

The distribution of ridge and furrow in East Anglia: ploughing practice and subsequent land use*

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Abstract

Ridge and furrow remains a visible surviving feature of the medieval landscape but outside of the Midland Plain some aspects of the practice are not clearly understood. It is the distribution of ridge and furrow in such an area, in this case East Anglia, that is considered here. Norfolk, Suffolk, and Cambridgeshire retain relatively few examples of ridge and furrow. There is an uneven distribution across the three counties, despite the fact that during the medieval period, open-field agriculture was ubiquitous. It is argued that in the post-medieval period the majority of former open-field land was cross-ploughed and underdrained after enclosure, a practice that removed ridging almost completely. It is concluded that the pattern of post-medieval arable cultivation in East Anglia has largely determined the mid-twentieth century distribution of ridge and furrow, and that the extent of ridged fields in the medieval period was more widespread than has been hitherto imagined.

The earthworks of former arable cultivation known as 'ridge and furrow' are among the most readily visible surviving features of the medieval landscape. Although the ridges we see today date from when the fields in which they lie were put down to grass, normally in the post-medieval period, it is now generally accepted that surviving ridges perpetuate medieval practice and that, although ridging continued into the post-medieval period, its presence indicates medieval open-field cultivation.

Modern distribution maps of ridge and furrow are a combination of two different phenomena. To begin with, the land in question must have been ploughed in ridges, and secondly, this land must be put down to pasture and subsequently remain under grass until such time as the ridging can be identified and recorded. The existence of ridge and furrow in the Midlands is well attested, and it is indeed in the Midlands that most work on this type of earthwork has been conducted. Yet in those areas that are peripheral to the Midland Plain the distribution of ridge and furrow is less clearly understood. East Anglia is a case in point. In the past, some commentators have incorrectly concluded that there is none to be found.¹ Norfolk, Suffolk, and Cambridgeshire all either still retain examples of ridge and furrow or, in other cases, its existence can be inferred, despite its removal by subsequent ploughing. Using East Anglia as a case study, an analysis of surviving ridge and furrow clearly demonstrates that it is the

* I would like to thank Brian Cushion, David Hall, Andrew Rogerson and Tom Williamson for their comments on early drafts of this paper.

¹ D. Hall, *Medieval Fields* (1982), p. 5.

subsequent land use of these areas that has largely determined the mid-twentieth century distribution of ridge and furrow, and not the original extent of ridged fields.

The usual method for generating ridge and furrow distribution maps has been for RAF air photographs to be analysed, and the location of surviving ridges to be plotted on Ordnance Survey maps.² Yet as a technique of historical analysis, the distribution map has a number of limitations. In situations where it can never be known exactly what a distribution was in the past, any conclusions based on mapping existing or known sites runs the risk of being called into question when subsequent research adds further information to the coverage and alters the original sample. The disappearance of sites or artifacts, their 'attrition rate', has crucial implications for historical studies. This has recently been seen in the debate over vernacular buildings, where analysis of the attrition rates of buildings has seriously called into question conclusions based on mapping house types.³ This type of problem is not confined to the study of buildings; it is common to any study that bases its conclusion upon distributions.

Ridge and furrow distribution maps have been produced for Cambridgeshire and for Norfolk, and both maps show an uneven distribution across the respective counties.⁴ There are two major concentrations in west Cambridgeshire and west Norfolk (see figure 1). Elsewhere, there is comparatively little evidence of ridging but there is just enough to suggest that originally, ridge and furrow was much more widespread.

It needs to be emphasised at this point that the open-field farmer who cultivated on heavy soil had little alternative to ridge and furrow as far as drainage was concerned. Within the constraints of an open-field system the only other method of drainage possible would have been to plough deep furrows on either side of a strip. This has obvious drawbacks if the surface of the ground was ploughed flat and the soil was prone to waterlogging. It is therefore perhaps significant that Walter of Henley, writing in the thirteenth century, suggested only ridge and furrow for drainage '... that the land, or rydge, which lye as if it were a creast ... to be well furrowed ... so that the ground be delyvered from the water'.⁵ This therefore raises the question of why there is little ridge and furrow in areas such as the south Norfolk claylands, where open-fields, albeit of 'irregular' form, survived into the post-medieval period.⁶

At least part of the answer lies not in medieval ploughing practice, but in the subsequent land use and drainage methods used in these areas. The case of Cambridgeshire shows this clearly. Early agricultural writers noticed that far fewer ridges were retained in the east of the county, and explained this by reference to the fact that drainage was better managed here than in the west, and that cross-ploughing and underdrainage had replaced ridge and furrow.⁷ Those farmers in the west of the county were severely castigated for continuing to plough in ridges.

² For example, M. J. Harrison, W. R. Mead and D. J. Pannet, 'A Midland ridge and furrow map', *Geographical J.*, 131 (1965), pp. 365-69.

³ D. Currie, 'Time and Chance. Modelling the attrition of old houses', *Vernacular Architecture*, 19 (1988), pp. 1-9.

⁴ R. J. Silvester, 'Ridge and Furrow in Norfolk', *Norfolk Arch.*, 40 (1989), pp. 286-96; R. Kain and W. R. Mead, 'Ridge and Furrow in Cambridgeshire', *Proc. of the Cambridge Antiquarian Soc.*, 67

(1977), pp. 131-7.

⁵ D. Oschinsky (ed.), *Walter of Henley and other treatises on farm management and accounting* (1971), pp. 321-23.

⁶ K. Skipper, 'Wood-Pasture: the landscape of the Norfolk claylands in the early modern period' (Unpublished MA thesis, University of East Anglia, 1989).

⁷ Kain and Mead, 'Ridge and Furrow in Cambridgeshire', pp. 135-6.

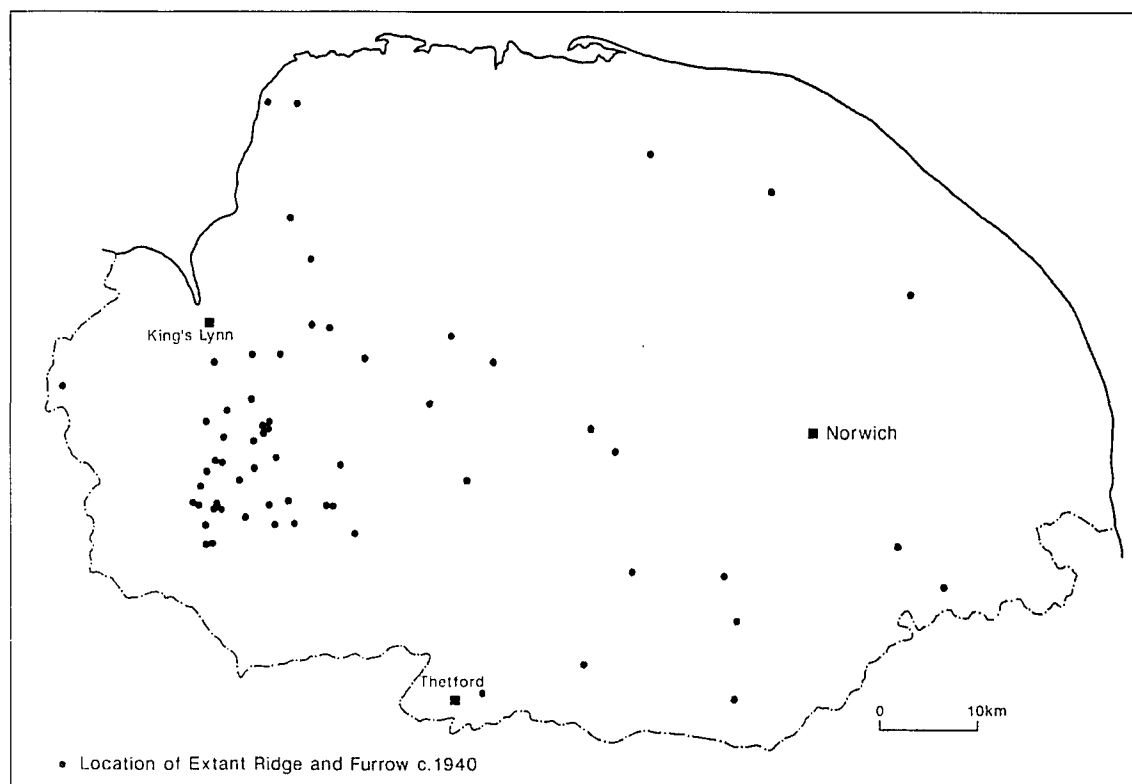


FIGURE 1. Distribution map of Ridge and Furrow in Norfolk. Based on aerial photographs and the Norfolk Sites and Monuments Record

It would appear that the uneven use of hollow draining accounts in the most part for the distribution of ridge and furrow in the county, rather than the original extent of ridged fields.

A similar situation seems to have occurred in Norfolk and Suffolk, but here, the intensification of arable production in the post-medieval period, together with improved drainage techniques, was enough to erase ridge and furrow almost entirely.

The post-medieval period saw the increasing use of the ploughing technique of stitching. Here, a flat surface was retained by cross-ploughing every year. Needless to say, this technique could only be used on enclosed ground. William Folkingham, writing in 1610, commented that 'stitches are common in Norfolk and Suffolk even on their light grounds'. Marshall, writing in 1787, describes the operation, showing it was clearly established as a practice by this time.⁸ As stitching is associated with enclosed areas and ridge and furrow with open-field strips; and as enclosure seems to have increased in Norfolk and Suffolk over time; then it follows that while the practice of ridging would have decreased over time, that of stitching and related practices would have increased. Stitching therefore, would have been responsible for the removal of medieval ridge and furrow on enclosed areas.

However, it was the increased use of underdraining in conjunction with cross-ploughing

⁸ Folkingham quoted from M. W. Beresford, *History on the Ground. Six studies in maps and landscapes* (1957), p. 83; W. Marshall, *The Rural Economy of Norfolk* (1787), p. 78.

which had the largest impact on ridge and furrow. References to underdraining begin to appear in Norfolk farm accounts from the 1740s, with the biggest drive being at the end of the eighteenth century when it took place on a 'phemonemal scale'.⁹ In the minds of the agricultural improvers of the day, ridge and furrow was an unpleasant reminder of medieval practice. Nathaniel Kent commented that 'This, of all methods of draining may safely be called the worst'.¹⁰ Ploughing in ridge and furrow could have no part in the new agricultural order. Needless to say, an area of former ridged open-field that was underdrained and cross-ploughed would leave little or no trace of ridge and furrow, even if it was put down to pasture soon afterwards.

If it is accepted that post-medieval drainage methods can seriously affect modern distributions of ridge and furrow, then the absence of large amounts of ridge and furrow in Norfolk and Suffolk is readily explicable. In both counties there is enough evidence to suggest that ridge and furrow was once much more widespread and that subsequent arable production led to its removal. Ridging has been claimed at the Anglo-Saxon village of West Stow,¹¹ and a deposition of 1612 concerning a dispute over Brandon warren noted that 'it doth appeare by ridge and furrowe that itt hath bene shiftfield, though now used as warren', an explicit reference to the practice.¹² At Barnham there are soil marks which appear to indicate ploughed out ridge and furrow.¹³

However, it is in Norfolk that the clearest picture of ridge and furrow attrition emerges. West Norfolk retained a greater concentration of ridges into this century than the rest of the county, this despite the fact that irregular open-fields were ubiquitous in the county in the medieval period. However, there are enough surviving examples of ridge and furrow from the south of the county to suggest that ridging was once more widespread. For example, at Tibenham, a small area of ridge and furrow survived into this century before being destroyed after the Second World War.¹⁴ Analysis of the 1840 tithe award map showed the area in question was at that time pasture, but mostly surrounded by arable.¹⁵ It is clear that most of the parish was once open-field and that this small area of ridge and furrow was the remnant of a much wider distribution. In 1839 71.4 per cent of the parish was under arable cultivation, clearly sufficient to have removed most other ridging, and the 1930s land utilisation survey shows that the arable area continued to expand thereafter.¹⁶

Even more fortuitous is the survival of four ridges in the parkland of Kirby Cane Hall in south Norfolk. Here, the ridges in question escaped being destroyed by being planted with nut trees, which were retained until the area was incorporated into the park. Variations in the surface vegetation adjacent to the surviving ridges indicate that the ridging was once more widespread. Again, it is post-medieval ploughing that removed this ridging, the tithe award map for the parish shows the surrounding areas as being under arable cultivation.¹⁷

Silvester has argued that the distribution of ridge and furrow in Norfolk is best explained in

⁹ S. Wade-Martins and T. Williamson (eds), 'The farming journal of Randall Boroughtes (1794-1799)', *Norfolk Rec. Soc.*, 58 (1996), p. 27.

¹⁰ N. Kent, *Hints to Gentlemen of Landed Property* (1793), pp. 21-2.

¹¹ S. West, 'West Stow: The Anglo-Saxon Village', *East Anglian Archaeology* 24 (Suffolk County Planning Department, 1985), p. 10.

¹² PRO, E134/10 Jas 1/East 27, deposition of Nicholas

Tilborough. I am grateful to Dr Andy Wood for bringing this reference to my attention.

¹³ At grid reference TL 845 798.

¹⁴ Silvester, 'Ridge and Furrow', p. 292.

¹⁵ Norfolk Record Office (NRO), MF 752/578.

¹⁶ R. J. P. Kain, *The National Tithe Files Database on CD-ROM*, reference number 6350.

¹⁷ NRO, MF 750/333.

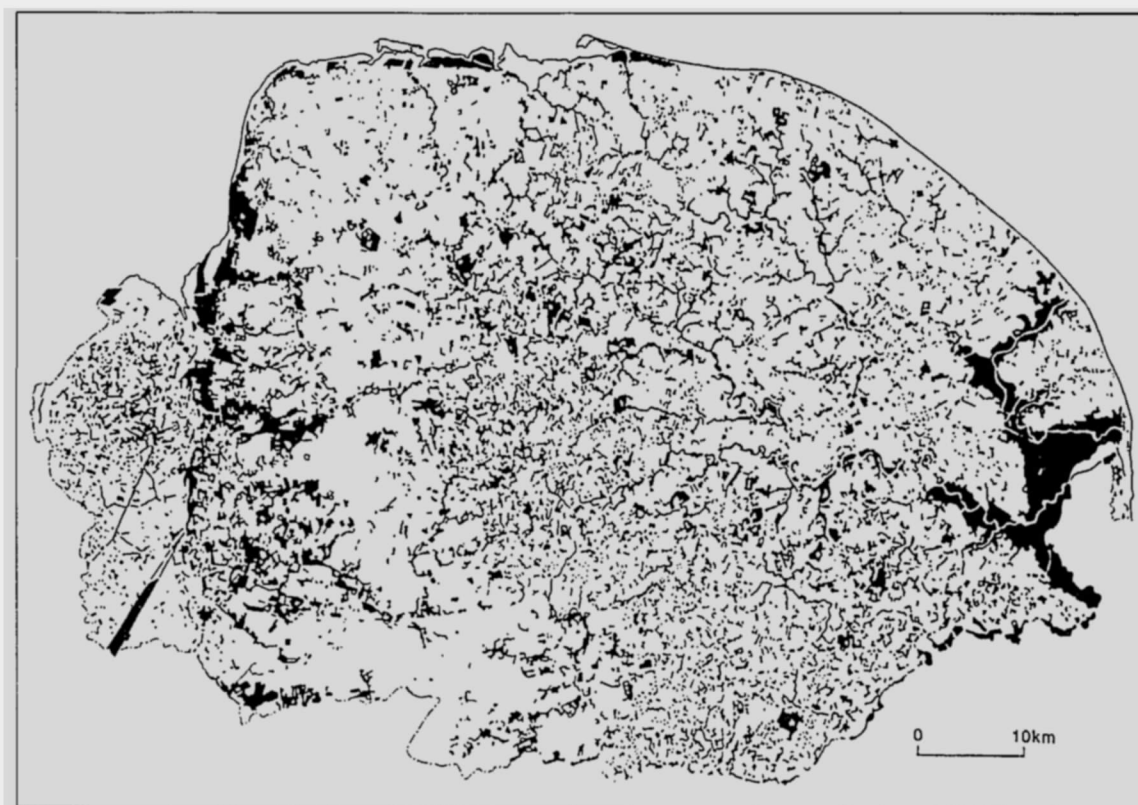


FIGURE 2. Distribution map of pasture in Norfolk in the 1930s. Taken from J. Mosby, *The Land of Britain*, vol 70 (1938)

cultural terms, the practice spreading across the Fens from the Midlands, but failing to fully establish itself in the rest of the county. The evidence presented here would suggest a different conclusion. It would appear that other areas of Norfolk were ridged, but that the ridges have not generally survived. The strong western bias of ridge and furrow in Norfolk is explained by the retention of more areas of permanent pasture in this area than elsewhere in the county. Map evidence, together with information from probate inventories gathered by Mark Overton indicates that from the sixteenth century areas of former open-field were put down to permanent pasture in west Norfolk for the purposes of stock rearing.¹⁸ During the eighteenth and nineteenth centuries there was a general upsurge in arable production in the county, but west Norfolk retained more permanent pasture than elsewhere. This is shown very clearly by mid-nineteenth century tithe award data, and by Mosby's land utilisation survey from the 1930s¹⁹ (see figure 2). Mosby's distribution map of pasture has, not surprisingly, the same general pattern as the ridge and furrow distribution map, showing a large concentration in the west of the county, but declining the further east one moves into the county. Within Norfolk, the

¹⁸ M. Overton, 'Computer analysis of an inconsistent data source: the case of probate inventories', *J. Historical Geography*, 3 (1977), pp. 317–26.

¹⁹ R. Kain, *An atlas and index of the Tithe Files of*

mid-Nineteenth century England and Wales (1986), p. 70; J. Mosby, *The Land of Britain: the report of the Land Utilisation Survey. Vol. 70, Norfolk* (1938), endpaper.

distribution of ridge and furrow probably reflects patterns of post-medieval land-use more accurately than it does the original distribution of ridging.

It can be concluded that ridge and furrow was once practiced in East Anglia to a greater extent than the distribution of surviving ridge and furrow would suggest. This is not to suggest that all open-fields in Norfolk and Suffolk were once ridged. Where open-fields were on well-draining soil there may have been no need for ridge and furrow. In the parkland of Houghton Hall for example, there is evidence for headlands but none for ridge and furrow, indicating that the direction of ploughing was alternated each year.²⁰ What this study has highlighted is the role of post-medieval land use in the survival of ridge and furrow in the landscape. Whereas in the Midlands ridging often continued in conjunction with underdraining,²¹ East Anglian farmers seem to have preferred a combination of underdraining and cross-ploughing. As such, this must count as a significant regional variation in ploughing practice that removed ridge and furrow almost completely. Where ridging did survive it was either because of particular land-use, for example in west Norfolk, or was purely fortuitous. In Norfolk and Suffolk the Agricultural Revolution brought with it the destruction of one of the most characteristic features of the medieval landscape.

²⁰ T. Williamson, pers. comm.

²¹ E. Kerridge, 'Ridge and Furrow and agrarian history' *AgHR* 3 (1955), pp. 14-36.