doi.org/10.1080/00665983.2016.1110782).

The use of house numbers as proxy population indicators has also to acknowledge that the seasonal occupation of roundhouses might distort the picture. This is a real possibility because of the many salt-making sites along the Essex coast from the end of the Middle Iron Age until the Roman period (Fawn et al. 1990). As the evaporation of sea water needs favourable weather, activity at the so-called Red Hills would have been confined to the summer (Stansbie and Biddulph 2012, 82). But — remarkably — roundhouses have not been reported from the Red Hills, and in this instance the possibility of the duplication of household numbers through roundhouse counts does not arise.
For the Earliest and Early Iron Ages, roundhouses in Essex were post-built with the posts set in individual holes, rather than in a continuous wall trench (Drury 1978, 127; Brown 1999, 177). There was a partial reversion to this technique in Essex at the end of the Middle Iron Age and in the Late Iron Age. Examples include those from mid-first century AD Elms Farm at Heybridge (Atkinson and Preston 1998, 94, fig. 5) and one from Abbotstone at Colchester dateable to the Middle to Late Iron Age transition (Benfield and Pooley 2005, 6, fig. 6; Sealey 2005, 21–22). Such structures can be more difficult to recognize than houses with penannular gullies (Willis 1997, 208), as with the Middle Iron Age house from Stanway at Colchester (Crummey et al. 2007, 30–31). Some post-built roundhouses were not identified until the post-exavation stage, as with the house at Hacheston (Suffolk) (Blagg et al. 2004, 36, fig. 27, 41). This means that the numbers of post-built roundhouses at the beginning and end of the Iron Age may well have been higher than the surviving evidence suggests.
On the question of roundhouse visibility, it is worth asking if the fall in numbers of Late Iron Age roundhouses is related to a shift towards unenclosed settlements (which are less easily recognized), rather than to those demarcated by a perimeter ditch and bank. But open settlements are in fact the most prolific sources of roundhouses in the Middle Iron Age; examples include the Period 2 village at Little Waltham and the amorphous sprawl of roundhouses at Mucking (Evans et al. forthcoming) (Sealey 2016, So3 in the online supplemental data, http://dx.doi.org/10.1080/00665983.2016.1110782). In addition, the largest single grouping of first-century AD roundhouses is the unenclosed village at Heybridge Elms Farm (Atkinson and Preston 1998, 94, fig. 5).

Roundhouse numbers also need to be evaluated in the light of how domestic space may have been organized. Paired circular structures which bear every appearance of a main house and an ancillary, and possibly non-residential structure, are well attested in Cambridgeshire (Evans 2003, 39; Evans and Hodder 2006, 270; Evans et al. 2008, 46;
Evans et al. 2013, 154, 240). Essex is very different, and the only incontrovertible instance of a paired set of circular structures comes from the ACS village at Stansted airport (Havis and Brooks 2004a, fig. 68, 98; 2004b, 531). However, in this instance, the smaller structure had an interior diameter of only 2.5 m and as a result it has not been included in the counts of roundhouses here. Otherwise the disposition of houses in the county fits the Hingley (1990) model of the emergence of large roundhouses in the Iron Age. Namely, large roundhouses could be regarded as serving for household activities that had hitherto been dispersed among several smaller houses being brought together under one roof. It is a pity that although hearths are occasionally reported from roundhouses in Essex, floors have not survived and so one cannot attempt analyses of artefacts to identify the roles of individual houses along the lines proposed for Haddenham (Cambs.) (Evans and Hodder 2006, 270–71) or Black Patch (East Sussex) (Drewett 1982, 328–40).

The fall in the number of Late Iron Age roundhouses from a Middle Iron Age peak shown in Table 6 is steep: from 131 to four houses. If we adjust the figures to allow for the Middle Iron Age being three times as long as the Late Iron Age, the fall is one of 43.6 roundhouses per century to one of four per century, or 90 %. If that strains credulity, we can merge the fourteen Middle to Late Iron Age houses with the four late ones. Even so, the contraction in numbers remains stark, one of 43.6 roundhouses per century to one of eighteen per century, or 58 %.

Of course, we cannot take those percentages at face value. Although one might discount the possibilities of significant seasonal occupation of roundhouses in Essex and of the pairing...
of houses (both of which could theoretically mean counting the same household twice), there is every likelihood that post-built roundhouses without a continuous wall trench were more common in the Early and Late Iron Ages than the available evidence suggests. Moreover, the existence of rectangular houses that leave little trace in the ground has to be accommodated as a factor in gauging relative population levels in the Late Iron Age. We cannot quantify these variables in the way that we can count roundhouses. It means that
ILLUS. 9  The Iron Age Settlement at Stratford Olympic Park
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statistics for population contraction based on roundhouse counts come with a margin of
error and should be taken as indications of magnitude rather than treated as proxy census
returns. But there is no escaping the sharp decrease in roundhouse numbers and the
evidence for settlement abandonment. It is not beyond the realms of possibility that an
advanced stage of the Middle Iron Age saw the onset of a demographic contraction that
reduced the population by a half or more.

THE CHRONOLOGY OF MIDDLE TO LATE IRON AGE
POPULATION DECLINE IN ESSEX

What remains unclear is the precise chronology of the postulated population decline in Iron
Age Essex (see Table 6; Sealey 2016, SO3). Curry Hill Central (Illus. 3), Moor Hall Farm
and St Osyth came to an end in the Middle Iron Age, but we do not know when. All one
can say is that St Osyth might have lasted as late as the second century BC on the basis of the
radiocarbon dates. The ceramic sequence at Stratford Olympic Park village suggests it came
to an end in the second century BC. On the basis of what is known about the history of
Little Waltham, Slough House Farm, the Stansted LTCP western settlement and Uphall
Camp, one can see that the population contraction began late in the Middle Iron Age. The
picture is at its most striking for Little Waltham where the fifteen c. 250–100 BC Period 2
roundhouses fall to two in the c. 100–50 BC Period 3. Relating the architectural sequence
proposed by the excavator to the site chronology suggests decline was underway at an
advanced stage of the second century BC by — let us say — c. 125 BC. Little Waltham ends
with a solitary roundhouse assigned to c. 50–25 BC. Uphall Camp peters out in the first half
of the first century, by c. 75 BC. Occupation of the Stansted ACS village had ended before c.
25 BC. Lofts Farm may also have come to an end by the end of the century. Serious
population decline seems therefore to have begun by the end of the second century BC,
and to have continued until at least the last quarter of the first century BC.

It should not be assumed that population levels recovered after c. 25 BC. At East of
Little Dunmow Road, Slough House Farm and the Stansted LTCP western site there
was a further contraction in roundhouse numbers in the Late Iron Age, with the
abandonment of the settlements falling at the start of the Roman period. Only the
Stansted airport LTCP eastern settlement bucks the trend, with an increase in round-
house numbers as one moves from the Late Iron Age into the Early Roman period.

POTENTIAL CAUSES OF POPULATION DECLINE
IN MIDDLE TO LATE IRON AGE ESSEX

The county-wide occurrence of settlements that testify to population retreat suggests an
environmental factor may have been involved. Tree ring data from London might imply
wetter conditions in the second century BC although the increased rate of tree growth then
was instead attributed by Tyers (2008, 74) to how the woodland was managed. In fact it
would seem that the Middle to Late Iron Age climate of Britain was much like that of today,
if not actually milder and drier (Lamb 1981, 56; Turner 1981, 261); and in northern Gaul the
climate improved from the second half of the third century BC (Malrain et al. 2013, 232).
Nor does the archaeological evidence allow the recognition of epidemics that might have
precipitated population decline. In some cases the pathology associated with infectious
diseases can be detected from skeletal remains (Chamberlain 2006, 154–56), but there are so
few inhumations from Iron Age Essex that this avenue of research is closed. There are no
mass graves like those from later periods that testify to widespread deaths from plague or
famine (Chamberlain 2006, 74–7, 123–24; Simmonds et al. 2008, 139–41; Grainger et al.
2008, 18–22; Connell et al. 2012, 217–31).

The slave trade may have been a relevant factor. The Belgae who came in search of
plunder from across the Channel will have taken slaves (Caesar, De Bello Gallico 5.12),
and the effects could have been devastating (Cunliffe 2005, 601). Findspots of Gallo-
Belgic A, B and C coins show that Essex was part of this Belgic sphere of interest (Sills
2003, 136, 151–53, 169, 182, 237–38), at the very time when populations started to go
into retreat in Essex. But archaeological evidence to link slavery with population
decline is difficult to find, a phenomenon typical of slavery in general (Taylor 2005,
230); and the slave chain and shackles of native type from Sheepen at Colchester are too
late to be of any help (Hawkes and Hull 1947, 343 nos 14, 21–22, pl. 105).

Political unrest and warfare might also account for population decline. We know the
Trinovantes were molested by Cassivellanus at the time of the Gallic Wars (Caesar, De
Bello Gallico 5.20). Later on, c. 15–10 BC, Tasciovanus had seized Camulodunum for a
period, and — by implication — overrun the Trinovantes (Hawkes 1995, 92–93; pace
Kretz 2006, 199, 202; 2008, 21–22; 2010, 43). Early in the next century the Essex prince
Dubnovellaunos was driven out of his kingdom, and Cunobelin secured mastery of
Essex (Kretz 2008, 20–21 citing Res Gestae 32.1; 2010, 42–46). Running through these
imperfectly glimpsed snatches of political upheaval is the common denominator of the
Trinovantes and other Essex communities as victims, and it may well explain part of the
population fall explored here. But like slavery, archaeological evidence for the effects of
warfare is hard to seek. Burnt daub from structures is regularly reported from Essex but
never in the quantities to suggest an actual destruction horizon. Nor are there massacre
sites like that across the county boundary with Cambridgeshire at the War Ditches
(Pickstone and Mortimer 2012, 33, 35, 40, 55–56).

MIDDLE AND LATE IRON AGE ESSEX IN A NEW LIGHT

A serious decline in population from the end of the Middle Iron Age allows us to see
Essex in a new light. Environmental evidence from Grange Lane at Little Dunmow on
the A120 suggests that woodland may have been gaining a grip on the landscape at what
was an advanced stage of the Middle Iron Age (Druce 2007, 371–72). West of
Colchester at Great Tey there was also a partial reversion to woodland, in the first
century BC (Skippins 2006, 8–9; Nicholls 2008; Sealey 2016, S05 in the online
supplemental data, http://dx.doi.org/10.1080/00665983.2016.1110782). What hap-
pened at both sites could be explained by the neglect of agrarian landscapes caused by
manpower shortages. Abandonment of the major defended Middle Iron Age settle-
ments of Asheldam Camp and Chipping Hill at Witham by the Late Iron Age can now
be seen as part of a wider pattern of settlement contraction (Bedwin 1991, 24–26;
Rodwell 1993, 57). There is a long gap in the funerary record at the Stanway site at
Colchester, where after the mid-first century BC funeral represented by Chamber AF25
there were no more graves until the c. AD 35–45 Chamber BF6 (Crummy et al. 2007, 10–13) and this too may be another facet of the same phenomenon. None of this means that Late Iron Age Essex was deserted: far from it. However, population contraction explains features of the Essex Late Iron Age that are otherwise puzzling, in particular the shortage of settlement contexts of early to middle Augustan date and indeed the dearth of sizeable settlements. Nor has the county produced any cemeteries comparable in size to that of King Harry Lane in Hertfordshire, with its 455 cremations and seventeen inhumations of Late Iron Age to conquest period date (Fitzpatrick 1991, 323). Late Iron Age cemeteries in Essex are always small, and the largest is the dozen or so cremations from Lexden at Colchester (Crummy 1995, 164–69).

DISCUSSION

We should not assume that population growth in early societies was neither inevitable nor inexorable. Population decline is also possible, and it happened (Simmons 2001, 66). Long-term rates of population growth tend to be lower than short-term rates; this can be explained by episodes of high mortality, some of which might be catastrophic (Chamberlain 2006, 69). We should never forget the vulnerability of pre-industrial populations to epidemics or the vagaries of the weather. Likewise, we should not assume that somehow everyone had enough to eat in the Iron Age (Lambrick 2009, 167). In other words, we should expect to find — and indeed attempt to recognize — episodes in prehistory when there was significant population contraction. If our reading of the Essex data is sound, the county suffered one of these episodes from the late second until at least the end of the first century BC.

It is not immediately obvious if Essex was typical of the rest of the country. Any attempt to repeat the exercise undertaken for Essex in East Anglia and Hertfordshire founders on two factors. One is the persistence of Middle Iron Age pottery in Norfolk, Suffolk and parts of Cambridgeshire until the Roman invasion. This factor makes it difficult to distinguish Middle from Late Iron Age houses in terms of their associated material culture. The other factor is the dearth of roundhouses themselves in these neighbouring regions (Sealey 2016, S06 in the online supplemental data, http://dx.doi.org/10.1080/00665983.2016.1110782).

Further north in the east Midlands, the incidence of roundhouses is the exact opposite to Essex, with a steep rise in numbers in the Late Iron Age (Willis 1997, 208–9; Tables 9–10). Both the Essex and East Midlands figures for roundhouse incidence by period hint that Iron Age population levels may have oscillated to a degree that has hitherto been unsuspected. Perhaps there were significant levels of population mobility within the country, as Hill suggests (2007, 23–24).

In Wessex it is difficult to know if the abandonment of many of the hill-forts in the late second and first centuries BC (Payne 2006, 5, 13; Cunliffe 2006, 162) is an expression of demographic retreat or social and political upheaval. Certainly there is the same dearth of Late Iron Age roundhouses in the region as in Essex. This is generally explained as their replacement by a house type that left little trace in the ground (Sharples 2010, 220), but it might be time for a reappraisal.
On the mainland of Europe there is evidence for population fluctuations on the same scale as Essex. In France north of the Loire there was an unprecedented increase c. 150–100 BC, with twice as many sites as there were in an earlier peak that began c. 550–500 and lasted until the following century. But in the first century BC the number of settlements fell by a third (Malrain et al. 2013, 231–34). Evidence for a first-century BC population retreat is also forthcoming in the east of France and the Auvergne, and indeed in the south of Germany (Haselgrove and Guichard 2013, 318–19, 324). It is striking that Middle and Late Iron Age Essex fits the continental pattern better than it does the insular picture.

At first sight the picture of a population contraction in Late Iron Age Essex is at odds with the archaeological visibility of the period as perceived from the artefactual evidence, a phenomenon found over much of southern and eastern Britain (Willis 1997, 205–7). It began in the Middle Iron Age with the introduction of coinage, and continued with the growing popularity of brooches from the first century BC (Haselgrove 1997, 51, 53, 59–67). In the last century of the Iron Age, wheel-thrown and grog-tempered pottery of Aylesford-Swarling type is commonplace. Imported pottery and metalwork from the Roman world add to the picture. Native metalwork decorated in La Tène style becomes more widespread, such as the copper-alloy mirror series. Taphonomy plays a part in the visibility of the Late Iron Age. From the first century BC the emergence of a cremation burial rite has captured much of this material for posterity, none more so than in elite graves. Votive deposition and a greater incidence of hoarding also contributed. But there is no inherent reason to think that roundhouse incidence – and therefore population levels – should march in step with

| County            | Number of Round-Houses |
|-------------------|------------------------|
| Leicestershire    | 23–25                  |
| Lincolnshire      | 13                     |
| Nottinghamshire   | 13                     |
| South Humberside  | 14                     |
| Total             | 63–65                  |

| Period            | Number of Round-Houses |
|-------------------|------------------------|
| IA                | 11–13                  |
| EIA               | 0                      |
| EIA or MIA        | 4                      |
| MIA               | 2                      |
| MIA or LIA        | 3                      |
| LIA               | 43                     |
| Total             | 63–65                  |
brooches and other categories of artefact (Willis 1997, 209). The popularity of brooches towards the end of the Iron Age is the manifestation of a growing interest in personal appearance (Hill 1997, 104) rather than an index of population growth. Whatever intellectual delights the variety and wealth of the artefactual evidence for the Middle and Late Iron Age have to offer us, they might be playing tricks on us if we think they are telling us about the demography of the periods.

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SUPPLEMENTAL DATA

Seven supplementary files for this article are included on the Archaeological Journal’s online platform (http://dx.doi.org/10.1080/00665983.2016.1110782). Radiocarbon Dates for Darnsden-Linton Pottery from Hunts Hill Farm (Sealey 2016, S01), Details of the Stansted Airport, A120 and A130 excavations (Sealey 2016, S02), the fourteen Iron Age Sites in Essex with five or more roundhouses (Sealey 2016, S03), round-house floor areas as proxy population indicators (Sealey 2016, S04), woodland regeneration in Essex as a symptom of population decline (Sealey 2016, S05), roundhouses and population decline in Norfolk, Suffolk, Hertfordshire and Cambridgeshire (Sealey 2016, S06), extended bibliography supporting the article and supplemental data (Sealey 2016, S07). (http://dx.doi.org/10.1080/00665983.2016.1110782).

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