Disaster recovery: new archaeological evidence for the long-term impact of the 'calamitous' fourteenth century

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The Black Death swept across Europe and Asia in the fourteenth century, killing millions and devastating communities. Recent re-evaluations of source data, the discovery of new plague cemeteries and advances in genotyping have caused scholars to reconsider the extent of the devastation and to revise estimated mortality rates upwards. But what was the true impact of this catastrophic episode? Systematic test-pitting can reveal changes in medieval demography that can be both quantified and mapped at a range of scales. Comparing the relative amounts of high medieval (copious) to late medieval (much scarcer) pottery suggests that the pottery-using population across eastern England was around 45% lower in the centuries after the Black Death than before, and such comparison identifies exactly where this contraction was the most and least severely felt.

Keywords: England, medieval, pottery, Black Death, plague, test-pit, depopulation

Introduction

The fourteenth century was a watershed in the history of Europe, during which centuries of demographic growth were thrown into reverse by successive environmental, economic and epidemiological vicissitudes, a 'calamitous' century indeed (Tuchman 1978). The most iconic of these calamities was the Black Death of AD 1346–1351: an epidemic vividly recorded by agonised contemporary eyewitnesses as it swept across Europe and Asia; its causes and effects have long been hotly debated. For much of the later twentieth century the impact of the Black Death was downplayed. Archaeologists found few proven fourteenth-century catastrophe cemeteries, and they demonstrated that many deserted medieval villages (DMVs)—sites abandoned following medieval occupation—were not depopulated until

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long after this period (Beresford & Hurst 1971). Many historians considered the Black Death to have been a minor Malthusian 'purgative', insignificant as an agent of social change that would have happened regardless (e.g. Power 1918; Bridbury 1973; Postan 1973). Opinion has, however, begun to change. New perspectives on source material have led historians to raise their estimates of Black Death mortality rates from 23–45% (Ziegler 1969) up to 40–60% (Aberth 2001), and to question its dismissal by earlier scholars (Hatcher 1994; Campbell 2013), while new techniques have enabled archaeologists to identify previously unsuspected fourteenth-century plague burials in French cemeteries (Kacki *et al.* 2011). The genotyping of *Yersinia pestis* (*YP*) DNA found in skeletons from the documented Black Death cemetery in East Smithfield, London (Bos *et al.* 2011) has not only proved that the Black Death was indeed caused by *YP*, but also indicated that this was a newly evolved variant—which may help explain its virulence—and the ancestor of all contemporary strains.

These advances in understanding the causes and mortality rate of the Black Death cannot, alone, answer wider questions about the longer social and economic impact of the compound perturbations of the fourteenth century (Nightingale 2005). A key factor that still impedes progress in this debate is our limited knowledge of demographic change in this period, which lacks comprehensive, consistent, reliable, scalable documentary population data (Bailey 1996: 1–2; Benedictow 2004: 245–72; Sloane 2011: 103–11).

This paper presents a novel solution to this evidential problem, using tens of thousands of datable pottery sherds newly recovered from nearly 2000 known archaeological contexts within historic rural settlements across six counties in eastern England. It indicates that these data can be used to measure and map, at a range of scales, sustained change in medieval settlement and demography before and after the fourteenth century. This not only indicates an overall drop in activity of nearly 50% in the centuries after the Black Death, but also shows, in detail, which places suffered and in what proportions. These results transcend the limitations of the written record pertaining to medieval demographic change, which are severe in countries such as England, France, Spain and Italy (Aberth 2001: 122–31), but much worse in other areas also affected by the Black Death, including Central and Northern Europe, North Africa, the Near East and the Middle East (Benedictow 2004: 257). Similar large-scale test-pit excavation could potentially be used to measure and compare the sustained impact of demographic change much more widely.

Project methods

The pottery data derive from more than 50 currently occupied rural settlements (CORS) (Lewis 2005) in eastern England (Figure 1), deliberately avoiding DMVs whose development may be atypical of medieval settlements (Lewis *et al.* 1997). The pottery was recovered from $1m^2$ test-pit excavations, one of the few archaeological techniques that can be used within CORS (Gerrard & Aston 2007: 244–61), which are by definition covered by contemporary habitation. Being small in extent and quickly completed, test-pits can be used where larger excavations would not be practical or permitted. Pits are sited wherever possible and follow standardised excavation methods (Lewis 2007). The test-pits were all excavated under professional archaeological supervision by members of the public (Lewis 2014a: 321–24); the results are a testament to the thousands of people who contributed.

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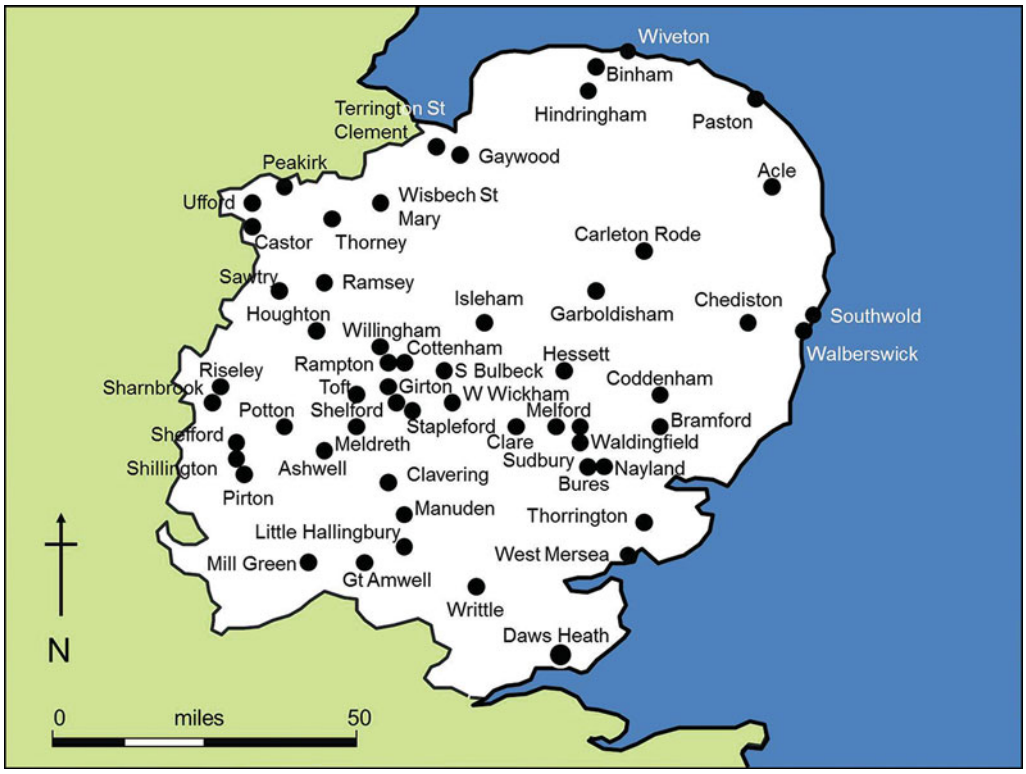

Figure 1. Eastern England, showing the location of parishes investigated by test-pit excavation within CORS to the end of 2014.

Analysis focuses on pottery because it was extensively used in eastern England in the study period (twelfth–sixteenth centuries AD) and can act as a proxy for human presence. Medieval ceramic vessels were easily broken and difficult to mend, and therefore frequently discarded; sherds are taphonomically durable in most archaeological contexts, relatively easy to see during excavation and sieving, and datable without incurring prohibitive costs. Mapping the distribution of medieval pottery from test-pit excavations within CORS can thus be used with reasonable confidence to reconstruct the extent, date and (to some degree) character of contemporary human activity. Medieval potters produced a wide range of wares, most remaining in production for a century or more (McCarthy & Brooks 1988), but the mid fourteenth century is a watershed, dividing production of high medieval wares (early twelfth to early fourteenth century) from those of the late medieval period (late fourteenth to late sixteenth century). Given the long productive lifespan of most wares, short-term perturbations in settlement and demography are unlikely to register in pottery assemblages, but sustained long-term change will be apparent.

Analysis focused on test-pits producing more than two sherds of pottery for each period. This reflects excavation and field-walking data, which indicate that two sherds within a single m^2 are more than would be expected from low-intensity use such as the manuring

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of arable fields (Haselgrove *et al.* 1985; Davison 1990; Parker Pearson & Schadla-Hall 1994; Jones 2005), thus providing a threshold for activity that may relate to habitation. Negative evidence (i.e. the absence of pottery) is used with caution, with inferences based on several pits in different properties more reliable than those based on single pits. Other indices (e.g. five or more sherds per pit, or the total weight of sherds per pit) demonstrate similar patterns. For example, averaging the data across four very different settlements (the agglomerated villages of Houghton and Wyton; the medieval castle town of Clare; the highly dispersed settlement of Clavering; and the nucleated green village of Great Shelford) reveals that the total *number* of sherds from all of the pits dropped by 76%; the total *weight* of sherds by 60%; the *number* of pits producing *five or more* sherds by 64%; and the number of pits producing *two or more* sherds by 54%. Using the latter measure (pits yielding two sherds or more) seems to produce the most conservative results, so it is used in this paper to avoid over-statement.

Test-pit data and the Black Death

The CORS test-pit programme was originally devised to increase the number of CORS subject to research-driven archaeological sampling in order to advance understanding of the development of medieval settlement plans and patterns over time by redressing the existing bias towards deserted sites (Lewis *et al.* 1997; Lewis 2007). The observation that late medieval pottery was much more scarce than high medieval pottery was an incidental discovery, first noted in 2005 in the conjoined nucleated Ouse Valley villages of Houghton and Wyton in Cambridgeshire (Lewis 2005: 14). By 2008, of the 37 pits completed there (Lewis 2008: 61), 23 had produced 2 or more sherds of high medieval date, but only 9 had done so for the late medieval period (Figure 2), a drop of 61%. A similar decline was evident in the number of pits producing *five* or more sherds of pottery, which drops by 60% from 15 to just 6.

This was valuable for what it revealed about the late medieval development of individual settlements such as Houghton and Wyton, which lack detailed documentary evidence and thus rely more heavily on archaeology. It became much more interesting as the dataset grew, allowing site-specific patterns to be aggregated and wider inferences to be drawn, particularly as the CORS were all selected specifically because they were medieval settlements that did *not* become permanently deserted or shrunken, but were presumed to have recovered quickly if adversely affected by events such as the Black Death. For example, Cottenham in Cambridgeshire, despite documentary records attesting the death of at least 33 of the 58 tenants on one manor during the Black Death and the presence of 'ruinous' houses in the sixteenth century, was considered by historians to have "probably suffered no overall shrinkage" (Wright & Lewis 1989: 48–54), an inference perhaps given tacit support by the absence of abandoned settlement earthworks of medieval date around the area today.

Now that nearly 2000 pits have been excavated, the aggregated evidence from 55 CORS is dramatic (Table 1). Across the East Anglian region, 90% of the excavated settlements illustrate a decline in the number of pottery-producing pits in the late medieval period. Overall, the number drops by 44.7%.

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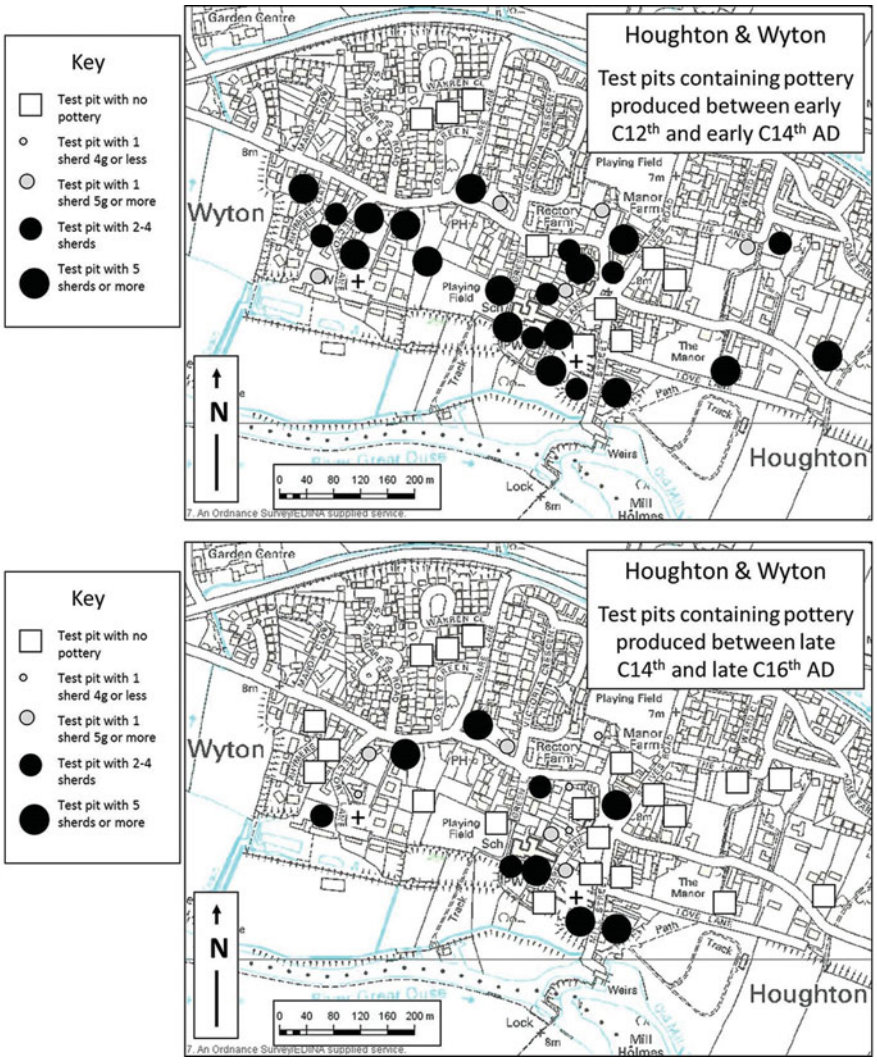

Figure 2. Houghton and Wyton (Cambridgeshire), showing the distribution of excavated test-pits and pottery of high medieval (top) and late medieval (bottom) date.

Discussion

These results clearly emphasise a dramatic change between the high and late medieval periods. This is itself significant, not least because the data are quantifiable, but we must ask exactly what change this represents. Do the pottery data reflect post-fourteenth century demographic fluctuation or something else, such as a move away from pottery use or changes in rubbish disposal? Contextualising the evidence suggests that the former explanation is correct.

Firstly, there is no evidence for a decline in *per capita* pottery use in the fourteenth to sixteenth centuries (Dyer 1982) that could account for the decrease in pottery volumes.

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Table 1. Pottery yields from test-pits excavated in CORS in eastern England until the end of 2014.

			High medieval		Late medieval		Change over time	
Parish name	County	Total no. pits dug (to end 2014)	No. pits with 2+ sherds	Percentage of all dug pits producing 2+ sherds	No. pits with 2+ sherds	Percentage of all dug pits with 2+ sherds	Change HM to LM in no. of pits with 2–4+ sherds	Percentage rise/fall in pits with 2–4+ sherds
Acle	Norfolk	45	22	49	12	27	−10	−45%
Ashwell	Herts	50	17	34	11	22	−6	−35%
Bures	Suffolk	7	2	29	0	0	−2	−100%
Binham	Norfolk	60	24	40	7	12	−17	−71%
Bramford	Suffolk	9	3	33	2	22	−1	−33%
Carleton Rode	Norfolk	57	21	37	8	14	−13	−62%
Castor	Cambs	23	11	48	4	17	−7	−64%
Chediston	Suffolk	47	16	34	22	47	6	38%
Clare	Suffolk	33	14	42	7	21	−7	−50%
Clavering	Essex	28	13	46	8	29	−5	−38%
Coddenham	Suffolk	59	20	34	8	14	−12	−60%
Cottenham	Cambs	34	14	41	3	9	−11	−79%
Daw's Heath	Essex	21	1	5	1	5	0	0%
Garboldisham	Norfolk	44	8	18	3	7	−5	−63%
Gaywood	Norfolk	39	21	54	3	8	−18	−86%
Girton	Cambs	10	3	30	0	0	−3	−100%
Great Amwell	Herts	23	4	17	1	4	−3	−75%
Great Shelford	Cambs	41	22	54	9	22	−13	−59%
Hessett	Suffolk	36	15	42	7	19	−8	−53%
Hindringham	Norfolk	21	10	48	3	14	−7	−70%
Houghton	Cambs	37	23	62	9	24	−14	−61%
Isleham	Cambs	24	7	29	3	13	−4	−57%
Little Hallingbury	Essex	54	7	13	3	6	−4	−57%
Long Melford	Suffolk	57	11	19	16	28	5	45%

Table 1. Continued.

Parish name	County	Total no. pits dug (to end 2014)	High medieval		Late medieval		Change over time	
			No. pits with 2+ sherds	Percentage of all dug pits producing 2+ sherds	No. pits with 2+ sherds	Percentage of all dug pits with 2+ sherds	Change HM to LM in no. of pits with 2–4+ sherds	Percentage rise/fall in pits with 2–4+ sherds
Manuden	Essex	28	9	32	4	14	−5	−56%
Meldreth	Cambs	32	23	72	15	47	−8	−35%
Mount Bures	Essex	7	6	86	2	29	−4	−67%
Nayland	Suffolk	50	29	58	34	68	5	17%
Paston	Norfolk	24	7	29	1	4	−6	−86%
Peakirk	Cambs	36	11	31	6	17	−5	−45%
Pirton	Herts	102	78	76	25	25	−53	−68%
Potton	Beds	26	3	12	1	4	−2	−67%
Ramsey	Cambs	10	7	70	4	40	−3	−43%
Rampton	Cambs	10	5	50	1	10	−4	−80%
Riseley	Beds	9	7	78	5	56	−2	−29%
Sawtry	Cambs	12	4	33	3	25	−1	−25%
Sharnbrook	Beds	68	27	40	16	24	−11	−41%
Shefford	Beds	19	4	21	1	5	−3	−75%
Shillington	Beds	23	14	61	4	17	−10	−71%
Southwold & Reydon	Suffolk	16	6	38	6	38	0	0%
Stapleford	Cambs	12	3	25	2	17	−1	−33%
Sudbury	Suffolk	31	20	65	15	48	−5	−25%
Swaffham Bulbeck	Cambs	24	12	50	8	33	−4	−33%
Terrington St Clement	Norfolk	24	13	54	7	29	−6	−46%
Thorney	Cambs	33	6	18	20	61	14	233%
Thorrington	Essex	18	4	22	2	11	−2	−50%

Table 1. Continued.

			High medieval		Late medieval		Change over time	
Parish name	**County**	**Total no. pits dug (to end 2014)**	**No. pits with 2+ sherds**	**Percentage of all dug pits producing 2+ sherds**	**No. pits with 2+ sherds**	**Percentage of all dug pits with 2+ sherds**	**Change HM to LM in no. of pits with 2–4+ sherds**	**Percentage rise/fall in pits with 2–4+ sherds**
Ufford	Cambs	23	2	9	1	4	−1	−50%
Walberswick	Suffolk	18	11	61	12	67	1	9%
West Mersea	Essex	58	12	21	6	10	−6	−50%
West Wickham	Cambs	18	9	50	2	11	−7	−78%
Willingham	Cambs	34	13	38	7	21	−6	−46%
Wisbech St Mary	Cambs	14	2	14	3	21	1	50%
Wiveton	Norfolk	23	11	48	4	17	−7	−64%
Writtle	Essex	56	23	41	21	38	−2	−9%
Total		**1717**	**690**	**40.2**	**388**	**22.6**	**−302**	**−44%**

Certainly there are changes in the *types* of ceramics in use. Twelfth- to fourteenth-century ceramic vessel assemblages are dominated by three main forms: the cooking pot, the bowl/pan/dish and the jug/pitcher. Although the use of some forms of ceramic *cooking* pots declined from the mid fourteenth century as metal pot use increased, this coincided with the introduction of a broader range of everyday ceramic items, including pipkins (a form of cooking pot), bowls, dripping dishes, cisterns, drinking cups and jugs, all widely used from the later fourteenth century (McCarthy & Brooks 1988: 102–103).

The reduction observed in the test-pits is also unlikely to result from changes in the disposal of discarded pottery. Field-walking in eastern England typically recovers less pottery of late medieval than high medieval date (Davison 1990; Rogerson *et al.* 1997; Parry 2006). If the same number of people had continued to use the same amount of pottery but removed less onto the fields (which could occur when pottery was incorporated into domestic manure spread on arable fields), we would expect to find *more* late medieval pottery within CORS, not less. It is thus implausible that reductions in the extent of manured arable land could cause the observed drop in pottery volumes within CORS. Likewise, there is no evidence from field-walking or excavation in late medieval rural settlements for widespread removal of rubbish to settlement margins, or towards pit disposal of refuse. There is also no indication in the test-pit data that differential sherd size is affecting the observed pattern: later wares are not found as consistently larger sherds.

A third point that indicates that the pottery data from the test-pit excavations are depicting a demographic decline, rather than simply a cultural move away from pottery use, is the *distribution* of pottery within settlements. If a change in fashion had reduced overall pottery use, volumes of pottery would simply be lower, generally, throughout settlements. In fact, the decline is frequently zoned, with some locations continuing to produce pottery in the late medieval period while others nearby do not. In Houghton, for example, the areas south and west of the church seem little affected, while those to its north and east see an 86% drop. Within Great Shelford (Figure 3), nearly all pits in Church Street and High Street yielded later medieval pottery, while those in High Green, Maris Green, Mill Lane and Buristead did not. At Pirton (Figure 4), pottery-rich farms on the edge of the village contrast with pottery-deficient areas near the church and along Royal Oak Lane and Walnut Tree Road. In dispersed settlements such as Clavering (Figure 5), some sites produced late medieval pottery whereas others did not. This zoning is also apparent at a regional scale in inconsistent levels of pottery decline, with some settlements even showing an increase. Several of these, including Nayland and Long Melford, derived considerable wealth from the late medieval cloth trade: these are the sort of places where, if the decline in pottery *had* been due to changes in fashion driven by rising living standards, we would expect to find less of it, not more, in the late medieval period. Overall, the structured spatial patterning of the pottery data supports the inference that changes in ceramic yields are indeed reflecting changes in population.

A fourth factor that supports the inference that the pottery data are showing demographic change is that they correlate broadly with historical data. While estimates for short-term Black Death mortality have ranged from about 30% to more than 90% (Sloane 2011: 103–11), there is broad consensus among historians that in England the post-Black Death population fluctuated for the next two centuries somewhere around 30–55% below its

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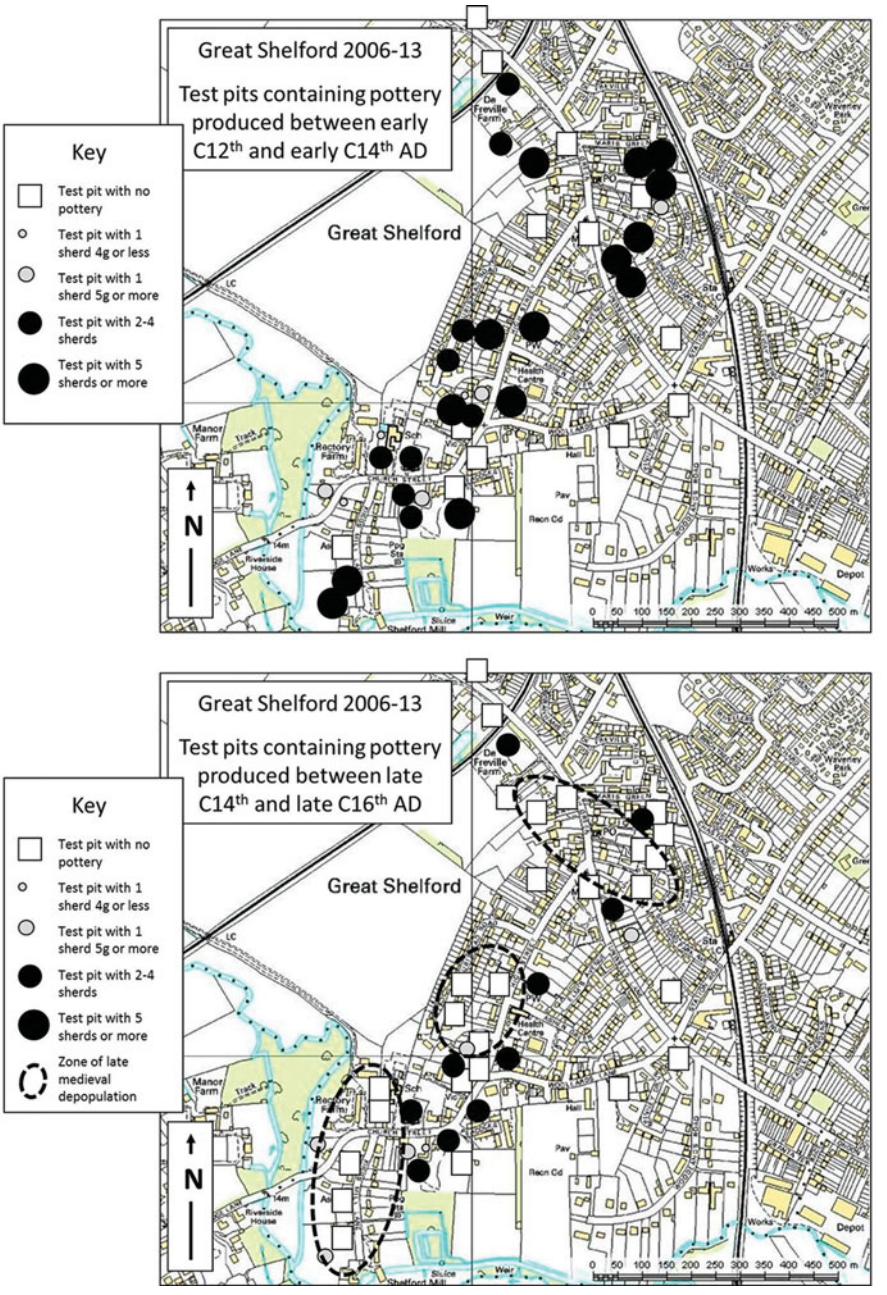

Figure 3. Great Shelford (Cambridgeshire), showing the distribution of excavated test-pits and pottery of high medieval (top) and late medieval (bottom) date with zones of late medieval reduction indicated.

pre-Black Death level. The test-pit data, which point to a decline averaging about 45%, sit comfortably within this range. Further corroboration is provided by more specific correlations between test-pit and historical data. Norfolk is the prime example: a county that by the 1330s 'possessed the highest density of relatively poor tax-payers in the country'

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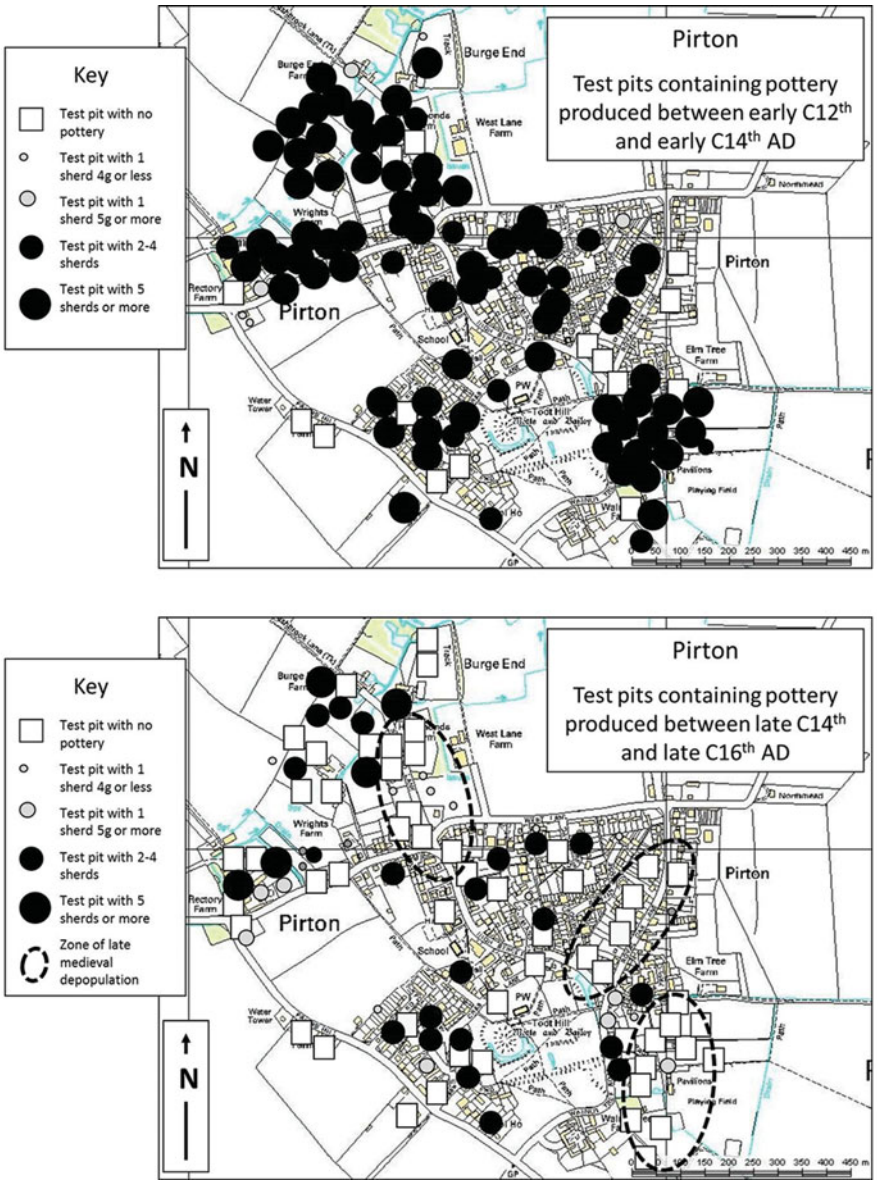

Figure 4. Pirton (Hertfordshire), showing the distribution of excavated test-pits and pottery of high medieval (top) and late medieval (bottom) date, with zones of late medieval reduction indicated.

(Campbell 2005: 67). Norfolk exhibits one of the greatest declines in post-fourteenth century pottery yields, reduced across this county by 65% and much higher than in Essex or Suffolk (see also below). These correlations between documentary and archaeological evidence usefully serve to validate each other, as the source data are of course affected by very different biases.

Given the points above, it therefore seems reasonable to infer that differences in the test-pit pottery data do reflect changes in demography. This renders post-Black Death contraction

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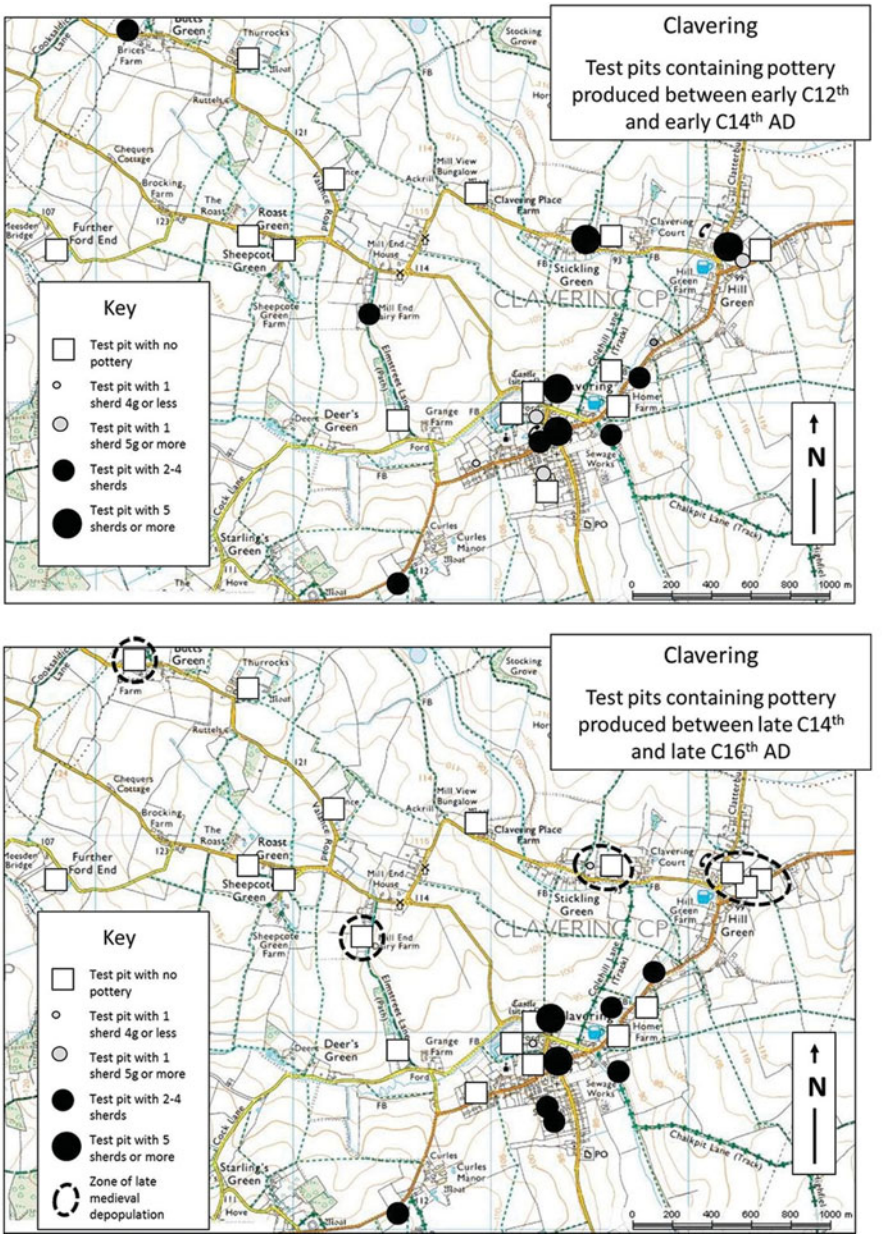

Figure 5. Clavering (Essex), showing the distribution of excavated test-pits and pottery of high medieval (top) and late medieval (bottom) date, with zones of late medieval reduction indicated.

both measurable and mappable. At Cottenham, for example (discussed above), the number of test-pits with two or more sherds drops by 79%, suggesting that the long-term impact of the difficulties of the fourteenth century may have been much greater than the 57% recorded Black Death mortality rate amongst manorial tenants. Also in Cambridgeshire, at Great Shelford (Figure 3) the 41 test-pits excavated showed a decline of around 60% in the

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number of pits producing two or more sherds, while the number of sherds overall drops from almost 400 to barely 20 and the weight of pottery recovered decreases from nearly 2kg to little more than 200g. Mapping these data reveals that this large village—which in the high medieval period sprawled continuously for more than 1200m from its river-side church along a high street and around two greens—was reduced to a single row running barely 200m immediately east of the church. At Wiveton in north Norfolk (Figure 6), of 23 pits excavated, the number producing 2 or more sherds drops from 11 to just 4, a third of previous levels. Mapping the data similarly revealed that in the high medieval period this coastal village extended for more than 600m around, and north of, the church along the west bank of the tidal river Glaven; it was reduced in the late medieval period to a small core extending barely 200m beyond the church. These figures are by no means the most severe: at Gaywood and Paston (both also in Norfolk), the drop is around 85%.

These are just a few examples of the devastation evident on an eye-watering scale within settlements that have previously been considered the 'successful' survivors (that is, CORS that did not become permanently abandoned DMVs), calculated using an index that may be producing conservative estimates. They vividly demonstrate the extent to which our existing maps of late medieval rural settlement contraction (a process continuing in some places well into the seventeenth century), extensively recorded through earthwork survey (such as by the Royal Commission on the Historical Monuments of England in counties including Dorset and Northamptonshire), are in fact showing just the tip of the iceberg of sustained medieval depopulation, whose enormity has hitherto been masked within CORS by eventual post-medieval regrowth. In addition to measuring the *extent* to which communities contracted, the pottery data are also able to highlight exactly *where* this contraction was more or less severely felt, at a range of scales: within settlements, we can see which streets, or even plots, were abandoned and which continued to be inhabited; at parish level, which parts of the landscape were more or less severely affected; and on a larger scale, revealing regional patterns.

The test-pit data reveal several other interesting phenomena. Firstly, it is clear that contraction did not just affect nucleated villages. This is significant because these are commonly believed to be particularly vulnerable to depopulation, not least because DMVs are most common in areas dominated by nucleated settlement (Roberts & Wrathmell 2000). But at dispersed Clavering, for example, there is an overall decline of 38% in the number of pottery-producing test-pits. This decline is dwarfed, however by Carleton Rode (Figure 7) in central Norfolk, today highly dispersed. Test-pit excavation showed it to be similarly dispersed in the medieval period, and to have suffered a 62% decline in pottery. All elements of the settlement pattern here were extremely badly affected by late medieval contraction, with several of the isolated sites producing no pottery of this date whatsoever, suggesting that they were entirely abandoned.

Another phenomenon apparent in the test-pit data is that many larger and higher status settlements appear to suffer as badly as smaller ones: this is noteworthy as the latter are often supposed to be less vulnerable to depopulation (Jones 2010). Cottenham, for example, is noted as "among the largest villages in Cambridgeshire since the 11th century" (Wright & Lewis 1989: 48–54), but suffered a late medieval decline of nearly 80% in the number of test-pits producing two or more sherds. Many urban or quasi-urban settlements (Beresford &

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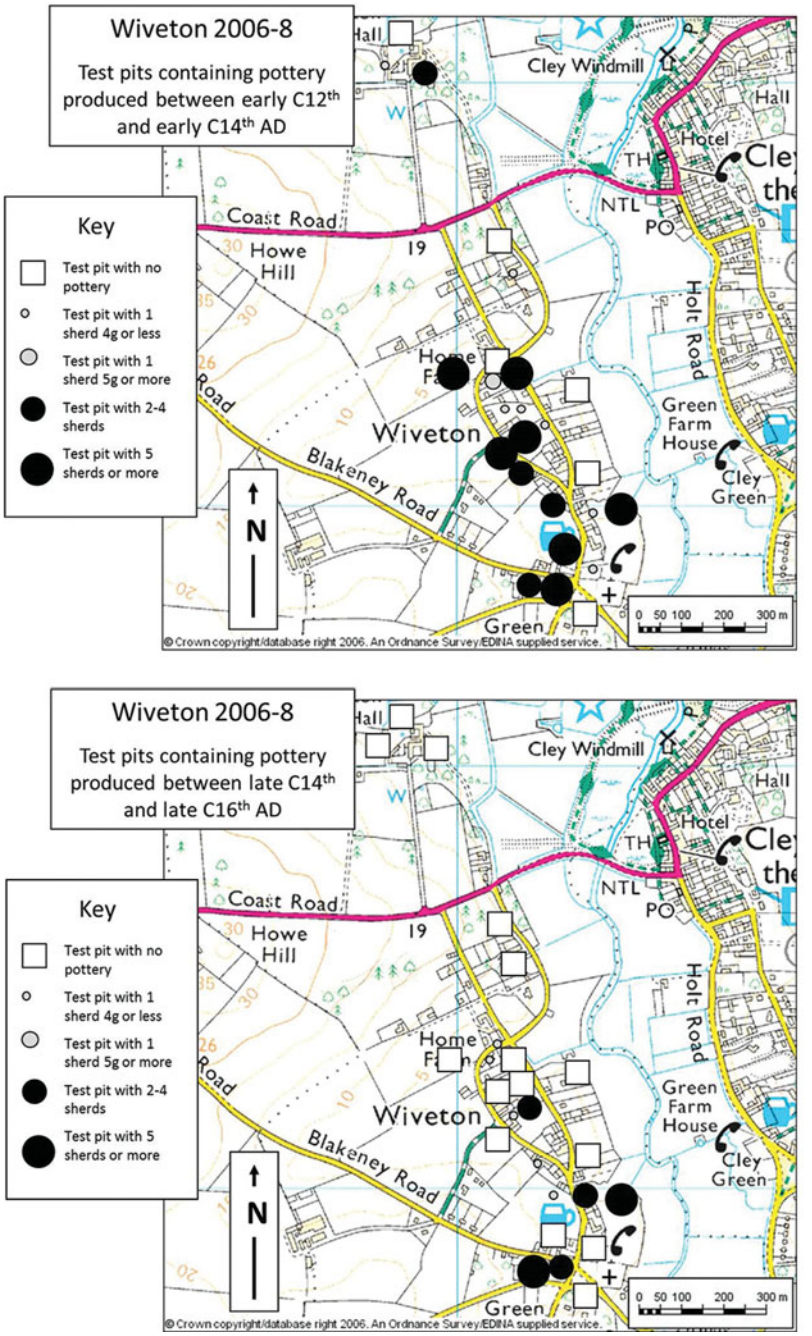

Figure 6. Wiveton (Norfolk), showing the distribution of excavated test-pits and pottery of high medieval (top) and late medieval (bottom) date.

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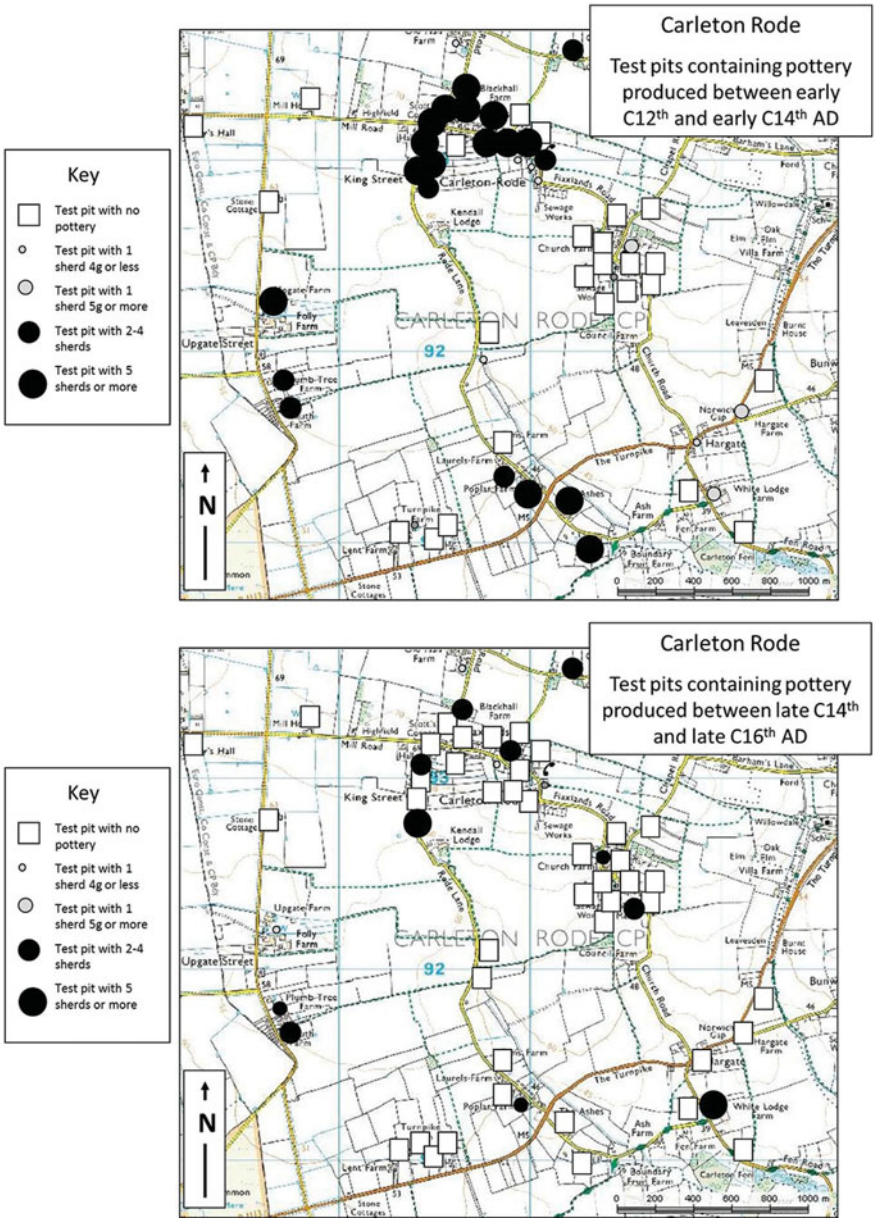

Figure 7. Carleton Rode (Norfolk), showing the distribution of excavated test-pits and pottery of high medieval (top) and late medieval (bottom) date.

Finberg 1973; Letters 2005) also fared badly. Clare (Suffolk) had borough status from at least AD 1086, yet saw a late medieval pottery decline of 50%. In Norfolk, markets were operating in Acle and Binham by the thirteenth century, but saw late medieval pottery declines of 45% and 71%, despite Acle being close to both the sea and the major city of Norwich, and Binham (Figure 8) being near the popular shrine of Walsingham. These rural market centres

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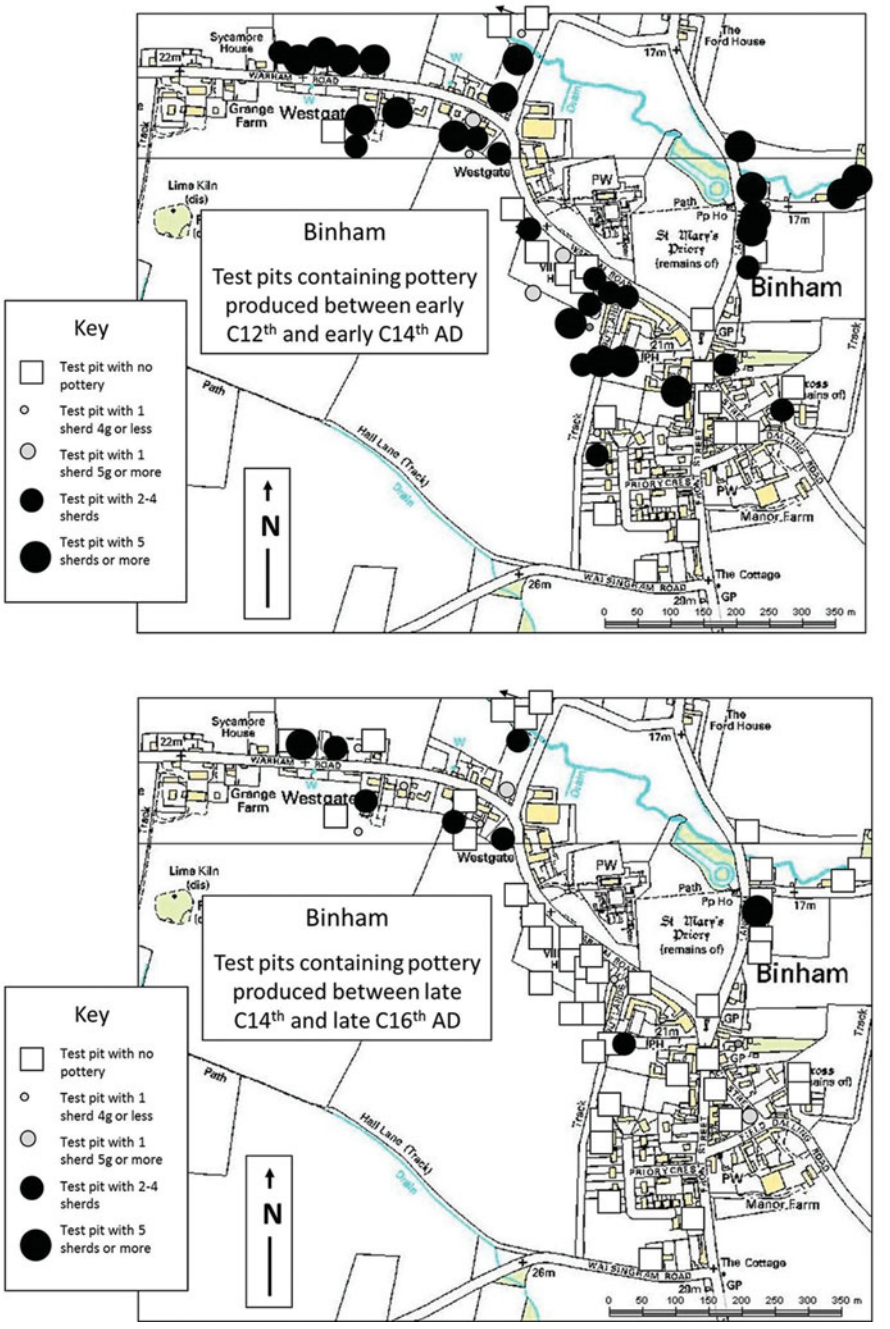

Figure 8. Binham (Norfolk), showing the distribution of excavated test-pits and pottery of high medieval (top) and late medieval (bottom) date.

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demonstrate an average late medieval reduction in pottery of about 55%, which is higher than the overall average for eastern England of around 44.7%. And yet looking at the 10% of settlements that did *not* experience sustained late medieval contraction, a common factor is the presence of a commercial base. Nayland and Long Melford (in southern Suffolk) were both heavily involved in the medieval wool trade, and both had a *higher* number of pottery-producing pits in the late medieval period than beforehand. Walberswick and Southwold, in which pottery yields from test-pits see little change, were both coastal ports trading in fish in Suffolk, a relatively urbanised county with the third highest density of small towns in England by AD 1500 (Bailey 2007).

Another noticeable pattern is an intra-settlement correlation between specific zones of apparently *new* high medieval expansion and late medieval decline. At Great Shelford, the Maris Green/High Green areas, largely depopulated in the fourteenth to sixteenth centuries, produced no pottery pre-dating *c*. AD 1100; the same pattern is evident at Pirton in Royal Oak Lane. It seems plausible that these areas were only used for settlement in the high medieval period *in extremis*, as pressure on space caused by a growing population became increasingly acute; they were then the first to be abandoned as population contraction eased pressure on space and opened up opportunities to relocate.

It is also apparent that the scale of decline in pottery volumes varies significantly across the eastern region (Figure 9; Table 2). Settlements in the centre, north and west of the region (including Norfolk, discussed above) fare much worse than those in the south, including Suffolk. Detailed analysis is beyond the scope of this paper, but the correlation of these patterns with variations in land type (Williamson 2003), late Anglo-Saxon settlement (Rippon 2008), medieval field systems (Martin & Satchell 2008; Oosthuizen 2010), pre-Black Death rural poverty (Campbell 2005) and late medieval commerce (Bailey 2007) points to fruitful avenues for future research.

Conclusion

Scholarly debate surrounding the long-term impact of the perturbations of the fourteenth century and its climactic Black Death has been hampered by the lack of standardised 'before-and-after' population data. Data presented here from eastern England indicate that test-pit excavations can reveal changes in medieval demography and settlement that can be both quantified and mapped at a range of scales, liberating scholarly enquiry from the confines of a finite (or indeed absent) documentary record. As a result, we can now say with some confidence that the pottery-using population across a sixth of England was around 45% lower in the centuries after the Black Death than before. Furthermore, we can identify exactly where in the settlement landscape this contraction was most and least severely felt, at scales ranging from plot to region.

This research shows that there is an almost unlimited reservoir of *new* evidence capable of revealing change in settlement and demography still surviving beneath today's villages, hamlets and small towns. It is tantalising to ponder, for example, how the data for long-term trends in settlement and demography in eastern England might compare with other regions, especially as projects in Hampshire, Leicestershire, Derbyshire and Yorkshire are already

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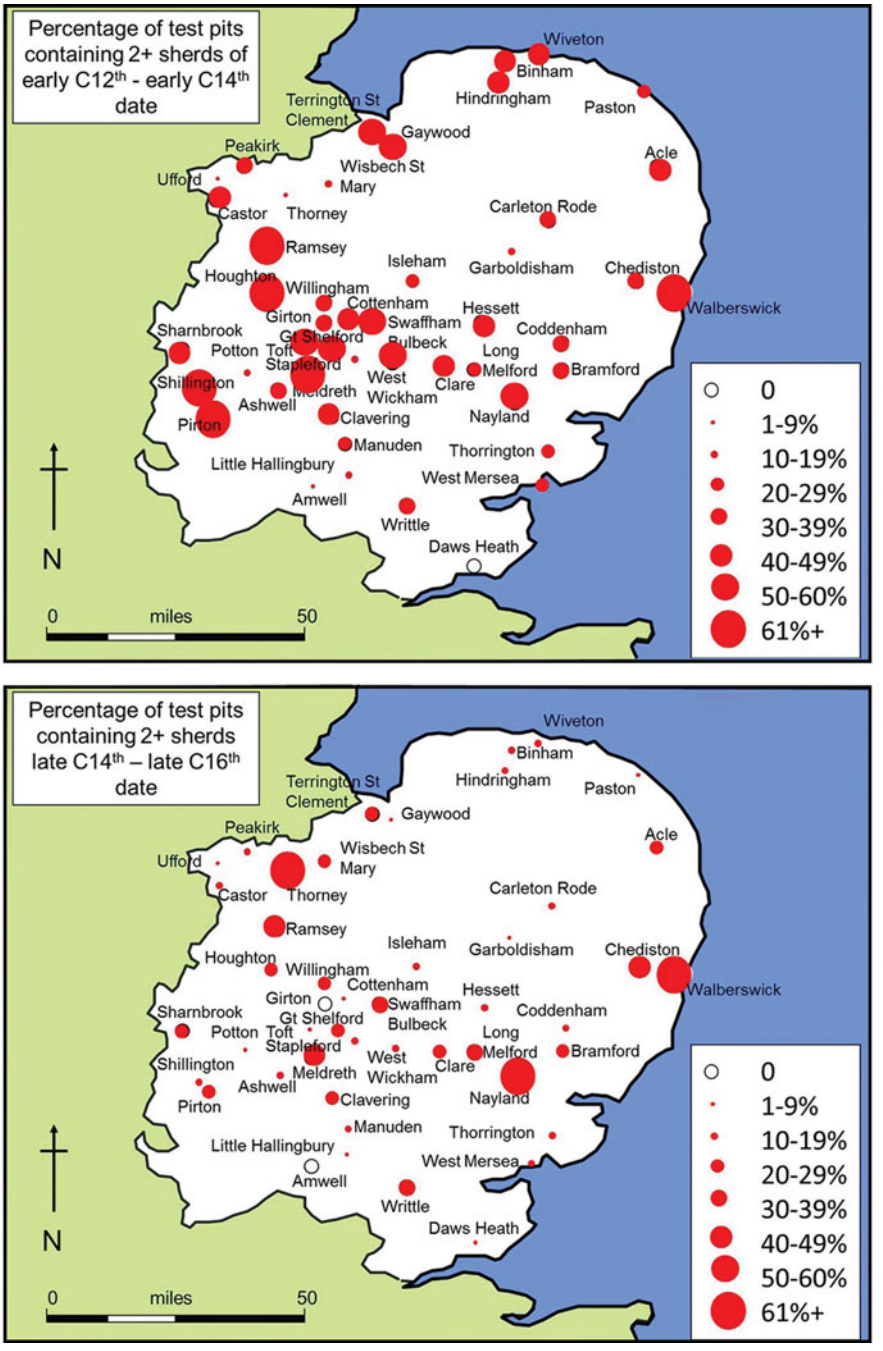

Figure 9. Settlements in Eastern England included in the CORS project up to 2014, showing the percentage of test-pits yielding two or more sherds of high medieval (top) and late medieval (bottom) date.

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Table 2. Percentage reduction in the number of pits yielding potentially habitative numbers of sherds between high and late medieval periods, listed by post-1974 administrative county.

County	Total number of pits excavated within county	Number of pits with 2+ sherds AD 1100–1350	Number of pits with 2+ sherds AD 1350–1600	Percentage drop in number of pits comparing high medieval (AD 1100–1350) to late medieval (AD 1350–1600)
Bedfordshire	145	55	27	51%
Cambridgeshire	427	177	100	44%
Essex	270	75	47	37%
Hertfordshire	175	99	37	63%
Norfolk	337	137	48	65%
Suffolk	363	147	129	12%

proving that the same technique will produce useful results elsewhere (Lewis 2008, 2014b; Denison-Edson & Mills 2014).

Indeed, this potential extends well beyond England: the economical, nimble methodology of test-pit excavation can be deployed almost anywhere (Turner & Webster 2012; Fernández Mier *et al.* 2014). The Black Death spanned 7000 miles from western Europe to eastern Asia: its impact on the subsequent 'Great Transition' era, which in turn gave rise to our present world, has been much discussed but with little consensus (e.g. Pei *et al.* 2015; Campbell in press). Deployed sufficiently widely elsewhere in Eurasia, test-pit excavation could provide new data to inform our understanding of how the world we inhabit today came to be. Moreover, this potential extends beyond the era of the Black Death, as test-pits can produce material of any date that may illuminate demographic change in many periods.

On a final, contemporary note, it is sobering to consider that the sustained post-Black Death demographic collapse and stagnation followed pandemics of plague. This disease is still endemic in parts of today's world and could once again become a major killer, should resistance to the antibiotics now used to treat it (Poland & Dennis 1999: 55–62) spread amongst tomorrow's bacteriological descendants of the fourteenth-century *Yersinia pestis*. We have been warned.

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