LANDSCAPE AND SOCIAL PRACTICE:
THE PRODUCTION AND CONSUMPTION OF POTTERY
IN TENTH CENTURY LINCOLNSHIRE

Volume II of II

Leigh Andrea Symonds, B.A., M.A.
Submitted for the degree of Doctor of Philosophy to the University of York, UK.
Department of Archaeology
December 1999
THESIS CONTAINS CD
TABLE OF CONTENTS

~ Volume I ~

Abstract i
Table of Contents ii
Table of Figures v
List of Accompanying Material xii
Acknowledgements xiv
Author's Declaration xvi

Chapter I:
The Geography of Landscape: Social space and the Anglo-Saxons 1
Landscape and Social Practice 1
Virtual Landscapes 9
The Landscape in Anglo-Saxon Archaeology 11
Landscape and Material Culture 17
   The landscape of late Anglo-Saxon England 21
   Artefact and region: Pottery production in tenth century Lincolnshire 25
   The social geography of Anglo-Scandinavian Lincolnshire 30
Summary 31

Chapter II:
The Social Geography of Lincolnshire: c. 850-1100 34

Social Topographies 35
   Geographies of water 36
   Geographies of land 41

Settlements and Communities 48
   Kingdoms and counties 48
   Ploughing and supporting themselves 54
   Urban landscapes 67
   Tenth century Lincoln 76
Social Landscapes

<table>
<thead>
<tr>
<th>Chapter III</th>
<th>Practices of Production: The craft of potters in Anglo-Scandinavian Lincolnshire</th>
<th>81</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The Study of Late Anglo-Saxon Pottery</td>
<td>83</td>
</tr>
<tr>
<td></td>
<td>Producing Pottery Data: Collection Strategies in Lincolnshire</td>
<td>84</td>
</tr>
<tr>
<td></td>
<td>Anglo-Saxon Pottery Traditions within Lincolnshire</td>
<td>87</td>
</tr>
<tr>
<td></td>
<td>Production Practices: Kiln-yards and their Wares</td>
<td>91</td>
</tr>
<tr>
<td></td>
<td>The kiln-yard</td>
<td>93</td>
</tr>
<tr>
<td></td>
<td>The pottery</td>
<td>93</td>
</tr>
<tr>
<td></td>
<td>Historical evidence</td>
<td>98</td>
</tr>
<tr>
<td></td>
<td>Stamford wares</td>
<td>99</td>
</tr>
<tr>
<td></td>
<td>Torksey ware</td>
<td>101</td>
</tr>
<tr>
<td></td>
<td>Lincoln wares</td>
<td>103</td>
</tr>
<tr>
<td></td>
<td>Discussion</td>
<td>104</td>
</tr>
<tr>
<td></td>
<td>Consumption Practices: the Distribution of Pottery within Lincolnshire</td>
<td>108</td>
</tr>
<tr>
<td></td>
<td>Summary</td>
<td>109</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chapter IV:</th>
<th>Ceramic Landscapes: Exploring Social Geography through Material Culture</th>
<th>113</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Approaching the Landscape: Visualising the Past</td>
<td>115</td>
</tr>
<tr>
<td></td>
<td>The Reconciliation of Data</td>
<td>117</td>
</tr>
<tr>
<td></td>
<td>Pottery and Landscape: Ceramic Analysis and Social Space</td>
<td>122</td>
</tr>
<tr>
<td></td>
<td>Human Mobility</td>
<td>126</td>
</tr>
<tr>
<td></td>
<td>Routes of movement</td>
<td>128</td>
</tr>
<tr>
<td></td>
<td>Perceptions and representations of movement</td>
<td>130</td>
</tr>
<tr>
<td></td>
<td>Settlement Interaction</td>
<td>138</td>
</tr>
<tr>
<td></td>
<td>The urban consumption of pottery</td>
<td>148</td>
</tr>
<tr>
<td></td>
<td>The rural consumption of pottery</td>
<td>152</td>
</tr>
<tr>
<td></td>
<td>Territorial Identity</td>
<td>155</td>
</tr>
<tr>
<td></td>
<td>Pottery and Landscape: The Social Practices of Production and Consumption</td>
<td>164</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chapter V:</th>
<th>Landscape and Social Practice in Tenth Century Lincolnshire</th>
<th>168</th>
</tr>
</thead>
</table>
Urban Transitions 177
Place and Mobility in the Landscape 181
Territory and Locale 188
Landscapes of Deposition 191
Epilogue 193

~ Volume II ~

Table of Contents i
List of Figures iv
List of Accompanying Material xi
Figures 1
Appendix I: Assemblage Charts 152
Appendix II: Database Material (CD-ROM) 185
Appendix III: Statistics (CD-ROM) 188
Bibliography 192
LIST OF FIGURES

Figure 1: Lincolnshire and the Danelaw 1
Figure 2: Topography of Lincolnshire 2
Figure 3: Regions of Lincolnshire 3
Figure 4: Lincolnshire rivers 4
Figure 5: Navigable Rivers 5
Figure 6: Lincolnshire and Norfolk Fens 6
Figure 7: Domesday settlements in Lincolnshire 7
Figure 8: Lincolnshire Domesday fisheries 8
Figure 9: Lincolnshire Domesday Saltpans 9
Figure 10: Roman roads of Lincolnshire 10
Figure 11: Saltways and Saltpans of Lincolnshire 11
Figure 12: Lincolnshire Ploughlands recorded in Domesday 12
Figure 13: The Seven Boroughs of the Danelaw 13
Figure 14: Anglo-Scandinavian Stamford 14
Figure 15: Distribution of Anglo-Scandinavian sculpture 15
Figure 16: Lindsey Covers 16
Figure 17: Kesteven Covers 17
Figure 18: Ecclesiastical Sites in Lincolnshire 18
Figure 19: Links between manorial lands at Domesday 19
Figure 20: Plan of Goltho 20
Figure 21: Artistic reconstruction of Goltho 21
Figure 22: The Brompton hogbacks 22
Figure 23: Plan of Goltho: c. 850-950 23
Figure 24: Plan of Goltho: c. 950-1000 24
Figure 25: Plan of Cheddar 25
Figure 26: Artistic reconstruction of Cheddar 26
Figure 27: Plan of Flixborough 27
Figure 28: Burghal Hidage and Reconquest Forts 28
Figure 29: Street plan of Lincoln 29
Figure 30: Artistic reconstruction of Flaxengate, Lincoln
Figure 31: Distribution of Maxey-type wares
Figure 32: Distribution of Ipswich ware
Figure 33: Danelaw kilns (late 9th and 10th centuries)
Figure 34: Decoration on Anglo-Scandinavian pottery
Figure 35: Musty’s Type 1 Kilns
Figure 36: Excavations at Silver Street, Lincoln
Figure 37: Photo of the Silver Street kiln, Lincoln
Figure 38: Plan of the Silver Street kiln, Lincoln
Figure 39: The kiln at Stamford Castle, Stamford
Figure 40: The kiln at Wharf Road, Stamford
Figure 41: Stamford ware, Castle kiln
Figure 42: Distribution of EST in Lincolnshire
Figure 43: Stamford kiln, Wharf Road
Figure 44: Distribution of ST in Lincolnshire
Figure 45: Red painted Stamford ware
Figure 46: Stamford crucibles
Figure 47: Torksey ware
Figure 48: Distribution of TORK in Lincolnshire
Figure 49: Lincoln wares
Figure 50: Local Late Saxon wares (LSLOC)
Figure 51: Distribution of LSLOC in Lincolnshire
Figure 52: Lincoln Kiln-type ware (LKT)
Figure 53: Lincoln Kiln-type ware (LKT)
Figure 54: Distribution of LKT in Lincolnshire
Figure 55: Distribution of LSH in Lincolnshire
Figure 56: Lincoln Fine-shelled ware (LFS)
Figure 57: Distribution of LFS in Lincolnshire
Figure 58: Lincoln Late Saxon Sandt ware (LSLS)
Figure 59: Distribution of LSLS in Lincolnshire
Figure 60: Lincoln Saxon-Norman Sandy ware (SNLS)
Figure 61: Distribution of SNLS in Lincolnshire
Figure 62: Lincoln Grutty ware (LG)
Figure 63: Distribution of LG in Lincolnshire
Figure 64: Worn Sherd Rim-former
Figure 65: Distribution of TORKT in Lincolnshire
Distance Stretching Maps

Figure 93: Temporal Distance: Lincoln wares (along roads) 93
Figure 94: Temporal Distance: Lincoln wares (along rivers) 94
Figure 95: Temporal Distance: Torksey ware (along roads) 95
Figure 96: Temporal Distance: Torksey ware (along rivers) 96
Figure 97: Temporal Distance: Stamford ware (along roads) 97
Figure 98: Temporal Distance: Stamford ware (along rivers) 98

Cognitive Temporal Mapping

Figure 99: Temporal Distance mapping (Lincoln wares (along roads)) 99
Figure 100: Temporal Distance mapping (Lincoln wares (along rivers)) 100
Figure 101: Temporal Distance mapping (Torksey ware (along rivers)) 101
Figure 102: Temporal Distance mapping (Torksey ware (along roads)) 102
Figure 103: Temporal Distance mapping (Stamford ware (along rivers)) 103
Figure 104: Temporal Distance mapping (Stamford ware (along roads)) 104

Cognitive Temporal Regression Graphs

Figure 105: Regression of Lincoln wares: Road distances 105
Figure 106: Regression of Lincoln wares: Road distances excluding Goltho 106
Figure 107: Regression of Lincoln wares: Road distances sites greater than 10 vessels 107
Figure 108: Regression of Lincoln wares: River distances 108
Figure 109: Regression of Lincoln wares: River distances excluding Flixborough 109
Figure 110: River distances sites with more than 10 vessels 110
Figure 111: Regression of Stamford ware: Road distances 111
Figure 112: Regression of Stamford ware: Road distances sites (with more than 10 vessels) 112
Figure 113: Regression of Stamford ware: River distances 113
Figure 114: Regression of Stamford ware: River distances (excluding Baston) 114
Figure 115: Regression of Torksey ware: Road distances 115
Figure 116: Regression of Torksey ware: River distances 116
Figure 117: Fenland pottery sites 117
Figure 118: Tenth and eleventh century pottery sites 118
Figure 119: Distribution of Anglian wares in Lincolnshire 119
Figure 120: Proportion of Lincoln wares 120
Figure 121: Distribution of Lincoln wares in Lincolnshire 121
Figure 122: Distribution of LKT and LSH in Lincolnshire
Figure 123: Distribution of LFS and SNLS in Lincolnshire
Figure 124: Anglo-Scandinavian Vessel Forms in Lincolnshire

MDS Models

Figure 126: MDS model of distances between sites (sites including towns; variables including vessel counts)
Figure 127: MDS model of distances between sites (sites excluding towns; variables including vessel counts)
Figure 128: MDS model of distances between sites (sites including towns; variables excluding vessel counts)
Figure 129: MDS model of distances between sites (sites excluding towns; variables excluding vessel counts)

Cluster Analysis Graphs

Figure 130: Hierarchical Cluster Diagram (sites including towns; variables including vessel counts)
Figure 131: Hierarchical Cluster Diagram (sites including towns; variables excluding vessel counts)
Figure 132: K-means cluster results (defining 8 clusters; variables including vessel counts)
Figure 133: K-means cluster results (defining 9 clusters; variables including vessel counts)
Figure 134: K-means cluster results (defining 10 clusters; variables including vessel counts)
Figure 135: K-means cluster results (defining 8 clusters; variables excluding vessel counts)
Figure 136: K-means cluster results (defining 9 clusters; variables excluding vessel counts)
Figure 137: K-means cluster results (defining 10 clusters; variables excluding vessel counts)

Distribution of Cluster Analysis

Figure 138: Geographic representation of k-means clusters (8 clusters, including vessels)
Figure 139: Geographic representation of k-means clusters (9 clusters, including vessels)
Figure 140: Geographic representation of k-means clusters (10 clusters, including vessels)
Figure 141: Geographic representation of k-means clusters (8 clusters, excluding vessels)
Figure 142: Geographic representation of k-means clusters (9 clusters, excluding vessels) 142
Figure 143: Geographic representation of k-means clusters (10 clusters, excluding vessels) 143
Figure 144: Distribution of Lincoln wares in Lincolnshire (quantity of vessels excluding Lincoln) 144
Figure 145: Distribution of Lincoln wares in Lincolnshire sites with only Lincoln wares 145
Figure 146: Distribution of Torksey ware (with only Lincoln wares) 146
Figure 147: Distribution of ST and EST (quantities of vessels) 147
Figure 148: Distribution of Stamford ware in Lincolnshire sites with only Stamford ware 148
Figure 149: Coin finds in Lincolnshire 149
Figure 150: Density of Manorial Land at Domesday 150
Figure 151: 10th and 11th century Church fabric 151
Figure 152: Manorial locales and wapentakes 152
Figure 153: Anglo-Scandinavian Pottery: South Ormsby 154
Figure 154: Anglo-Scandinavian Pottery: Wainfleet All Saints 155
Figure 155: Anglo-Scandinavian Pottery: Fillingham 156
Figure 156: Anglo-Scandinavian Pottery: Horncastle 157
Figure 157: Anglo-Scandinavian Pottery: Haugham 158
Figure 158: Anglo-Scandinavian Pottery: Haverholme 159
Figure 159: Anglo-Scandinavian Pottery: Grantham 160
Figure 160: Anglo-Scandinavian Pottery: Newton 161
Figure 161: Anglo-Scandinavian Pottery: Panton 162
Figure 162: Anglo-Scandinavian Pottery: Aylesby 163
Figure 163: Anglo-Scandinavian Pottery: Kirkby la Thorpe 164
Figure 163: Anglo-Scandinavian Pottery: Kirton 165
Figure 165: Anglo-Scandinavian Pottery: West Halton 166
Figure 166: Anglo-Scandinavian Pottery: Tattershall 167
Figure 167: Anglo-Scandinavian Pottery: Foston 168
Figure 168: Anglo-Scandinavian Pottery: Hackthorne 169
Figure 169: Anglo-Scandinavian Pottery: Nettleham 170
Figure 170: Anglo-Scandinavian Pottery: Fishtoft 171
Figure 171: Anglo-Scandinavian Pottery: Caistor 172
Figure 172: Anglo-Scandinavian Pottery: Ketsby 173
Figure 173: Anglo-Scandinavian Pottery: North Kelsey 174
Figure 174: Anglo-Scandinavian Pottery: Crowland 175
Figure 175: Anglo-Scandinavian Pottery: Sleaford 176
Figure 176: Anglo-Scandinavian Pottery: Cherry Willingham 177
Figure 177: Anglo-Scandinavian Pottery: Flixborough 178
Figure 178: Anglo-Scandinavian Pottery: Repton 179
Figure 179: Anglo-Scandinavian Pottery: Baston 180
Figure 180: Anglo-Scandinavian Pottery: Newark 181
Figure 181: Anglo-Scandinavian Pottery: Goltho 182
Figure 182: Anglo-Scandinavian Pottery: Torksey 183
Figure 183: Anglo-Scandinavian Pottery: Lincoln 184
LIST OF ACCOMPANYING MATERIAL

CD-ROM:

File Directories:

/appndx2

/other
  /coins.dbf
  /manor.dbf
/pottery
  /pottery.dbf
  /places.dbf
  /fensite.dbf
  /norfen.dbf
  /healeys.dbf
  /stamford.dbf

/appndx3

/cluter
  /hrural.spo
  /hcltowns.spo
  /kclinv.dbf
  /kclinv.spo
  /kclvess.dbf
  /kclvess.spo
  /ware10nt.dbf
  /ware10t.dbf
/cogreg
  /lrddist.dbf
  /lrvdist.dbf
  /rdlreg.spo
  /rdsreg.spo
  /rdtreg.spo
  /rsvreg.spo
  /rdsreg.spo
  /srddist.dbf
  /svrdist.dbf
  /trddist.dbf
/eucreg
  /euclreg.dbf
  /euctreg.dbf
  /eucsreg.dbf
Lincolnshire and the Danelaw

Roads and Pathways derived from OS 1:675000
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Original in Colour
Topography of Lincolnshire

Fenland and Coastal silts derived from Coles and Hall 1998

Marsh rendered from Barley 1971

Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Figure 2
Regions of Lincolnshire

Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Figure 3
Lincolnshire Rivers

Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

~4~

Figure 4
Navigable Rivers

Information derived from Edwards and Hindle 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Figure 5
Lincolnshire and Norfolk Fens

Roads and Pathways derived from OS 1:675000
Topography and Hydrology derived from 1:250000 Bartholomew map data and Coles and Hall 1998

L.A. Symonds 1999

Figure 6
Domesday Settlements of Lincolnshire

G = Grantham; Li = Lincoln; Lo = Louth; S = Stamford; R = Torksey
from Darby 1971: 35

L.A. Symonds 1999

Figure 7
Lincolnshire Domesday Fisheries
Sites derived from Foster and Longley 1924
Roads and Pathways derived from OS 1:675000
Topography and Hydrology derived from 1:250000 Bartholomew map data
L.A. Symonds 1999

Figure 8
Lincolnshire Domesday Saltpans
Sites derived from Foster and Longley 1924
Roads and Pathways derived from OS 1:675000
Topography and Hydrology derived from 1:250000 Bartholomew map data
L.A. Symonds 1999

Figure 9
Roman roads of Lincolnshire

Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Figure 10
Saltways and Saltpans of Lincolnshire

Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Figure 11
Domesday Ploughlands of Lincolnshire (by densities per square mile)

G = Grantham; Li = Lincoln; Lo = Louth; S = Stamford; T = Torksey

from Darby 1971: 57

L.A. Symonds 1999

Figure 12
The Seven Boroughs of the Danelaw

Roads and Pathways derived from OS 1:675000
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Figure 13
Anglo-Scandinavian Stamford

from Mahany et al. 1982: 7

L.A. Symonds 1999

Figure 14
Distribution of Anglo-Scandinavian Sculpture

Sites derived from Everson and Stocker 1999

Topography and Hydrology derived from 1:250000 Bartholomew map data

I.A. Symonds 1999

Figure 15
Lindsey Covers

from Everson and Stocker 1999: 52-3

L.A. Symonds 1999
Kesteven Covers

from Everson and Stocker 1999:38-40

L.A. Symonds 1999

Figure 17
Ecclesiastical Sites in Lincolnshire

Sites derived from Sawyer 1998 and Stocker 1993
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Figure 18
Links between manorial lands at Domesday
Sites derived from Foster and Longley 1924
Roads and Pathways derived from OS 1:675000
Topography and Hydrology derived from 1:250000 Bartholomew map data
L.A. Symonds 1999

Figure 19
Plan of Goltho c. 850-950

from Beresford 1987: 32

L.A. Symonds 1999
Artistic reconstruction of Goltho c. 850

from Beresford 1987: 36

L.A. Symonds 1999

Figure 21
The Brompton Hogbacks

from Lang 1984: 86

L.A. Symonds 1999
Plan of Goltho c. 850-950

from Beresford 1987: 9

L.A. Symonds 1999
Plan of Goltho c. 950-1000

from Beresford 1987: 9

L.A. Symonds 1999

Figure 24
Plan of Cheddar
Pre c. 930
From Rahtz 1979: 50
L.A. Symonds 1999

Figure 25
Artistic Reconstruction of Cheddar
Pre c. 930
From Alan Sorrell in Rahtz 1979: 51
L.A. Symonds 1999

Figure 26
Plan of Flixborough
Mid 8th - early 9th century
From Sawyer 1998 : 67
L.A. Symonds 1999

Figure 27
The Burghal Hidage and Reconquest Forts

Roads and Pathways derived from OS 1:675000
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Figure 28
Street Plan of Lincoln

From Everson and Stocker 1999: 13

L.A. Symonds 1999
Artistic Reconstruction of Flaxengate, Lincoln
11th century house
from R. Sutton in Sawyer 1998: 191
L.A. Symonds 1999

Figure 30
Distribution of Maxey-type ware in Lincolnshire

Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Figure 31
Distribution of Ipswich-type ware in Lincolnshire

Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Figure 32
Danelaw kilns
(late 9th and 10th centuries)
Topography and Hydrology derived from 1:250000 Bartholomew map data
L.A. Symonds 1999

Figure 33
Decoration on Anglo-Scandinavian pottery

from Miles et al. 1989: 206

L.A. Symonds 1999
Musty’s Type 1 Kilns

from Musty 1974: 45

L.A. Symonds 1999
Excavations at Silver Street, Lincoln

from Miles et al. 1989: 36

L.A. Symonds 1999

Figure 36
Photo of Kiln 200, Silver Street, Lincoln

from Miles et al. 1989: 191

L.A. Symonds 1999

Figure 37
Plan of Kiln 200, Silver Street, Lincoln

from Miles et al. 1989:188

L.A. Symonds 1999

Figure 38
The kiln at Stamford Castle, Stamford

from Kilmurry 1980:335

L.A. Symonds 1999

Figure 39
The kiln at Wharf Road, Stamford

from Kilmurry 1980: 33

L.A. Symonds 1999

Figure 40
Stamford wares, Castle kiln

from Kilmurry 1980:35

L.A. Symonds 1999

Figure 41
Distribution of EST in Lincolnshire

Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

50 km

Figure 42
Stamford wares, Wharf Road

Kilmurry 1980: 47

L.A. Symonds 1999
Distribution of ST in Lincolnshire

Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Figure 44
Red Painted Stamford ware

from Kilmurry 1980: 37

L.A. Symonds 1999

Figure 45
Stamford Crucibles

from Adams Gilmour 1988

L.A. Symonds 1999

Figure 46
Torksey ware

from Adams Gilmour 1988: 121

L.A. Symonds 1999

Figure 47
Distribution of TORK in Lincolnshire

Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Figure 48
Lincoln wares

From Sawyer 1998: 193

L.A. Symonds 1999

Figure 49
Local Late Saxon wares (LSLOC)

from Adams Gilmour 1988: 136

L.A. Symonds 1999

Figure 50
Distribution of LSLOC in Lincolnshire
Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data
L.A. Symonds 1999

Figure 51
Lincoln Kiln-type ware (LKT)

BOWLS AND DISHES

BýIs, dishm ýd othý foms from MiICS el al. 1989: 211

L. A. Symonds 1999

LAMPS COSTRELS JUG/PITCHERS

from Miles et al. 1989: 211

L.A. Symonds 1999

Figure 52
Lincoln Kiln-type ware LKT)

1 = small globular jars; 2 = small jars; 3 = medium jars; 4 = large jars; 5 = lipped jars; 6 = pitchers; 7 = large storage jars; 8 = large pitchers; 9 = wide mouthed jars

from Miles et al. 1989: 209

L.A. Symonds 1999

Figure 53
Distribution of LKT in Lincolnshire
Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data
L.A. Symonds 1999

Figure 54
Distribution of LSH in Lincolnshire

Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

0 50 km

Figure 55
Lincoln Fine-shelled ware (LFS)

from Adams Gilmour 1988: 115

L.A. Symonds 1999
Distribution of LFS in Lincolnshire

Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Figure 57
Lincoln Late Saxon Sandy ware (LSLS)

from Adams Gilmour 1988: 103

L.A. Symonds 1999
Distribution of LSLS in Lincolnshire

Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Figure 59
Lincoln Saxo-Norman Sandy ware (SNLS)

From Adams Gilmour 1988: 109

L.A. Symonds 1999
Distribution of SNLS in Lincolnshire

Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Figure 61
Lincoln Gritty ware (LG)

from Adams Gilmour 1988: 99

L.A. Symonds 1999

Figure 62
Distribution of LG in Lincolnshire

Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Figure 63
Worn sherd Rim-former

from Miles et al. 1989: 206

L.A. Symonds 1999

Figure 64
Distribution of TORKT in Lincolnshire

Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999
Distribution of HLKT in Lincolnshire

Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Figure 66
Distribution of sites in the EMPP database

Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Figure 67
Distribution of non-EMPP sources and sites

Sites derived from T. Lane, H. Healey and other published sources
Topography and Hydrology derived from 1:250000 Bartholomew map data

Figure 68
Distribution of Anglo-Scandinavian pottery in Lincolnshire

Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Figure 69
Number of sites per number of vessels

Stem and Leaf diagrams

L.A. Symonds 1999

Figure 69b
Sawyer's Map of Roman Roads
Solid line = certain; broken line = deduced

L.A. Symonds 1999

Figure 70
Margary's Map of Roman Roads

from Margary 1971: 192

L.A. Symonds 1999

Figure 71
Stafford’s Map of Roman Roads

From Stafford 1985: 10

L.A. Symonds 1999

Figure 72
Proximity to Rivers
EMPP vs Late Saxon sites

L.A. Symonds 1999

Figure 73
Proximity to Rivers
EMPP vs Late Saxon sites (percentages)

L.A. Symonds 1999

Figure 74
Proximity to Rivers

EMPP vs Late Saxon site (cumulative percentages)

L.A. Symonds 1999

Figure 75
Proximity to Roads

EMPP vs Late Saxon sites

L.A. Symonds 1999

Figure 76
Proximity to Roads

EMPP vs Late Saxon site (percentages)

L.A. Symonds 1999

Figure 77
Proximity to Roads

EMPP vs Late Saxon site (cumulative percentages)

L.A. Symonds 1999

Figure 78
Distribution of sites with more than 10 vessels

Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Figure 79
Distribution of Lincoln wares in Lincolnshire

quantity of vessels

Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Figure 80
Distribution of Torksey ware in Lincolnshire
(quantity of vessels)
Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data
L.A. Symonds 1999

Figure 81
Distribution of TORKT in Lincolnshire
(quantity of vessels)
Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data
L.A. Symonds 1999

-82-
Suirnford ware
Estimated Stamford ware vessel count derived from sherd count = 24595 (Kilmurry 1980; Mahany et al 1980; Miles forthcoming; Leach forthcoming)

Distribution of ST in Lincolnshire
(quantity of vessels)
Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data
L.A. Symonds 1999

Figure 83
Traveling Pots: Lincoln wares

(quantities of pottery along roads)

Sites derived from Vince and Young 1991

Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999
Traveling Pots: Lincoln wares
(quantities of pottery along rivers)
Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data
LA. Symonds 1999

Original in Colour  

Figure 85
Traveling Pots: Stamford ware
(quantities of pottery along rivers)
Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data
L.A. Symonds 1999

Figure 86
Traveling Pots: Stamford ware
(quantities of pottery along roads)
Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data
L.A. Symonds 1999

Figure 87
Traveling Pots: Torksey ware

(quantities of pottery along rivers)

Sites derived from Vince and Young 1991

Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Original in Colour

Figure 88
Traveling Pots: Torksey ware
(quantities of pottery along roads)
Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data

LA. Symonds 1999

Original in Colour

Figure 89
Regression of Lincoln wares

Euclidean distances
Including and excluding Goltho

L.A. Symonds 1999

Figure 90
Regression of Stamford ware
Euclidean distances

L.A. Symonds 1999

Figure 91
Regression of Torksey ware

Euclidean distances

L.A. Symonds 1999

Figure 92
Temporal Distance Mapping: Lincoln wares
(along roads)
Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data
L.A. Symonds 1999

Figure 93
Temporal Distance Mapping: Lincoln wares
(legal rivers)
Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data
L.A. Symonds 1999

Figure 94
Temporal Distance Mapping: Torksey ware
(along roads)
Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data
L.A. Symonds 1999

Figure 95
Temporal Distance Mapping: Torksey ware
(Along rivers)
Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Figure 96
Temporal Distance Mapping: Stamford ware

(along roads)

Sites derived from Vince and Young 1991

Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Figure 97
Temporal Distance Mapping: Stamford ware
(along rivers)
Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data
L.A. Symonds 1999

Figure 98
Temporal Distance Mapping: Lincoln wares

(quantities of pottery along roads per days travel)
Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Days of travel
(25.6 km (16 miles) per day)
Temporal Distance Mapping: Lincoln wares

(quantities of pottery along rivers per days travel)

Sites derived from Vince and Young 1991

Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Original in Colour

Figure 100
Temporal Distance Mapping: Torksey ware
(quantities of pottery along rivers per days travel)
Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data
L.A. Symonds 1999

Days of travel
(51.2 km (32 miles) per day)

Pottery sites
Pottery sites
(< 10 vessels)
Pottery sites

Pottery sites (< 10 vessels)

Days of travel
(25.6 km (16 miles) per day)

Temporal Distance Mapping: Torksey ware
(quantities of pottery along roads per days travel)
Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:25000 Bartholomew map data

L.A. Symonds 1999

Original in Colour
Temporal Distance Mapping: Stamford ware

(quantities of pottery along roads per days travel)

Sites derived from Vince and Young 1991

Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Days of travel
(25.6 km (16 miles) per day)
Temporal Distance Mapping: Stamford ware

(quantities of pottery along rivers per days travel)

Sites derived from Vince and Young 1991

Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Figure 104
Regression of Lincoln wares

Road distances
Including Goltcho

L.A. Symonds 1999

Figure 105
Regression of Lincoln wares

Road distances
Excluding Goltho

L.A. Symonds 1999

Figure 106
Regression of Lincoln wares

Road distances
Sites with more than 10 vessels

L.A. Symonds 1999

Figure 107
Regression of Lincoln wares

River distances
Including Flixborough

L.A. Symonds 1999

Figure 108
Regression of Lincoln wares

River distances
Excluding Flixborough

L.A. Symonds 1999

Figure 109
Regression of Lincoln wares

River distances
Sites with more than 10 vessels

L.A. Symonds 1999
Regression of Stamford ware
Road distances

L.A. Symonds 1999
Regression of Stamford ware

Road distances
Sites with more than 10 vessels

L.A. Symonds 1999

Figure 112
Regression of Stamford ware

River distances

L.A. Symonds 1999

Figure 113
Regression of Stamford ware

River distances
Excluding Baston

L.A. Symonds 1999

Figure 114
Regression of Torksey ware
Road distances

L.A. Symonds 1999
Regression of Torksey ware
River distances

*L.A. Symonds 1999

Figure 116
Fenland pottery sites

Sites derived from the Lincolnshire and Norfolk Fenland Surveys
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Figure 117
Tenth and eleventh century pottery sites
Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999
Distribution of Anglian wares in Lincolnshire
(quantity of vessels)
Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Original in Colour

Figure 119
Proportion of Lincoln Wares at Flaxengate

From Adams Gilmour 1988

L.A. Symonds 1999

Figure 120
Distribution of Lincoln wares in Lincolnshire
(variety of wares)
Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data
L.A. Symonds 1999

Original in Colour

Figure 121
Distribution of LKT and LSH in Lincolnshire

Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999
Distribution of LFS and SNLS in Lincolnshire

Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data
L.A. Symonds 1999

Figure 123
Anglo-Scandinavian Vessel Forms in Lincolnshire

Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Original in Colour

Figure 124
PAGE NUMBERING AS ORIGINAL
MDS model of distances between sites
Sites including towns
Variables including vessel counts

L.A. Symonds 1999

Figure 126
MDS model of distances between sites
Sites excluding towns
Variables including vessel counts

L.A. Symonds 1999

Figure 127
MDS model of distances between sites

Sites including towns
Variables excluding vessel counts

L.A. Symonds 1999

Figure 128
MDS model of distances between sites

Sites excluding towns
Variables excluding vessel counts

L.A. Symonds 1999

Figure 129
Hierarchical Cluster Analysis Dendrogram
sites including towns
variables including vessel counts

Dendrogram using Ward Method

<table>
<thead>
<tr>
<th>Label</th>
<th>CASE</th>
<th>0</th>
<th>5</th>
<th>10</th>
<th>15</th>
<th>20</th>
<th>25</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kirkby la Thorpe</td>
<td>19</td>
<td>E</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Newton</td>
<td>22</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Quarrington</td>
<td>25</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Grantham</td>
<td>11</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>West Halton</td>
<td>16</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Panton</td>
<td>24</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Foston</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Wainfleet All Saints</td>
<td>31</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Tattershall</td>
<td>27</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Plethopt</td>
<td>29</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Fillingham</td>
<td>5</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Hackthorne</td>
<td>15</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Aylesby</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Haugham</td>
<td>12</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Haverholme</td>
<td>13</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Keteby</td>
<td>17</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Horncastle</td>
<td>14</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Linwood</td>
<td>18</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>South Ormsby</td>
<td>32</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Kirton</td>
<td>30</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Crowland</td>
<td>7</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Sleaford</td>
<td>26</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Caistor</td>
<td>4</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Nettleham</td>
<td>23</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Cherry Willingham</td>
<td>8</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>North Kelsey</td>
<td>21</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Flixborough</td>
<td>10</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Baston</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Newark</td>
<td>20</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Goltho</td>
<td>9</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Torksey</td>
<td>28</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Lincoln</td>
<td>6</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Hierarchical Cluster Analysis
Sites including towns
Variables including vessel counts
L.A. Symonds 1999

Figure 130
Hierarchical Cluster Analysis

Sites including towns
Variables excluding vessel counts

L.A. Symonds 1999

---

Dendrogram using Ward Method

<table>
<thead>
<tr>
<th>Label</th>
<th>CASE</th>
<th>Num</th>
<th>0</th>
<th>5</th>
<th>10</th>
<th>15</th>
<th>20</th>
<th>25</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baston</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grantham</td>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Newton</td>
<td>22</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quarrington</td>
<td>25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kirkby la Thorpe</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Newark</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Kelsey</td>
<td>21</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fillingham</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hackthorpe</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aylesby</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crowland</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tattershall</td>
<td>27</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Horncastle</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Linwood</td>
<td>18</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sleaford</td>
<td>26</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lincoln</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>South Ormsby</td>
<td>32</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caistor</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flixborough</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kirton</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fishtoft</td>
<td>29</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wainfleet All Saints</td>
<td>31</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foston</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Goltho</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Haugham</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ketby</td>
<td>17</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Haverholme</td>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nettleham</td>
<td>23</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cherry Willingham</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>West Halton</td>
<td>16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Panton</td>
<td>24</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Torksey</td>
<td>28</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
K-means cluster results using Ward’s Method and defining 8 clusters
Variables excluding vessel counts

<table>
<thead>
<tr>
<th>Settlement</th>
<th>Cluster</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kirton</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Baston</td>
<td>2</td>
<td>17.788</td>
</tr>
<tr>
<td>Grantham</td>
<td>2</td>
<td>16.555</td>
</tr>
<tr>
<td>Kirkby la Thorpe</td>
<td>2</td>
<td>10.501</td>
</tr>
<tr>
<td>Newton</td>
<td>2</td>
<td>17.191</td>
</tr>
<tr>
<td>Quarrington</td>
<td>2</td>
<td>14.214</td>
</tr>
<tr>
<td>Foston</td>
<td>3</td>
<td>16.272</td>
</tr>
<tr>
<td>Crowland</td>
<td>3</td>
<td>21.038</td>
</tr>
<tr>
<td>Fishtoft</td>
<td>3</td>
<td>15.132</td>
</tr>
<tr>
<td>Wainfleet</td>
<td>3</td>
<td>13.294</td>
</tr>
<tr>
<td>Flixborough</td>
<td>4</td>
<td>15.406</td>
</tr>
<tr>
<td>South Ormsby</td>
<td>4</td>
<td>15.406</td>
</tr>
<tr>
<td>Aylesby</td>
<td>5</td>
<td>22.845</td>
</tr>
<tr>
<td>Hackthorne</td>
<td>5</td>
<td>16.968</td>
</tr>
<tr>
<td>North Kelsey</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Cherry Willingham</td>
<td>7</td>
<td>14.597</td>
</tr>
<tr>
<td>West Halton</td>
<td>7</td>
<td>19.161</td>
</tr>
<tr>
<td>Nettleham</td>
<td>7</td>
<td>17.487</td>
</tr>
<tr>
<td>Panton</td>
<td>7</td>
<td>22.003</td>
</tr>
<tr>
<td>Caistor</td>
<td>8</td>
<td>25.376</td>
</tr>
<tr>
<td>Goltho</td>
<td>8</td>
<td>13.115</td>
</tr>
<tr>
<td>Haugham</td>
<td>8</td>
<td>14.372</td>
</tr>
<tr>
<td>Haverholme</td>
<td>8</td>
<td>23.015</td>
</tr>
<tr>
<td>Horncastle</td>
<td>8</td>
<td>14.244</td>
</tr>
<tr>
<td>Ketsby</td>
<td>8</td>
<td>13.808</td>
</tr>
<tr>
<td>Linwood</td>
<td>8</td>
<td>19.286</td>
</tr>
<tr>
<td>Sleaford</td>
<td>8</td>
<td>23.431</td>
</tr>
<tr>
<td>Tattershall</td>
<td>8</td>
<td>20.324</td>
</tr>
</tbody>
</table>

*Figure 132*
K-means cluster results using Ward’s Methods and defining 9 clusters
Variables excluding vessel counts

<table>
<thead>
<tr>
<th>Settlement</th>
<th>Cluster</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aylesby</td>
<td>1</td>
<td>19.355</td>
</tr>
<tr>
<td>Caistor</td>
<td>1</td>
<td>13.34</td>
</tr>
<tr>
<td>Goltho</td>
<td>1</td>
<td>15.078</td>
</tr>
<tr>
<td>Baston</td>
<td>2</td>
<td>17.788</td>
</tr>
<tr>
<td>Grantham</td>
<td>2</td>
<td>16.555</td>
</tr>
<tr>
<td>Kirby la Thorpe</td>
<td>2</td>
<td>10.501</td>
</tr>
<tr>
<td>Newton</td>
<td>2</td>
<td>17.191</td>
</tr>
<tr>
<td>Quarrington</td>
<td>2</td>
<td>14.214</td>
</tr>
<tr>
<td>Foston</td>
<td>3</td>
<td>16.272</td>
</tr>
<tr>
<td>Crowland</td>
<td>3</td>
<td>21.038</td>
</tr>
<tr>
<td>Wainfleet All Saints</td>
<td>3</td>
<td>13.294</td>
</tr>
<tr>
<td>Cherry Willingham</td>
<td>4</td>
<td>14.597</td>
</tr>
<tr>
<td>West Halton</td>
<td>4</td>
<td>19.161</td>
</tr>
<tr>
<td>Nettleham</td>
<td>4</td>
<td>17.487</td>
</tr>
<tr>
<td>Panton</td>
<td>4</td>
<td>22.003</td>
</tr>
<tr>
<td>Fillingham</td>
<td>5</td>
<td>12.97</td>
</tr>
<tr>
<td>Hackthorne</td>
<td>5</td>
<td>12.97</td>
</tr>
<tr>
<td>North Kelsey</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Kirton</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>Haugham</td>
<td>8</td>
<td>15.728</td>
</tr>
<tr>
<td>Haverholme</td>
<td>8</td>
<td>22.009</td>
</tr>
<tr>
<td>Horncastle</td>
<td>8</td>
<td>13.442</td>
</tr>
<tr>
<td>Ketsby</td>
<td>8</td>
<td>14.709</td>
</tr>
<tr>
<td>Linwood</td>
<td>8</td>
<td>17.563</td>
</tr>
<tr>
<td>Sleaford</td>
<td>8</td>
<td>22.234</td>
</tr>
<tr>
<td>Tattershall</td>
<td>8</td>
<td>19.009</td>
</tr>
<tr>
<td>Flixborough</td>
<td>9</td>
<td>15.406</td>
</tr>
<tr>
<td>South Ormsby</td>
<td>9</td>
<td>15.406</td>
</tr>
</tbody>
</table>

*Figure 133*
K-means cluster results using Ward’s Method and defining 10 clusters
Variables excluding vessel count

<table>
<thead>
<tr>
<th>Settlement</th>
<th>Cluster</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aylesby</td>
<td>1</td>
<td>19.355</td>
</tr>
<tr>
<td>Caistor</td>
<td>1</td>
<td>13.34</td>
</tr>
<tr>
<td>Goltho</td>
<td>1</td>
<td>15.078</td>
</tr>
<tr>
<td>Kirton</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Foston</td>
<td>3</td>
<td>15.148</td>
</tr>
<tr>
<td>Fishtoft</td>
<td>3</td>
<td>10.943</td>
</tr>
<tr>
<td>Wainfleet All Saints</td>
<td>3</td>
<td>13.18</td>
</tr>
<tr>
<td>North Kelsey</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Fillingham</td>
<td>5</td>
<td>12.97</td>
</tr>
<tr>
<td>Hackthorne</td>
<td>5</td>
<td>12.9701</td>
</tr>
<tr>
<td>Nettleham</td>
<td>6</td>
<td>15.208</td>
</tr>
<tr>
<td>Panton</td>
<td>6</td>
<td>15.208</td>
</tr>
<tr>
<td>Cherry Willingham</td>
<td>7</td>
<td>15.752</td>
</tr>
<tr>
<td>Haugham</td>
<td>7</td>
<td>13.203</td>
</tr>
<tr>
<td>Haverholme</td>
<td>7</td>
<td>17.697</td>
</tr>
<tr>
<td>West Halton</td>
<td>7</td>
<td>21.408</td>
</tr>
<tr>
<td>Ketsby</td>
<td>7</td>
<td>13.742</td>
</tr>
<tr>
<td>Crowland</td>
<td>8</td>
<td>22.726</td>
</tr>
<tr>
<td>Horncastle</td>
<td>8</td>
<td>14.267</td>
</tr>
<tr>
<td>Linwood</td>
<td>8</td>
<td>18.469</td>
</tr>
<tr>
<td>Sleaford</td>
<td>8</td>
<td>17.82</td>
</tr>
<tr>
<td>Tattershall</td>
<td>8</td>
<td>13.459</td>
</tr>
<tr>
<td>South Ormsby</td>
<td>9</td>
<td>15.406</td>
</tr>
<tr>
<td>Baston</td>
<td>10</td>
<td>17.788</td>
</tr>
<tr>
<td>Grantham</td>
<td>10</td>
<td>16.555</td>
</tr>
<tr>
<td>Kirkby la Thorpe</td>
<td>10</td>
<td>10.501</td>
</tr>
<tr>
<td>Newton</td>
<td>10</td>
<td>17.191</td>
</tr>
<tr>
<td>Quarrington</td>
<td>10</td>
<td>14.459</td>
</tr>
</tbody>
</table>

*Figure 134*
K-means cluster results using Ward’s Method and defining 8 clusters
Variables including vessel count

<table>
<thead>
<tr>
<th>Settlement</th>
<th>Cluster</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flixborough</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Baston</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Grantham</td>
<td>3</td>
<td>26.643</td>
</tr>
<tr>
<td>Kirkby la Thorpe</td>
<td>3</td>
<td>18.311</td>
</tr>
<tr>
<td>Newton</td>
<td>3</td>
<td>15.23</td>
</tr>
<tr>
<td>Quarrington</td>
<td>3</td>
<td>17.919</td>
</tr>
<tr>
<td>Kirton</td>
<td>3</td>
<td>52.866</td>
</tr>
<tr>
<td>Aylesby</td>
<td>4</td>
<td>23.021</td>
</tr>
<tr>
<td>Fillingham</td>
<td>4</td>
<td>19.011</td>
</tr>
<tr>
<td>Hackthorne</td>
<td>4</td>
<td>25.469</td>
</tr>
<tr>
<td>South Ormsby</td>
<td>4</td>
<td>30.339</td>
</tr>
<tr>
<td>Foston</td>
<td>5</td>
<td>25.552</td>
</tr>
<tr>
<td>Haugham</td>
<td>5</td>
<td>18.211</td>
</tr>
<tr>
<td>Haverholme</td>
<td>5</td>
<td>20.971</td>
</tr>
<tr>
<td>Horncastle</td>
<td>5</td>
<td>24.272</td>
</tr>
<tr>
<td>West Halton</td>
<td>5</td>
<td>29.636</td>
</tr>
<tr>
<td>Ketsby</td>
<td>5</td>
<td>13.548</td>
</tr>
<tr>
<td>Linwood</td>
<td>5</td>
<td>25.936</td>
</tr>
<tr>
<td>Tattershall</td>
<td>5</td>
<td>24.283</td>
</tr>
<tr>
<td>Wainfleet All Saints</td>
<td>5</td>
<td>33.414</td>
</tr>
<tr>
<td>North Kelsey</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Caistor</td>
<td>7</td>
<td>25.676</td>
</tr>
<tr>
<td>Crowland</td>
<td>7</td>
<td>29.541</td>
</tr>
<tr>
<td>Cherry Willingham</td>
<td>7</td>
<td>36.846</td>
</tr>
<tr>
<td>Nettleham</td>
<td>7</td>
<td>36.695</td>
</tr>
<tr>
<td>Sleaford</td>
<td>7</td>
<td>33.228</td>
</tr>
<tr>
<td>Fishtoft</td>
<td>7</td>
<td>36.879</td>
</tr>
<tr>
<td>Goltho</td>
<td>8</td>
<td>0</td>
</tr>
</tbody>
</table>

Figure 135
K-means cluster results using Ward’s Method and defining 9 clusters
Variables including vessel count

<table>
<thead>
<tr>
<th>Settlement</th>
<th>Cluster</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aylesby</td>
<td>1</td>
<td>23.021</td>
</tr>
<tr>
<td>Fillingham</td>
<td>1</td>
<td>19.011</td>
</tr>
<tr>
<td>Hackthorne</td>
<td>1</td>
<td>25.469</td>
</tr>
<tr>
<td>South Ormsby</td>
<td>1</td>
<td>30.339</td>
</tr>
<tr>
<td>Baston</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Kirton</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Foston</td>
<td>4</td>
<td>25.552</td>
</tr>
<tr>
<td>Haugham</td>
<td>4</td>
<td>18.211</td>
</tr>
<tr>
<td>Haverholme</td>
<td>4</td>
<td>20.971</td>
</tr>
<tr>
<td>Horncastle</td>
<td>4</td>
<td>24.272</td>
</tr>
<tr>
<td>West Halton</td>
<td>4</td>
<td>29.636</td>
</tr>
<tr>
<td>Ketsby</td>
<td>4</td>
<td>13.548</td>
</tr>
<tr>
<td>Linwood</td>
<td>4</td>
<td>25.936</td>
</tr>
<tr>
<td>Panton</td>
<td>4</td>
<td>37.89</td>
</tr>
<tr>
<td>Tattershall</td>
<td>4</td>
<td>24.283</td>
</tr>
<tr>
<td>Wainfleet All Saints</td>
<td>4</td>
<td>33.414</td>
</tr>
<tr>
<td>Grantham</td>
<td>5</td>
<td>20.565</td>
</tr>
<tr>
<td>Kirkby la Thorpe</td>
<td>5</td>
<td>9.696</td>
</tr>
<tr>
<td>Newton</td>
<td>5</td>
<td>13.394</td>
</tr>
<tr>
<td>Quarrington</td>
<td>5</td>
<td>14.255</td>
</tr>
<tr>
<td>North Kelsey</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Caister</td>
<td>7</td>
<td>25.676</td>
</tr>
<tr>
<td>Crowland</td>
<td>7</td>
<td>29.541</td>
</tr>
<tr>
<td>Cherry Willingham</td>
<td>7</td>
<td>36.846</td>
</tr>
<tr>
<td>Nettleham</td>
<td>7</td>
<td>36.695</td>
</tr>
<tr>
<td>Sleaford</td>
<td>7</td>
<td>33.228</td>
</tr>
<tr>
<td>Fishtoft</td>
<td>7</td>
<td>36.879</td>
</tr>
<tr>
<td>Goltho</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>Flixborough</td>
<td>9</td>
<td>0</td>
</tr>
</tbody>
</table>

*Figure 136*
K-means cluster results using Ward’s Method and defining 10 clusters
Variables including vessel count

<table>
<thead>
<tr>
<th>Settlement</th>
<th>Cluster</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aylesby</td>
<td>1</td>
<td>22.114</td>
</tr>
<tr>
<td>Caistor</td>
<td>1</td>
<td>32.991</td>
</tr>
<tr>
<td>Fillingham</td>
<td>1</td>
<td>25.23</td>
</tr>
<tr>
<td>Hackthorne</td>
<td>1</td>
<td>21.69</td>
</tr>
<tr>
<td>Baston</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Foston</td>
<td>3</td>
<td>18.602</td>
</tr>
<tr>
<td>Haughton</td>
<td>3</td>
<td>18.602</td>
</tr>
<tr>
<td>Haverholme</td>
<td>3</td>
<td>24.018</td>
</tr>
<tr>
<td>Horncastle</td>
<td>3</td>
<td>17.827</td>
</tr>
<tr>
<td>Ketsby</td>
<td>3</td>
<td>16.87</td>
</tr>
<tr>
<td>Linwood</td>
<td>3</td>
<td>20.728</td>
</tr>
<tr>
<td>Tattershall</td>
<td>3</td>
<td>20.505</td>
</tr>
<tr>
<td>Wainfleet All Saints</td>
<td>3</td>
<td>34.521</td>
</tr>
<tr>
<td>South Ormsby</td>
<td>3</td>
<td>30.272</td>
</tr>
<tr>
<td>West Halton</td>
<td>4</td>
<td>26.154</td>
</tr>
<tr>
<td>Nettleham</td>
<td>4</td>
<td>26.368</td>
</tr>
<tr>
<td>Panton</td>
<td>4</td>
<td>25.451</td>
</tr>
<tr>
<td>Fishtoft</td>
<td>4</td>
<td>39.521</td>
</tr>
<tr>
<td>North Kelsey</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Kirton</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Crowland</td>
<td>7</td>
<td>25.03</td>
</tr>
<tr>
<td>Cherry Willingham</td>
<td>7</td>
<td>33.786</td>
</tr>
<tr>
<td>Sleaford</td>
<td>7</td>
<td>22.997</td>
</tr>
<tr>
<td>Goltho</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>Flixborough</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>Grantham</td>
<td>10</td>
<td>20.565</td>
</tr>
<tr>
<td>Kirkby la Thorpe</td>
<td>10</td>
<td>9.696</td>
</tr>
<tr>
<td>Newton</td>
<td>10</td>
<td>13.394</td>
</tr>
<tr>
<td>Ouarrington</td>
<td>10</td>
<td>14.225</td>
</tr>
</tbody>
</table>

Figure 137
Geographic Representation of K-means Cluster Analysis

8 clusters (including vessels)
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Original in Colour
Geographic Representation of K-means Cluster Analysis

9 clusters (including vessels)
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Figure 139
Geographic Representation of K-means Cluster Analysis

10 clusters (including vessels)
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Original in Colour

~140~ Figure 140
Geographic Representation of K-means Cluster Analysis

8 clusters (excluding vessels)
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Original in Colour
Geographic Representation of K-means Cluster Analysis

9 clusters (excluding vessels)
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Original in Colour
Geographic Representation of K-means Cluster Analysis

10 clusters (excluding vessels)
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Original in Colour

Figure 143
Distribution of Lincoln wares in Lincolnshire
(quantity of vessels excluding Lincoln)
Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data
L.A. Symonds 1999

Figure 144
Distribution of Lincoln wares in Lincolnshire
sites with only Lincoln wares
Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data
L.A. Symonds 1999

Figure 145
Distribution of Torksey ware in Lincolnshire
(with only Lincoln wares)
Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data
L.A. Symonds 1999

Figure 146
Distribution of ST and EST in Lincolnshire
(quantity of vessels)
Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Figure 147

Original in Colour
Distribution of Stamford ware in Lincolnshire

Sites with only Stamford ware
Sites derived from Vince and Young 1991
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Figure 148
Coin finds in Lincolnshire

Coin data derived from Blackburn et al 1983
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

Figure 149
Density of manorial land at Domesday
Sites derived from Foster and Longley 1924 and Vince and Young 1991
Roads and Pathways derived from OS 1:675000
Topography and Hydrology derived from 1:250000 Bartholomew map data
L.A. Symonds 1999
10th and 11th century Church Fabric
Sites derived from Pevsner 1999
Roads and Pathways derived from OS 1:675000
Topography and Hydrology derived from 1:250000 Bartholomew map data
L.A. Symonds 1999

50 km

Figure 151
Manorial locales and wapentakes
Sites derived from Foster and Longley 1924
Roads and Pathways derived from OS 1:675000
Topography and Hydrology derived from 1:250000 Bartholomew map data
L.A. Symonds 1999

Figure 152
APPENDIX I

ASSEMBLAGE CHARTS

OF

SITES WITH 10 OR MORE VESSELS
South Ormsby

Vessel Count: 10

Figure 153
Wainfleet All Saints

Vessel count: 10

Figure 154
Vessel count: 13
Vessel count: 14

Figure 156
Vessel count: 16

Figure 157
Haverholme

Vessel count: 18

Figure 158
Newton

Vessel count: 19

Figure 160
Panton

Vessel count: 20

Figure 161
Aylesby

Vessel count: 22

Figure 162
Kirby la Thorpe

Vessel count: 22

Figure 163
Kirton

Vessel count: 22

Figure 164
West Halton

Figure 165

Vessel count: 27
Tattershall

Vessel count: 27

Figure 166
Foston

Vessel count: 28

Figure 167
Hackthorne

Figure 168

Vessel count: 28
Nettleham

Vessel count: 48
Fishtoft

Vessel count: 51

Figure 170
Figure 172

Vessel count: 57
Vessel count: 62

Figure 173
Vessel count: 71
Figure 175
Cherry Willingham

Vessel count: 90

Figure 176
Vessel count: 147

Figure 177
Repton

Vessel count: 169

Figure 178
Baston

Vessel count: 322

Figure 179
Newark

Vessel count: 571

Figure 180
Goltho

Vessel count: 956

Figure 181
Torksey

Vessel count: 1586

Figure 182
Lincoln

Vessel count: 6563

Figure 183
APPENDIX II

DATABASE MATERIAL
This appendix lists the database material which was used to create the maps and perform the statistical analysis. It serves to further index the accompanying CD-ROM disk of files under /appndx2 in two directories: /pottery and /other. Corresponding to this division, the data will be described in two sections. The first will discuss the sources for the pottery data. The second will address the remainder.

The pottery data was gathered from a number of sources, as noted in Chapter III and IV. I am greatly indebted to the kindness of Alan Vince, Jane Young, Hilary Healey, and Tom Lane who allowed me to use their data (see below).

The remainder of the data is gathered into two tables: manor.dbf and coins.dbf. The manorial data refers to Domesday entries for those late Saxon sites in the EMPP database. As previously mentioned, a full survey of the Domesday Book was beyond the scope of this thesis.

<table>
<thead>
<tr>
<th>Source</th>
<th>Database</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foster and Longley 1924</td>
<td>manor.dbf</td>
<td>Field names: Sitename; Manor; Land; Berwick; Of Manor (B); Place (B); Sokeland; Of Manor (S); Place (S); Meadow; Underwood; Marsh; Notes; Reference</td>
</tr>
<tr>
<td>Blackburn et al. 1983</td>
<td>coins.dbf</td>
<td>Field names: Id; Ruler; Issue; Date; Mint; Moneyer; Site</td>
</tr>
</tbody>
</table>
### Pottery Data:

<table>
<thead>
<tr>
<th>Source</th>
<th>Database</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMPP (courtesy of A. Vince and J. Young);</td>
<td>places.dbf</td>
<td>Field names: Location; ID; Sitename; NGS; Easting; Northing; Database</td>
</tr>
<tr>
<td>Lincolnshire Fenland Survey (courtesy of T. Lane); Hilary Healey; Silvester 1991; Hayfield 1985</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EMPP (courtesy of A. Vince and J. Young)</td>
<td>pottery.dbf</td>
<td>Field names: Sitename; Context; Type; Sherd; Form; Comments</td>
</tr>
<tr>
<td>Norfolk Fenland Survey (Silvester 1991)</td>
<td>norfen.dbf</td>
<td>Field names: Id; Sitecord; Parish; NGS; Easting; Northing; Type; Date; Sherd; SMR; Note</td>
</tr>
<tr>
<td>Lincolnshire Fenland Survey (courtesy of T. Lane)</td>
<td>fensite.dbf</td>
<td>Field names: Sitecode; Parish; NGS; Easting; Northing; Date; Comment</td>
</tr>
<tr>
<td>Hilary Healey</td>
<td>healeys.dbf</td>
<td>Field names: Sitename; NGS; Easting; Northing; Type; Comments</td>
</tr>
<tr>
<td>Stamford sources listed in the database</td>
<td>stamford.dbf</td>
<td>Field names: Source; Author; Site; Ware; Sub-ware; Sherd count; Comments</td>
</tr>
</tbody>
</table>
APPENDIX III

STATISTICAL ANALYSES

This appendix lists the statistical analyses discussed in the main body of the text. It is accompanied by a CDROM disk under the file directory /appndx2, in which are the files that include the statistical outputs of the analyses, and the databases which produced these outputs. A list of the files in each directory is described below.

Regression Analyses

The regression analyses performed in the thesis are in two sets. The first set is a standard regression using Euclidean distances as described in Chapter IV. The second set uses the distances measured along the Roman roads and navigable rivers as discussed in Chapter IV. This was done in SPSS by first creating a scattergram and then fitting a regression line to the graph with a confidence interval of 95 and the r-squared value displayed. The charts for these regressions are displayed within figures. The SPSS output is included on the Appendix III disk.

Euclidean regression:

<table>
<thead>
<tr>
<th>Town</th>
<th>Database</th>
<th>SPSS output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lincoln</td>
<td>lincdist.dbf</td>
<td>euclreg.spo</td>
</tr>
<tr>
<td>Stamford</td>
<td>stdist.dbf</td>
<td>eucstreg.spo</td>
</tr>
<tr>
<td>Torksey</td>
<td>torkdist.dbf</td>
<td>euctreg.spo</td>
</tr>
</tbody>
</table>
Cognitive Regression:

Regression along rivers:

<table>
<thead>
<tr>
<th>Town</th>
<th>Database</th>
<th>SPSS output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lincoln</td>
<td>lrivdist.dbf</td>
<td>rvlereg.spo</td>
</tr>
<tr>
<td>Stamford</td>
<td>srivdist.dbf</td>
<td>rvsreg.spo</td>
</tr>
<tr>
<td>Torksey</td>
<td>trivdist.dbf</td>
<td>rvtreg.spo</td>
</tr>
</tbody>
</table>

Regression along roads:

<table>
<thead>
<tr>
<th>Town</th>
<th>Database</th>
<th>SPSS output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lincoln</td>
<td>lrddist.dbf</td>
<td>rdlreg.spo</td>
</tr>
<tr>
<td>Stamford</td>
<td>srddist.dbf</td>
<td>rdsreg.spo</td>
</tr>
<tr>
<td>Torksey</td>
<td>trddist.dbf</td>
<td>rdtreg.spo</td>
</tr>
</tbody>
</table>

Multidimensional Scaling:

Multidimensional scaling was performed on those assemblages with 10 or more vessels as a way of exploring the pattern of variation between sites. Listed below are the database files and outputs which were produced.

<table>
<thead>
<tr>
<th>Settlements</th>
<th>Database</th>
<th>SPSS output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban and rural</td>
<td>ware10t.dbf</td>
<td>mdstowns.spo</td>
</tr>
<tr>
<td>Rural</td>
<td>ware10nt.dbf</td>
<td>mdsrural.spo</td>
</tr>
</tbody>
</table>

~190~
Cluster Analyses:

The cluster analyses were done on those assemblages which contained ten or more vessels as discussed in Chapter IV. There were two sets of cluster analysis performed: hierarchical cluster analysis and k-means analysis. These were sufficiently discussed in Chapter IV and the chart of the database files and statistical outputs are displayed below.

Hierarchical Cluster Analyses:

<table>
<thead>
<tr>
<th>Settlement</th>
<th>Database</th>
<th>SPSS output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban and Rural</td>
<td>wares10t.dbf</td>
<td>hcltowns.spo</td>
</tr>
<tr>
<td>Rural</td>
<td>wares10nt.dbf</td>
<td>hclrural.spo</td>
</tr>
</tbody>
</table>

K-means Cluster Analyses:

<table>
<thead>
<tr>
<th>Vessels</th>
<th>Database</th>
<th>SPSS output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Including vessels</td>
<td>kclvess.dbf</td>
<td>kclvess.spo</td>
</tr>
<tr>
<td>Excluding vessels</td>
<td>kclnv.dbf</td>
<td>kclnv.spo</td>
</tr>
</tbody>
</table>


Austin, T. 1888. *Two fifteenth-century cookery books*, Early English Text Society 91


~192~


Barrett, J. 1987. 'Fields of Discourse: Reconstituting a Social Archaeology', Critique of Anthropology 7(3): 5-16


Bender, B. 1993. 'Landscape - Meaning and Action', in B. Bender (ed.) 1993: 1-17


Bentley, G. C. 1987. 'Ethnicity and Practice', Comparative studies in Society and History 29: 24-55


Blackburn, M., Colyer, C. and Dolley, M. 1983. Early Medieval Coins from Lincoln and its Shire c. 770-1100, Lincoln Archaeological Trust (Lincoln)

-193-
Bosworth, J. 1982. ‘Towards a wider view of pottery production - a potter comments on some archaeological reports’, Medieval Ceramics 6: 43-50
Bourdieu, P. 1990. The Logic of Practice, Stanford University Press (Stanford)
Buikstra, J. E. and Charles, D. K. 1999. ‘Centering the Ancestors: Cemeteries, Mounds, and

Cameron, K. 1961. English Place Names, Batsford (London)


Clarke, D. 1972. Models in Archaeology, Methuen and Co. Ltd. (London)


Colgrave, B. 1956. Felix’s Life of Saint Guthlac, Cambridge at the University Press (Cambridge)


Cumberpatch, C. and Blinkhorn, P. (eds.) 1997. Not so much a pot, more a way of life, Oxbow (Oxford)


Folch-Serra, M. 1990. 'Place, voice, space: Mikail Bakhtin's diaological landscape', *Environment and Planning D: Society and Space* 8: 255-274


Foster, C. W. and Longley, T. 1924. *The Lincolnshire Domesday and the Lindsey Survey*, The Lincoln Record Society 19 (Horncastle)


Green, S. 1990. 'Approaching archaeological space: an introduction to the volume', in K. Allen, S. Green and E. Zubrow (eds.) 1990: 3-8


Hadley, D. 1996. 'And they proceeded to plough and to support themselves': the Scandinavian Settlement of England', in Anglo-Norman Studies XIX: 69-96


Hall, R. 1984. 'A Late Pre-Conquest Urban Building Tradition', in P. Addyman and V. Black (eds.) 1984: 71-77


Healey, H. 1993. 'Saxon and Medieval Pottery', in T. Lane (ed.) 1993: 7-8

Heighway, C. 1972. The erosion of history: archaeology and the planning of towns, Council for British Archaeology, Urban Research Committee (London)


Hodges, R. 1989b. Dark Age Economics, Duckworth (London)

Hodges, R. 1995. ‘Valediction or Vision? (review article of M. Mellor)’, Medieval Ceramics 19: 103-7


Hooke, D. 1981. The Anglo-Saxon landscape of the West Midlands: the charter evidence, British Archaeological Reports, British Series 95 (Oxford)


Hooke, D. and Burnell, S. (eds.) 1995. Landscape and Settlement in Britain AD 400-1066, Exeter University Press (Exeter)

~199~
Hunnisett, R. 1969. *Calendar of Nottinghamshire coroner's inquests 1485-1558*, Derry and Sons (Nottingham)


Kilmurry, K. 1977a. ‘The production of red-painted pottery at Stamford, Lincs.’, *Medieval Archaeology* XXI: 180-84


Leighton, A. 1972. *Transportation and Communication in Early Medieval Europe AD 500-

Llobera, M. 1996. 'Exploring the topography of the mind: GIS, social space, and archaeology', *Antiquity* 70: 612-22


Loveluck, C. 1998. 'A high-status Anglo-Saxon settlement at Flixborough, Lincolnshire', *Antiquity* 72: 146-61

MacDonald, J. forthcoming 'Travel and Communication in Anglo-Saxon Wessex', unpub DPhil, University of York


Massey, D. 1994. *Space, Place and gender*, University of Minnesota Press (Minneapolis)


Miles, P., Young, J. and Wacher, J. 1989. *A Late Saxon Kiln Site at Silver Street, Lincoln*, City of Lincoln Archaeology Unit (Lincoln)

Miles, P. forthcoming. ‘The Non-Stamford Wares and Roof-tiles’ in C. Mahany (ed.) forthcoming


Nailor, V. 1984. ‘A Preliminary Note on a Late Saxon Ware from Nottingham’, *Medieval Ceramics* 8: 59-64

O’Connor, T. 1982. *Animal bones from Flaxengate, Lincoln. c 870-1500*, Lincoln Archaeological Trust (Lincoln)


Ordnance Survey 1973. *Britain before the Conquest*, Director General of the Ordnance Survey (Southampton)


Palmer-Brown, C. 1995. *Castle Farm, Torksey: An archaeological excavation report for Manton & Bartle Architects (on behalf of Mr RNDenby)*, Pre-Construct Archaeology (Sleaford)

Palmer-Brown, C. 1996a. ‘Two Middle Saxon Grubenhäuser at St Nicholas School, Church Road, Boston’, *Lincolnshire History and Archaeology* 31: 10-19

Palmer-Brown, C. 1996b. *Archaeological Field Report: Verity*, Church Lane, Torksey, Pre-Construct Archaeology (Sleaford)


Robertson, A. J. 1986. *Anglo-Saxon Charters*, Wm W. Gaunt and Sons, Inc. (Holmes Beach)


Sawyer, P. H. 1977. 'King's and Merchants', in P. H. Sawyer and I. Wood (eds.) 1977: 139-158

Sawyer, P. H. 1998. *Anglo-Saxon Lincolnshire*, Society for Lincolnshire History and Archaeology (Lincoln)


Stenton, F. M. 1924. 'Introduction', in C. W. Foster and T. Longley 1924: ix-xlvi


Ulher, S. 1977. 'The transportation of produce in Lincolnshire, Yorkshire, Hampshire and Norfolk during the fourteenth century', unpublished B.Phil thesis, University of St. Andrews


Vince, A. (ed.) 1993b. Pre-Viking Lindsey, Lincoln Archaeological Studies, No. 1 (Lincoln)


Yorke, B. 1993. 'Lindsey: The Lost Kingdom Found?', in A. Vince (ed.) 1993: 141-150
