

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

Volume II of II

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Department of Archaeology
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**THESIS
CONTAINS
CD**

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LIST OF ACCOMPANYING MATERIAL

CD-ROM:

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- /coins.dbf
- /manor.dbf

/pottery

- /pottery.dbf
- /places.dbf
- /fensite.dbf
- /norfen.dbf
- /healeys.dbf
- /stamford.dbf

/appndx3

/cluster

- /hcrural.spo
- /hcltowns.spo
- /kclnv.dbf
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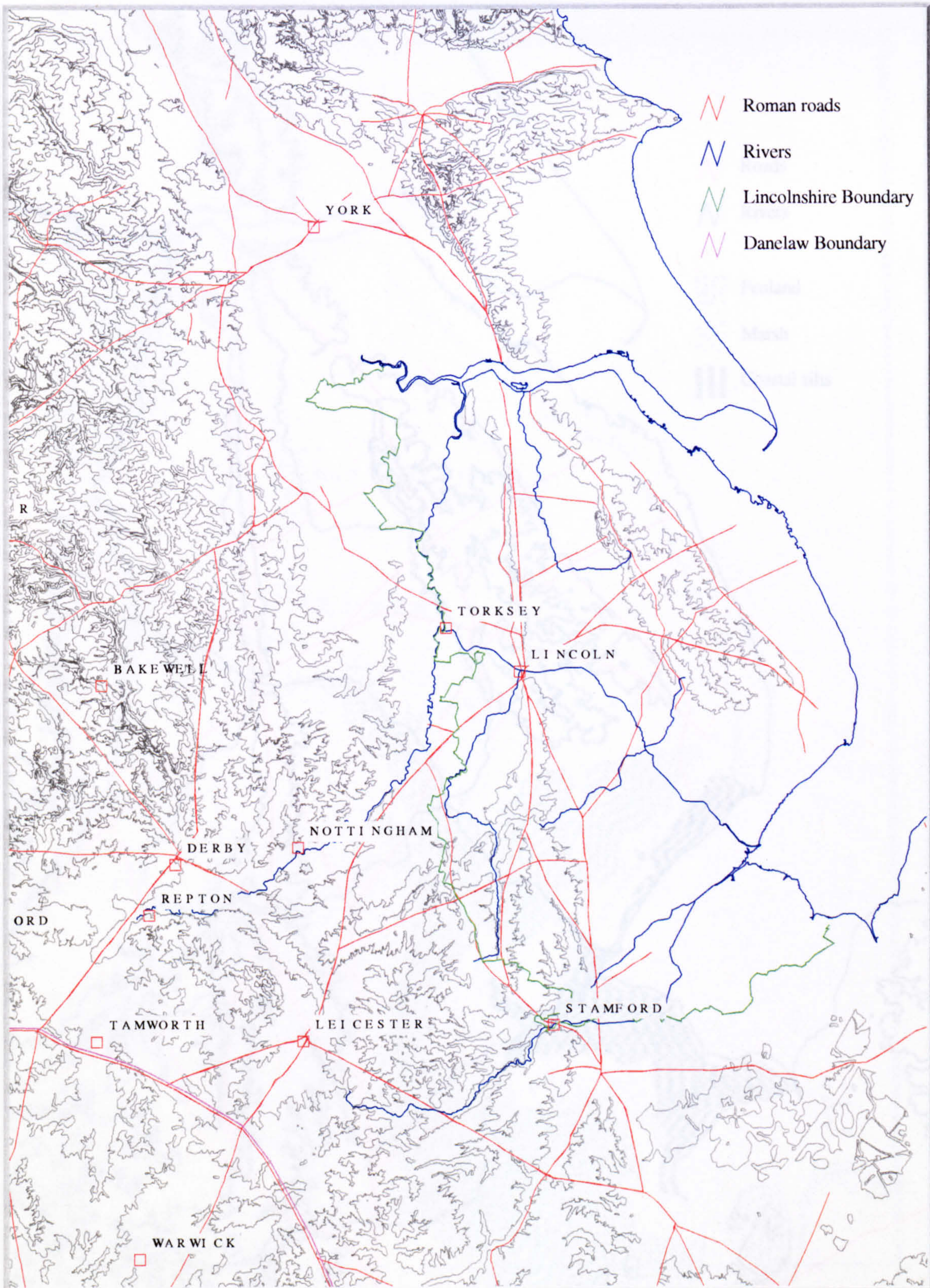
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/wares10nt.dbf
/wares10t.dbf



Lincolnshire and the Danelaw

Roads and Pathways derived from OS 1:675000

Topography and Hydrology derived from 1:250000 Bartholomew map data

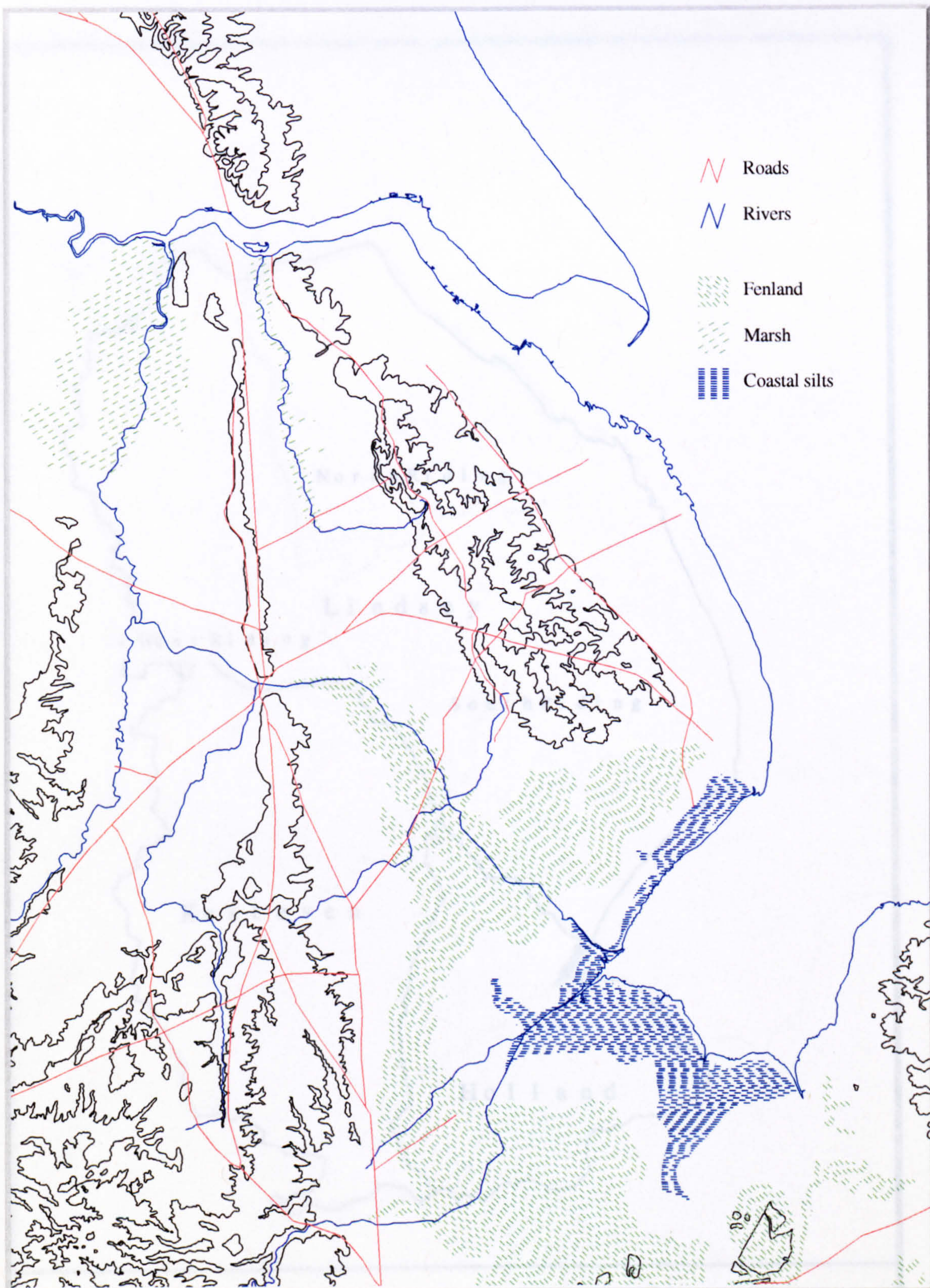
L.A. Symonds 1999

0  50 km



Original in Colour

Figure 1



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

0  50 km



Original in Colour

Figure 2

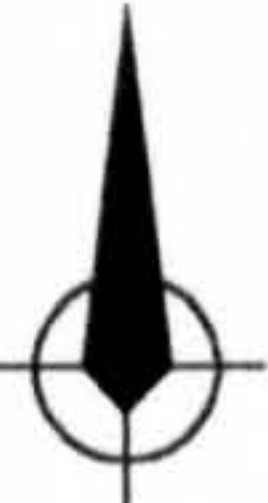
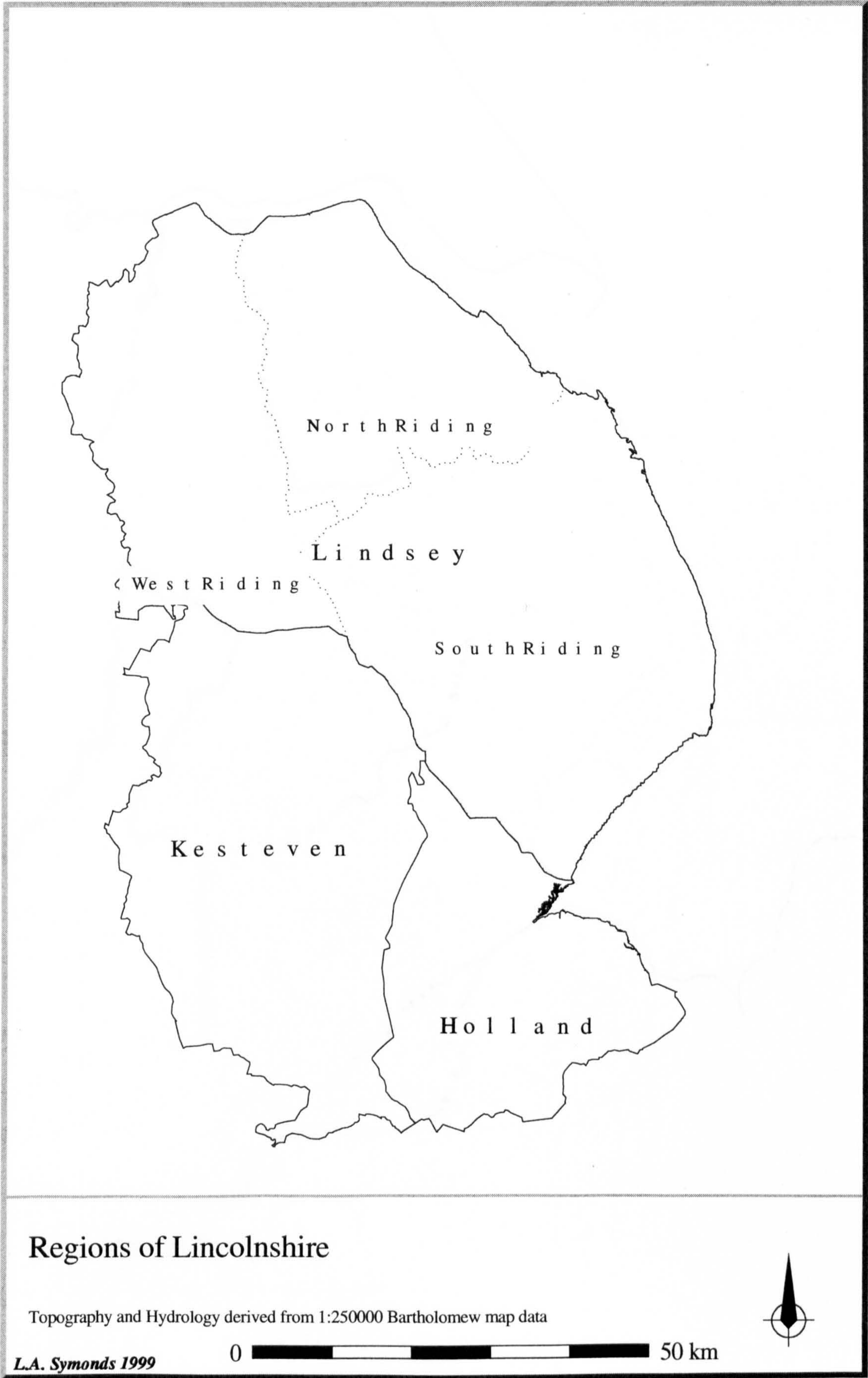
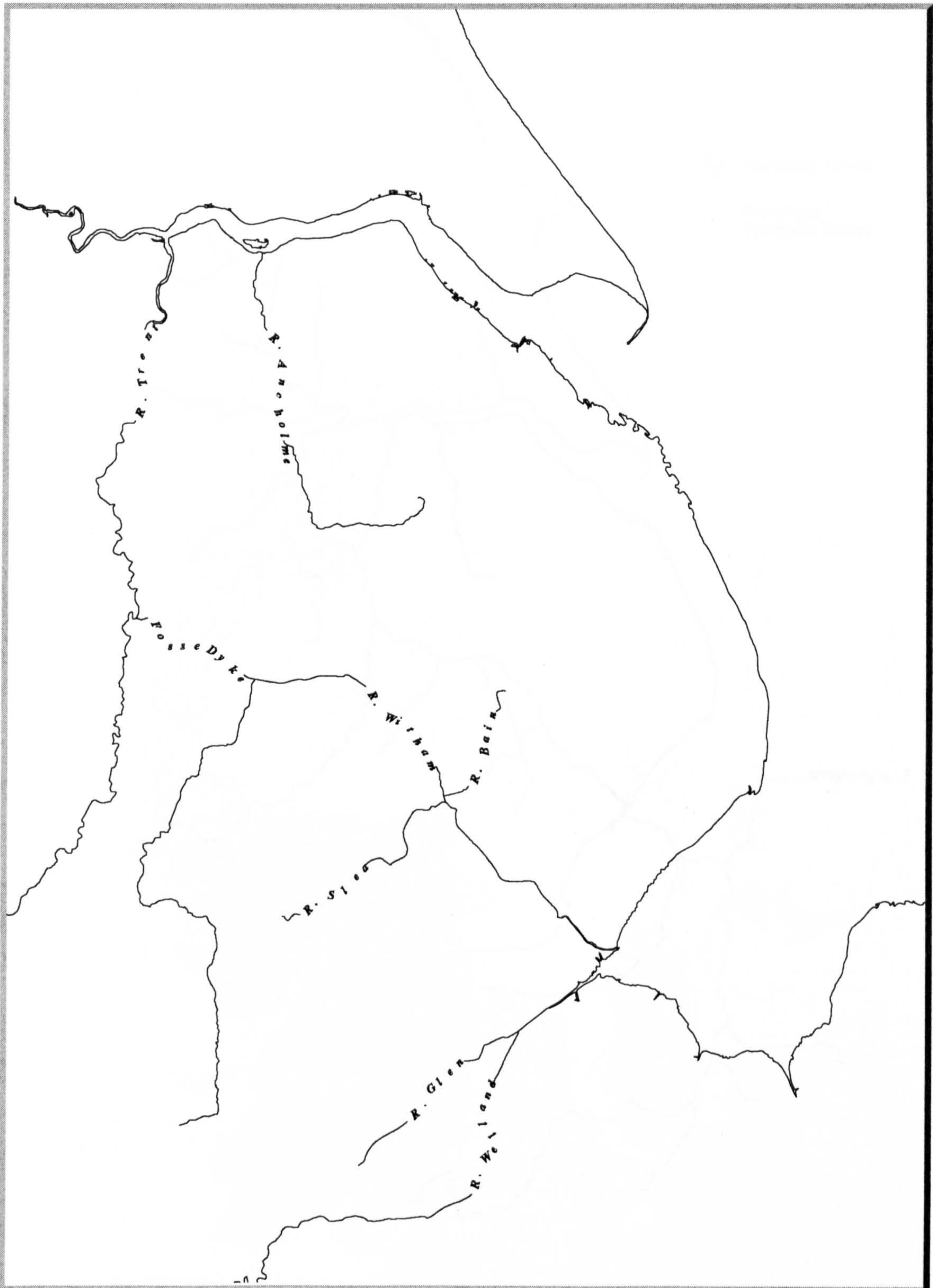


Figure 3



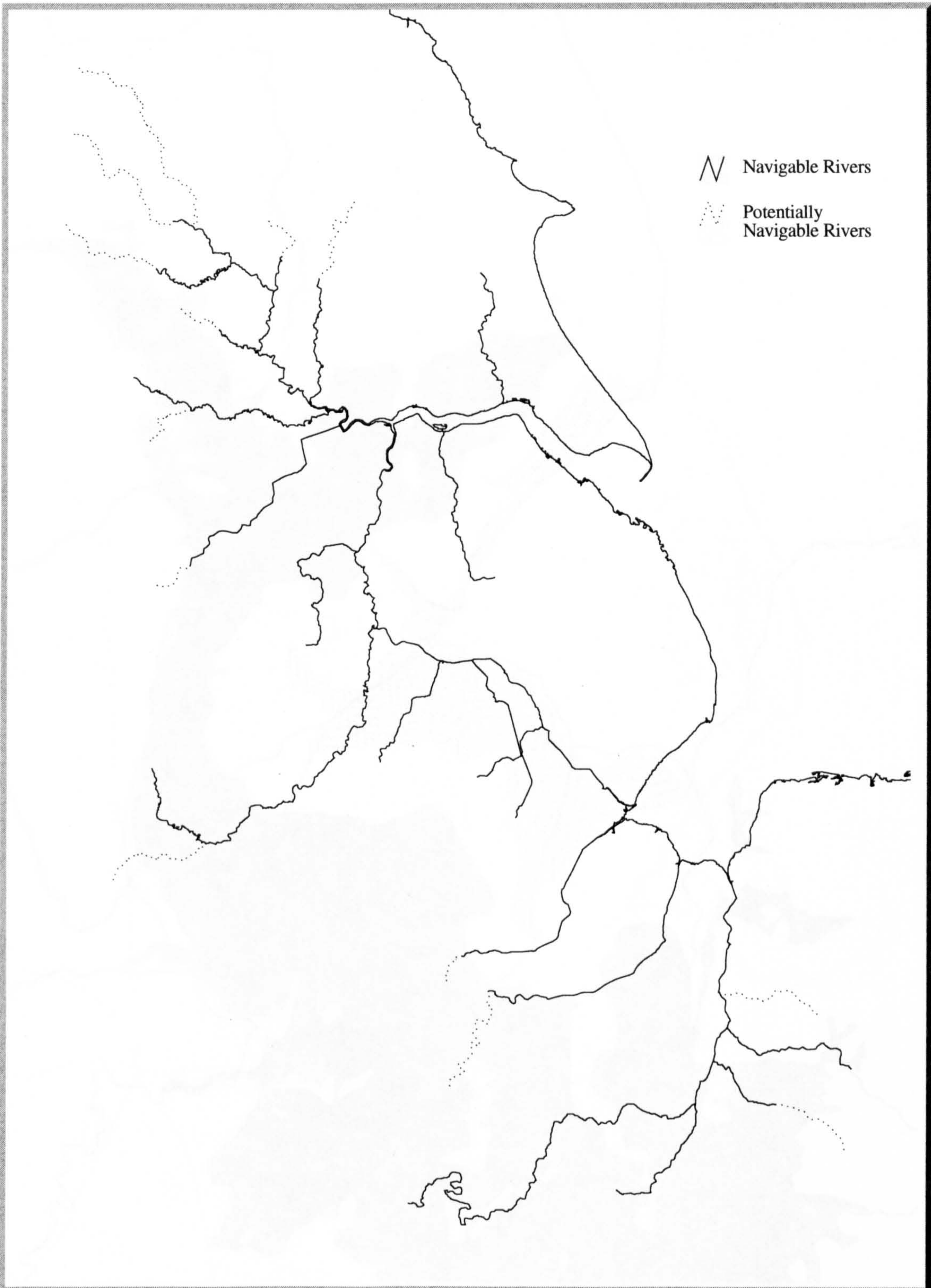
Lincolnshire Rivers

Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999



Figure 4



Navigable Rivers

Information derived from Edwards and Hindle 1991

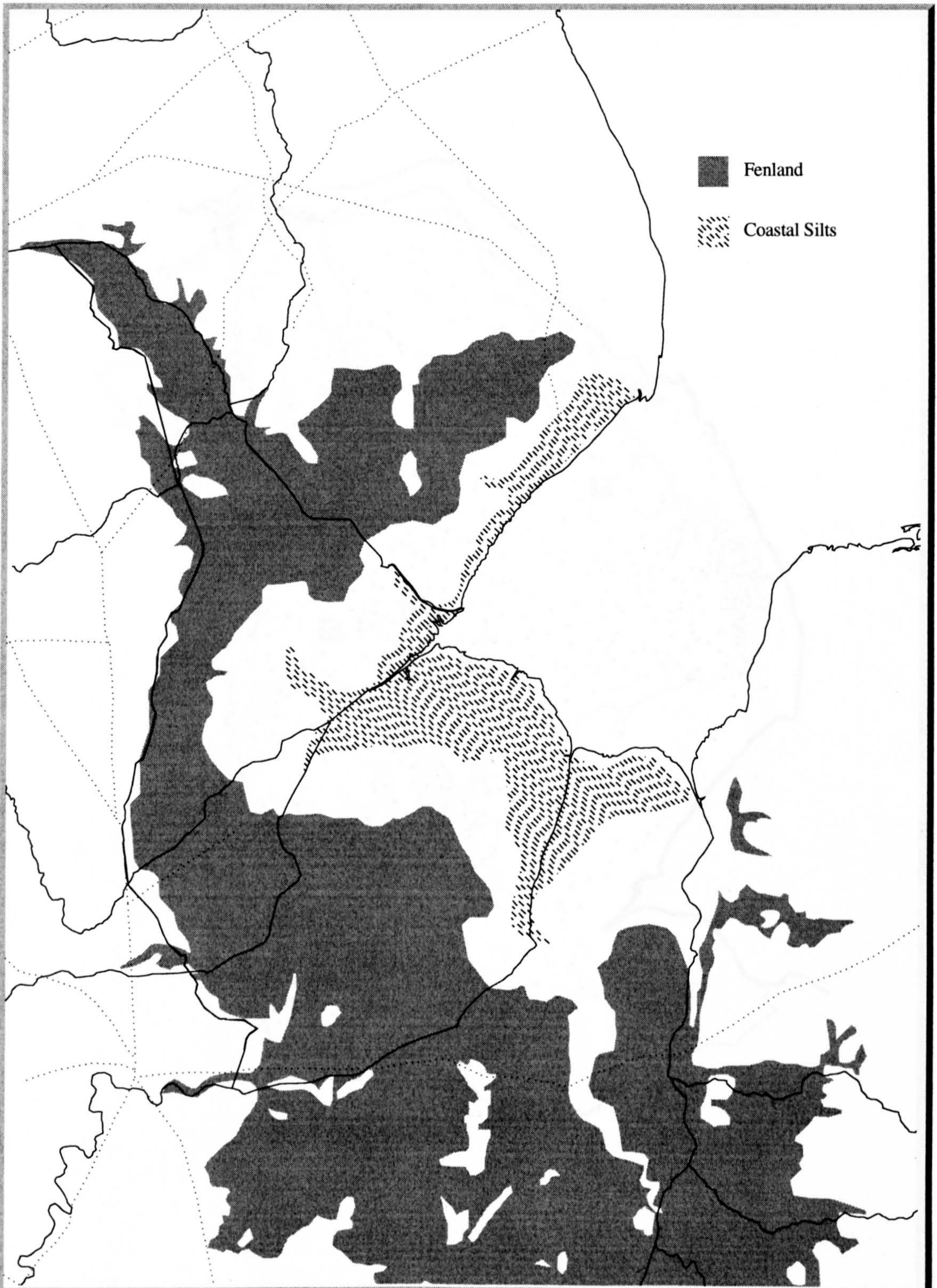
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

0  50 km



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

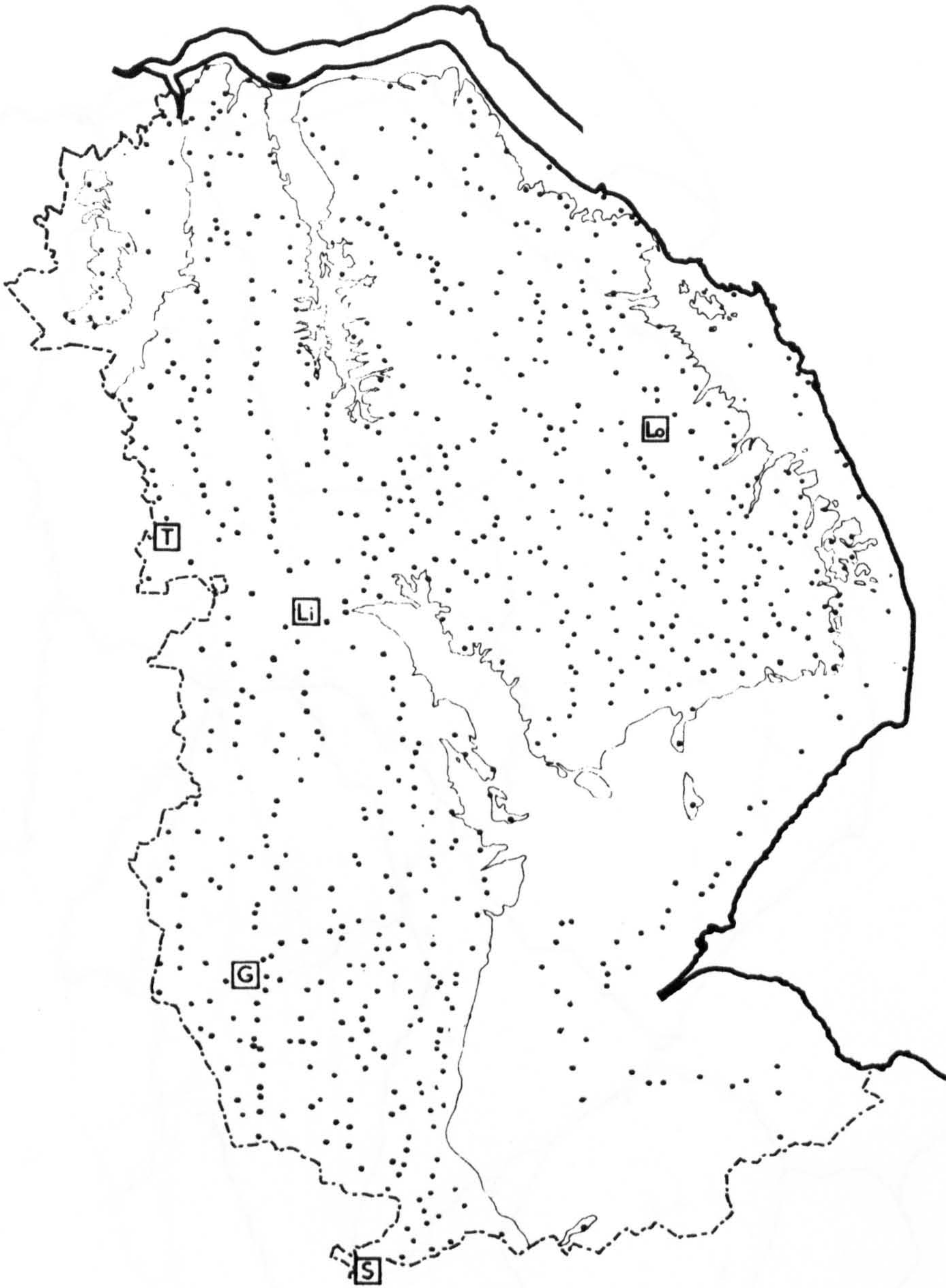


L.A. Symonds 1999



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Figure 6



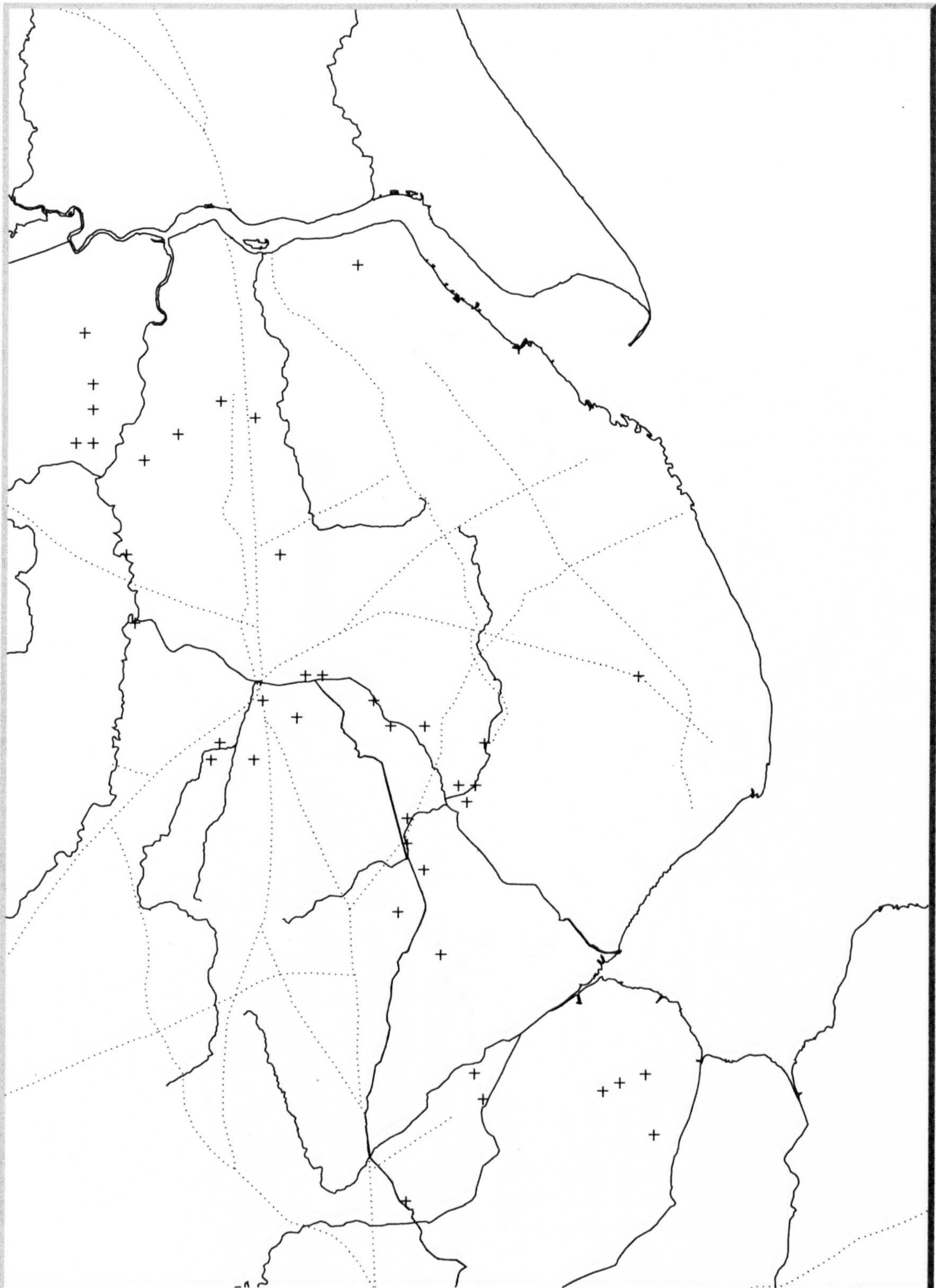
Domesday Settlements of Lincolnshire

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

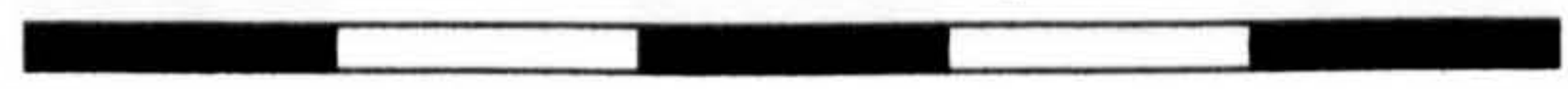
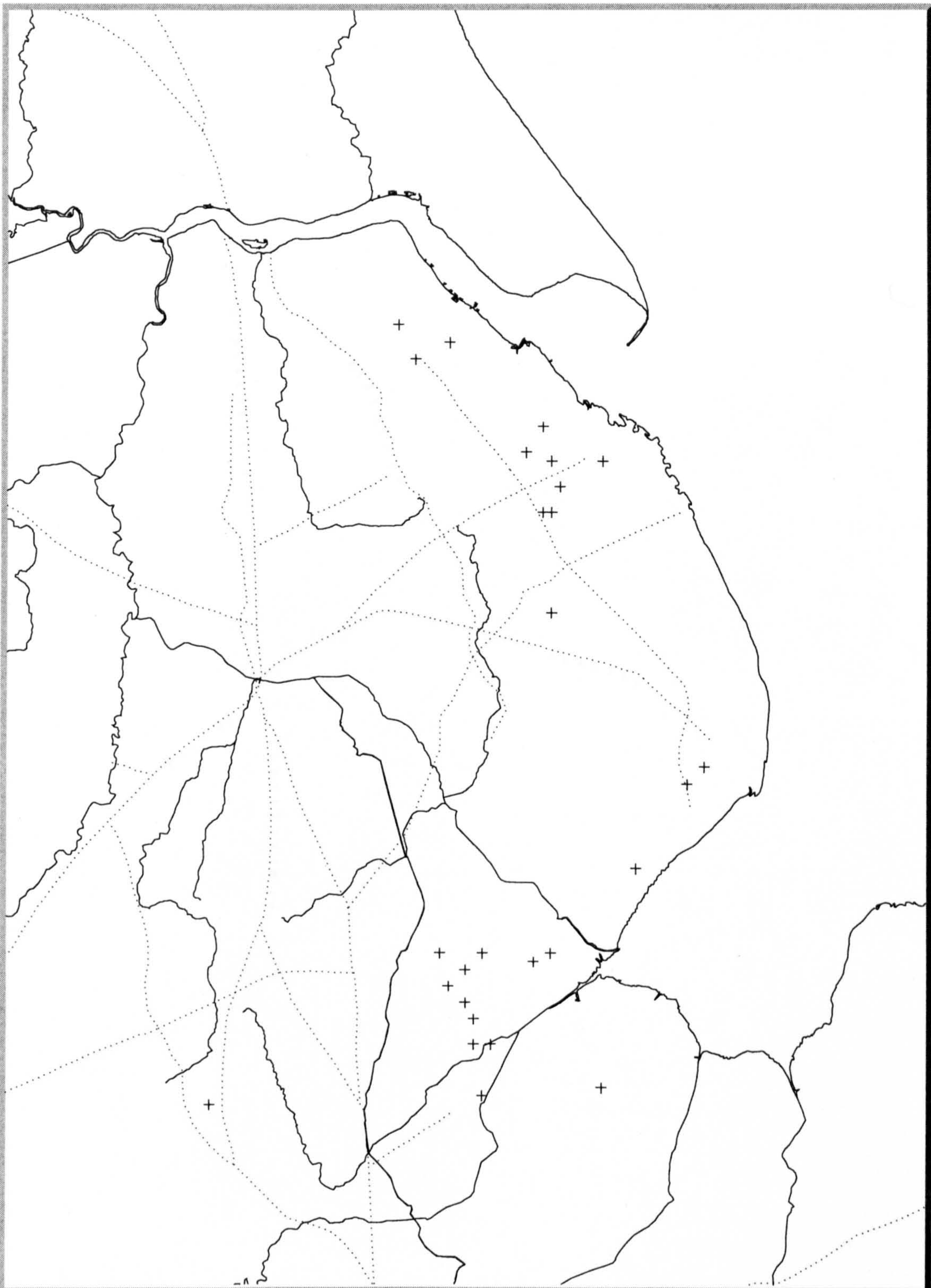
0  50 km



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

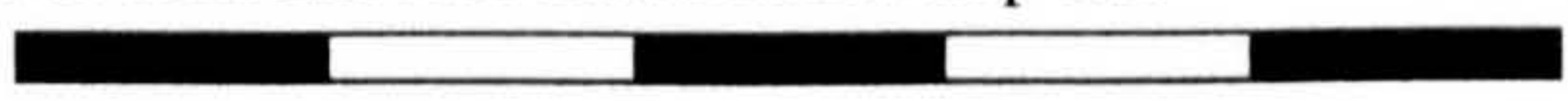
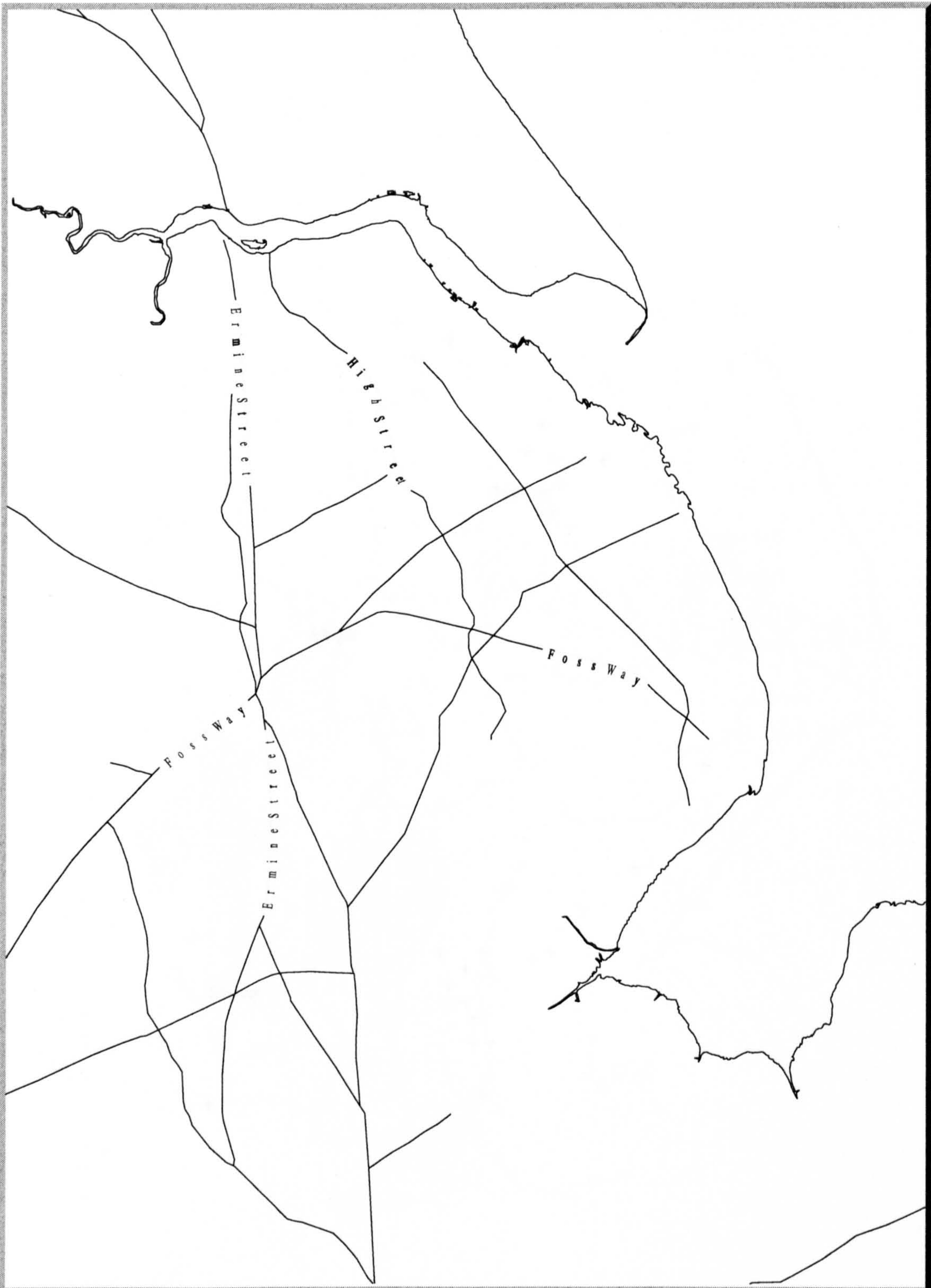
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Figure 9



Roman roads of Lincolnshire

Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

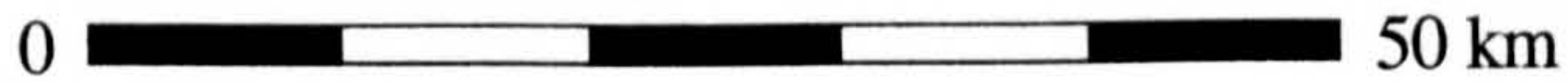
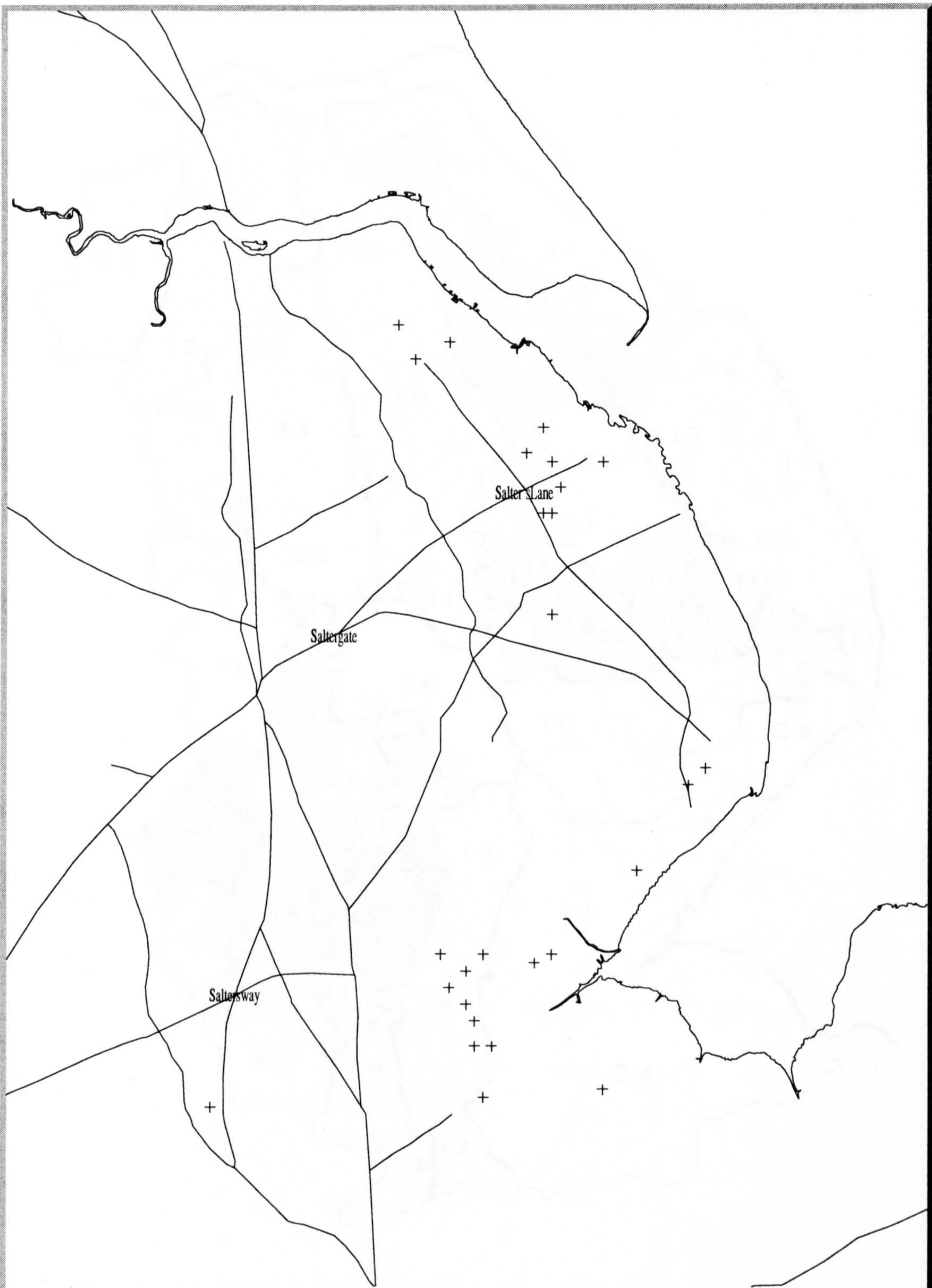


Figure 10



Saltways and Saltpans of Lincolnshire

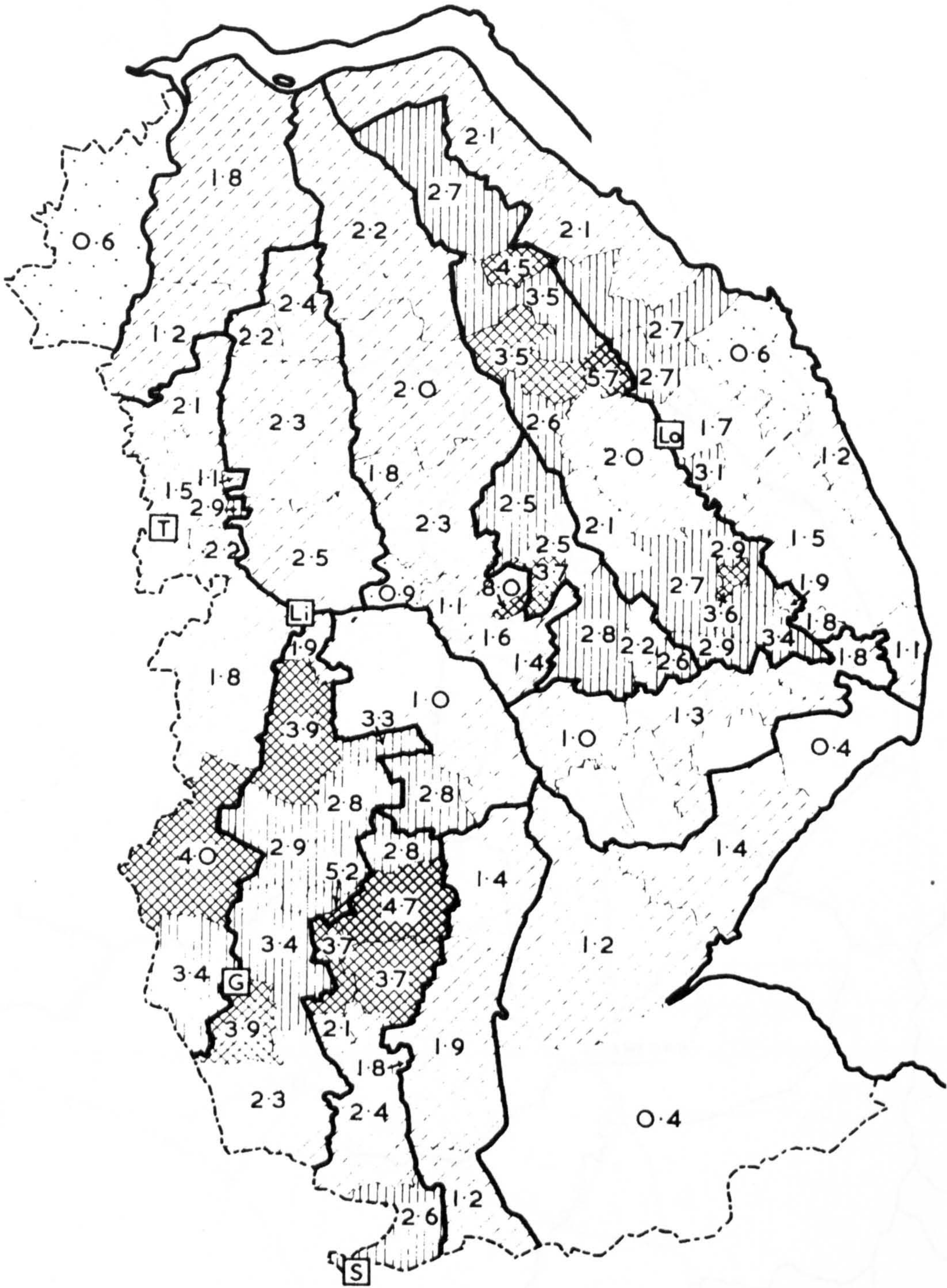
Topography and Hydrology derived from 1:250000 Bartholomew map data

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Figure 11



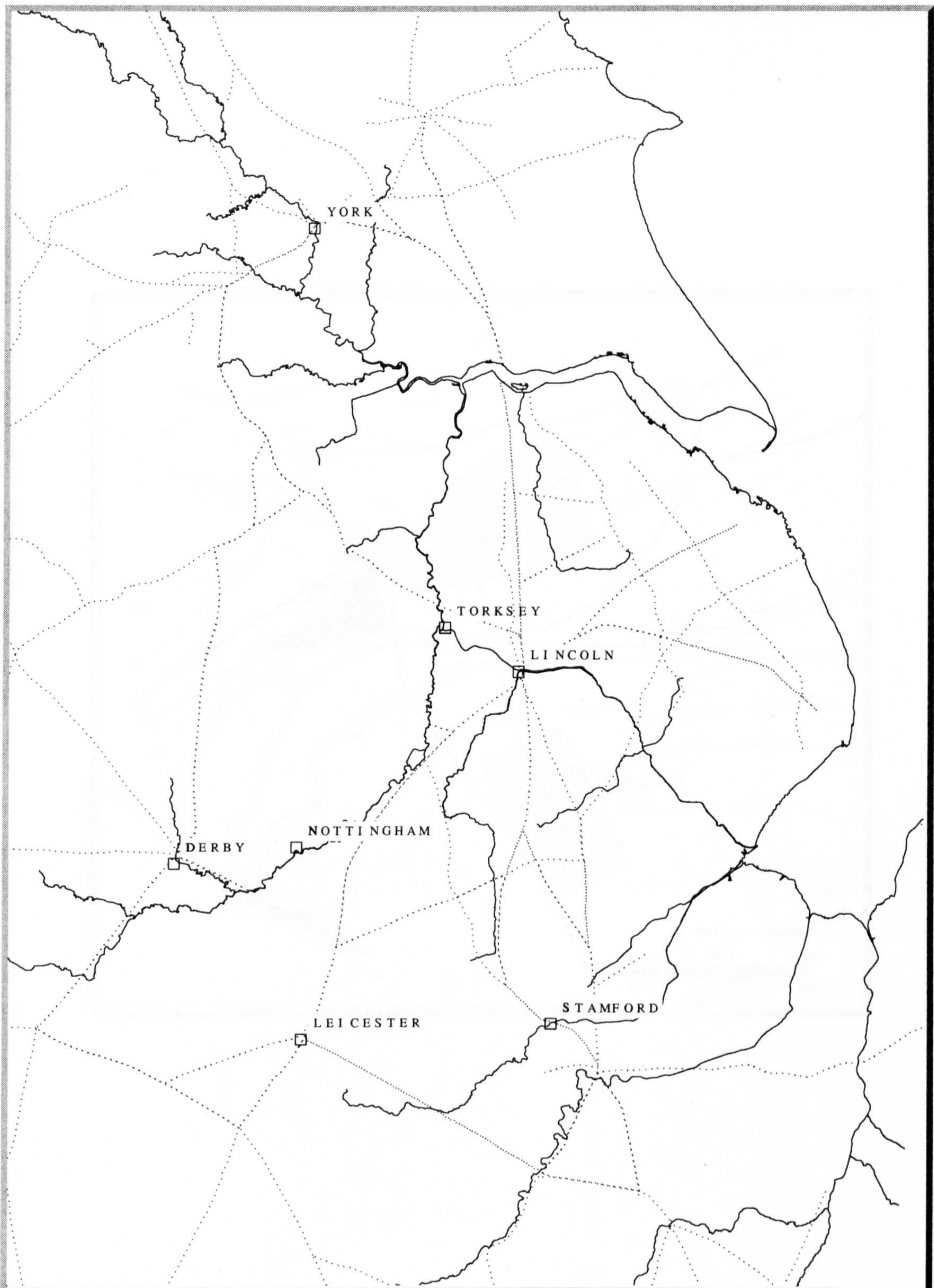
Domesday Ploughlands of Lincolnshire (by densities per square mile)

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

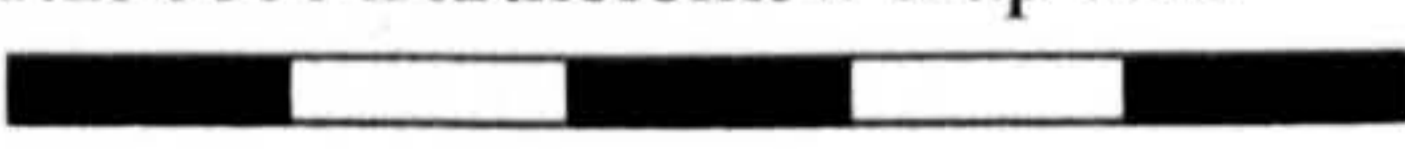
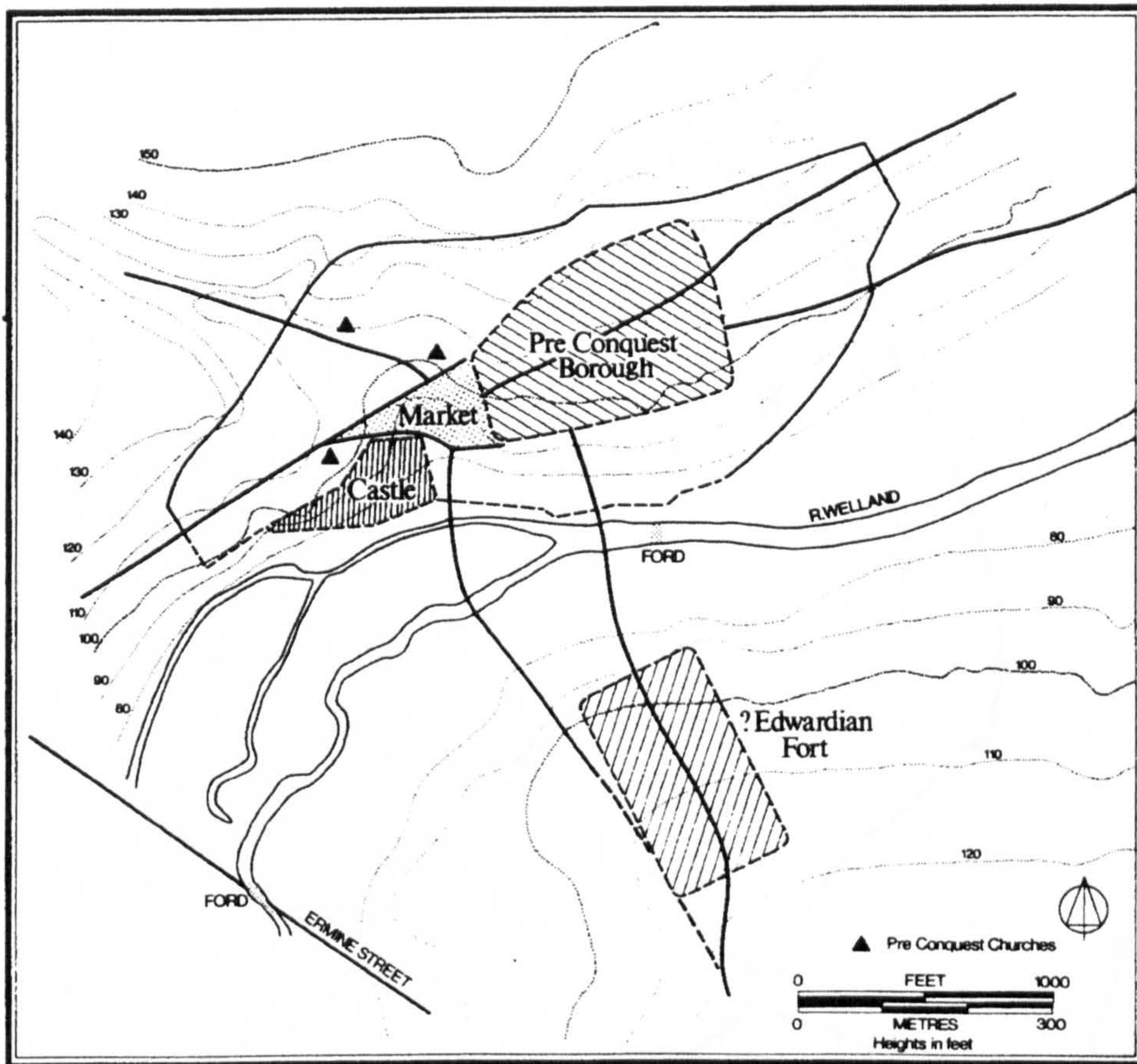
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Figure 13

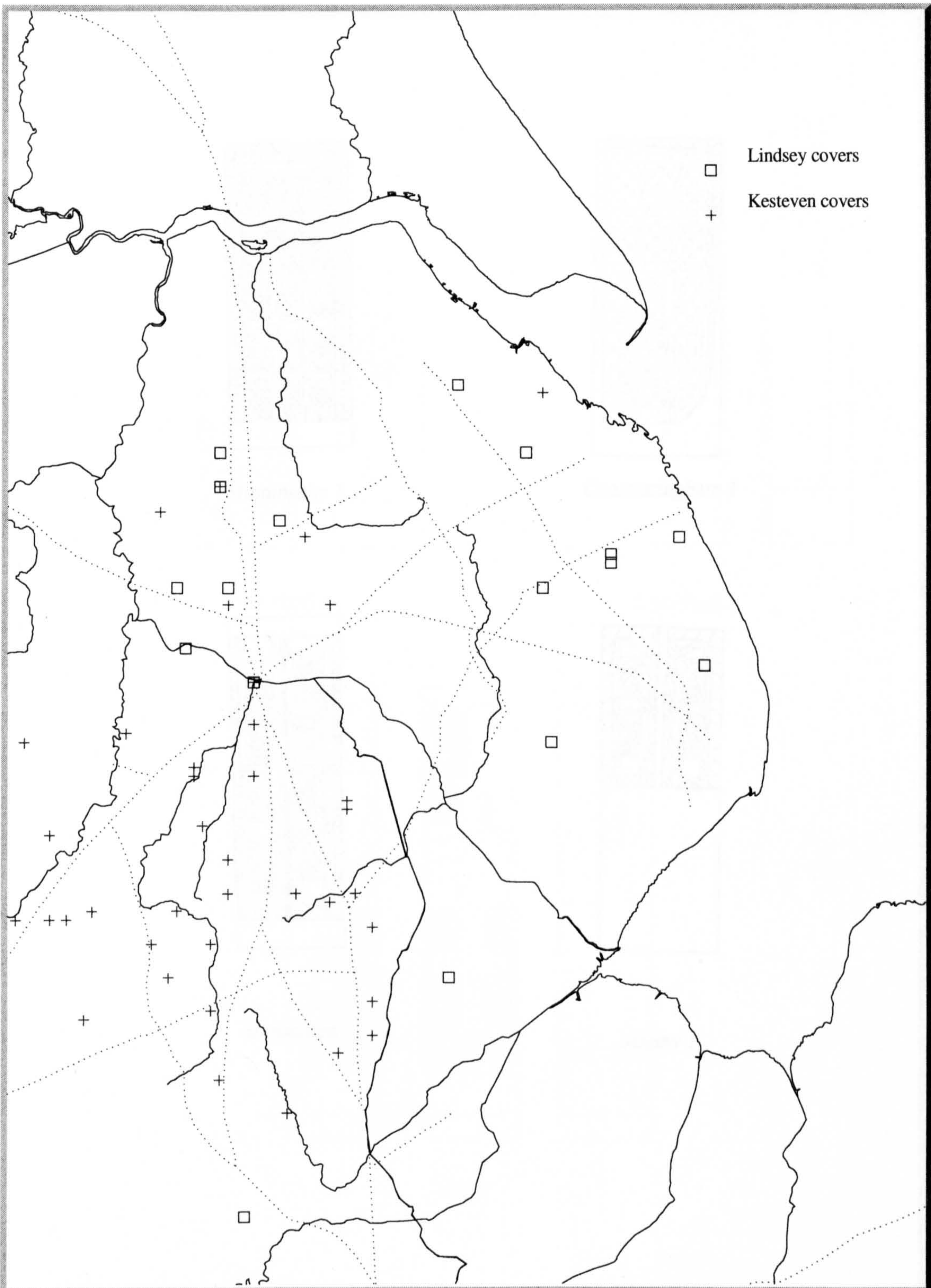


Anglo-Scandinavian Stamford

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

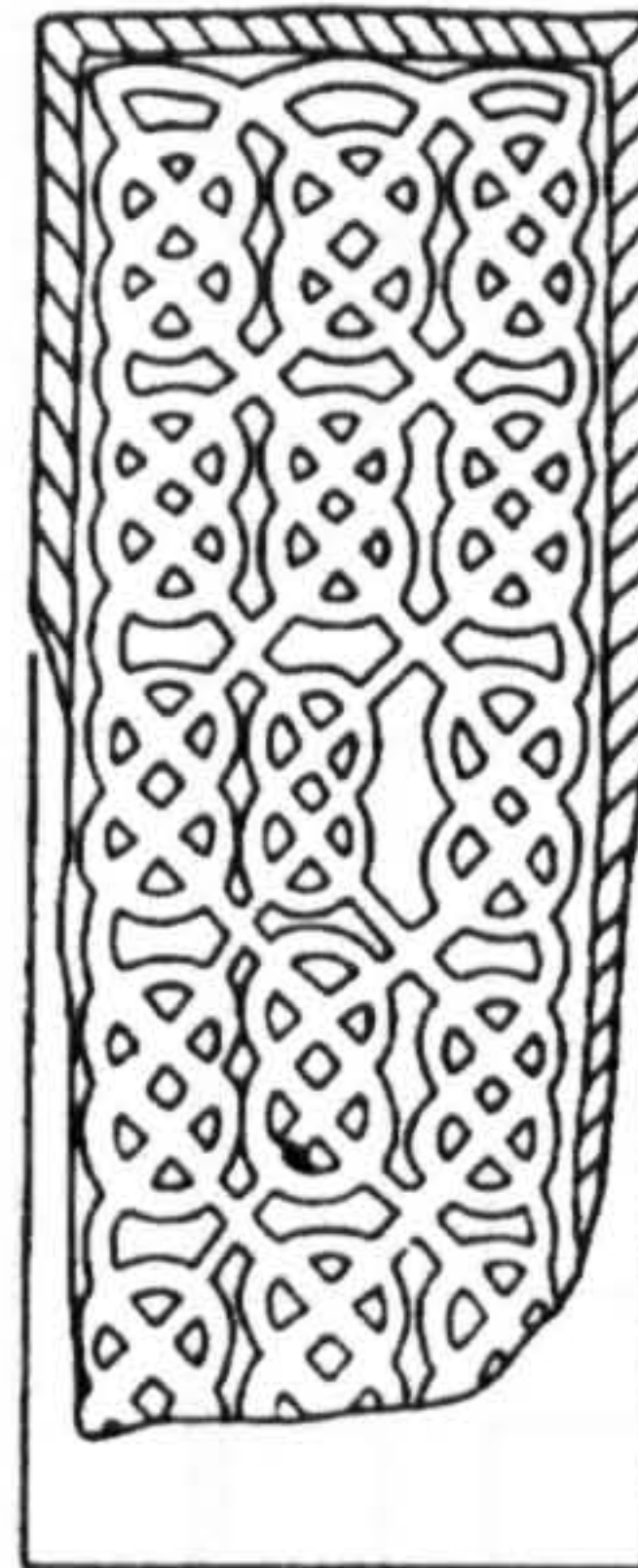
L.A. Symonds 1999



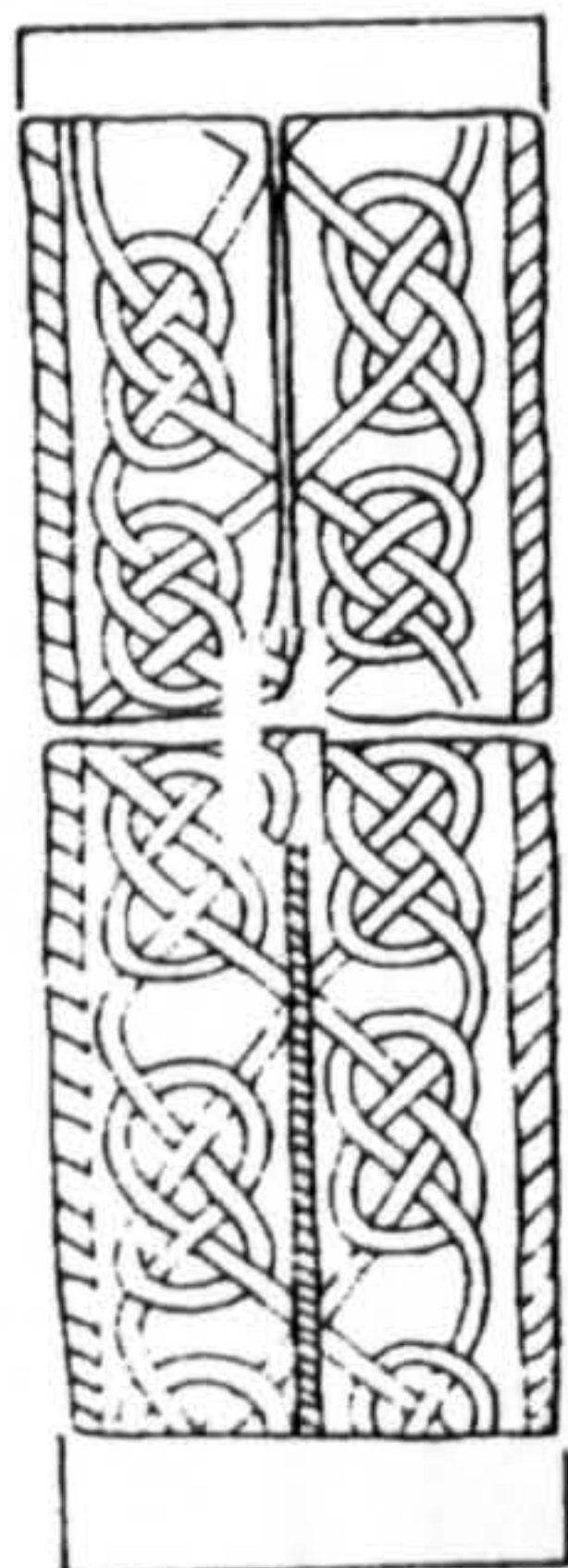
Figure 15



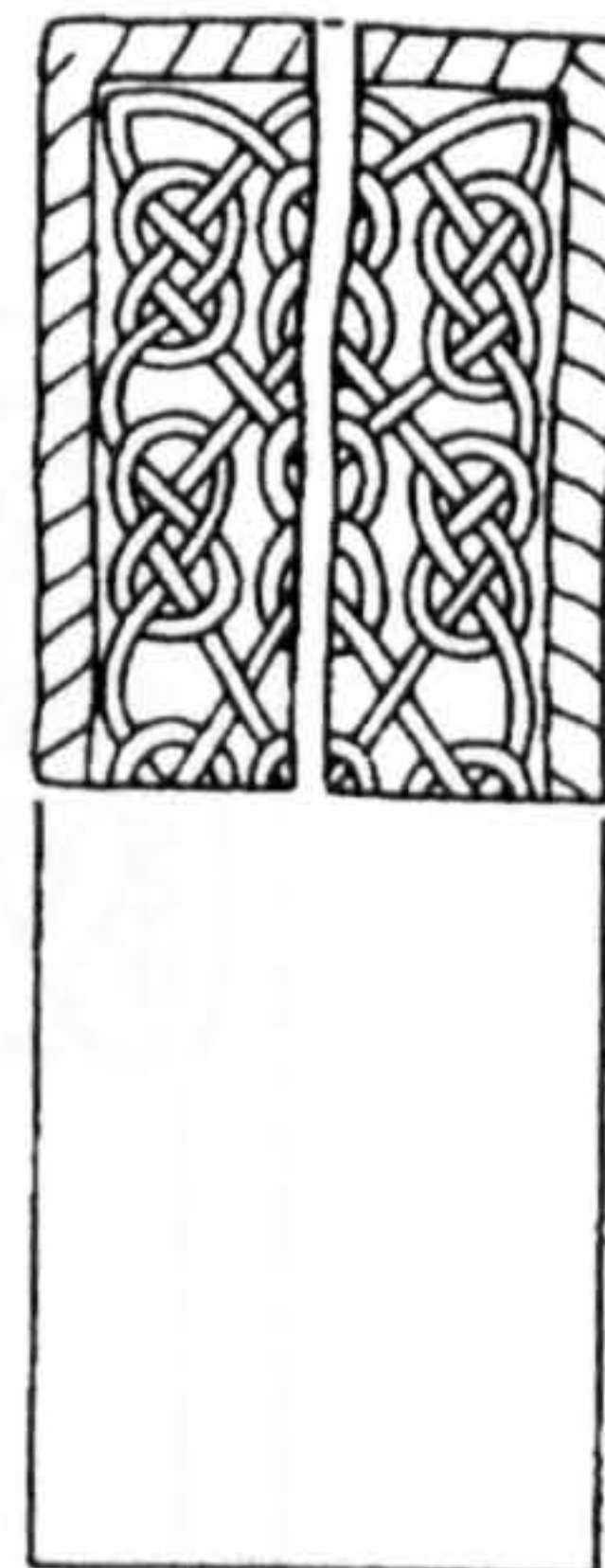
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Cammeringham 1



Broughton



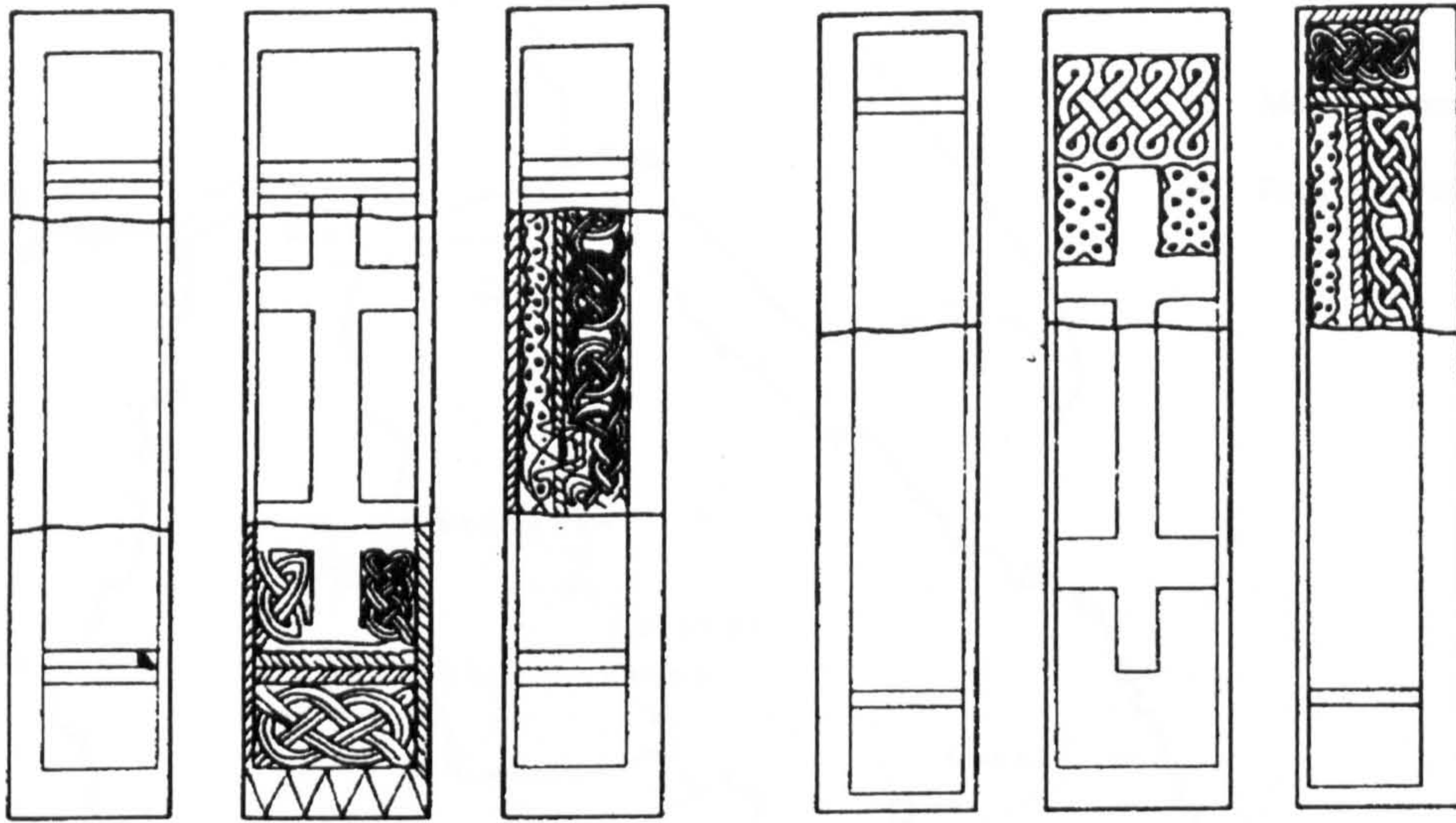
Manby 1

Lindsey Covers

from Everson and Stocker 1999 : 52-3

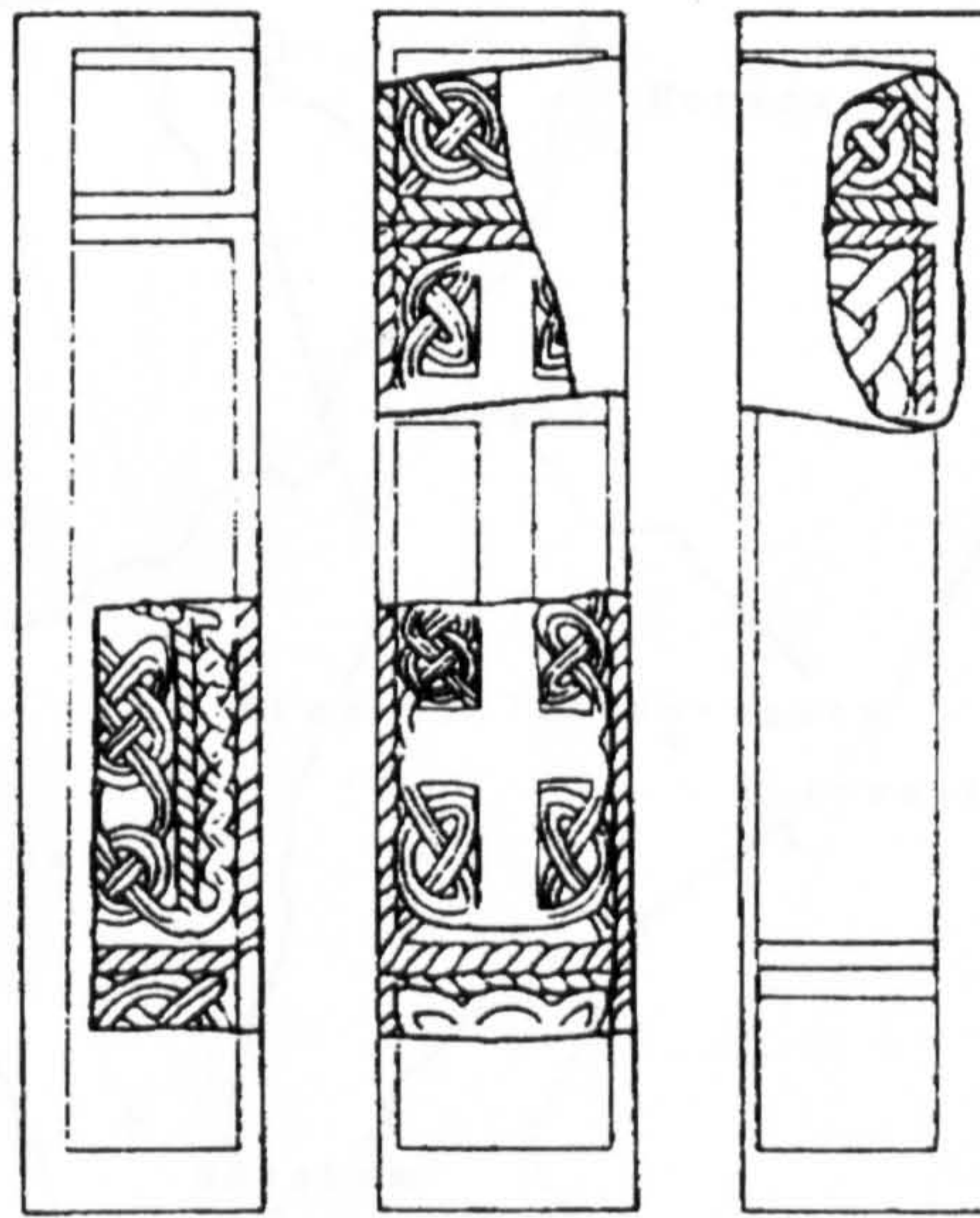
L.A. Symonds 1999

Figure 16



Burton Pendwardine 3

Coleby Hall 1



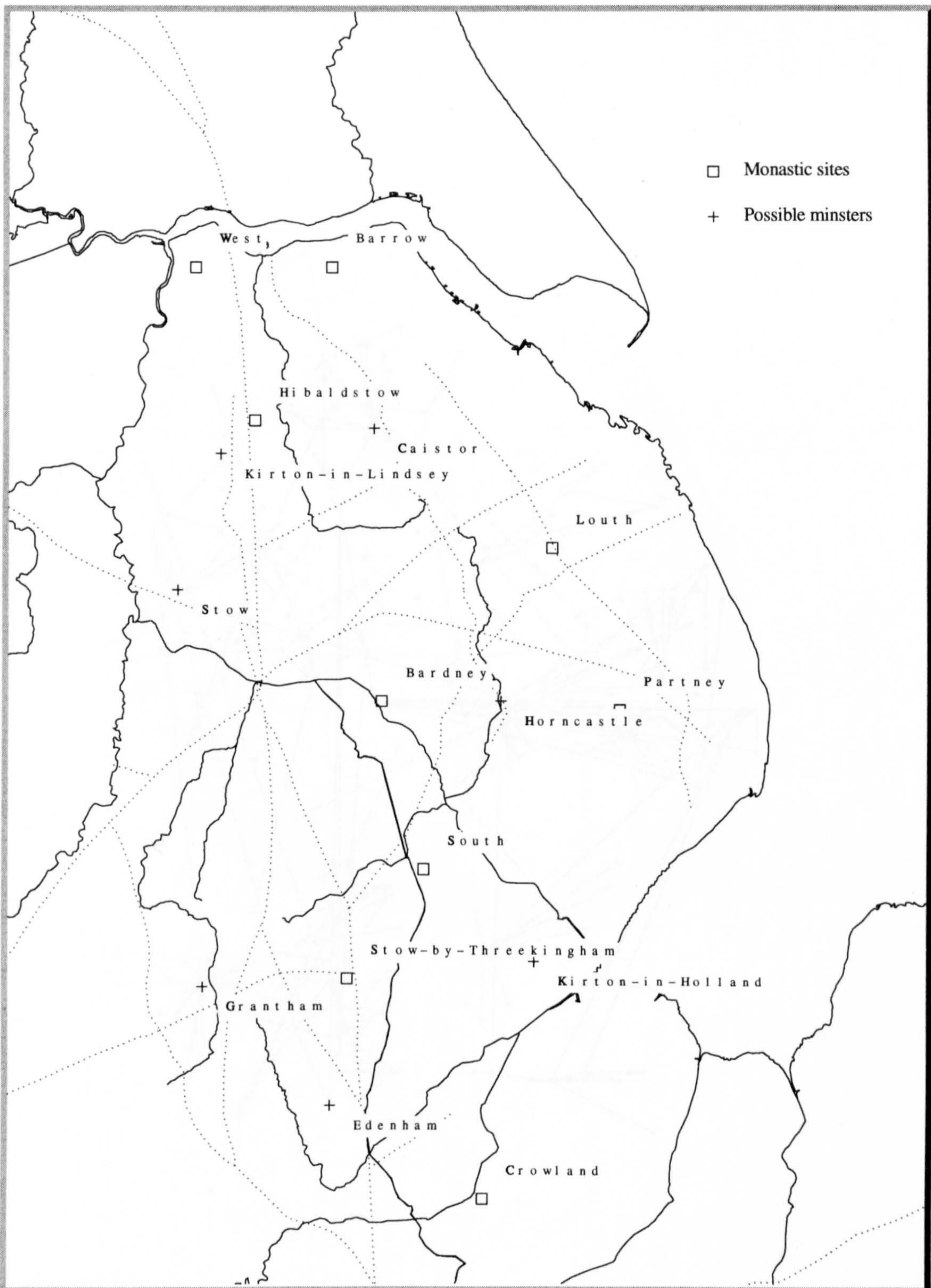
Eagle 1

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

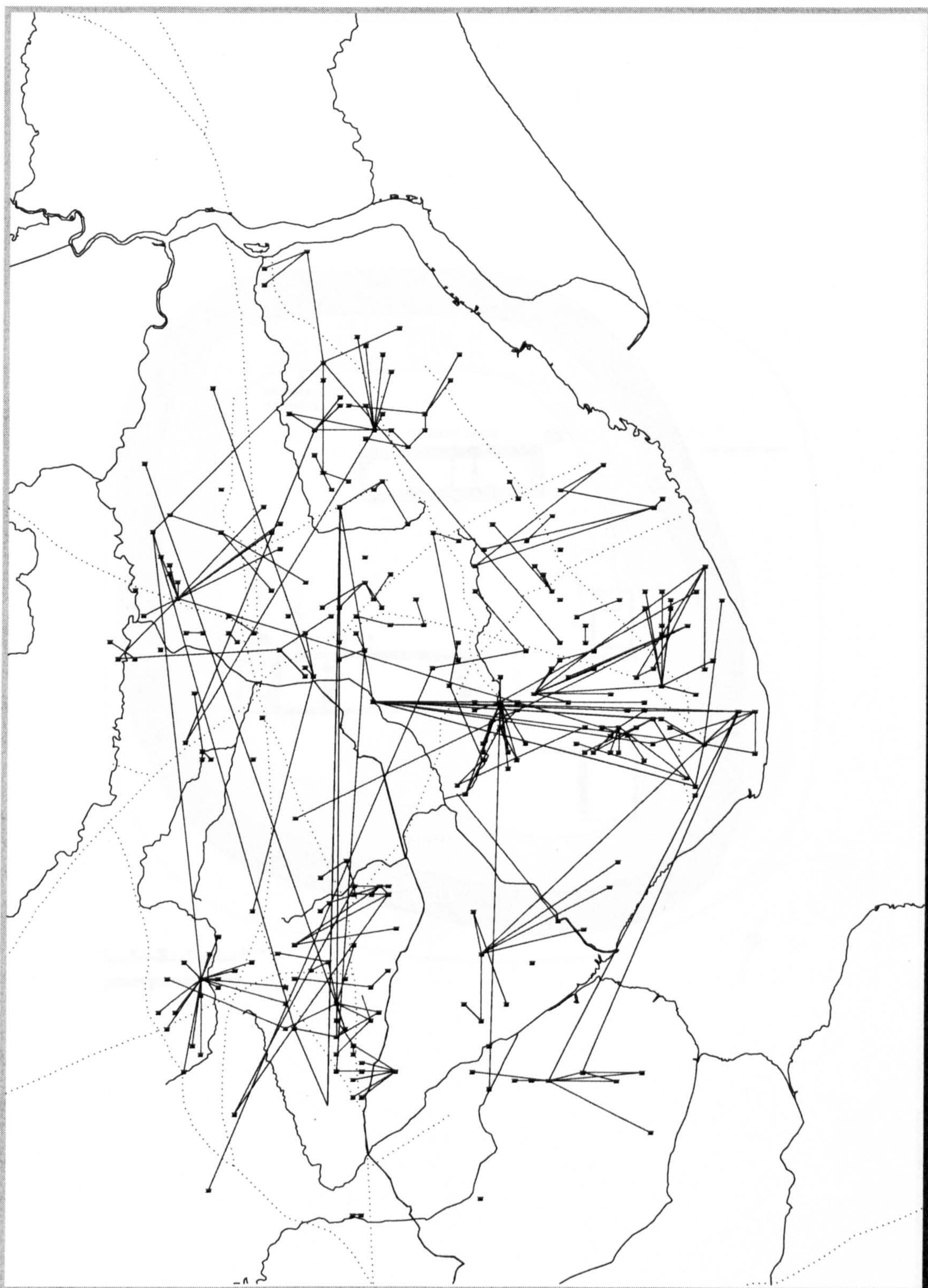
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

0 50 km



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

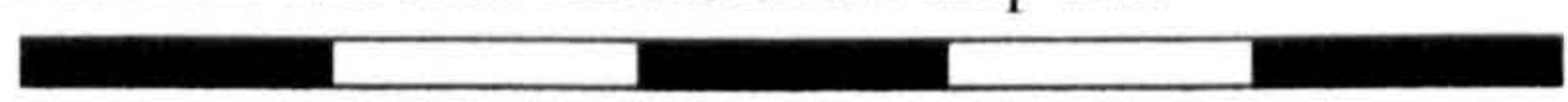
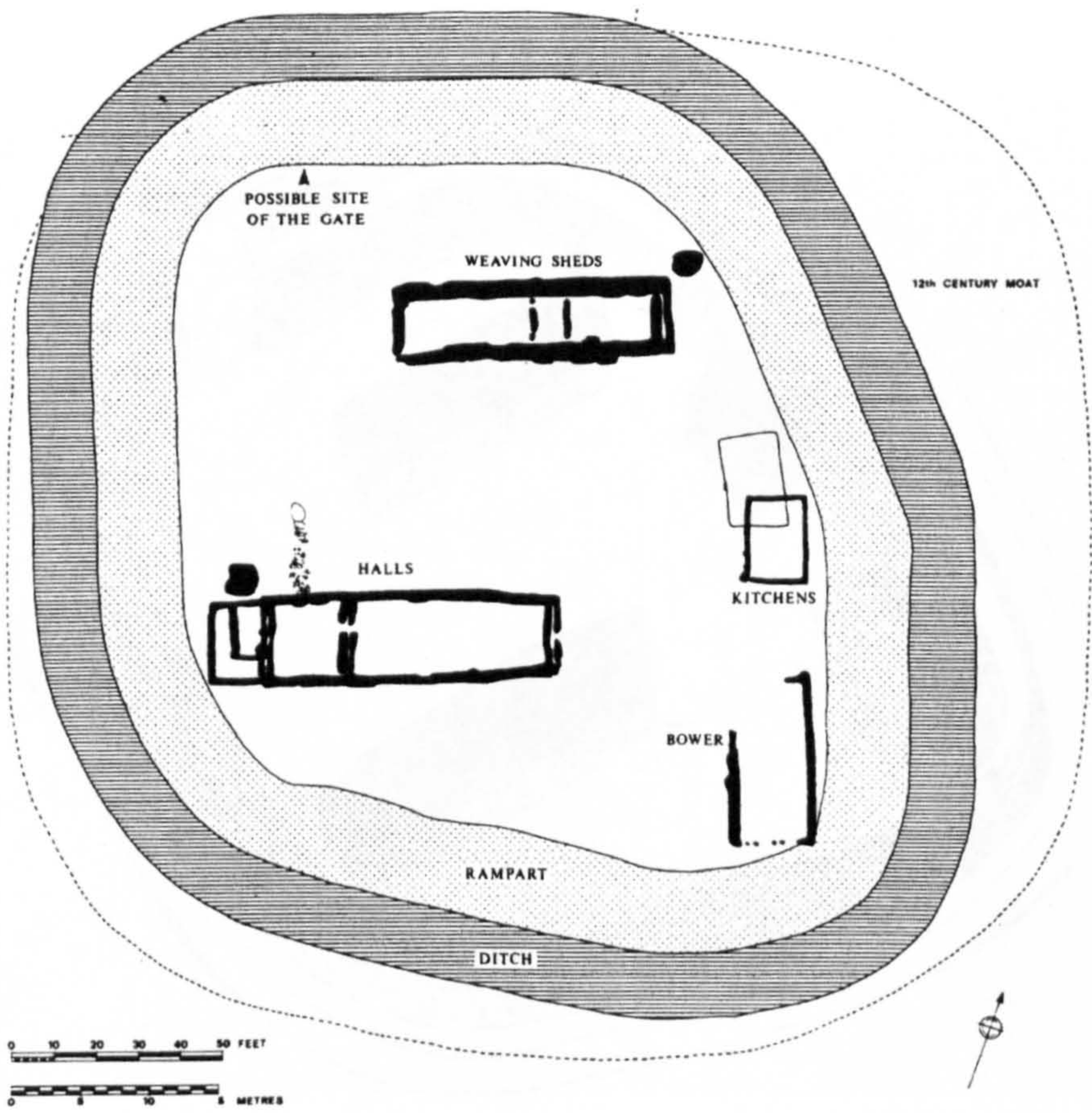
0  50 km



Figure 19

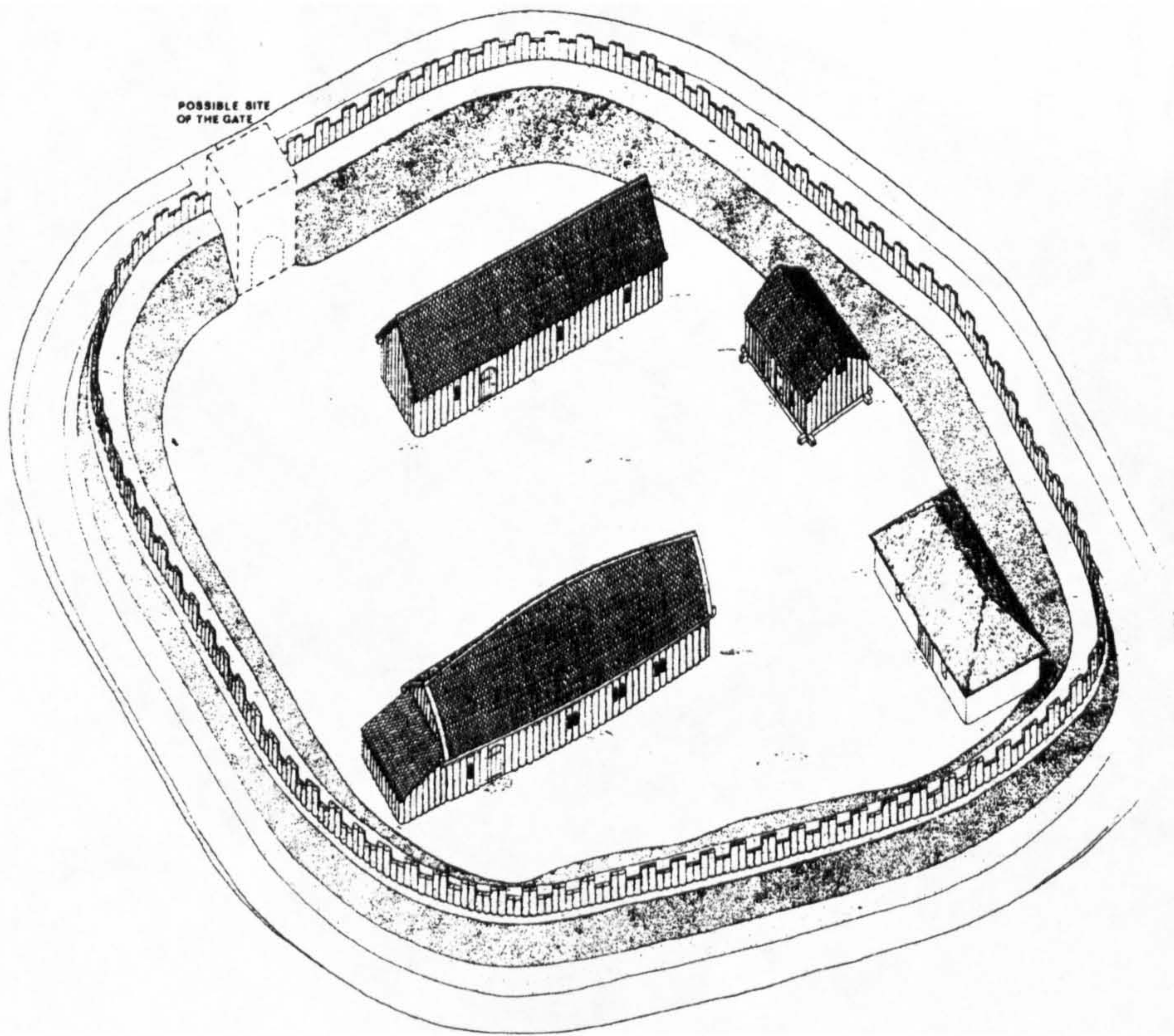


Plan of Goltho c. 850-950

from Beresford 1987: 32

L.A. Symonds 1999

Figure 20

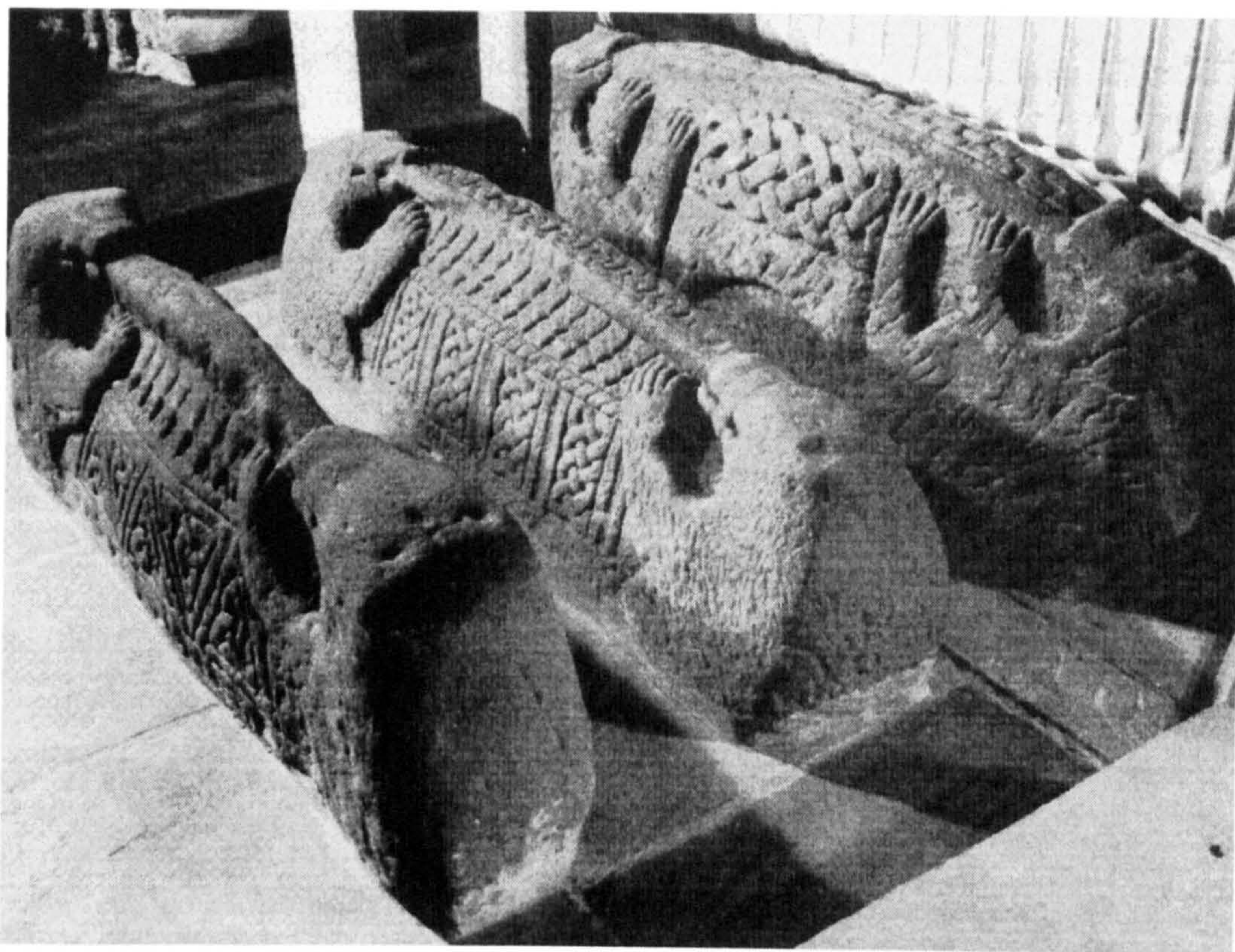


Artistic reconstruction of Goltho c. 850

from Beresford 1987: 36

L.A. Symonds 1999

Figure 21

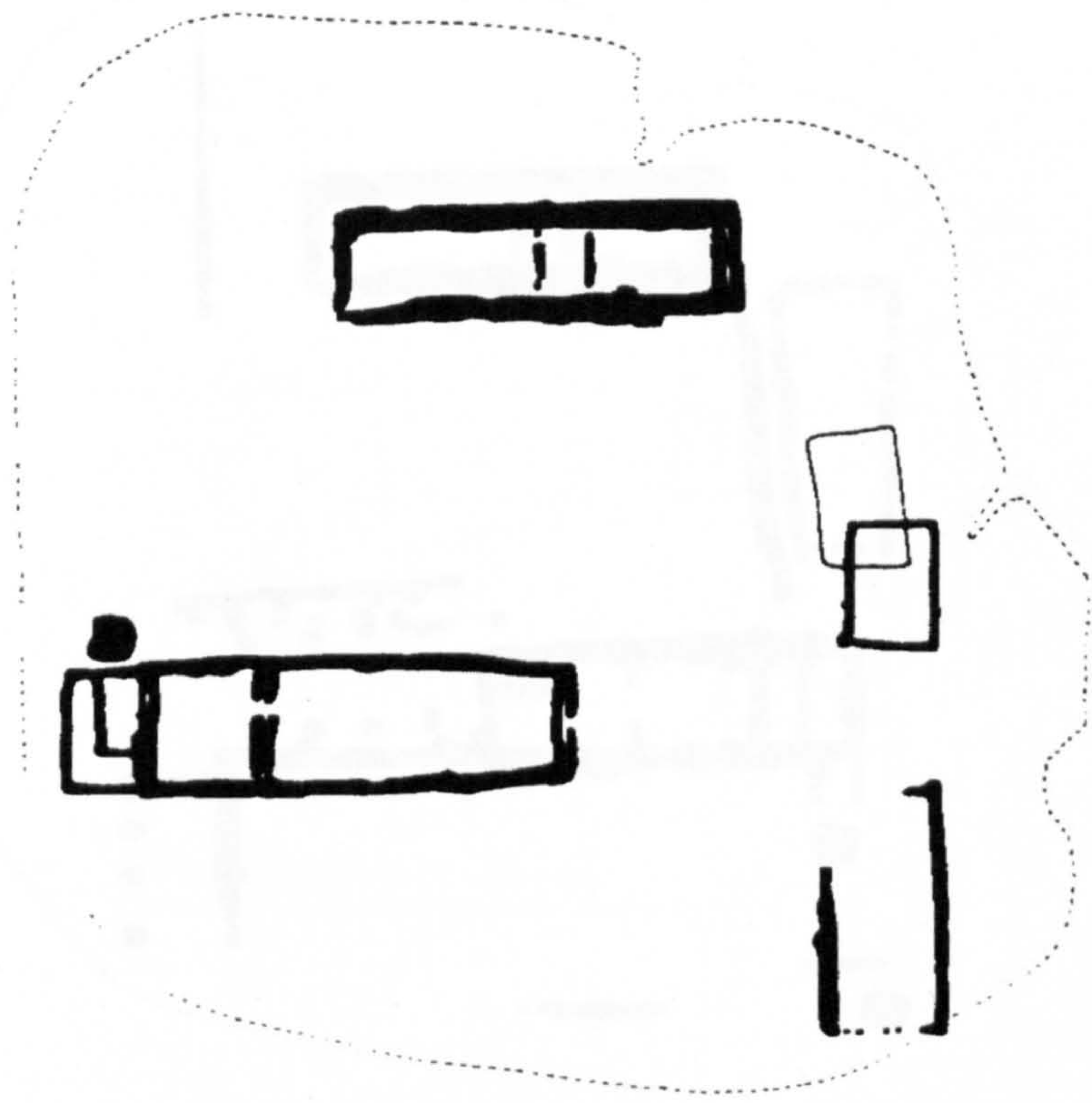


The Brompton Hogbacks

from Lang 1984: 86

L.A. Symonds 1999

Figure 22

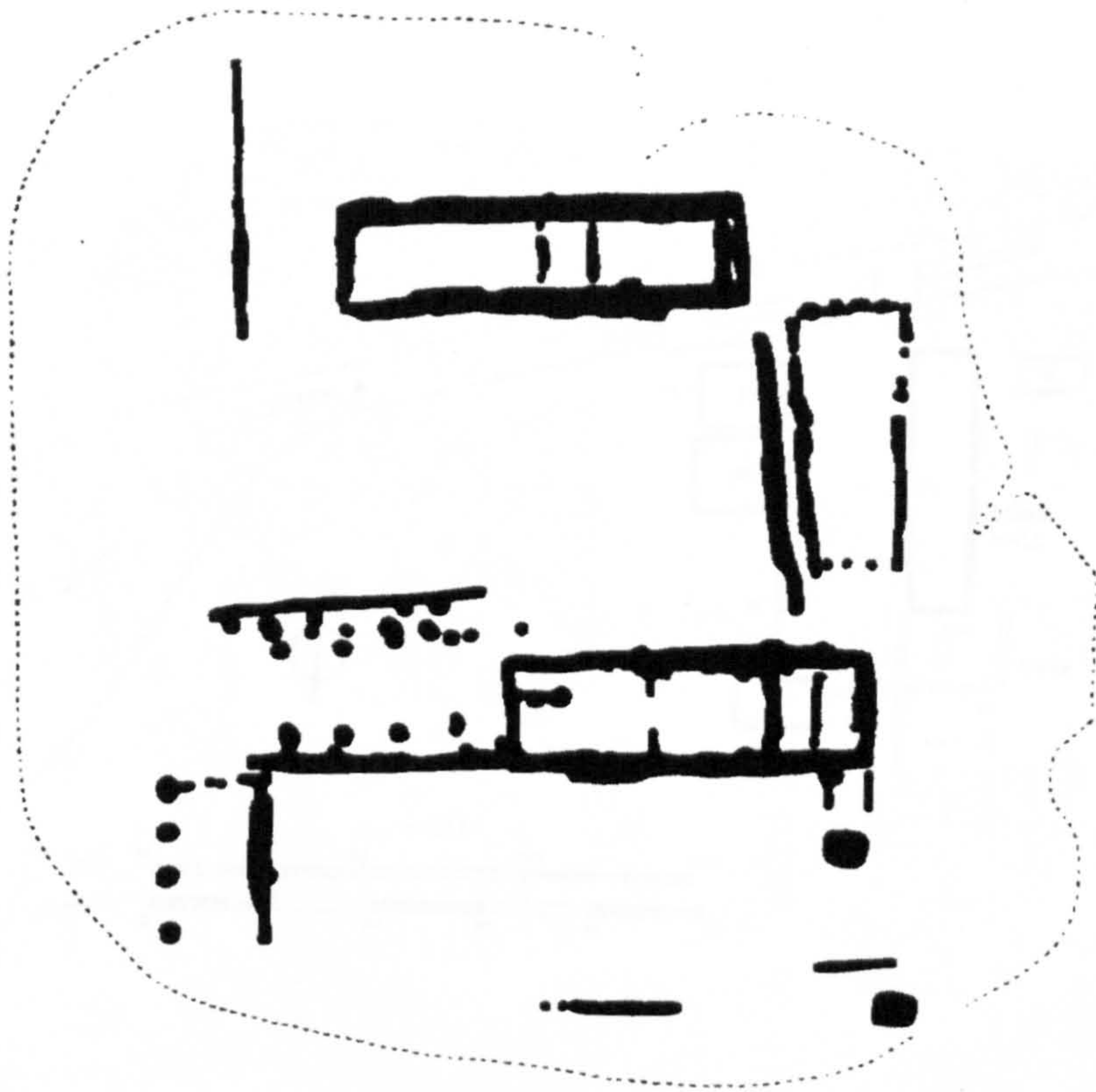


Plan of Goltho c. 850-950

from Beresford 1987: 9

L.A. Symonds 1999

Figure 23

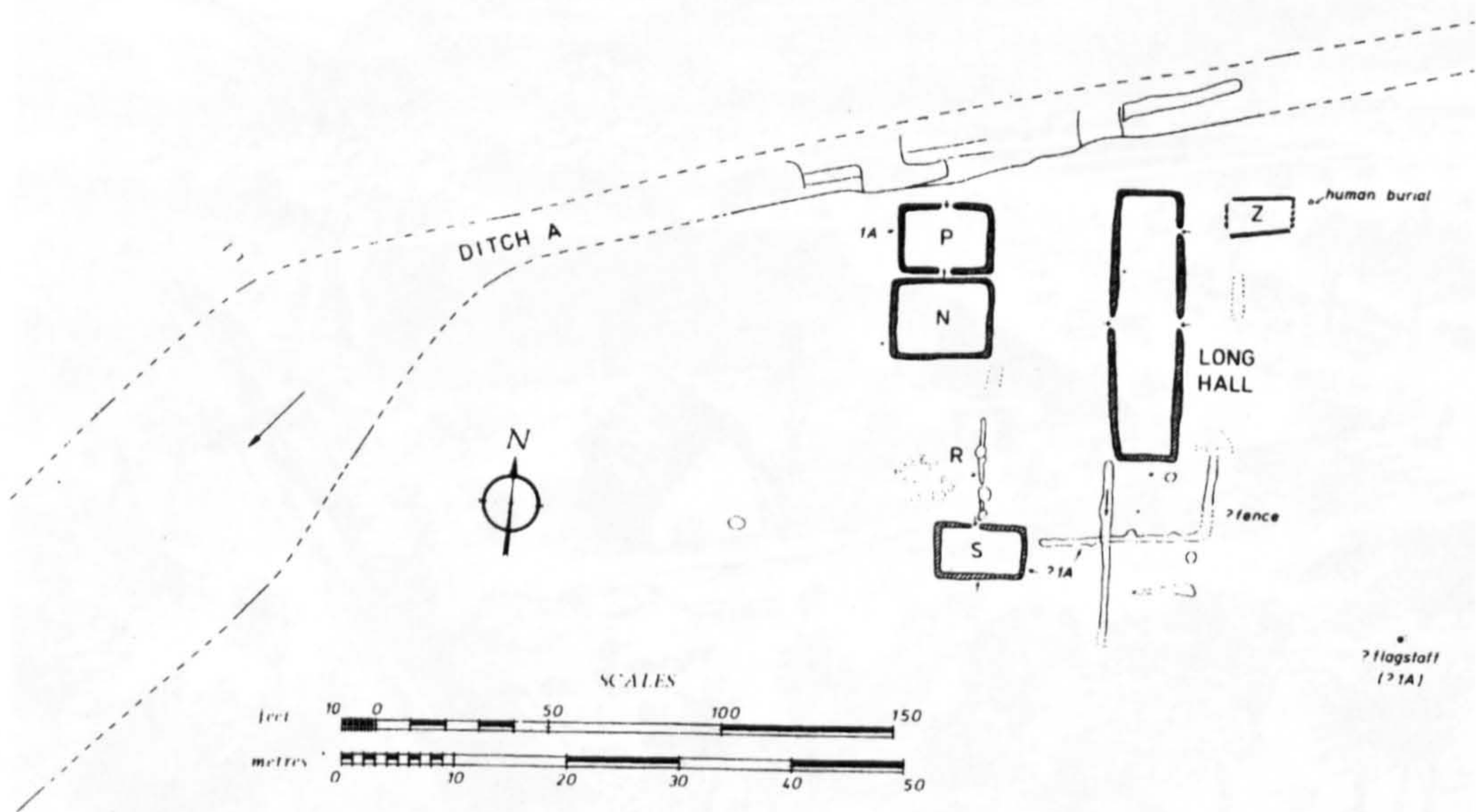


Plan of Goltho c. 950-1000

from Beresford 1987: 9

L.A. Symonds 1999

Figure 24



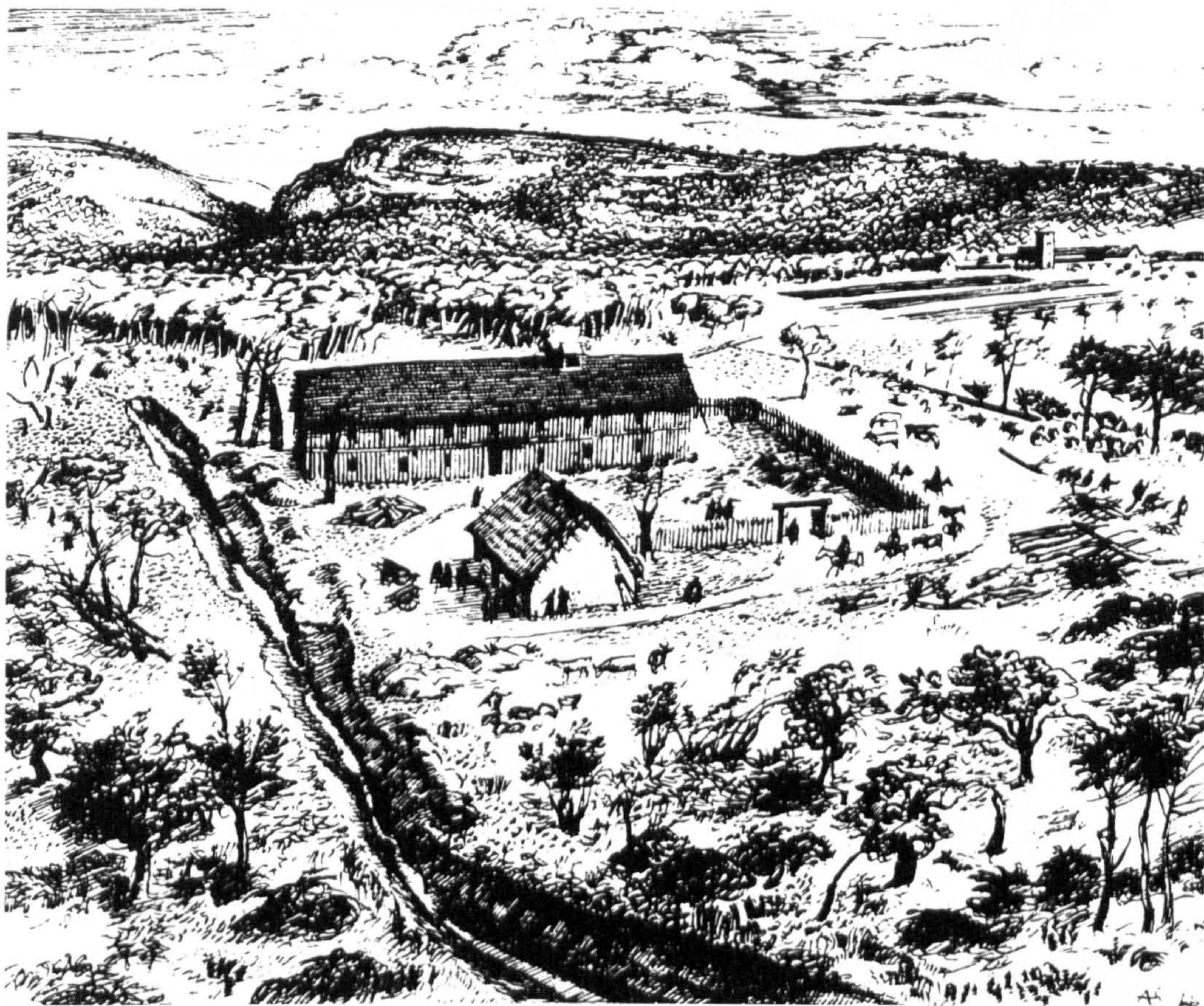
Plan of Cheddar

Pre c. 930

From Rahtz 1979: 50

L.A. Symonds 1999

Figure 25



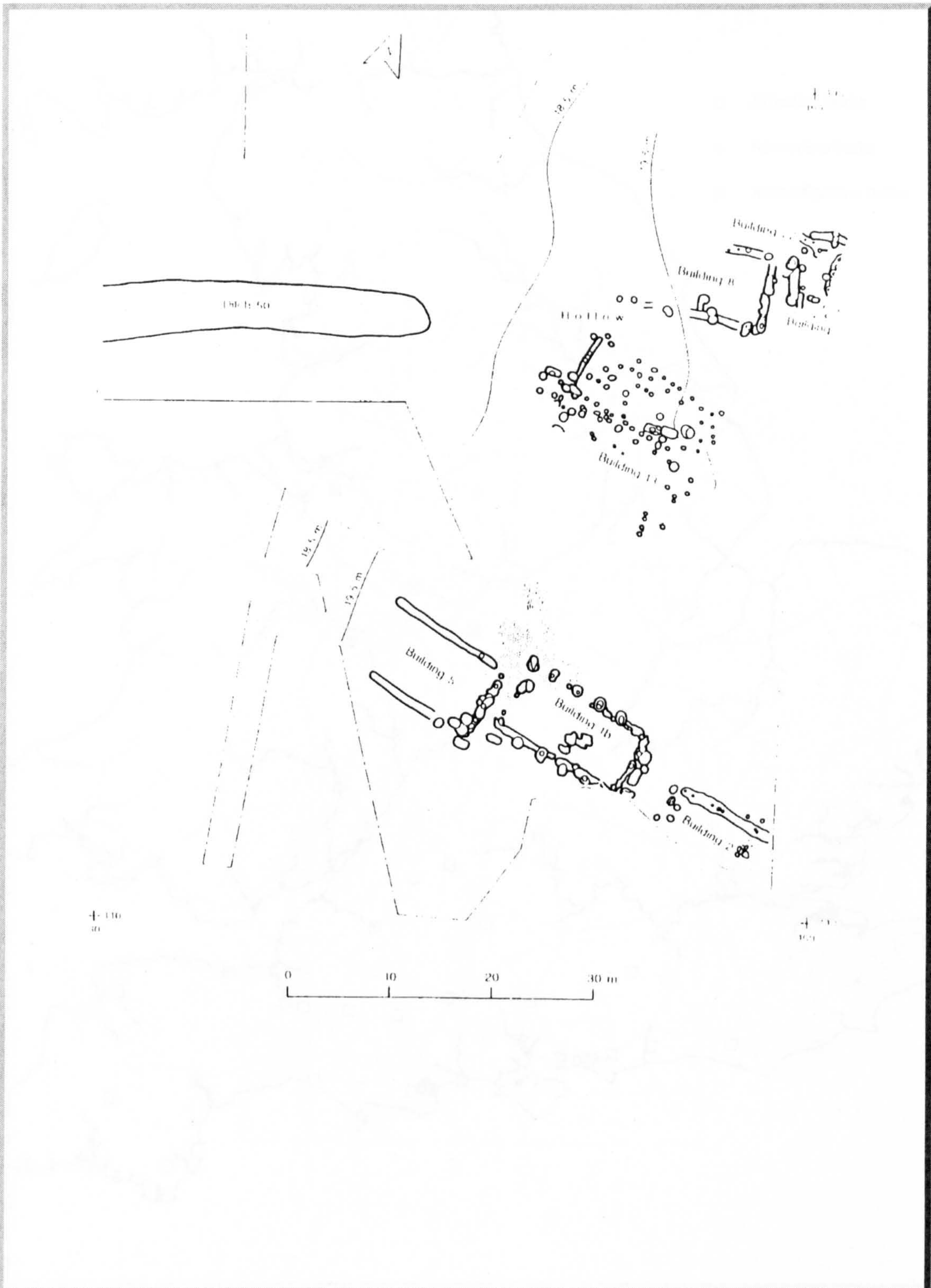
Artistic Reconstruction of Cheddar

Pre c. 930

From Alan Sorrell in Rahtz 1979: 51

L.A. Symonds 1999

Figure 26



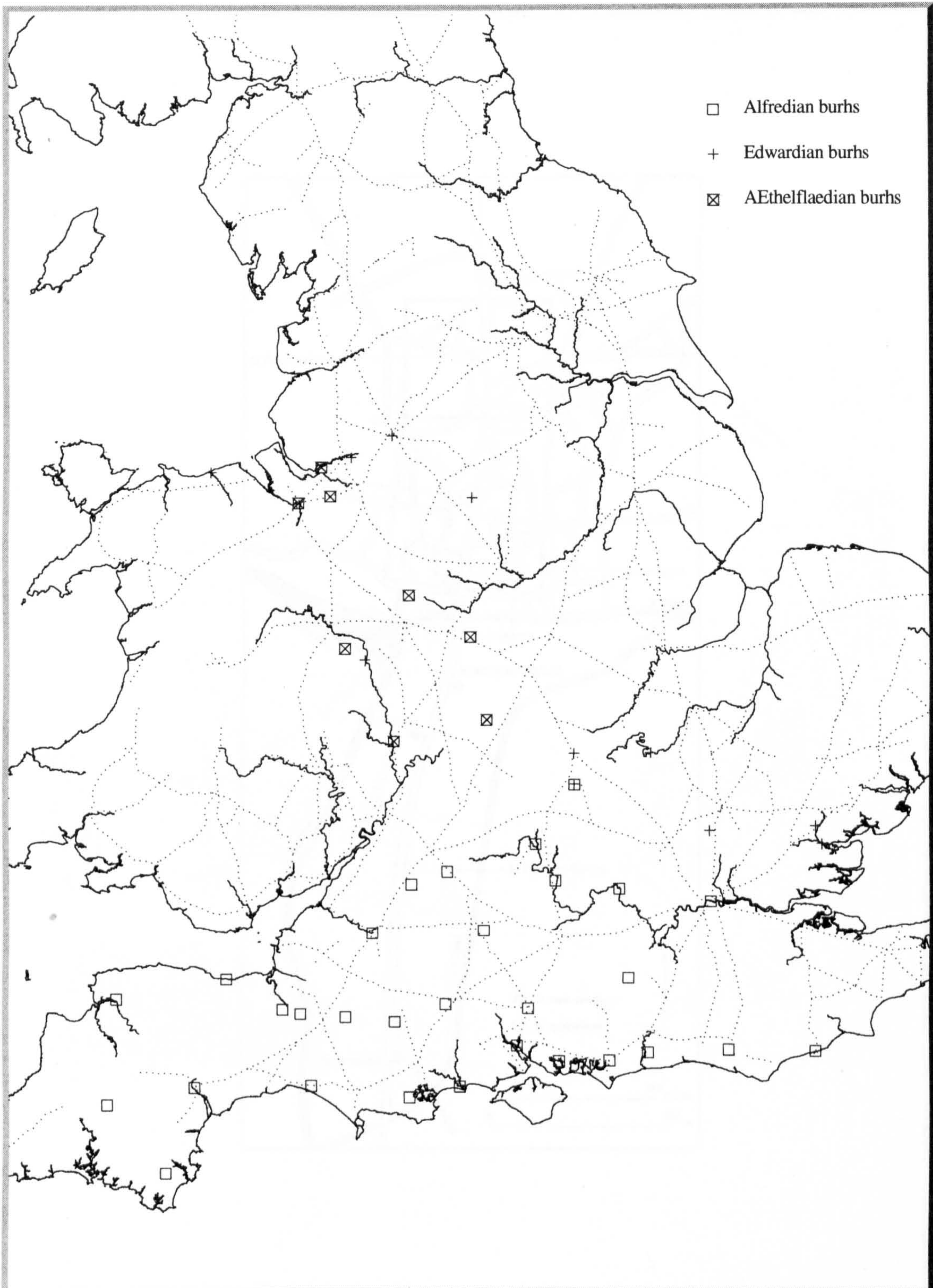
Plan of Flixborough

Mid 8th - early 9th century

From Sawyer 1998 : 67

L.A. Symonds 1999

Figure 27



- Alfredian burhs
- + Edwardian burhs
- ⊠ Aethelflaedian burhs

The Burghal Hidage and Reconquest Forts

Roads and Pathways derived from OS 1:675000

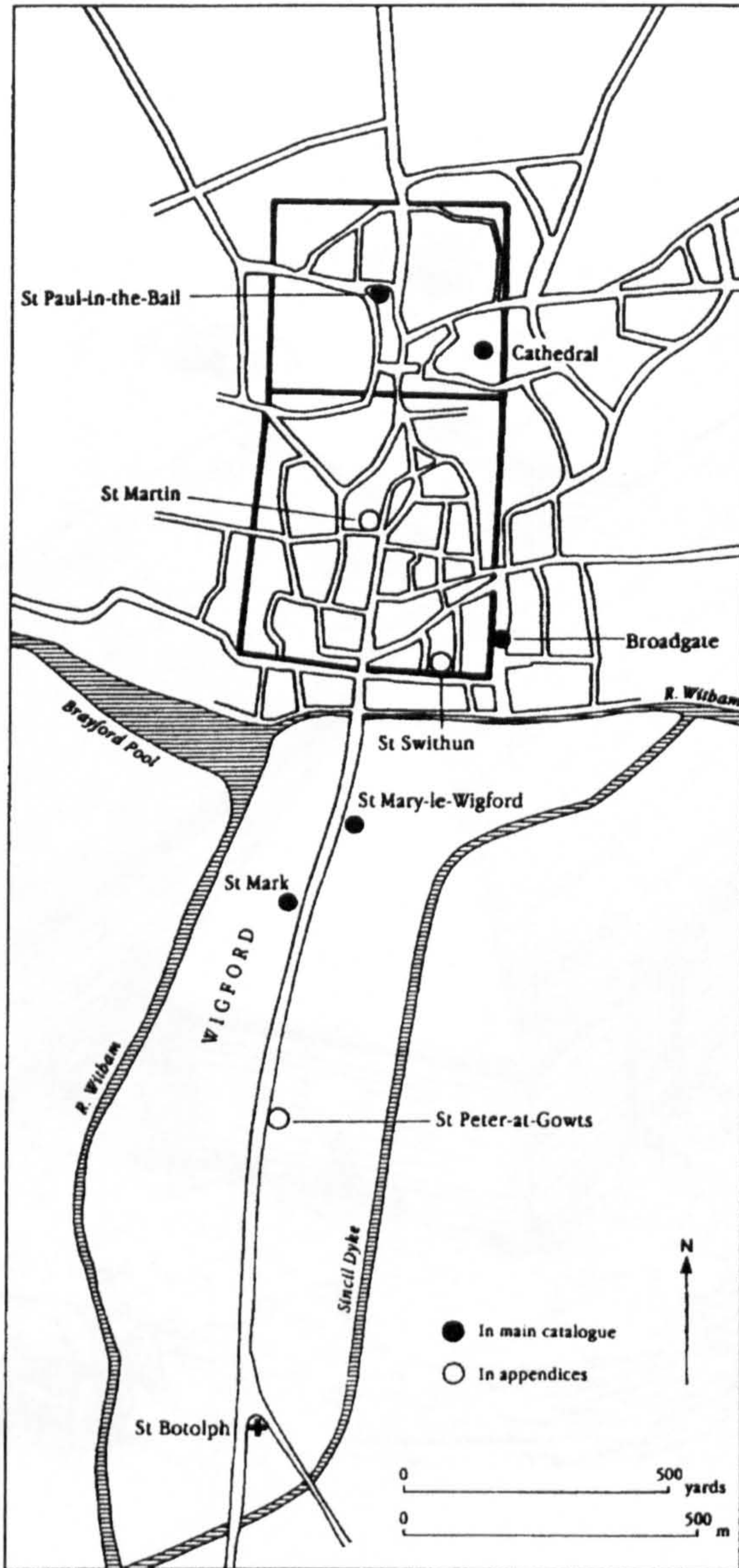
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

0 50 km



Figure 28

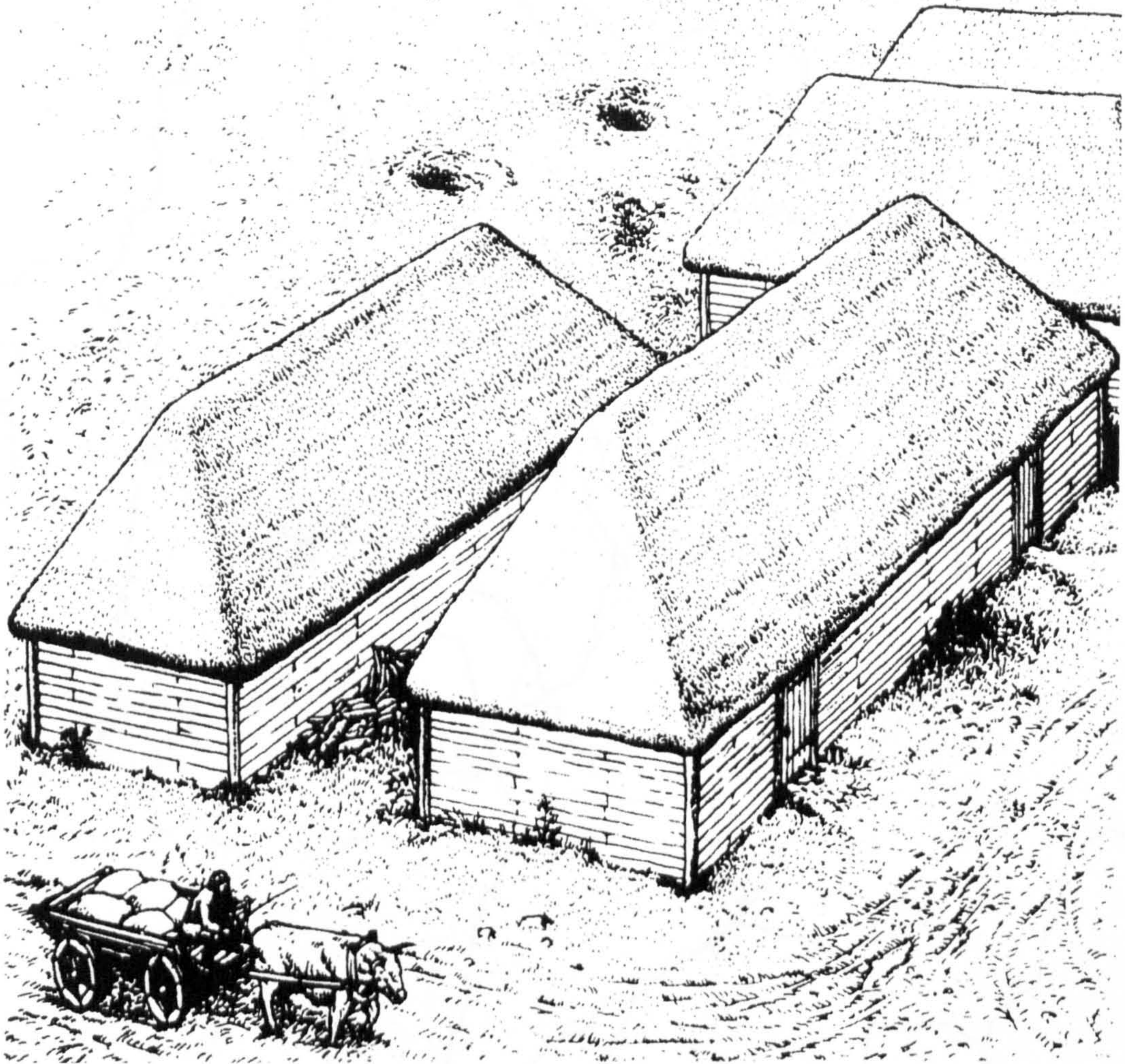


Street Plan of Lincoln

From Everson and Stocker 1999: 13

L.A. Symonds 1999

Figure 29



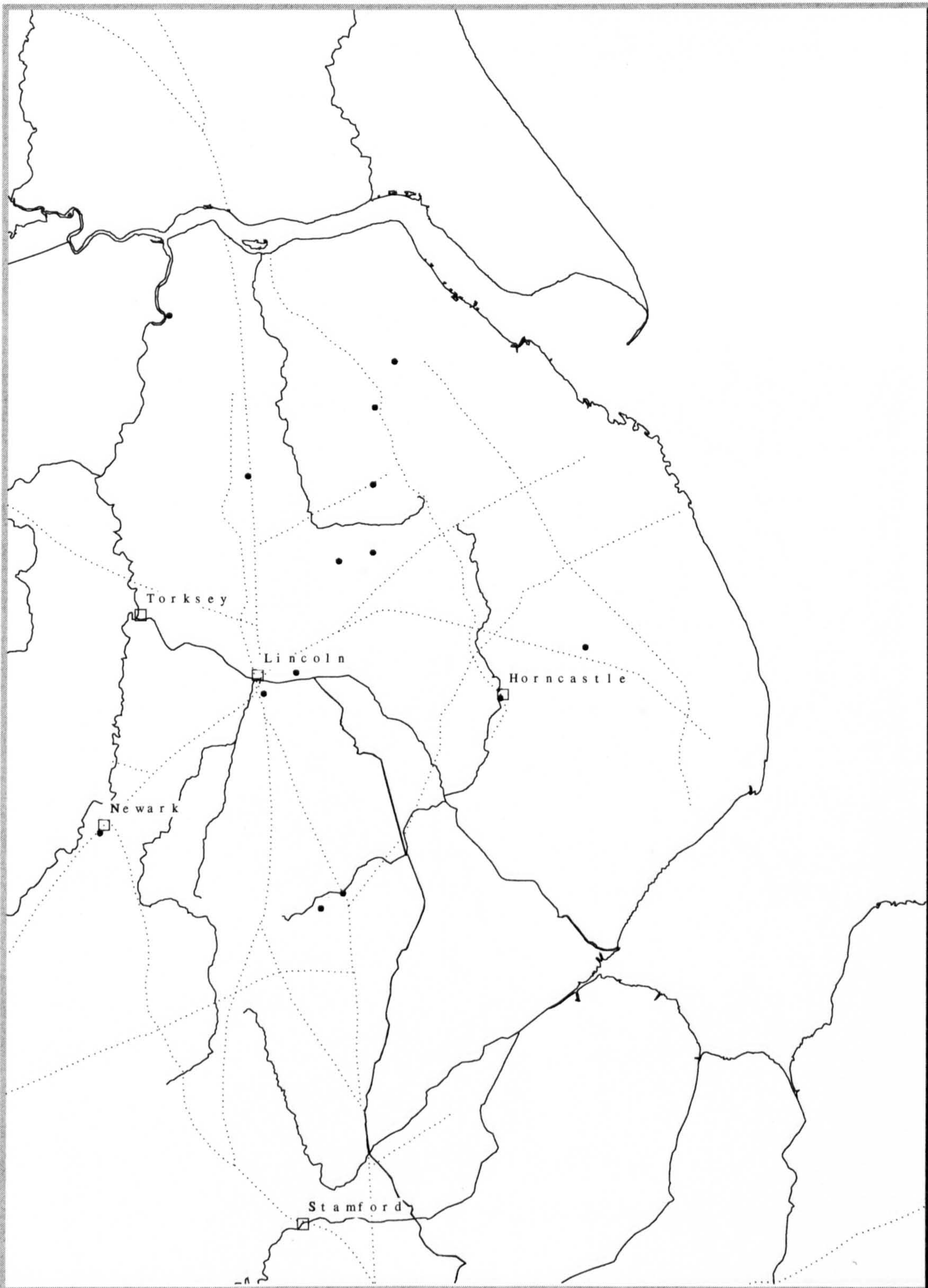
Artistic Reconstruction of Flaxengate, Lincoln

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

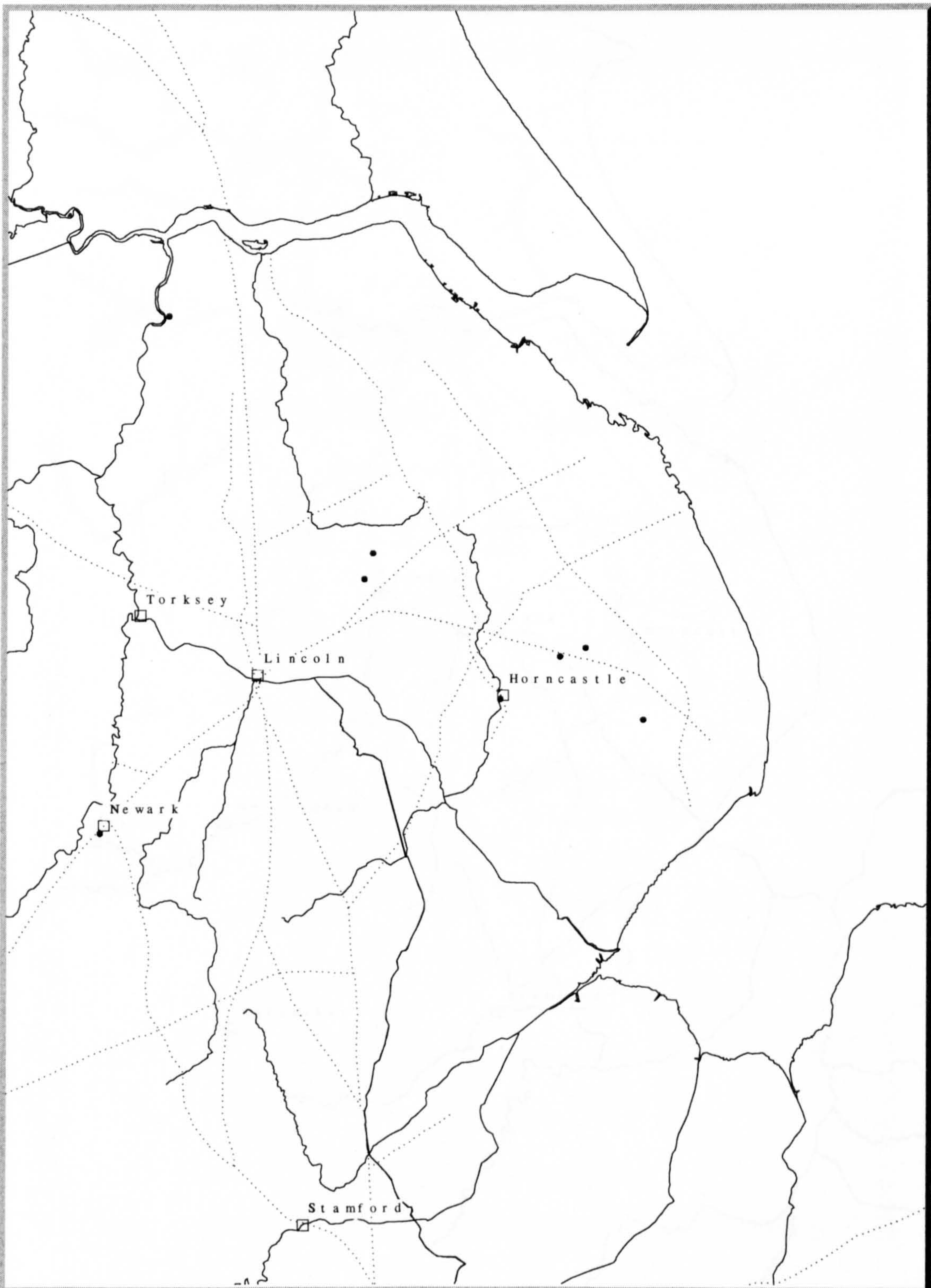
L.A. Symonds 1999



50 km



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

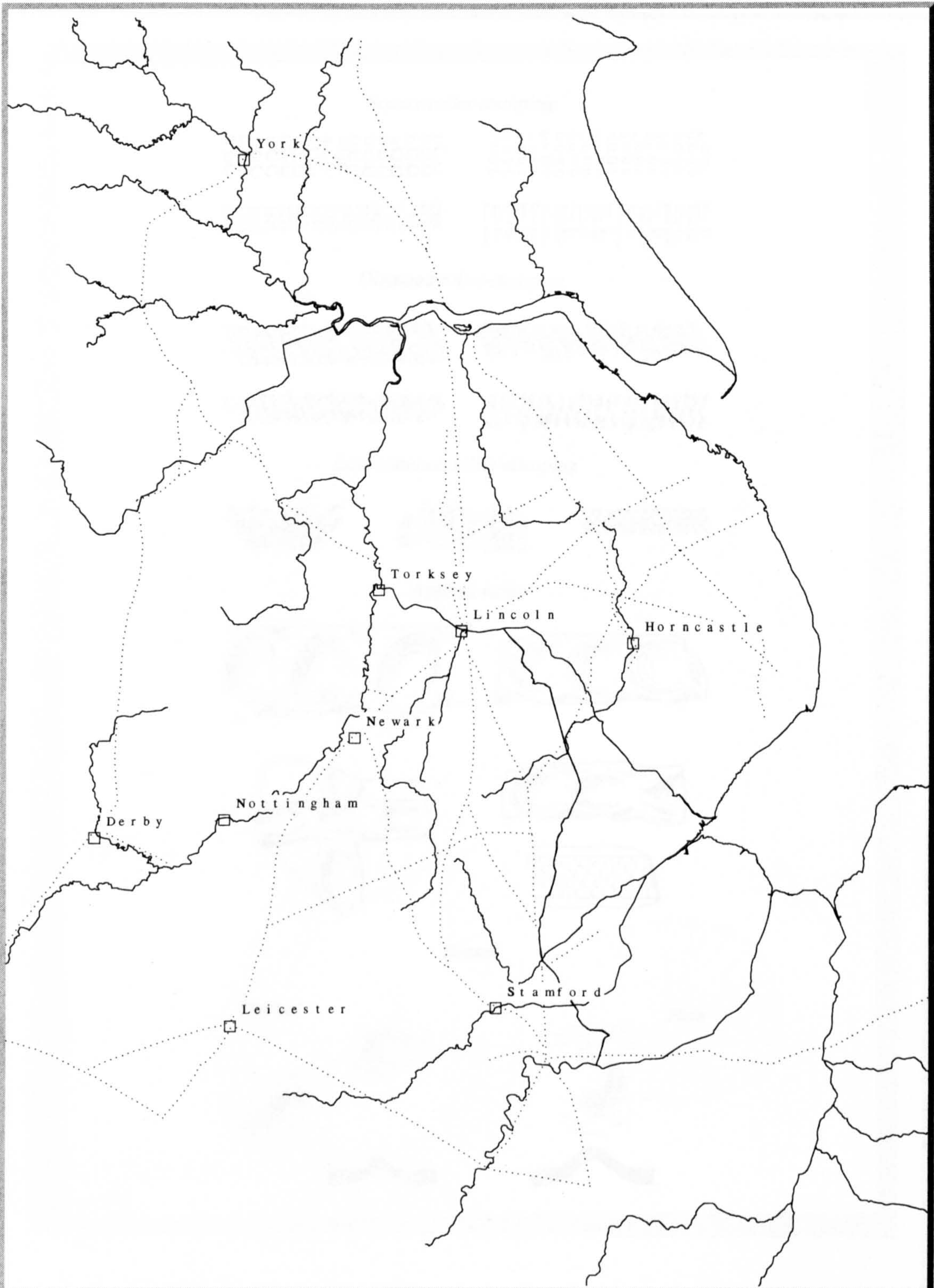
L.A. Symonds 1999



50 km



Figure 32



**Danelaw kilns
(late 9th and 10th centuries)**

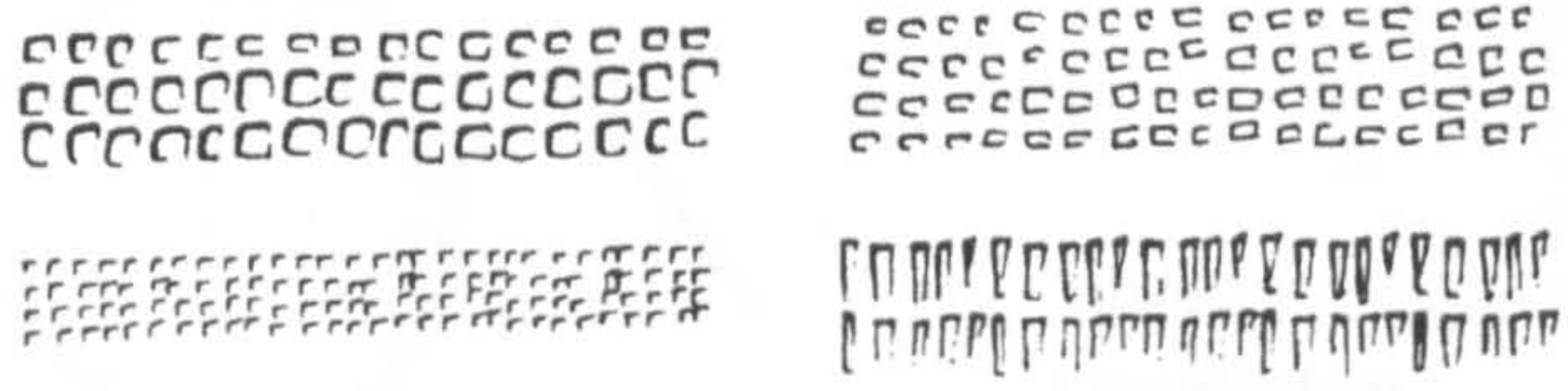
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999



Figure 33

Square roller-stamping



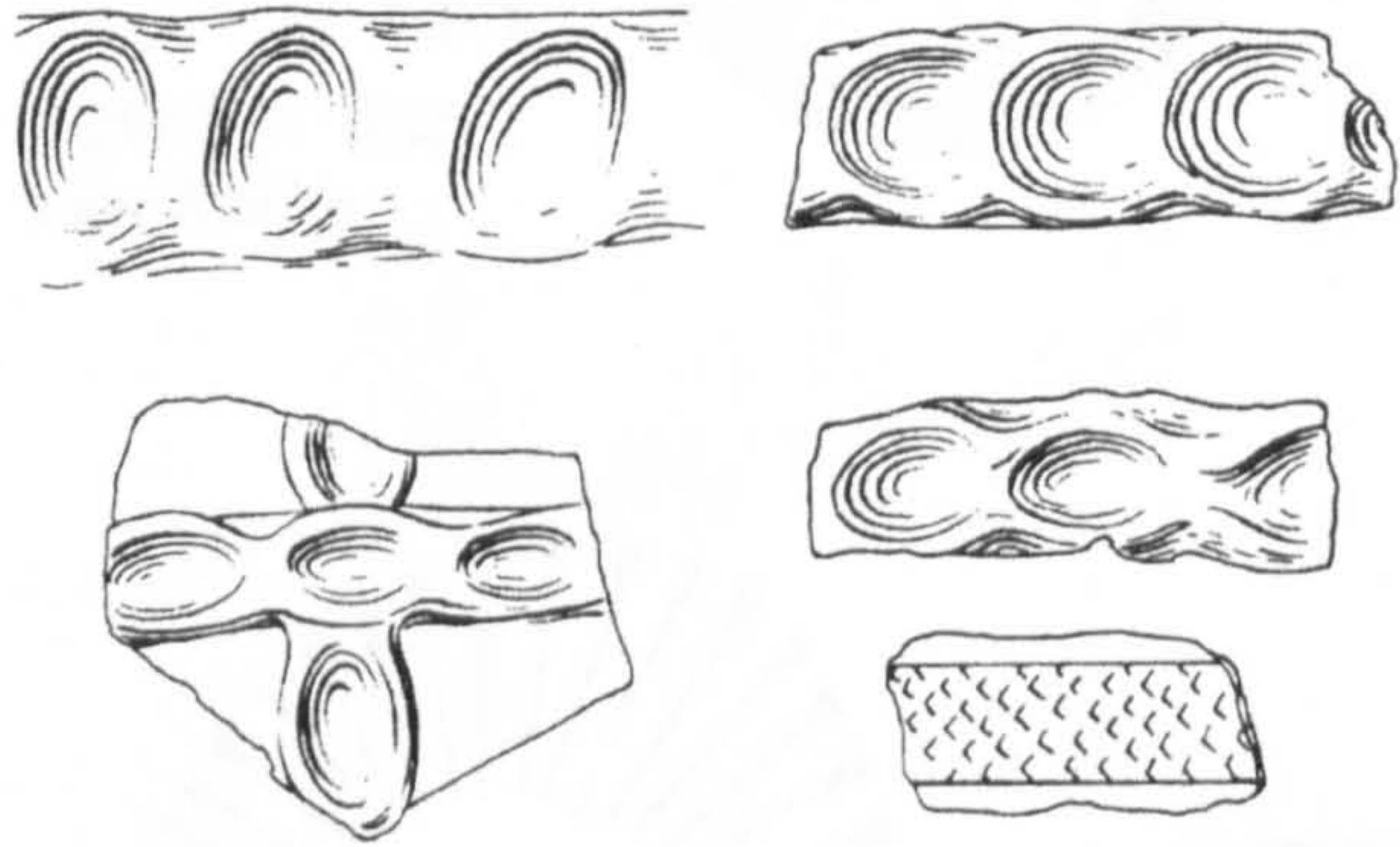
Diamond roller-stamping



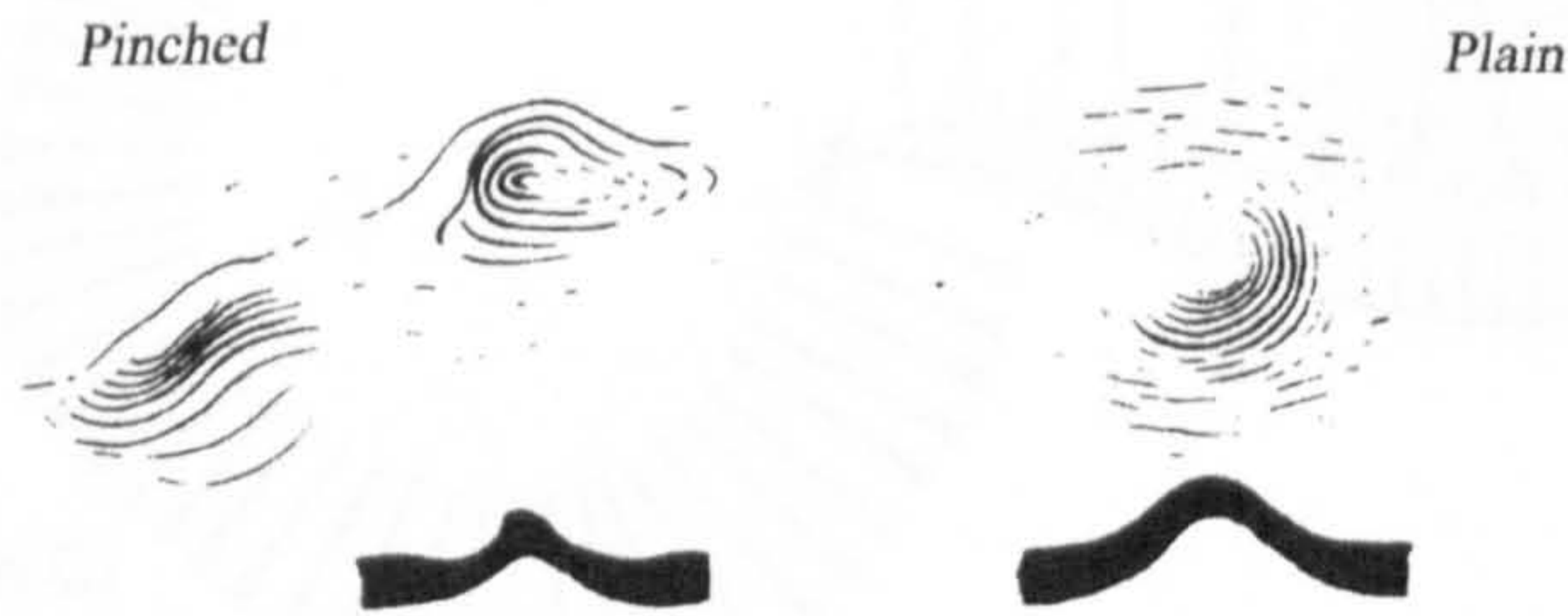
Less common roller-stamping



Applied strips



Bosses



Decoration on Anglo-Scandinavian pottery

from Miles *et al.* 1989: 206

L.A. Symonds 1999

Figure 34

Type 1a!



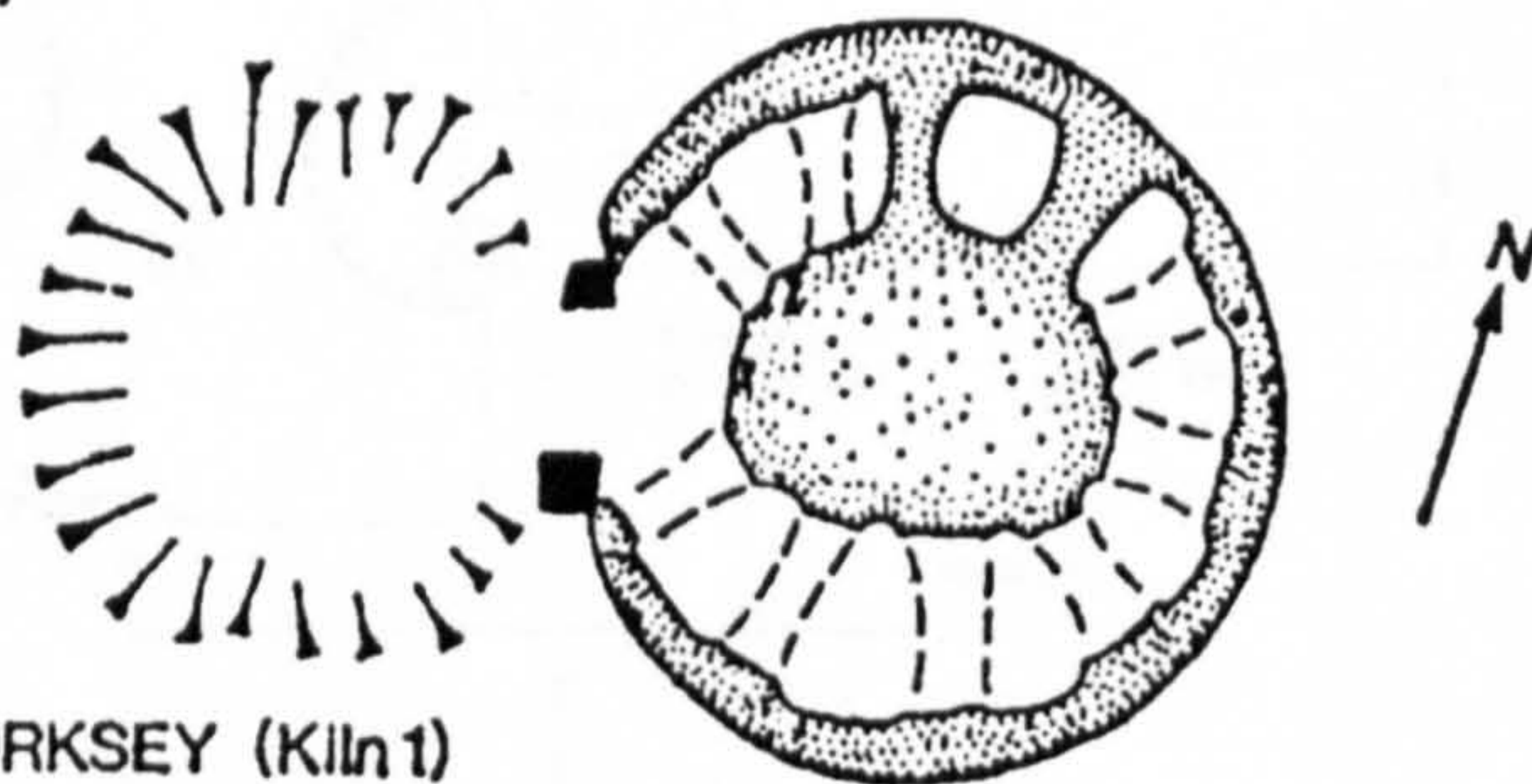
IPSWICH (Cox Lane Kiln IV)
Suffolk

Type 1a



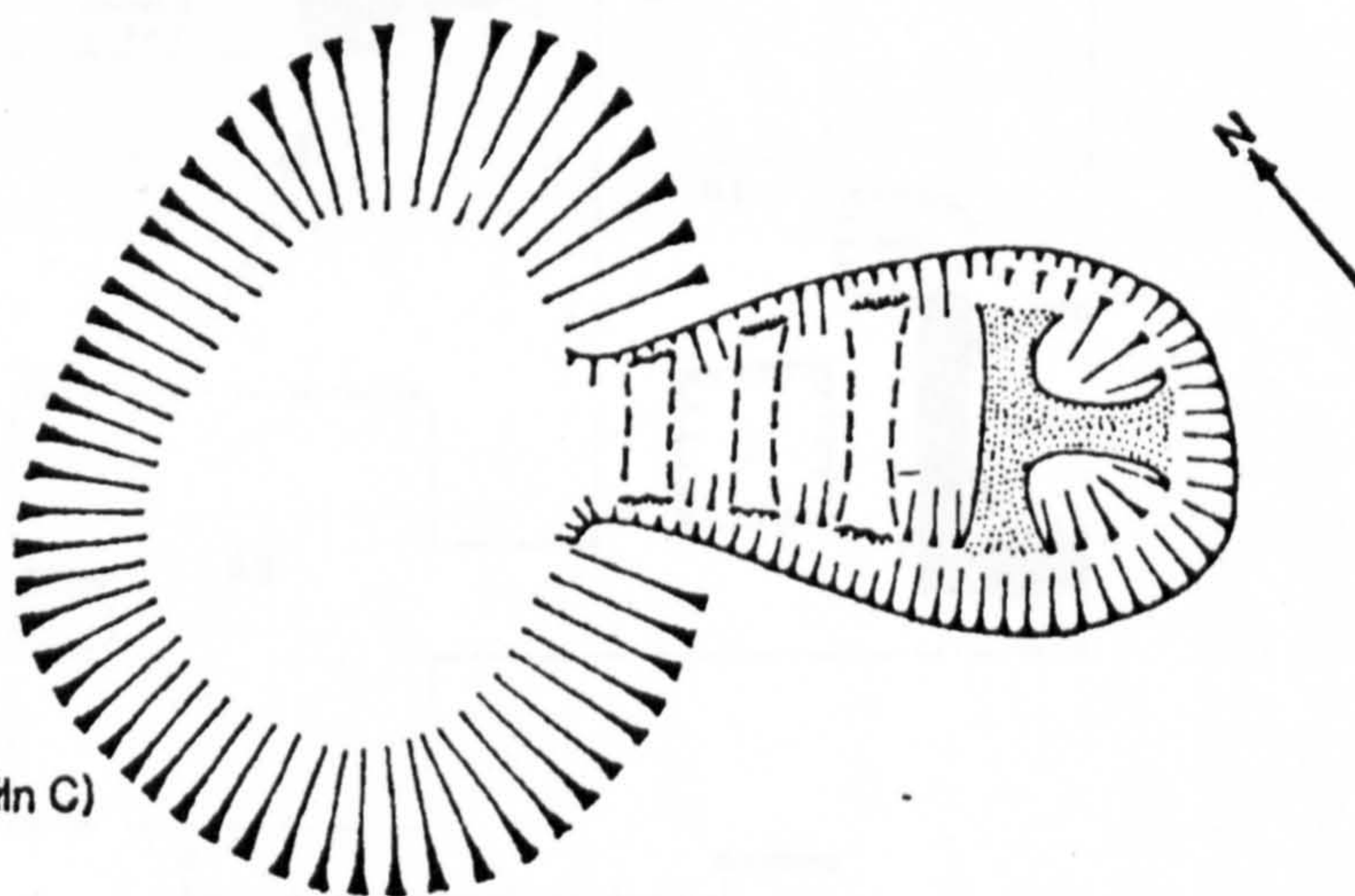
TORKSEY (Kiln 2)
Lincolnshire

Type 1b



TORKSEY (Kiln 1)
Lincolnshire

Type 1b



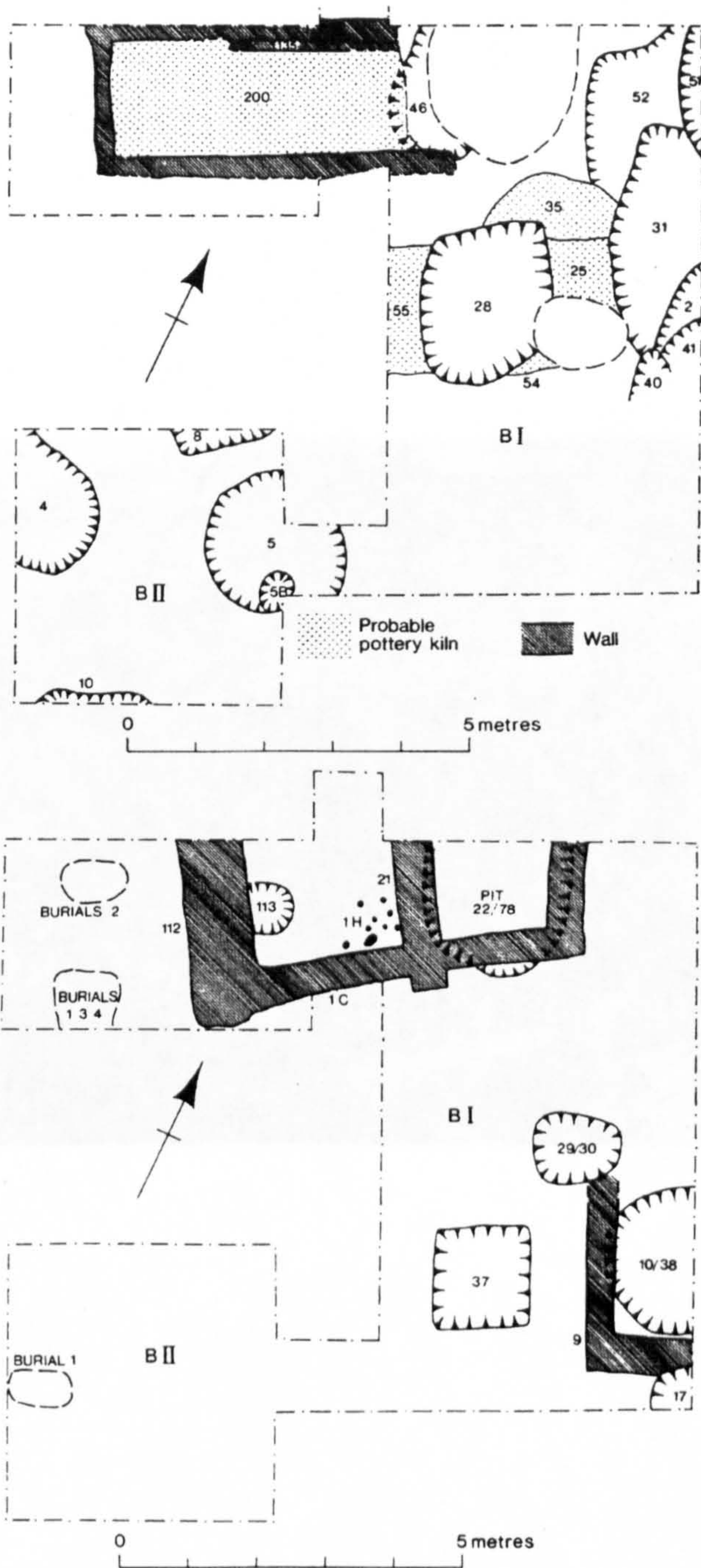
THETFORD (Kiln C)
Norfolk

Musty's Type 1 Kilns

from Musty 1974: 45

L.A. Symonds 1999

Figure 35



Excavations at Silver Street, Lincoln

from Miles *et al.* 1989: 36

L.A. Symonds 1999

Figure 36

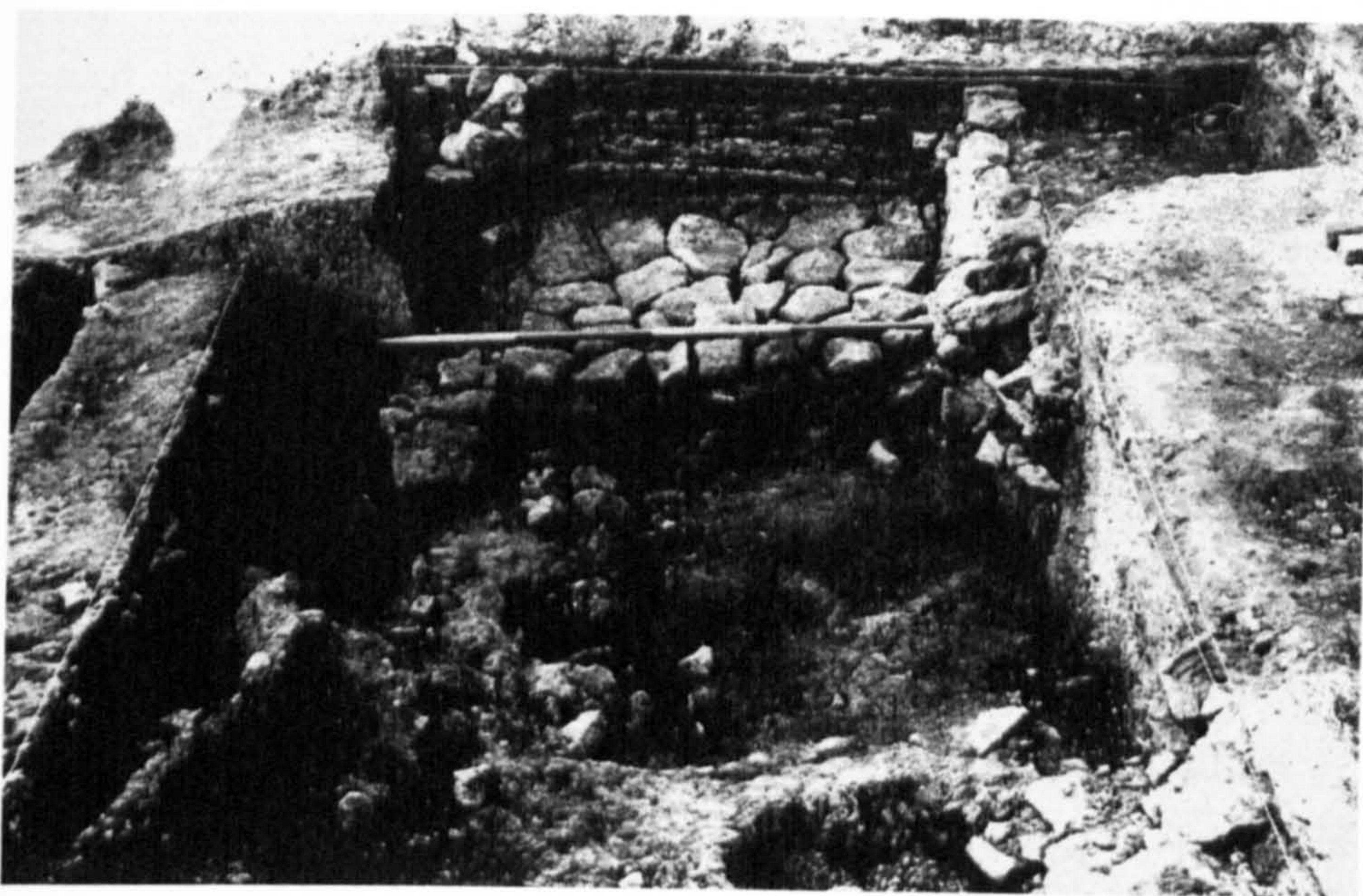
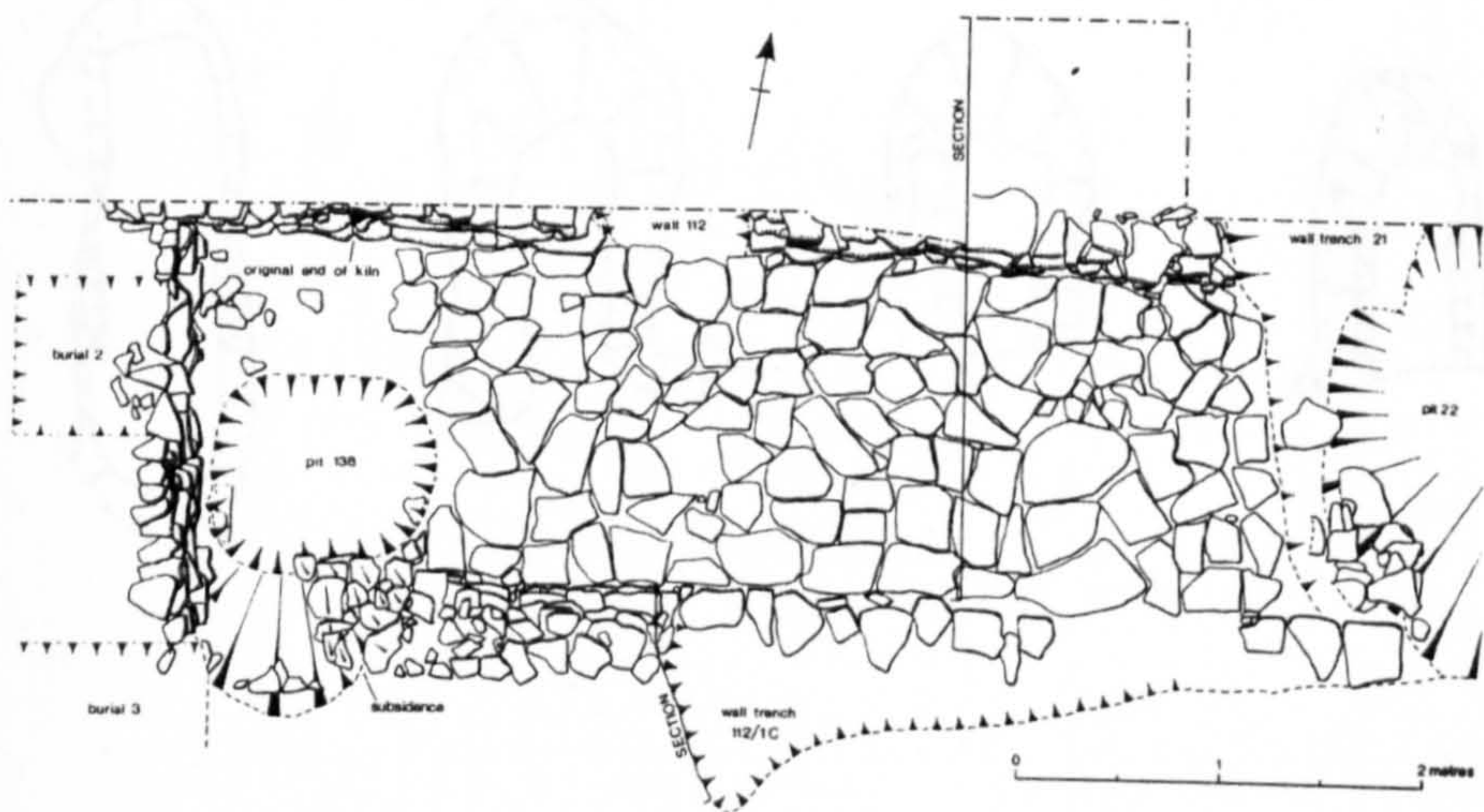


Photo of Kiln 200, Silver Street, Lincoln

from Miles *et al.* 1989: 191

L.A. Symonds 1999

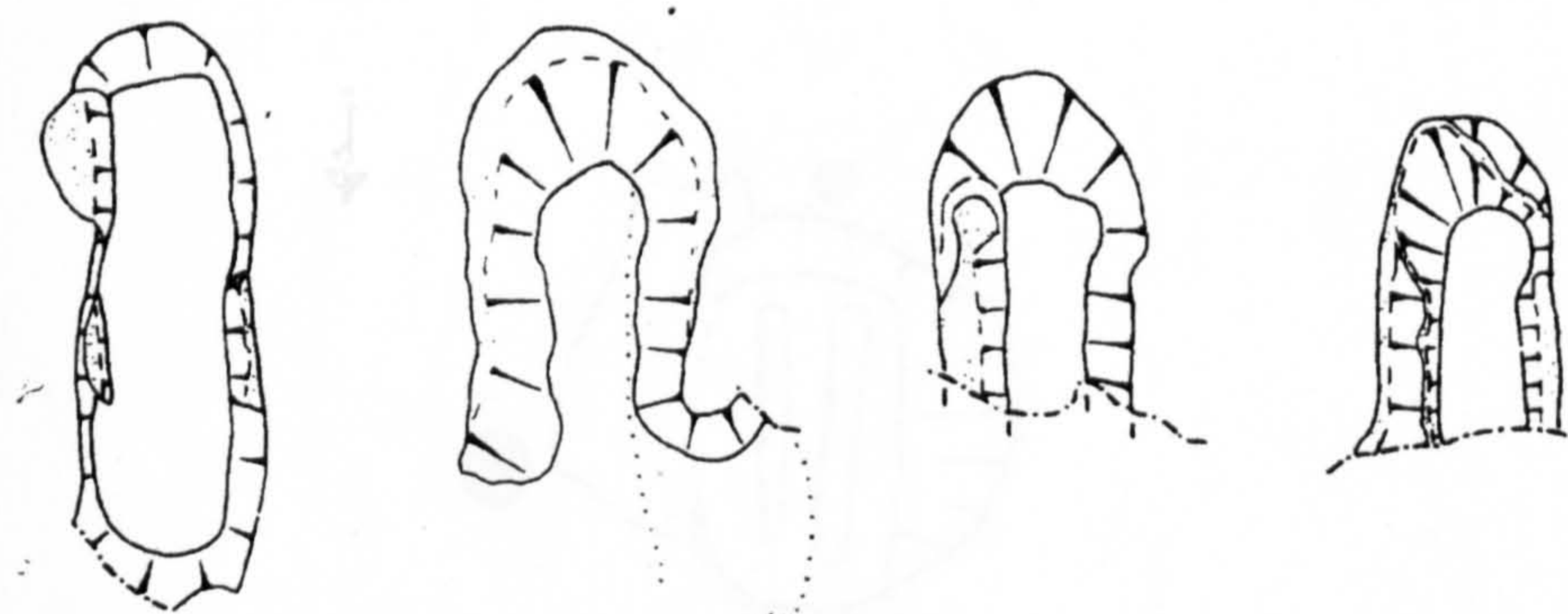


Plan of Kiln 200, Silver Street, Lincoln

from Miles *et al.* 1989:188

L.A. Symonds 1999

Figure 38



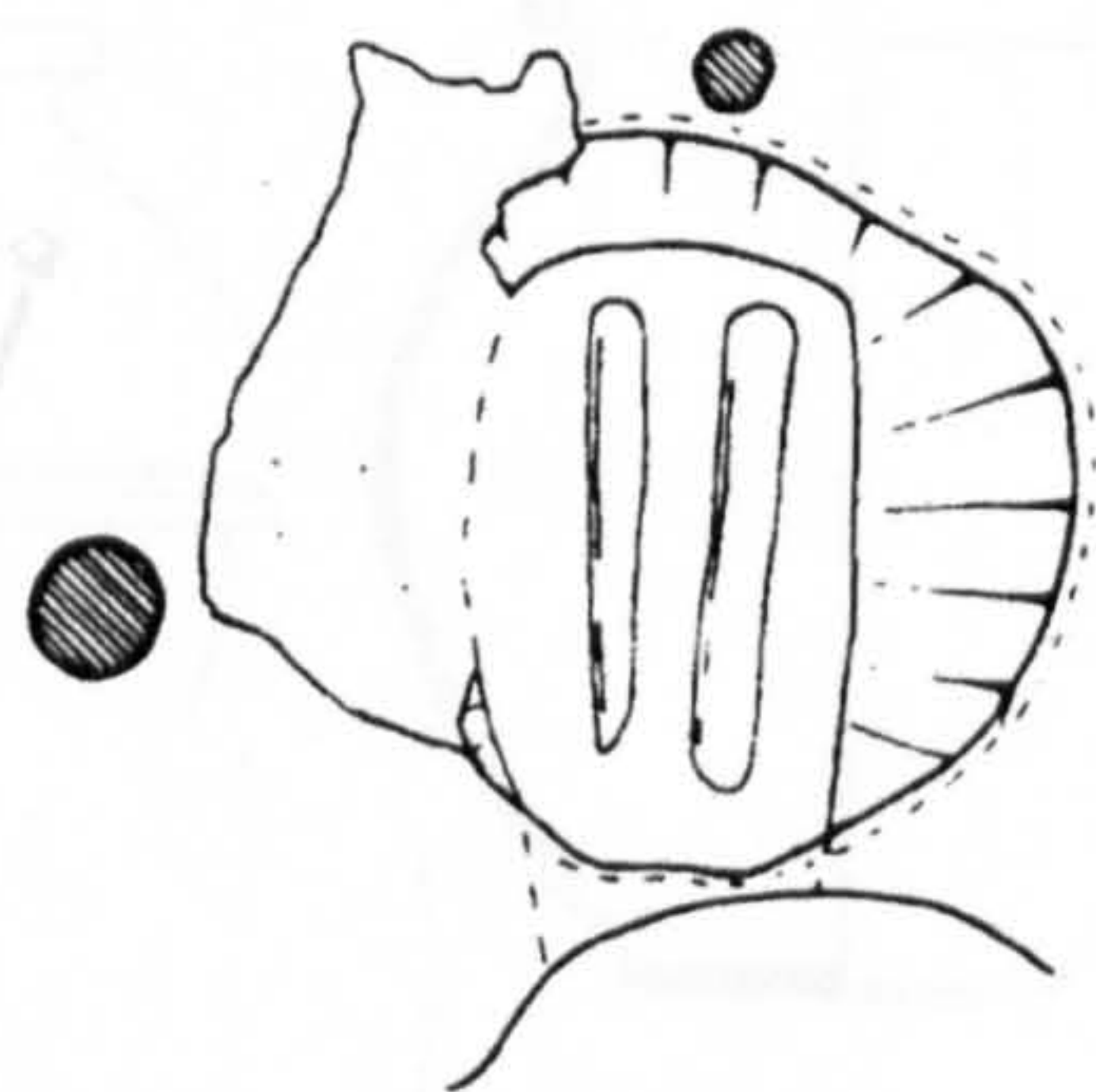
0 ————— 2m

The kiln at Stamford Castle, Stamford

from Kilmurry 1980:335

L.A. Symonds 1999

Figure 39

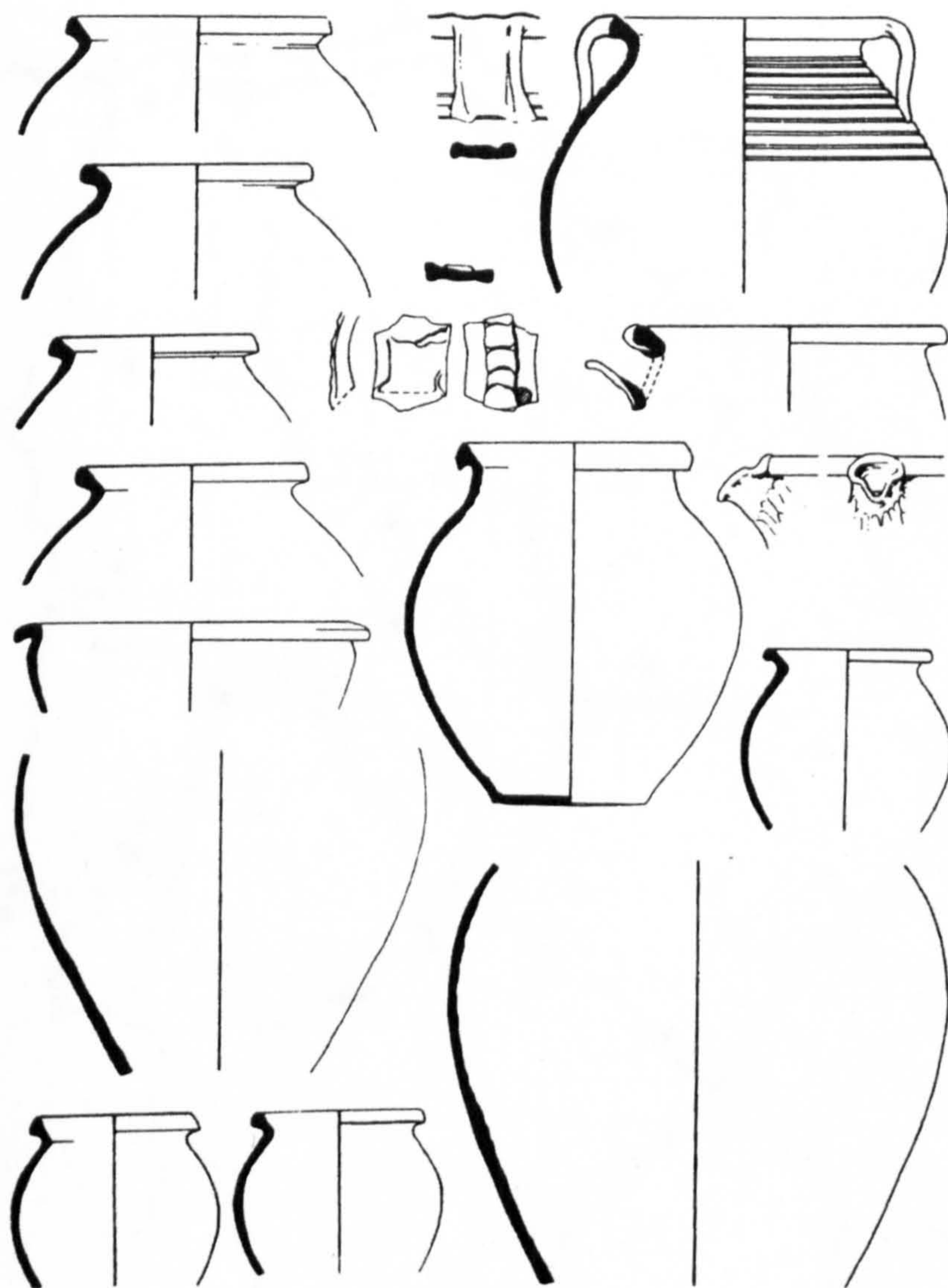


0 ————— 2m

The kiln at Wharf Road, Stamford

from Kilmurry 1980: 33

L.A. Symonds 1999

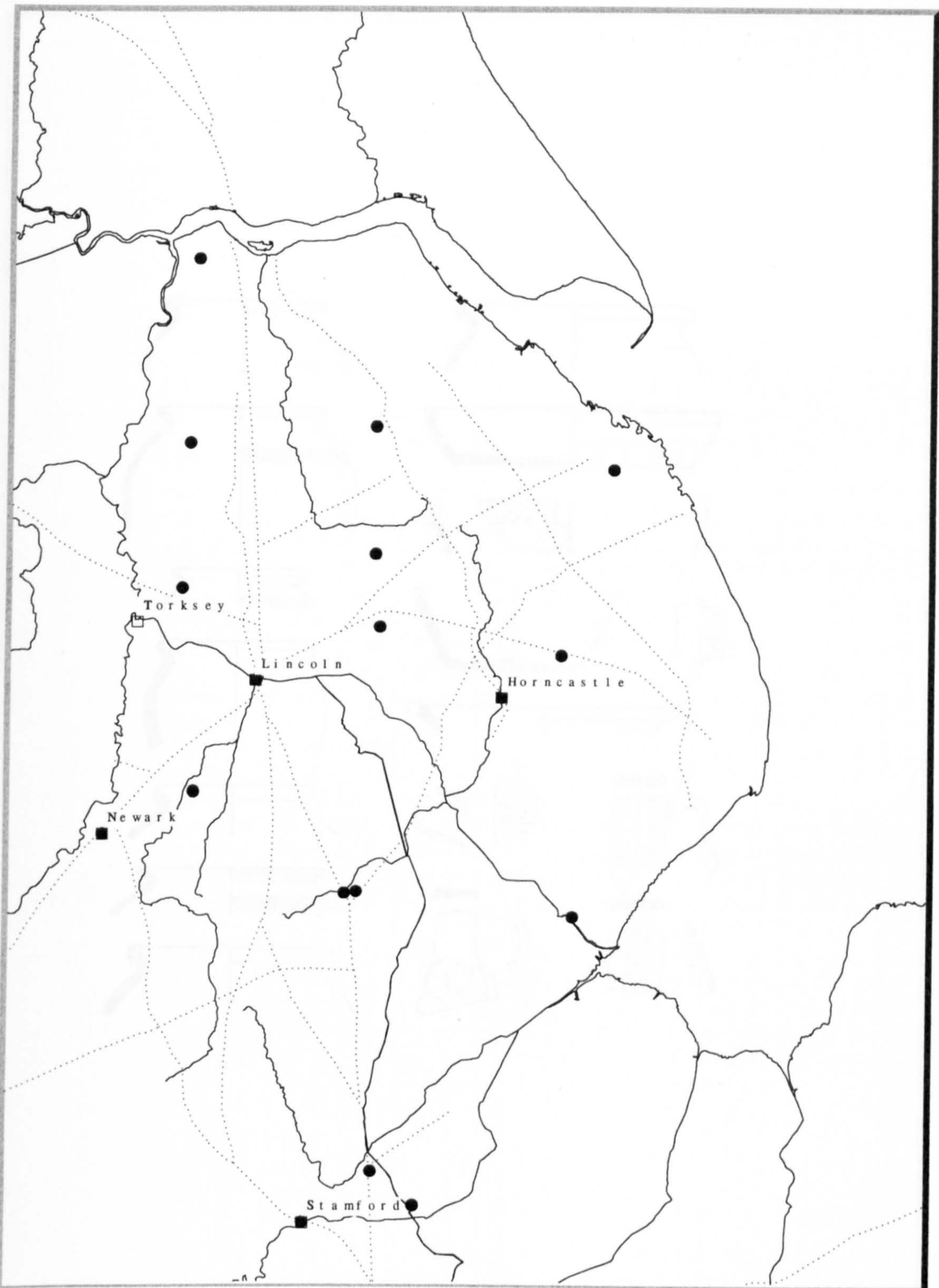


Stamford wares, Castle kiln

from Kilmurry 1980:35

L.A. Symonds 1999

Figure 41



Distribution of EST in Lincolnshire

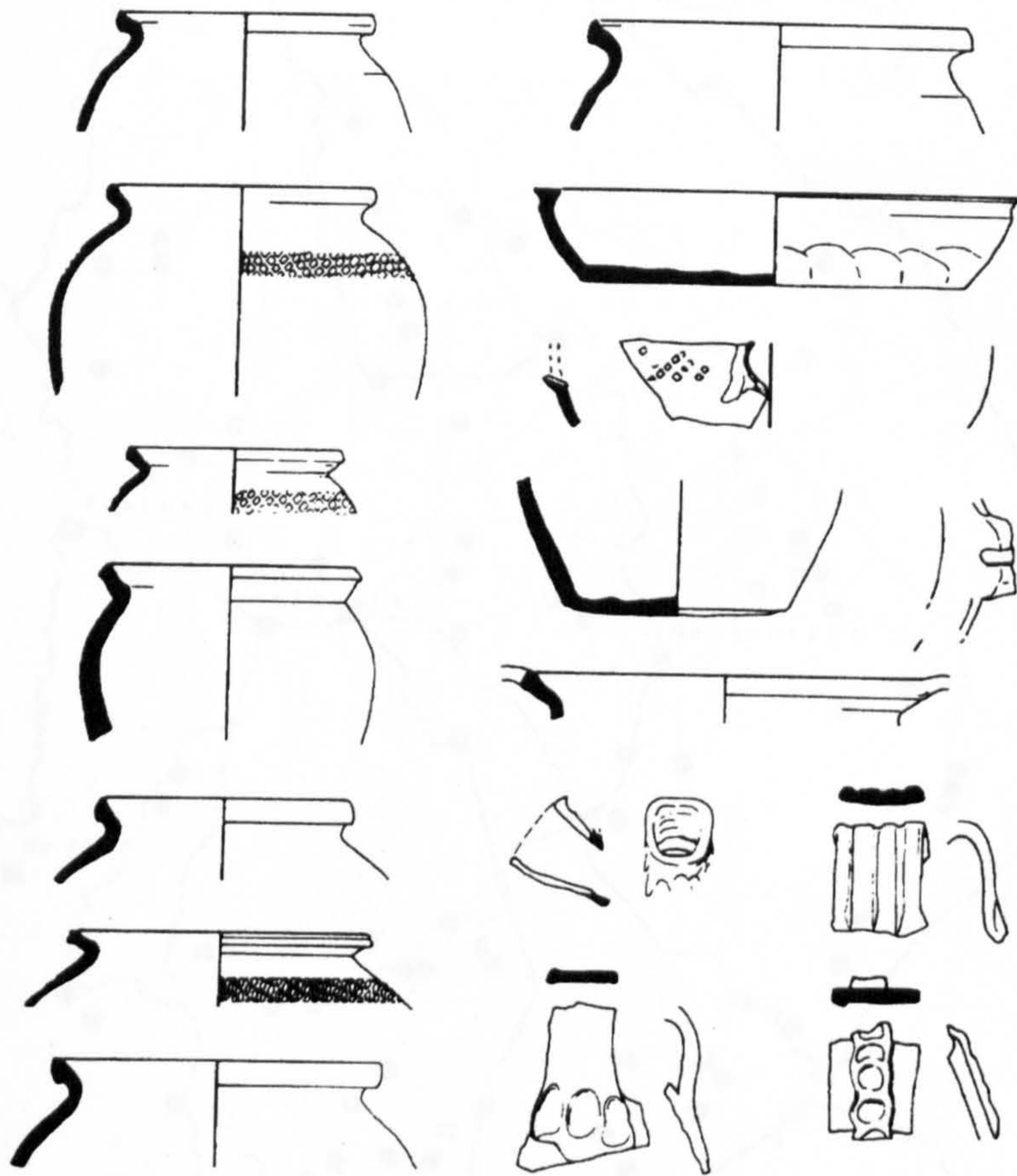
Sites derived from Vince and Young 1991

Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999



Figure 42

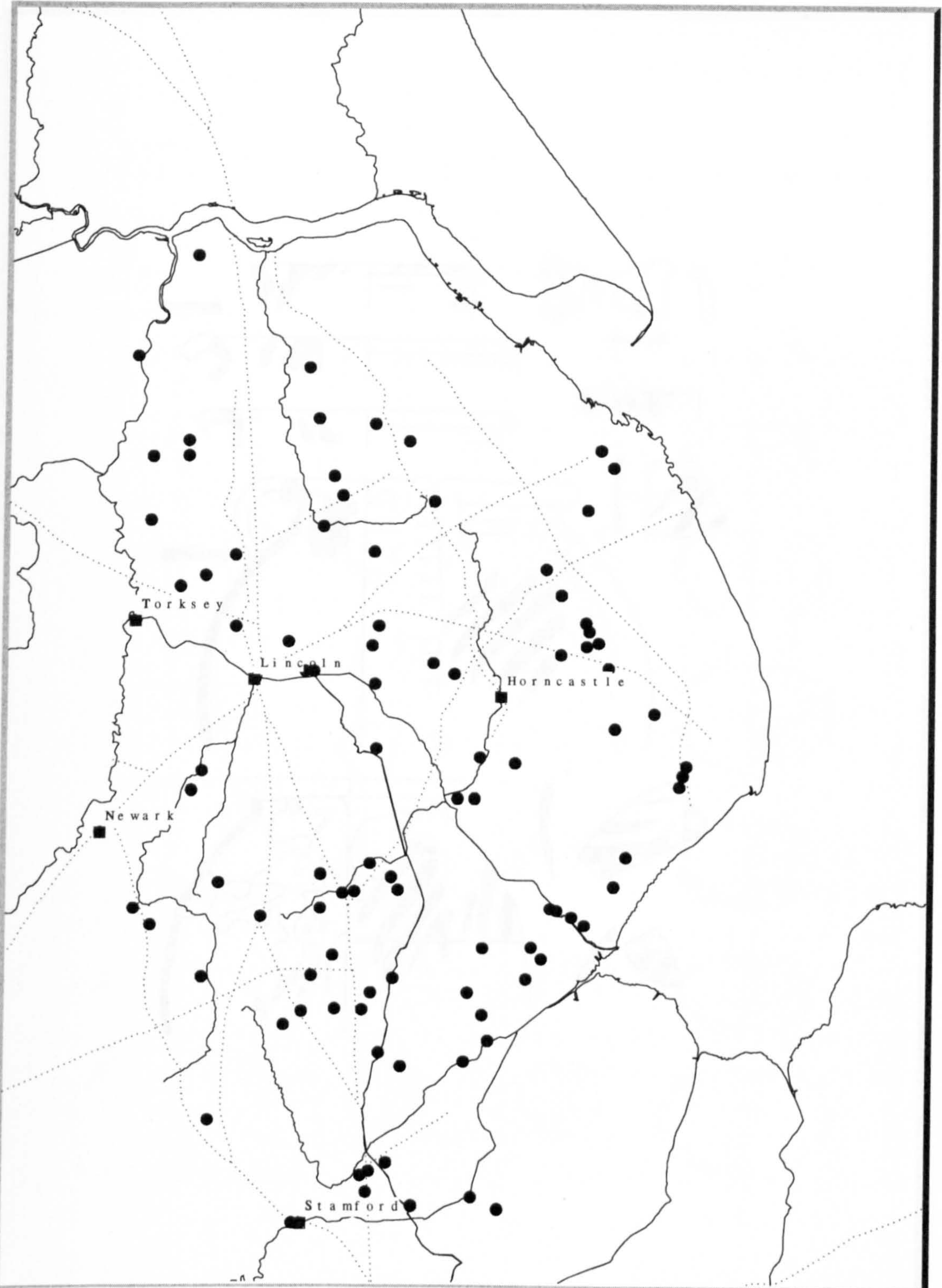


Stamford wares, Wharf Road

Kilmurry 1980 : 47

L.A. Symonds 1999

Figure 43



Distribution of ST in Lincolnshire

Sites derived from Vince and Young 1991

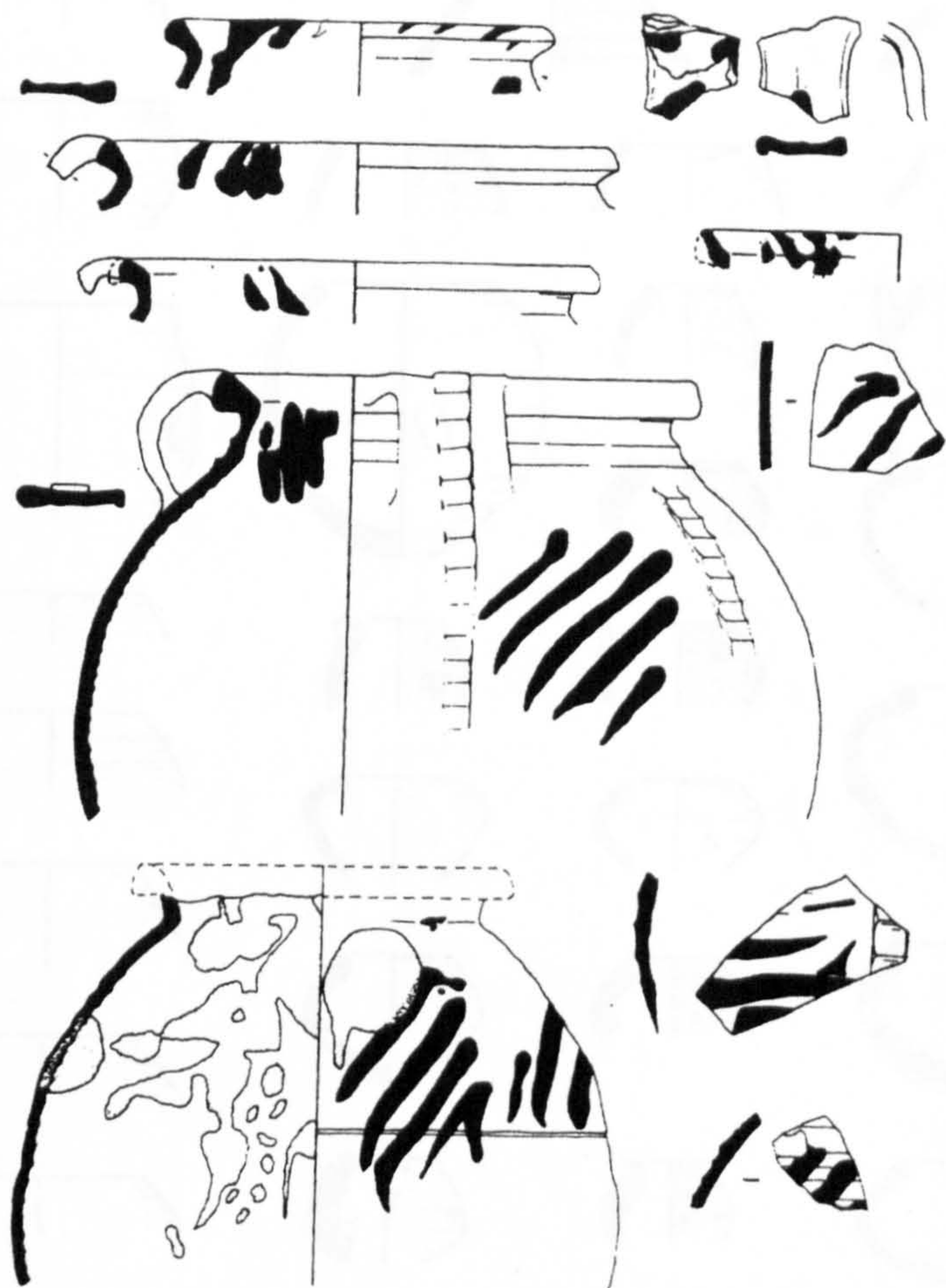
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999

0  50 km



Figure 44

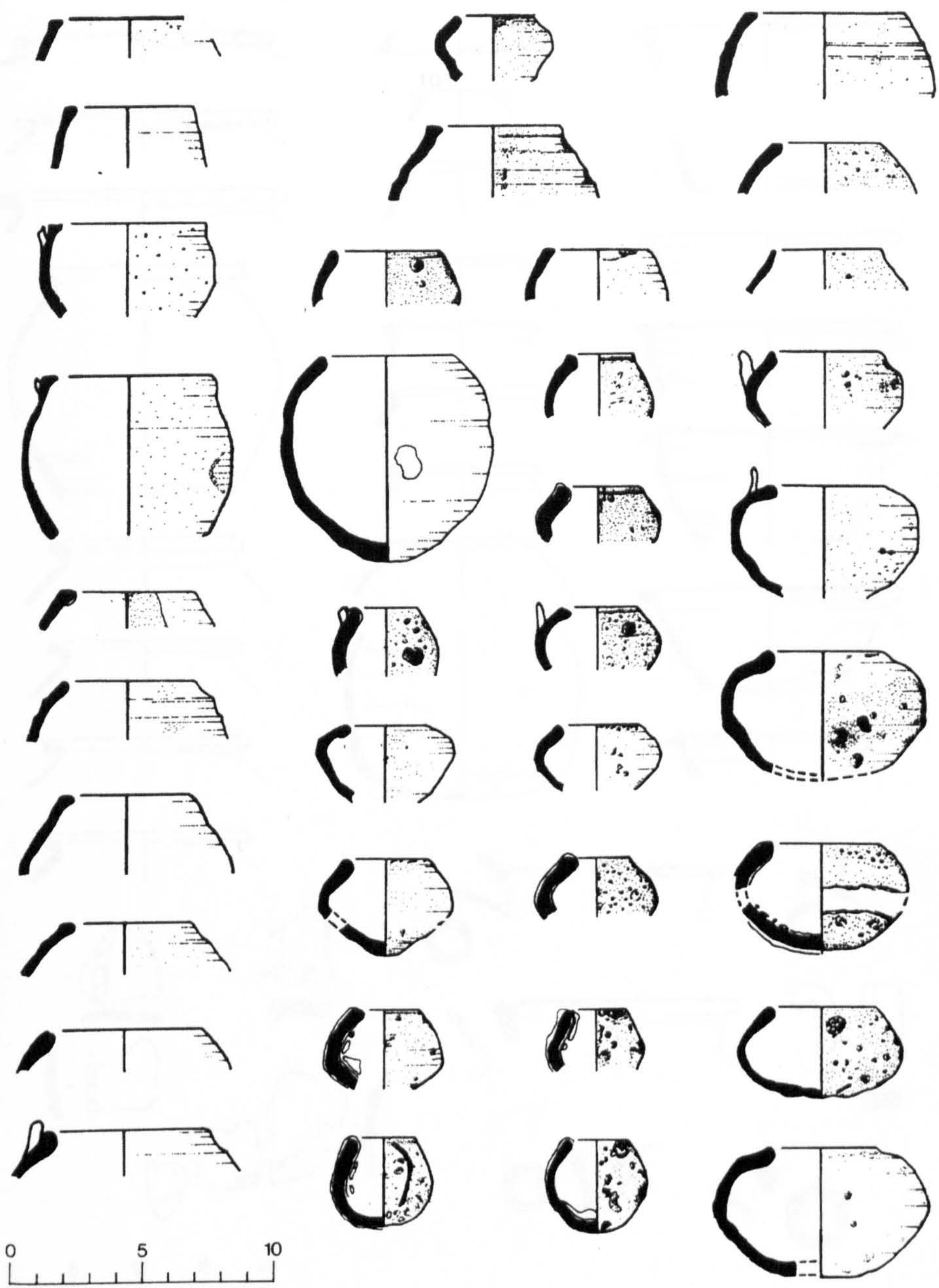


Red Painted Stamford ware

from Kilmurry 1980: 37

L.A. Symonds 1999

Figure 45

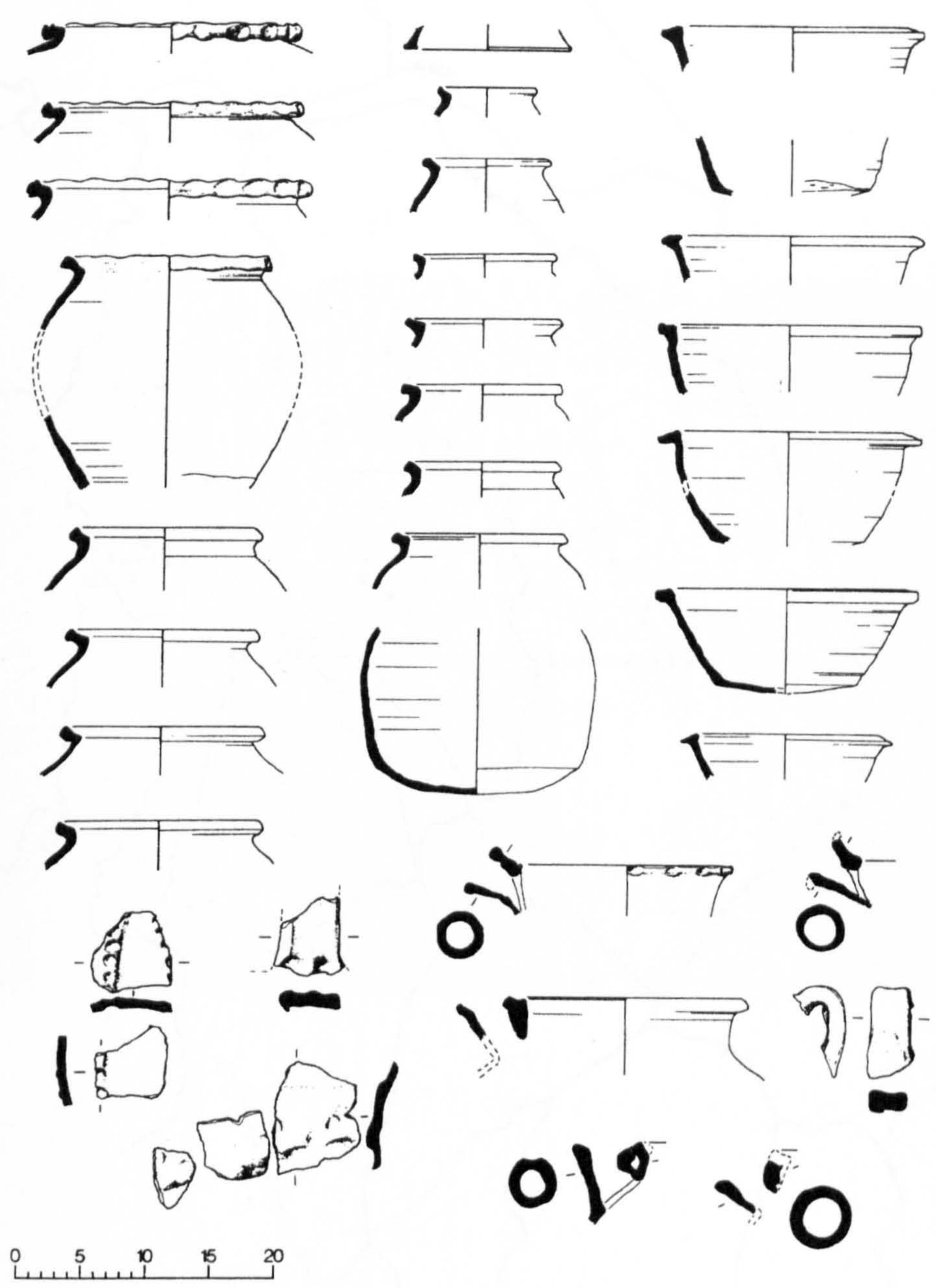


Stamford Crucibles

from Adams Gilmour 1988

L.A. Symonds 1999

Figure 46

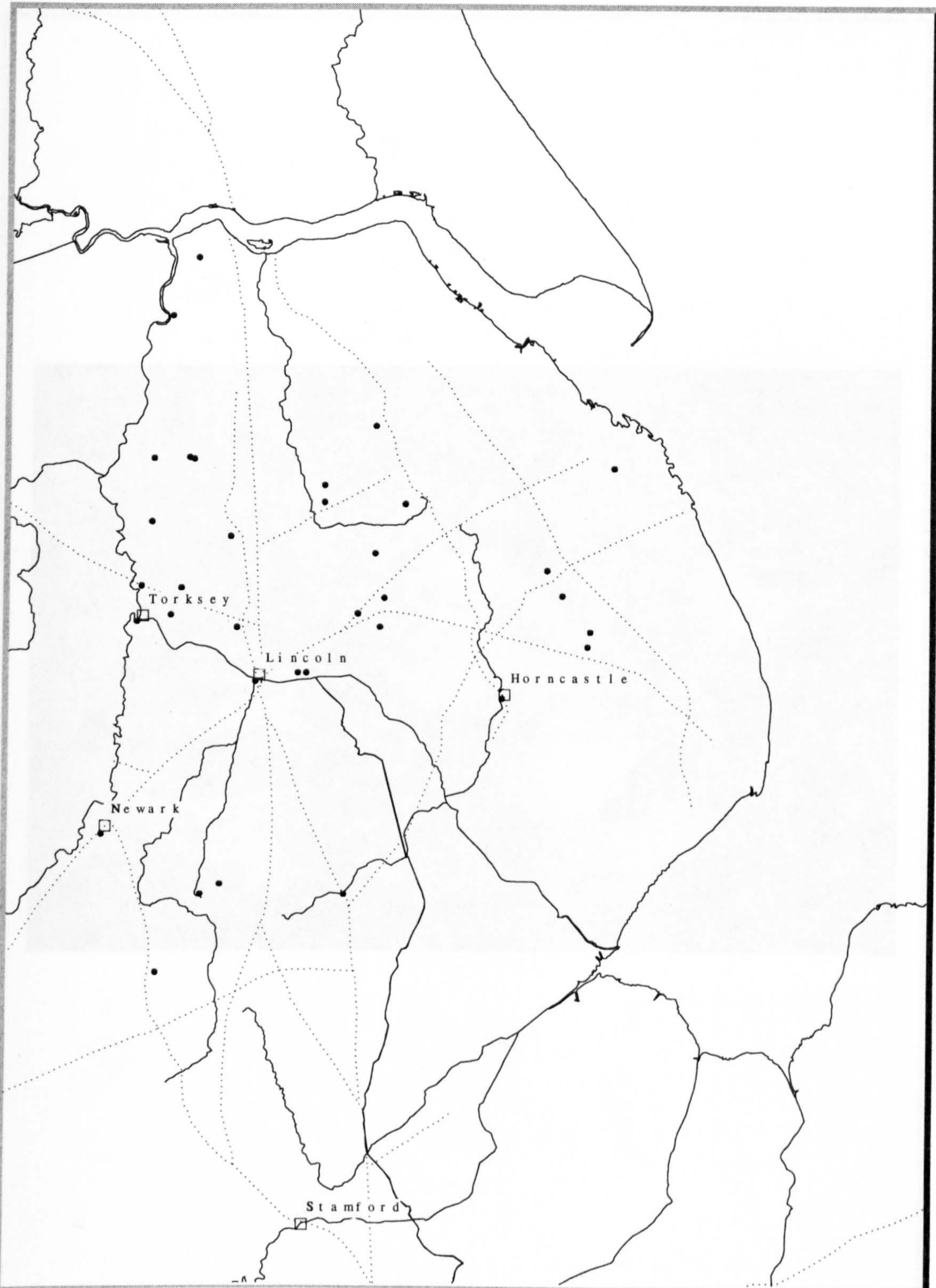


Torksey ware

from Adams Gilmour 1988: 121

L.A. Symonds 1999

Figure 47



Distribution of TORK in Lincolnshire

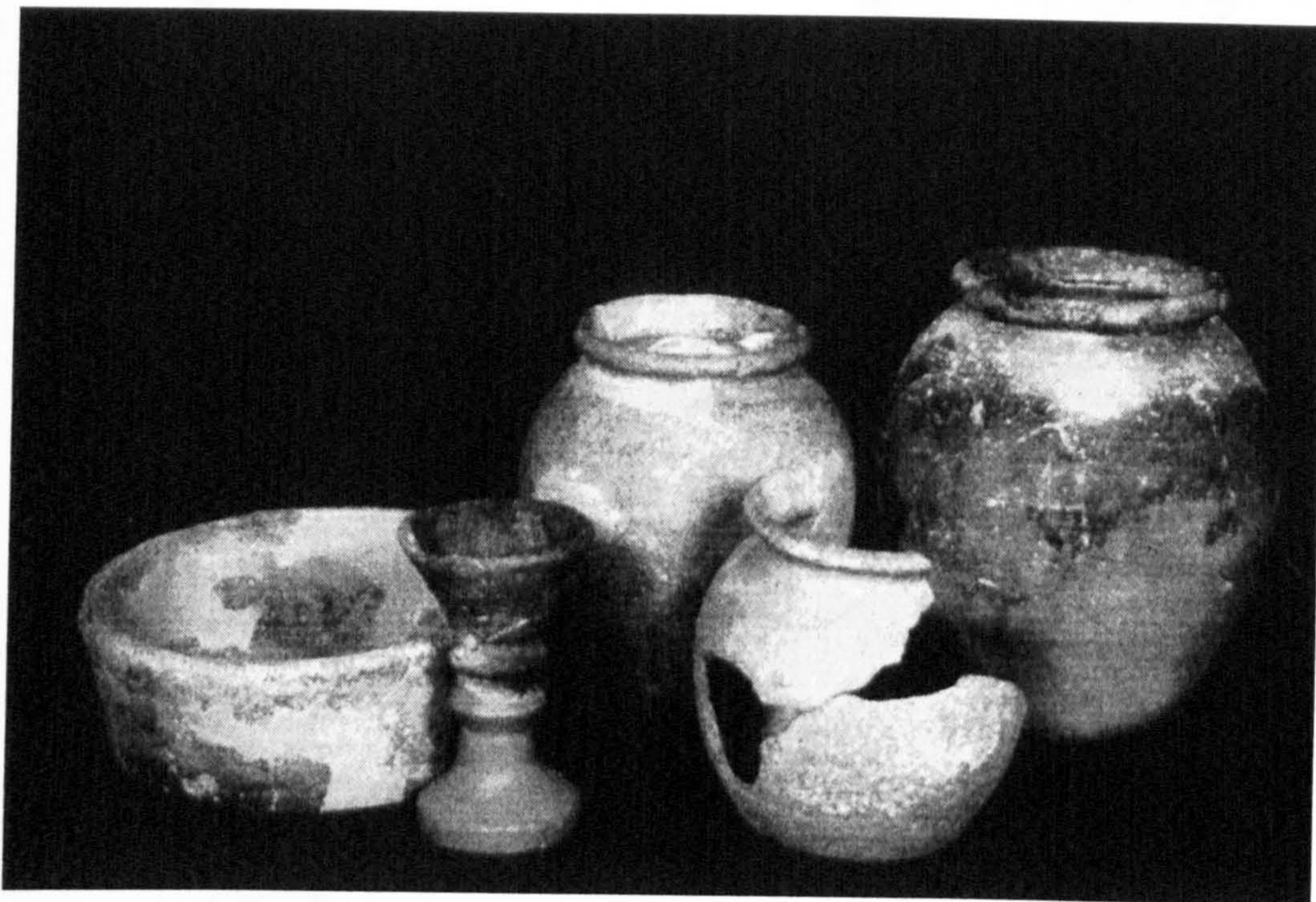
Sites derived from Vince and Young 1991

Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999



Figure 48

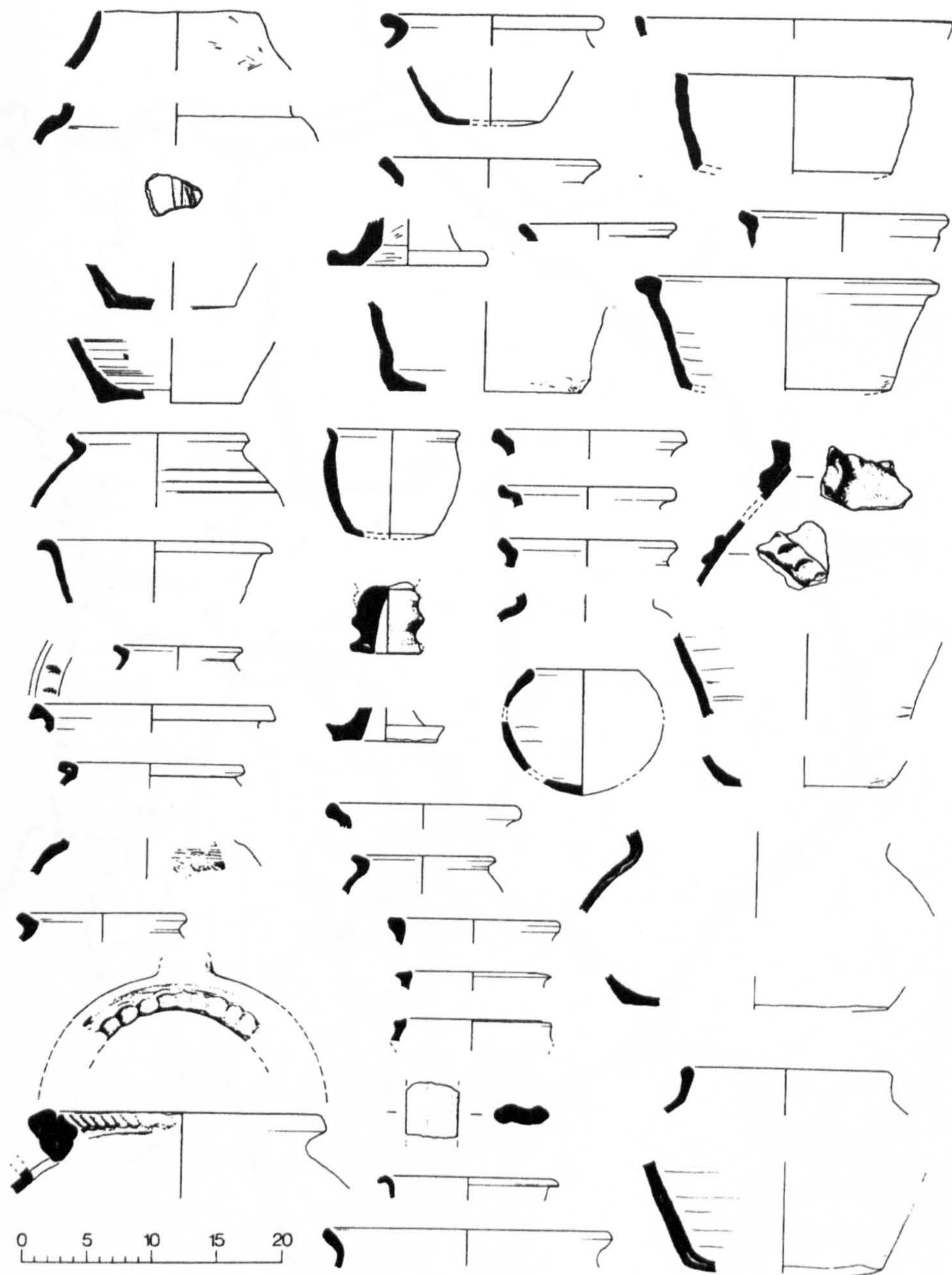


Lincoln wares

From Sawyer 1998: 193

L.A. Symonds 1999

Figure 49

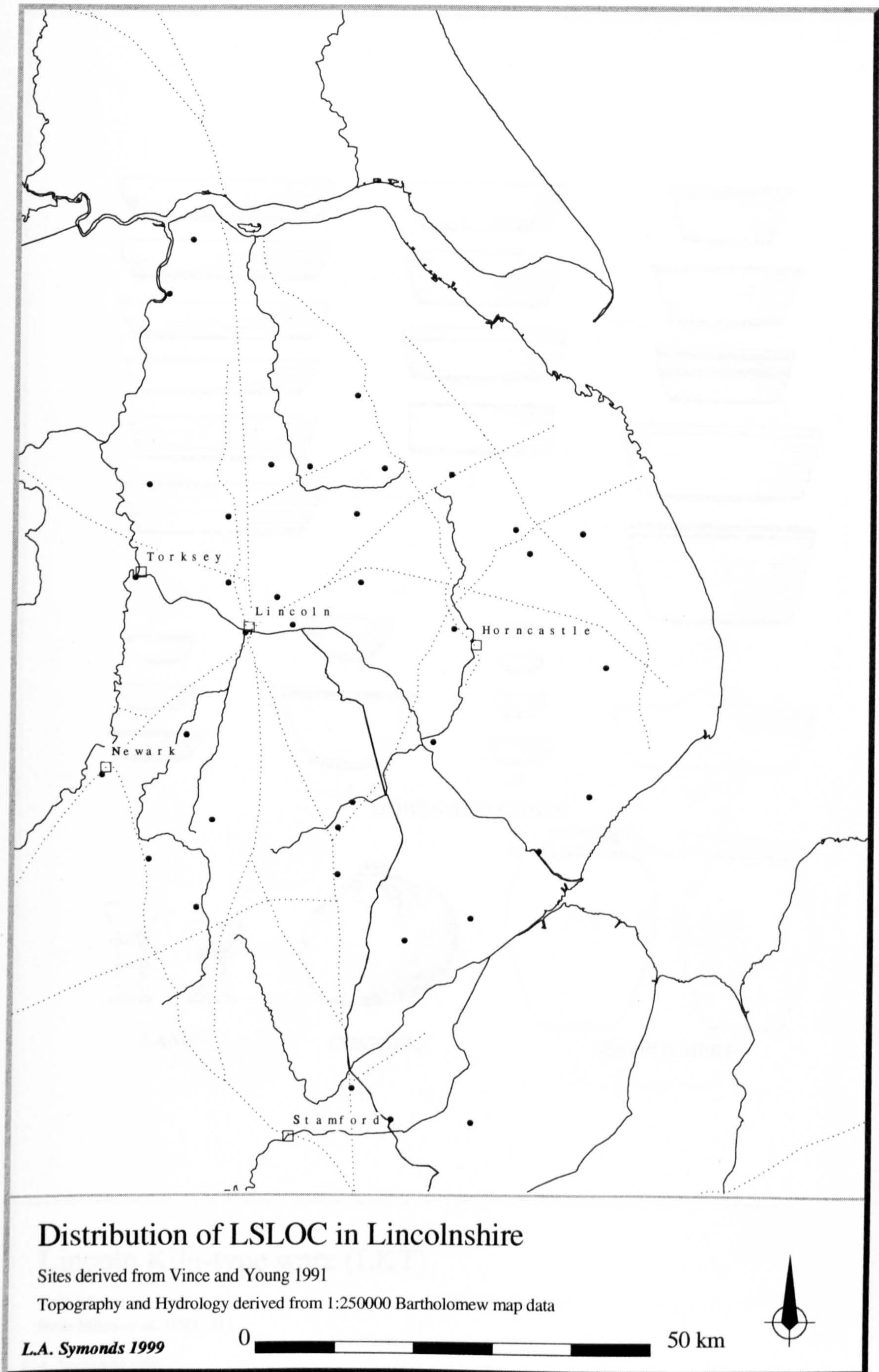


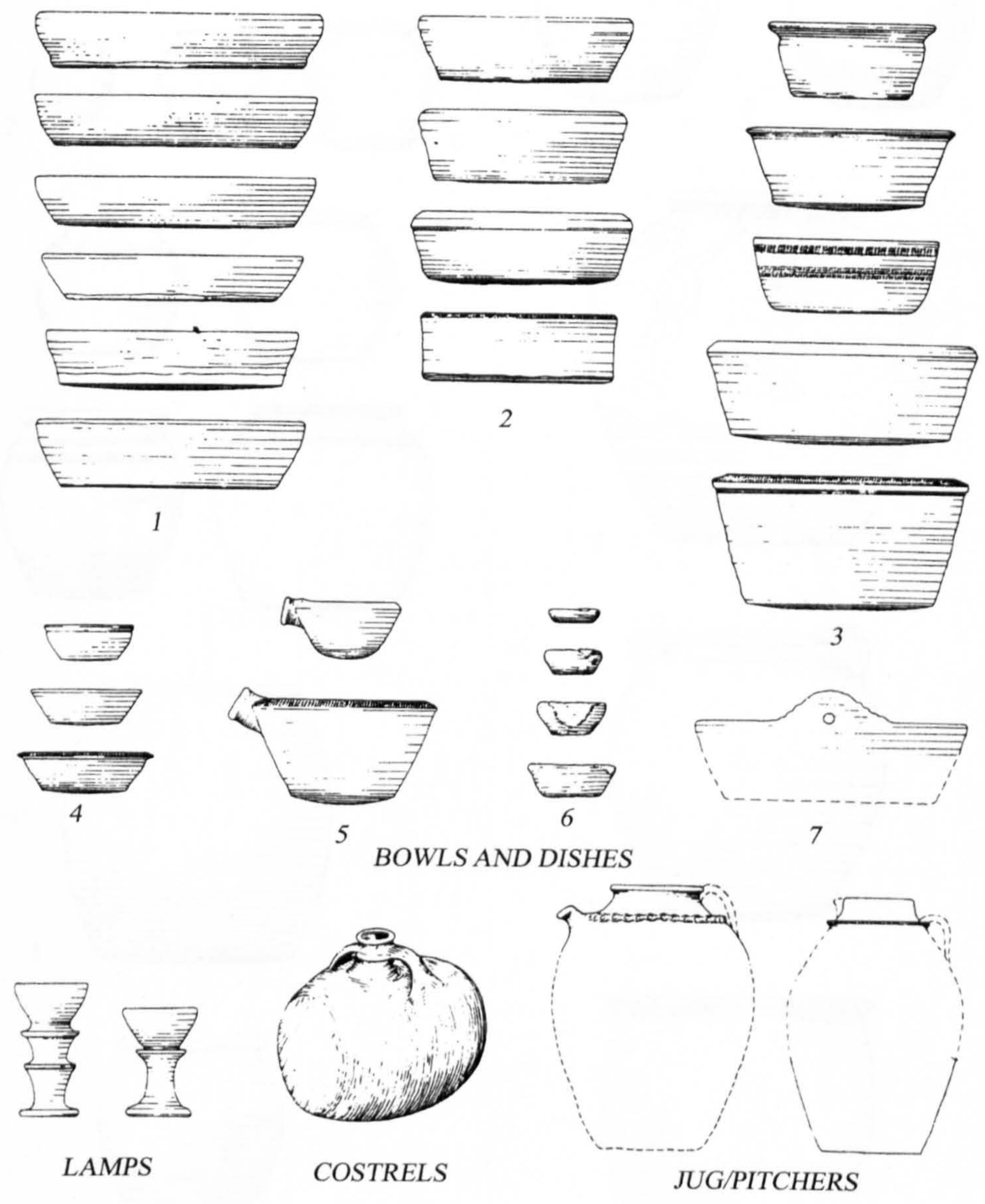
Local Late Saxon wares (LSLOC)

from Adams Gilmour 1988: 136

L.A. Symonds 1999

Figure 50





BOWLS AND DISHES

LAMPS

COSTRELS

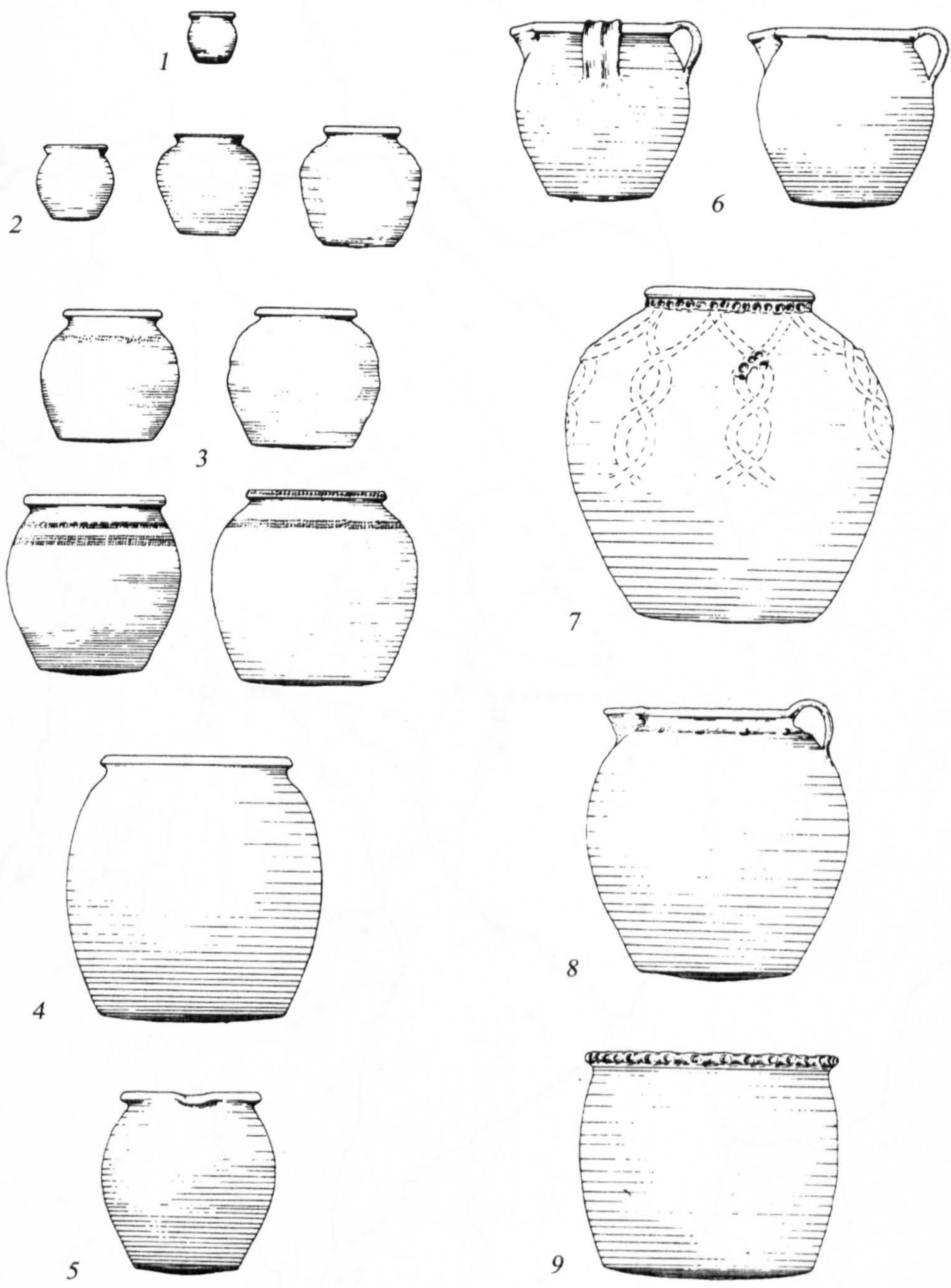
JUG/PITCHERS

Lincoln Kiln-type ware (LKT)

Bowls, dishes and other forms
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

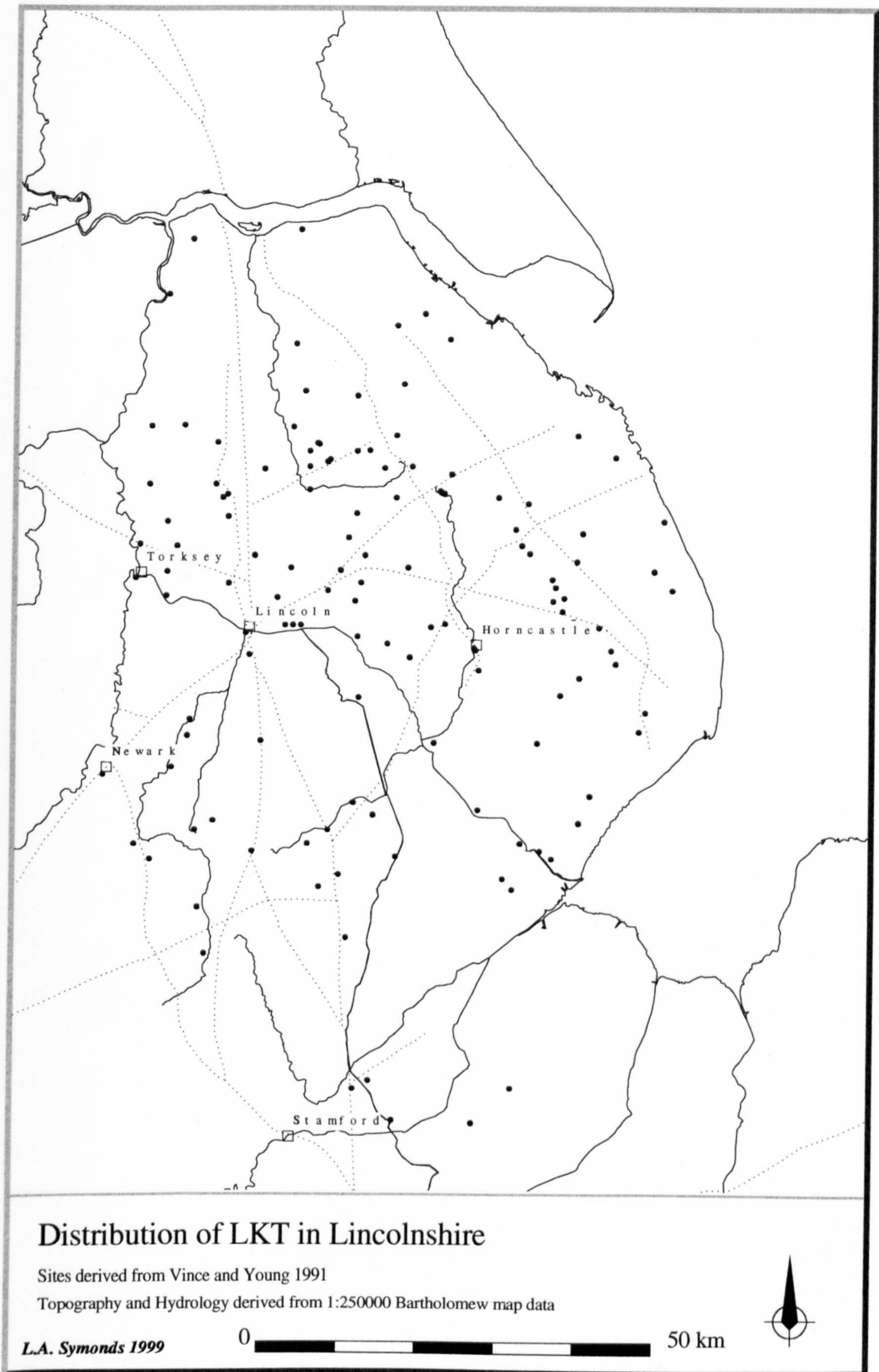
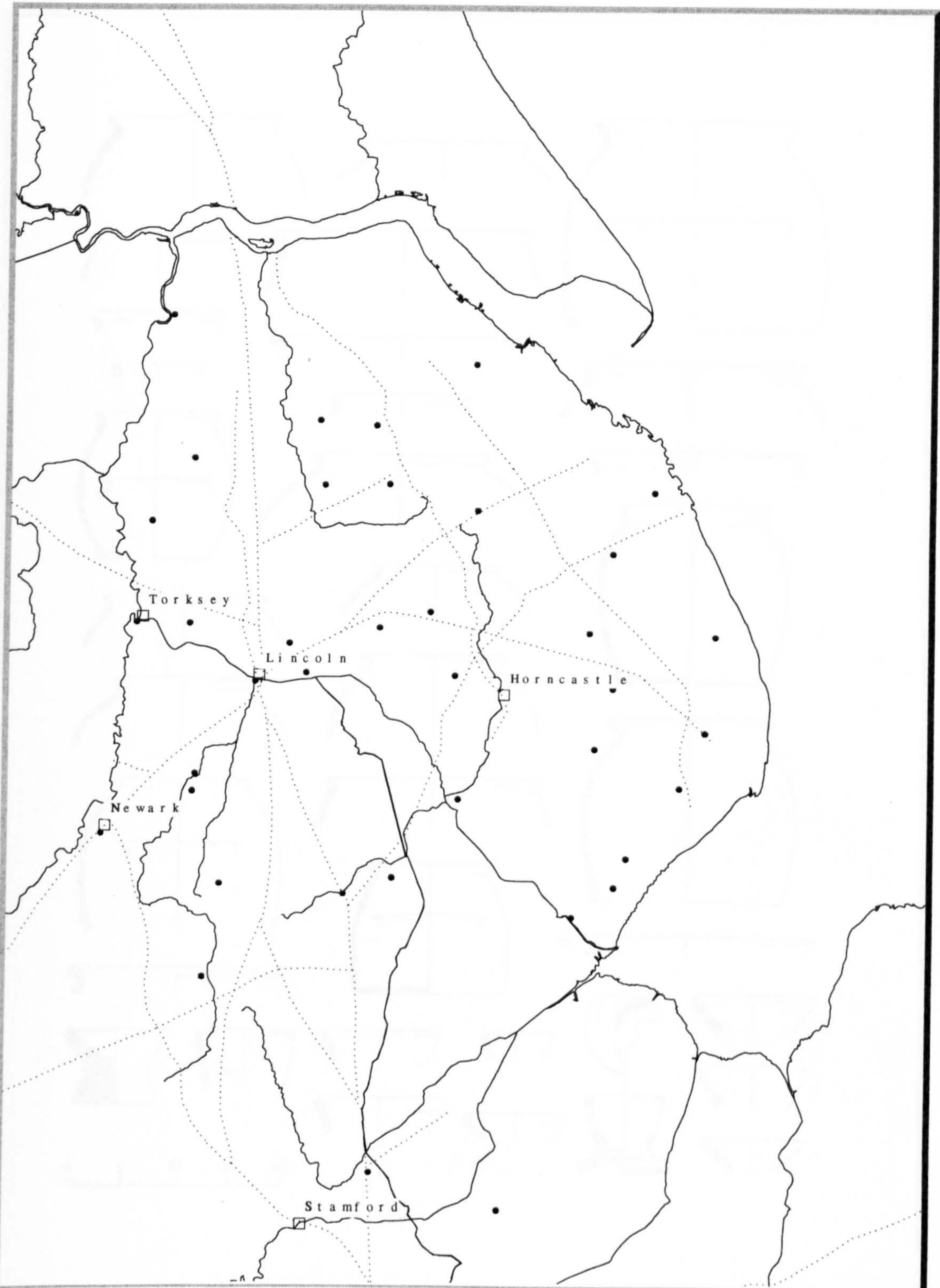


Figure 54



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

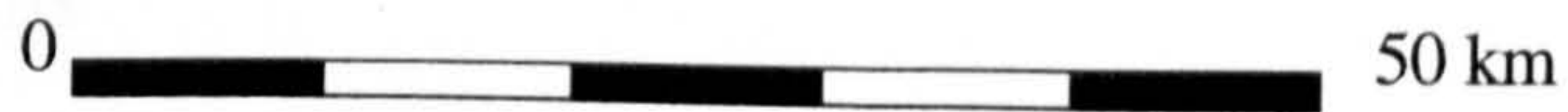
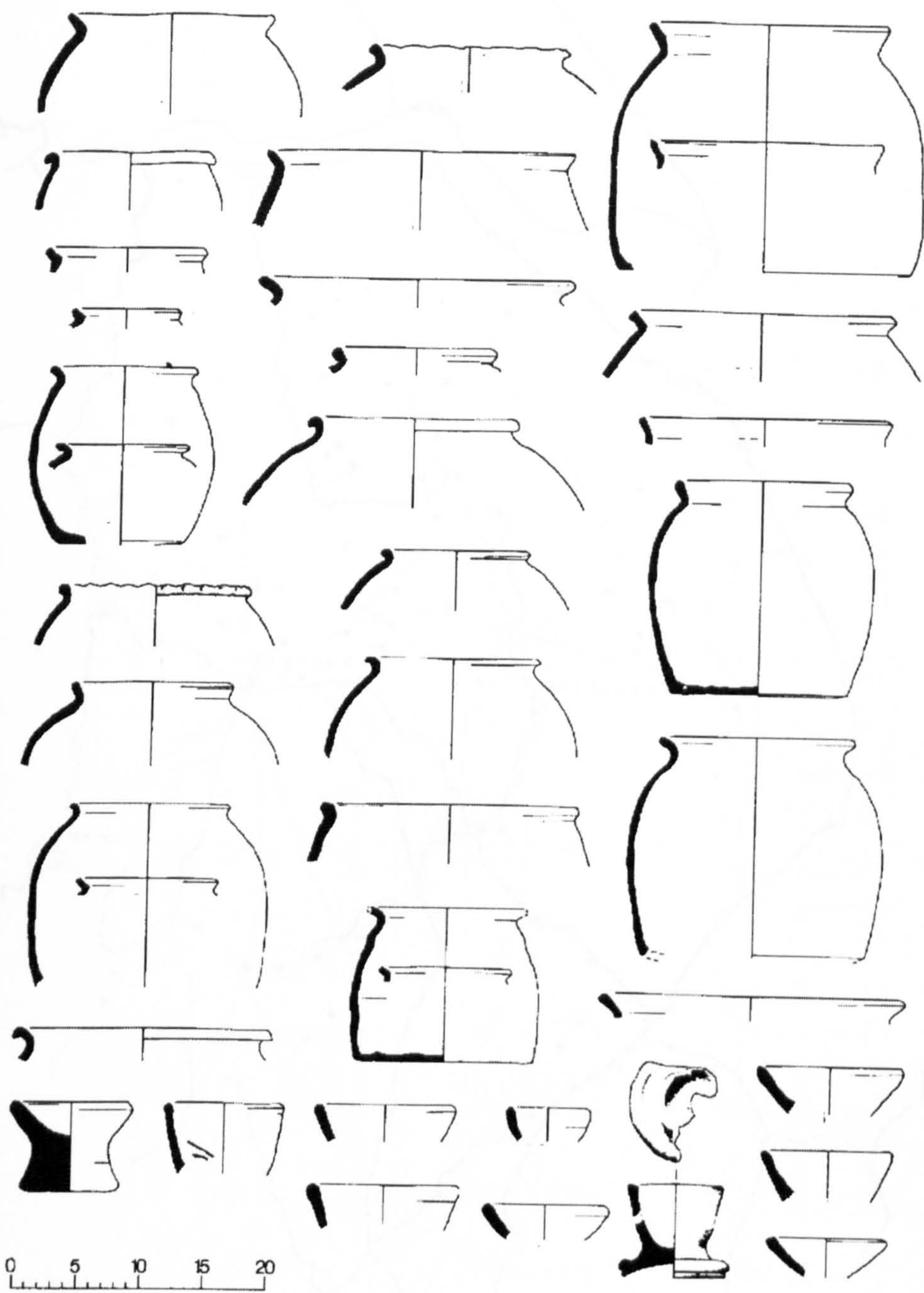


Figure 55

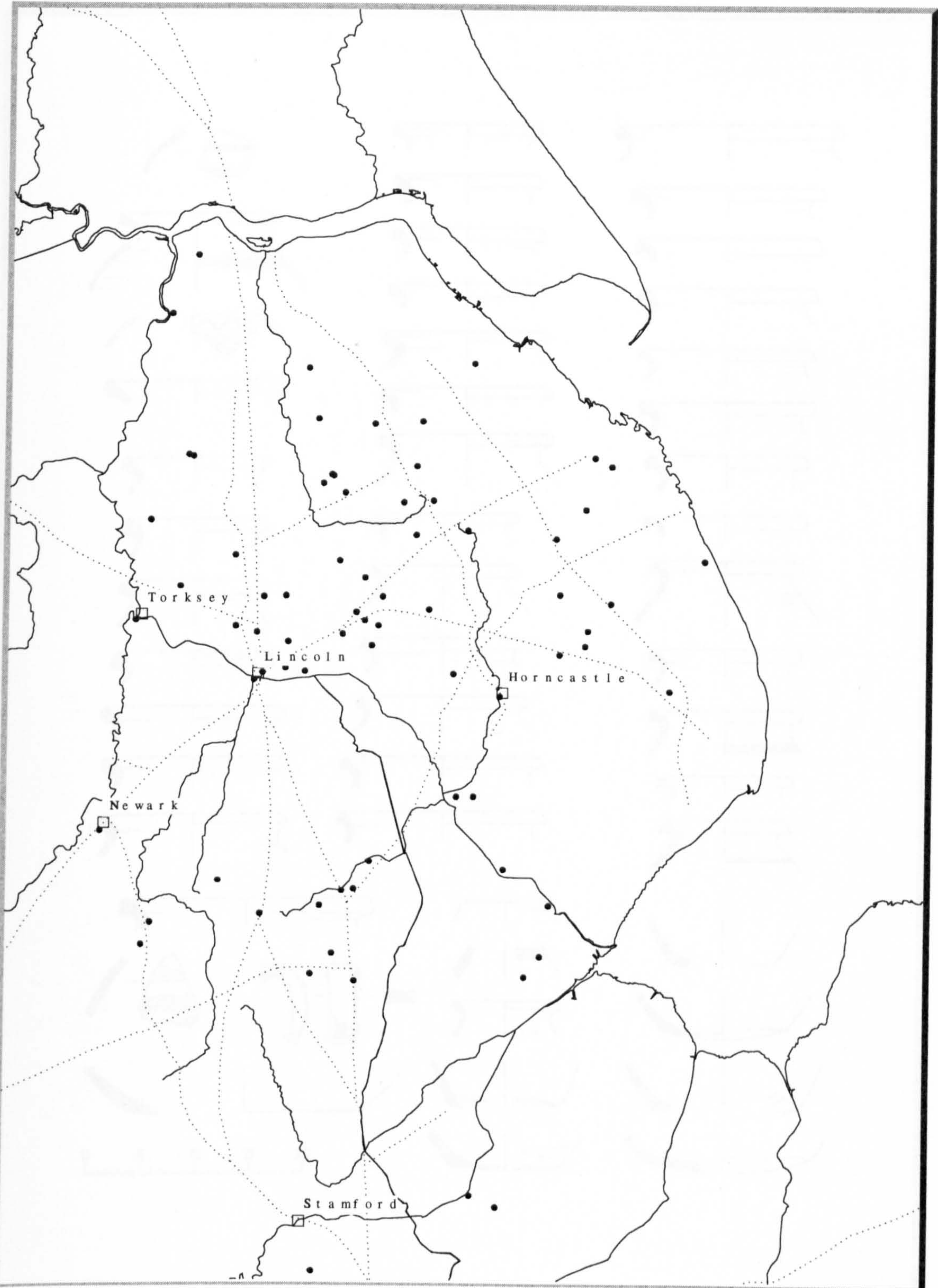


Lincoln Fine-shelled ware (LFS)

from Adams Gilmour 1988: 115

L.A. Symonds 1999

Figure 56



Distribution of LFS in Lincolnshire

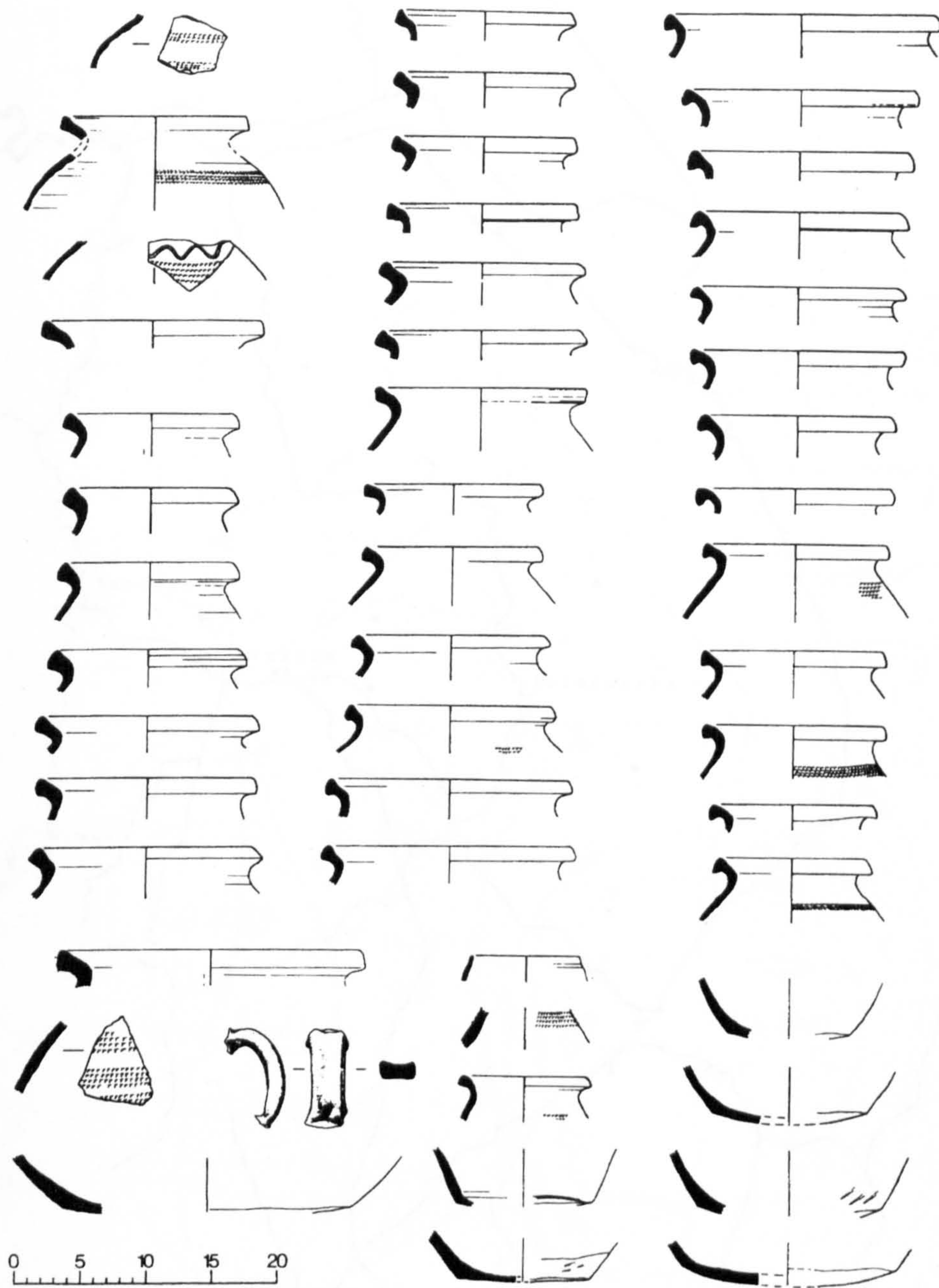
Sites derived from Vince and Young 1991

Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999



Figure 57

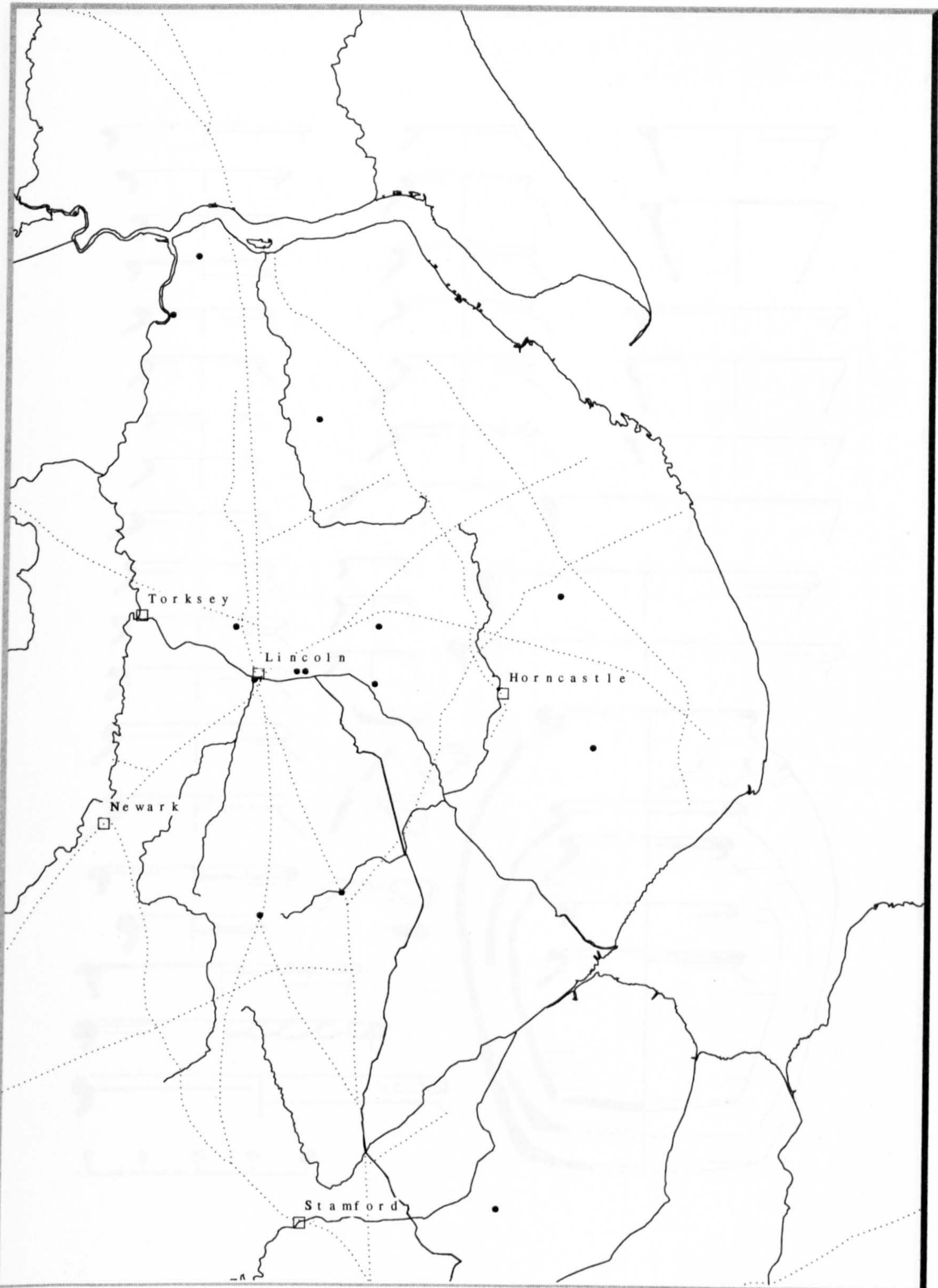


Lincoln Late Saxon Sandy ware (LSLS)

from Adams Gilmour 1988: 103

L.A. Symonds 1999

Figure 58



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

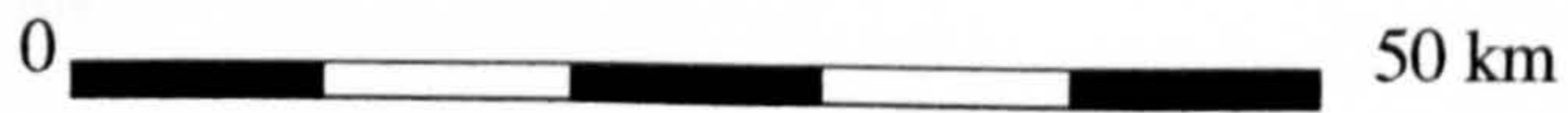
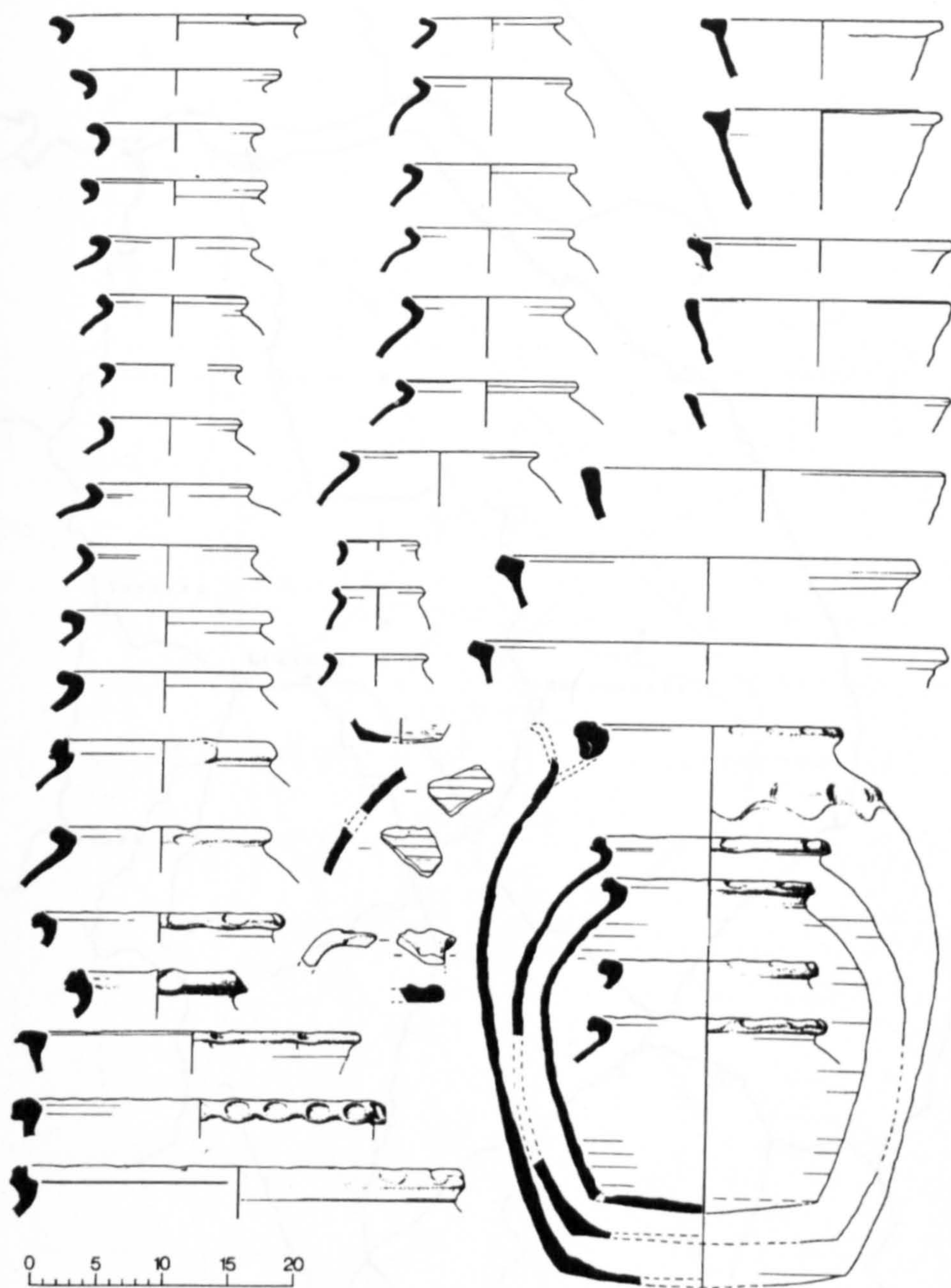


Figure 59

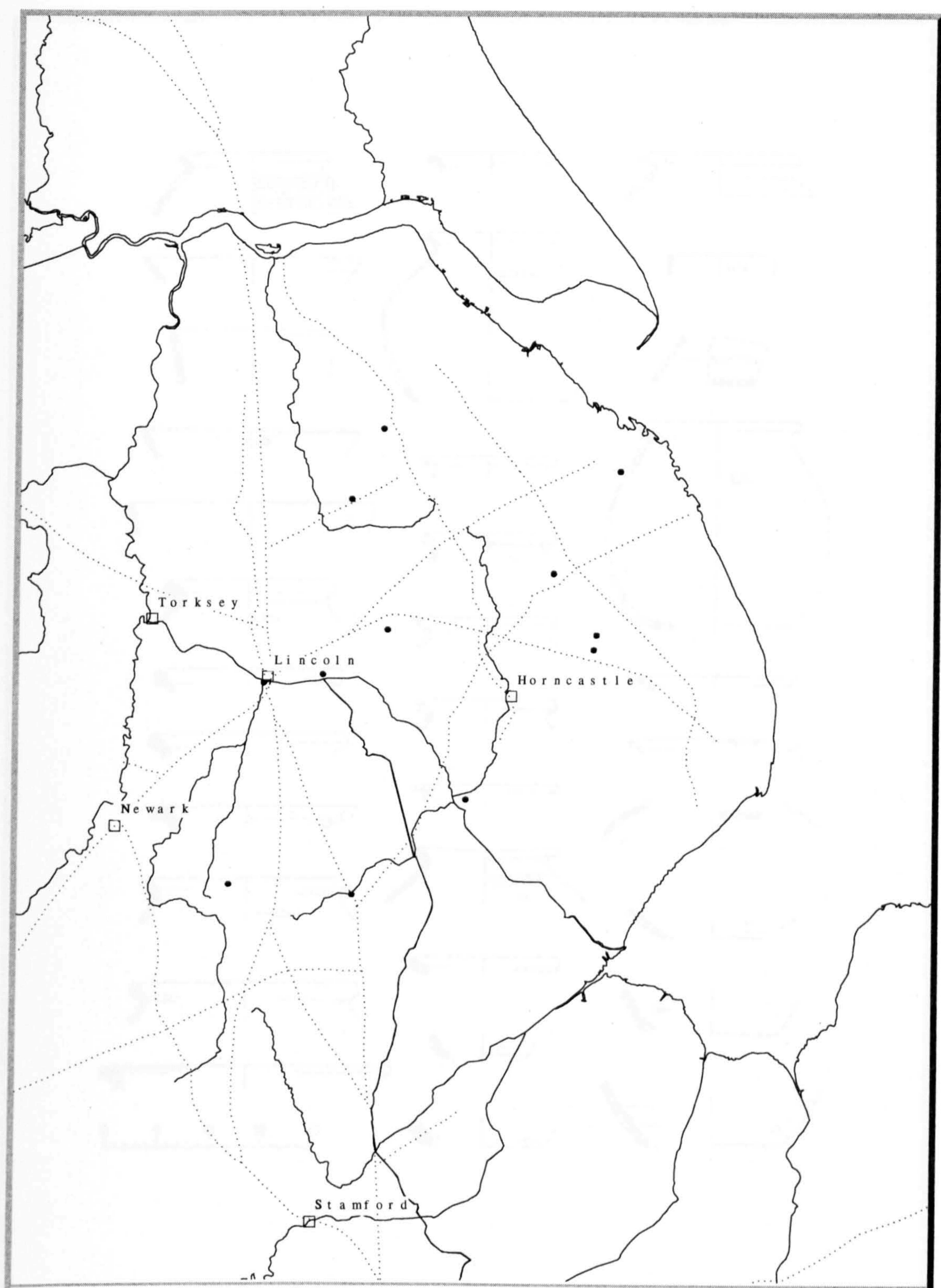


Lincoln Saxo-Norman Sandy ware (SNLS)

From Adams Gilmour 1988: 109

L.A. Symonds 1999

Figure 60



Distribution of SNLS in Lincolnshire

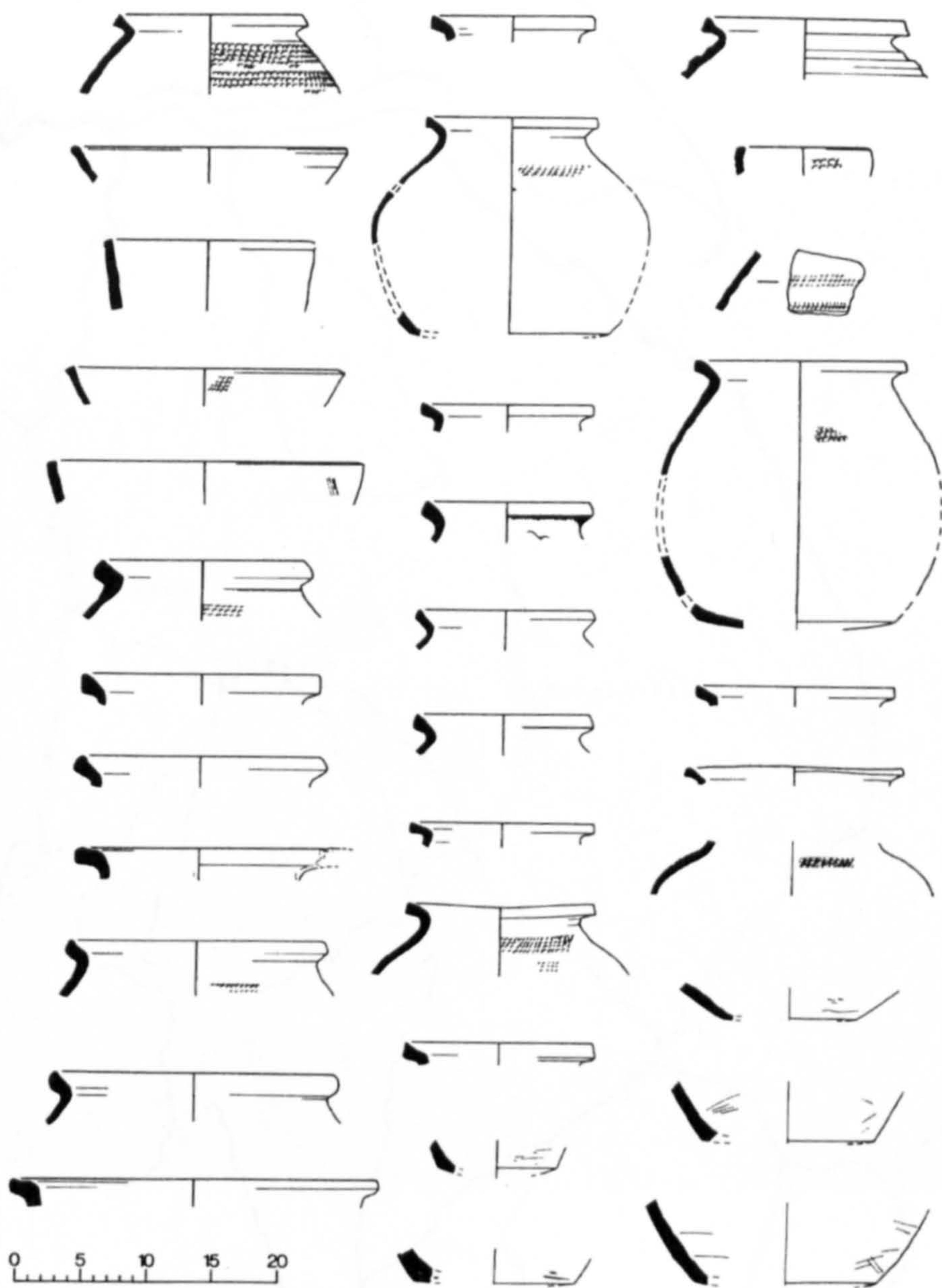
Sites derived from Vince and Young 1991

Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999



Figure 61

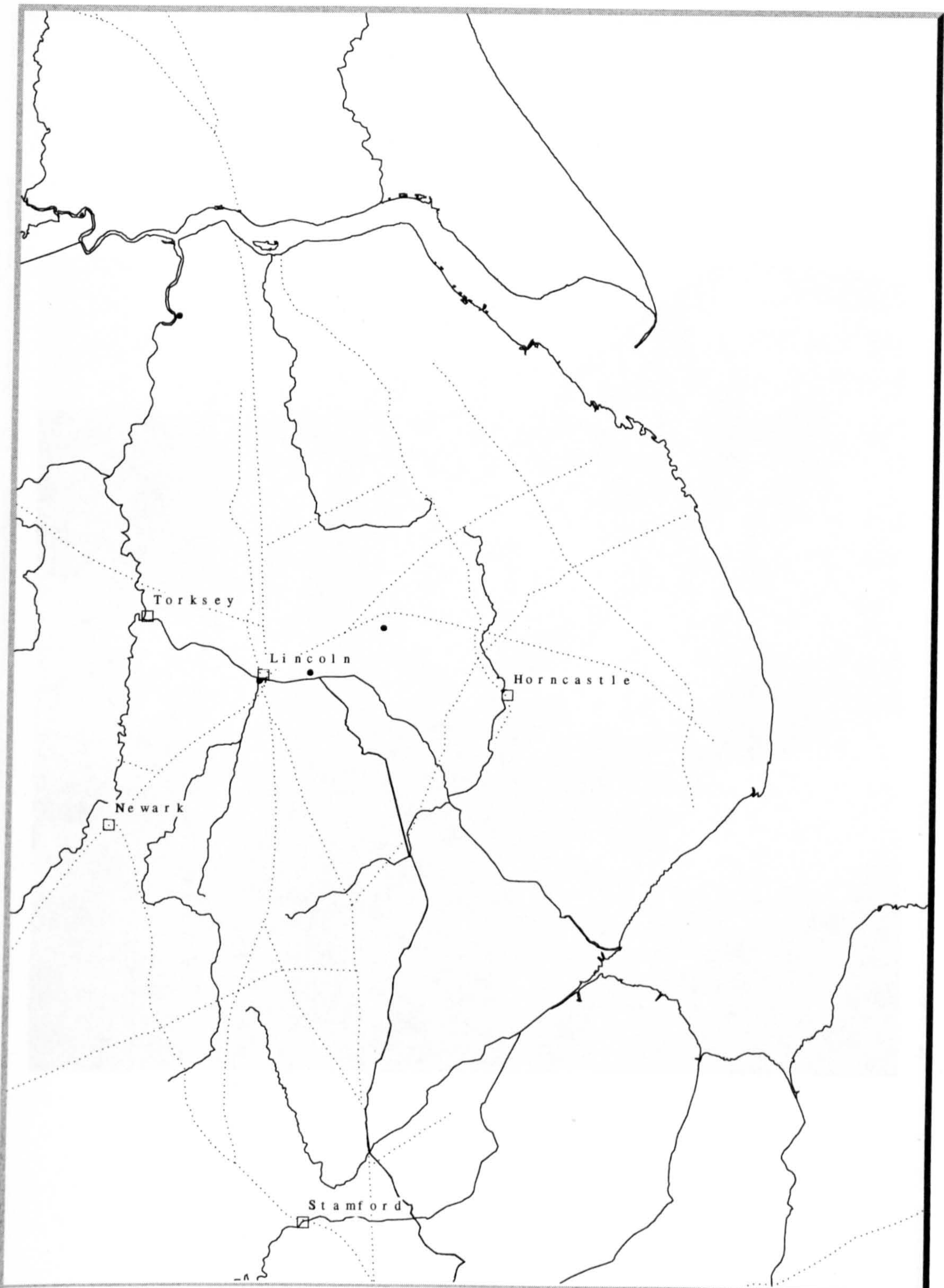


Lincoln Gritty ware (LG)

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



50 km

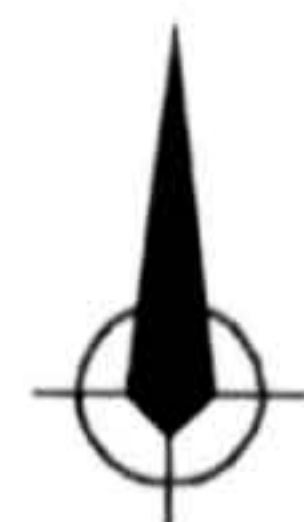
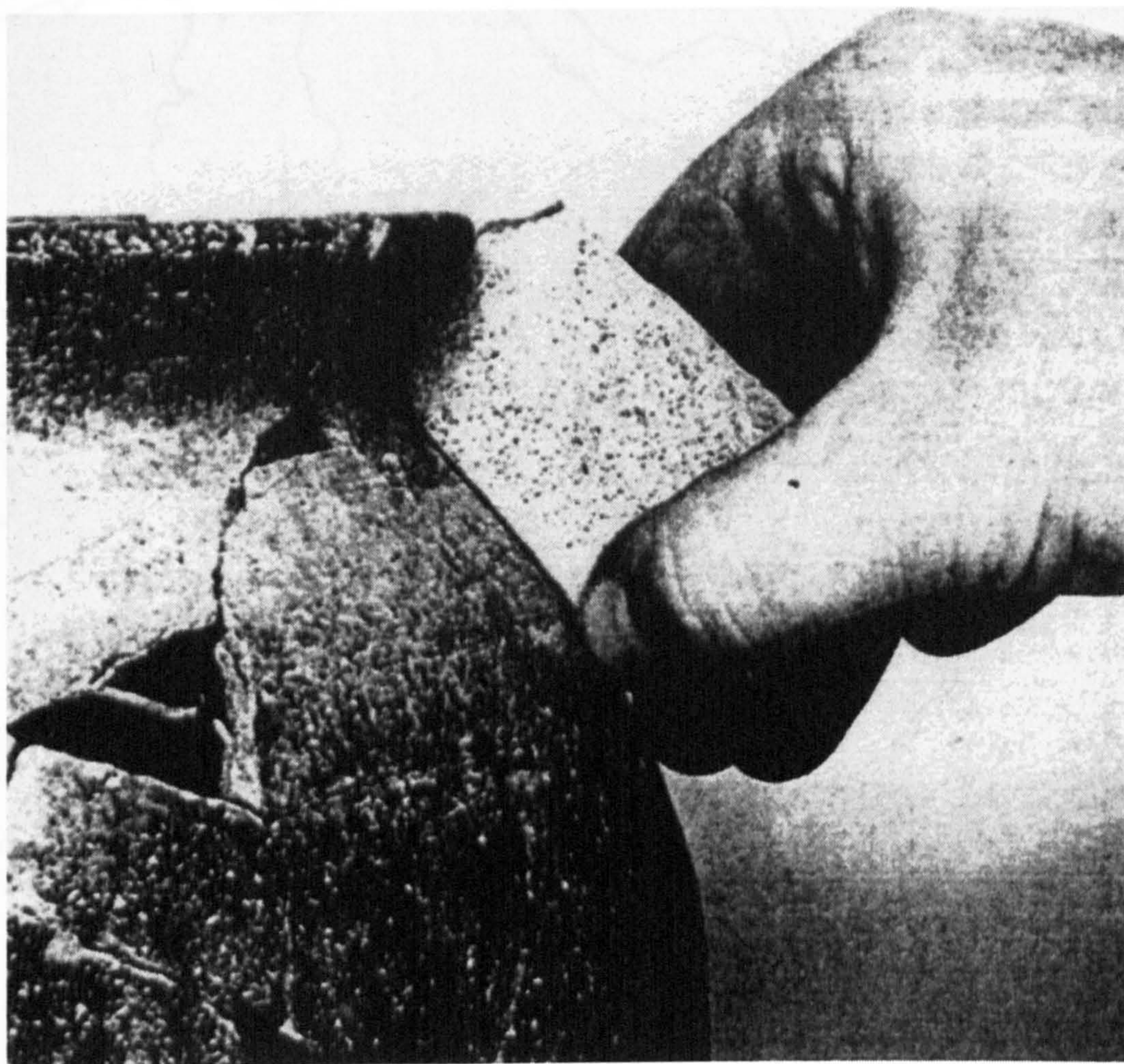


Figure 63

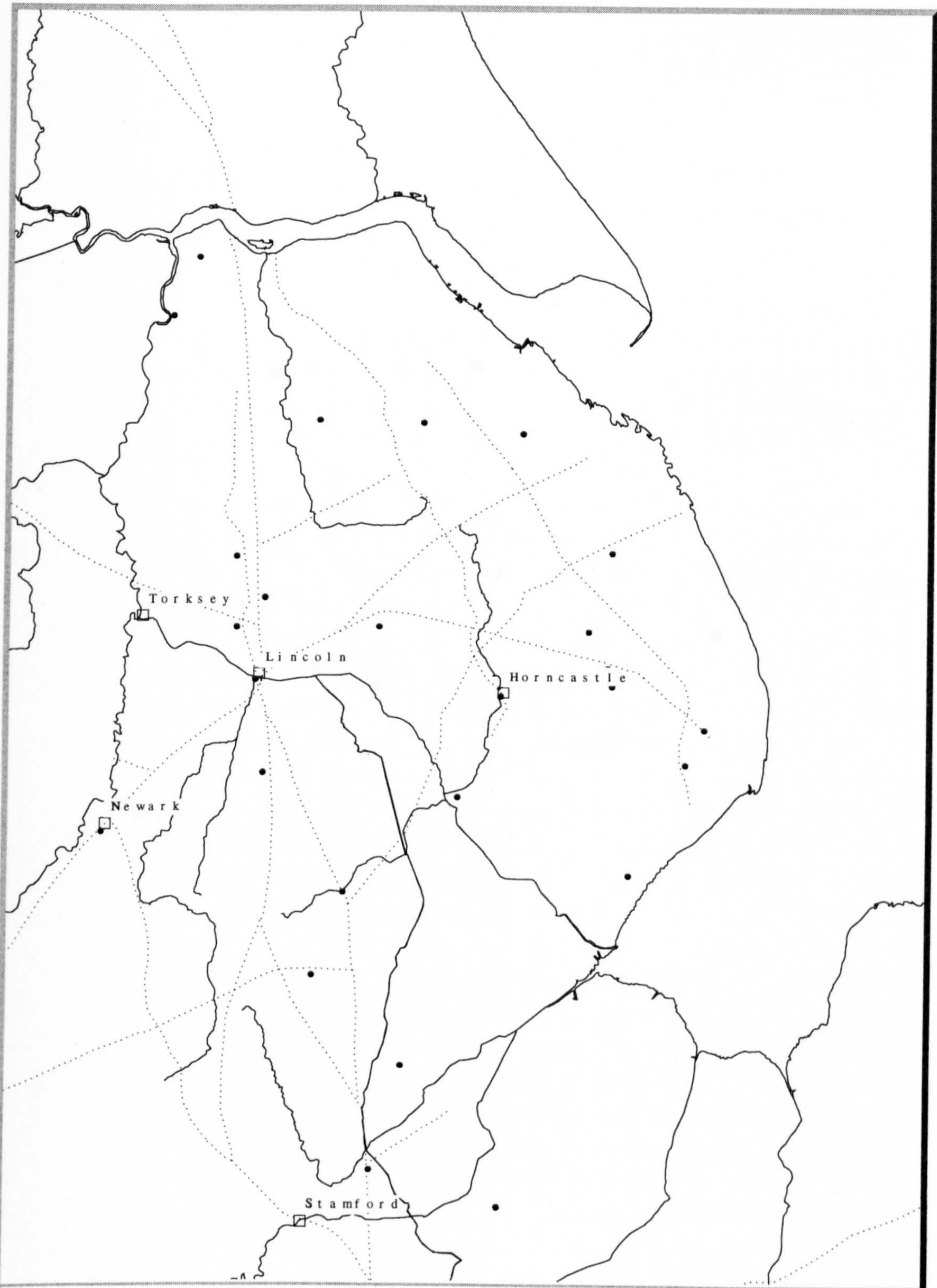


Worn sherd Rim-former

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

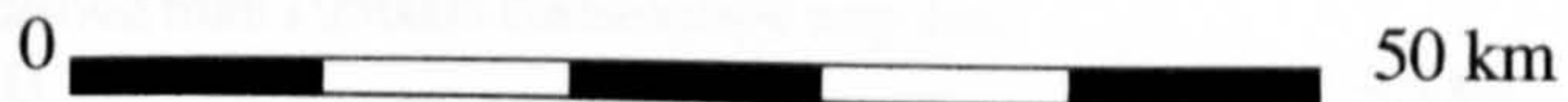
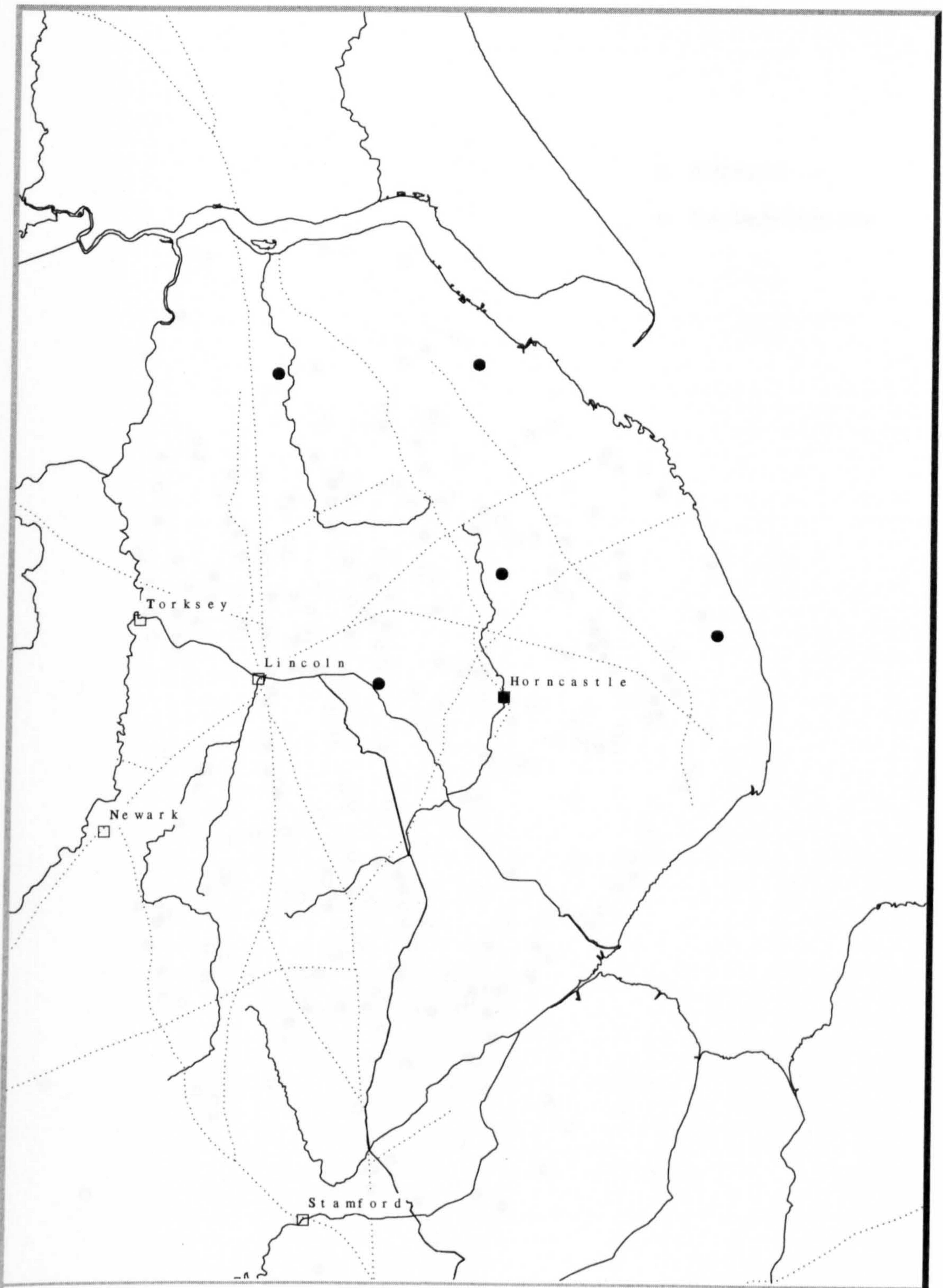


Figure 65



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

0  50 km

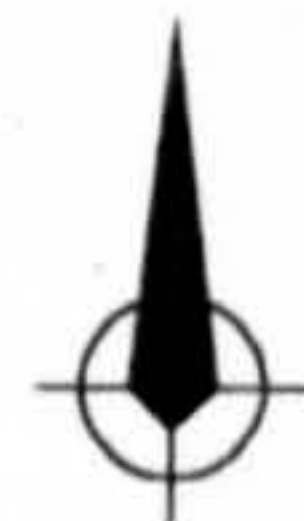


Figure 66

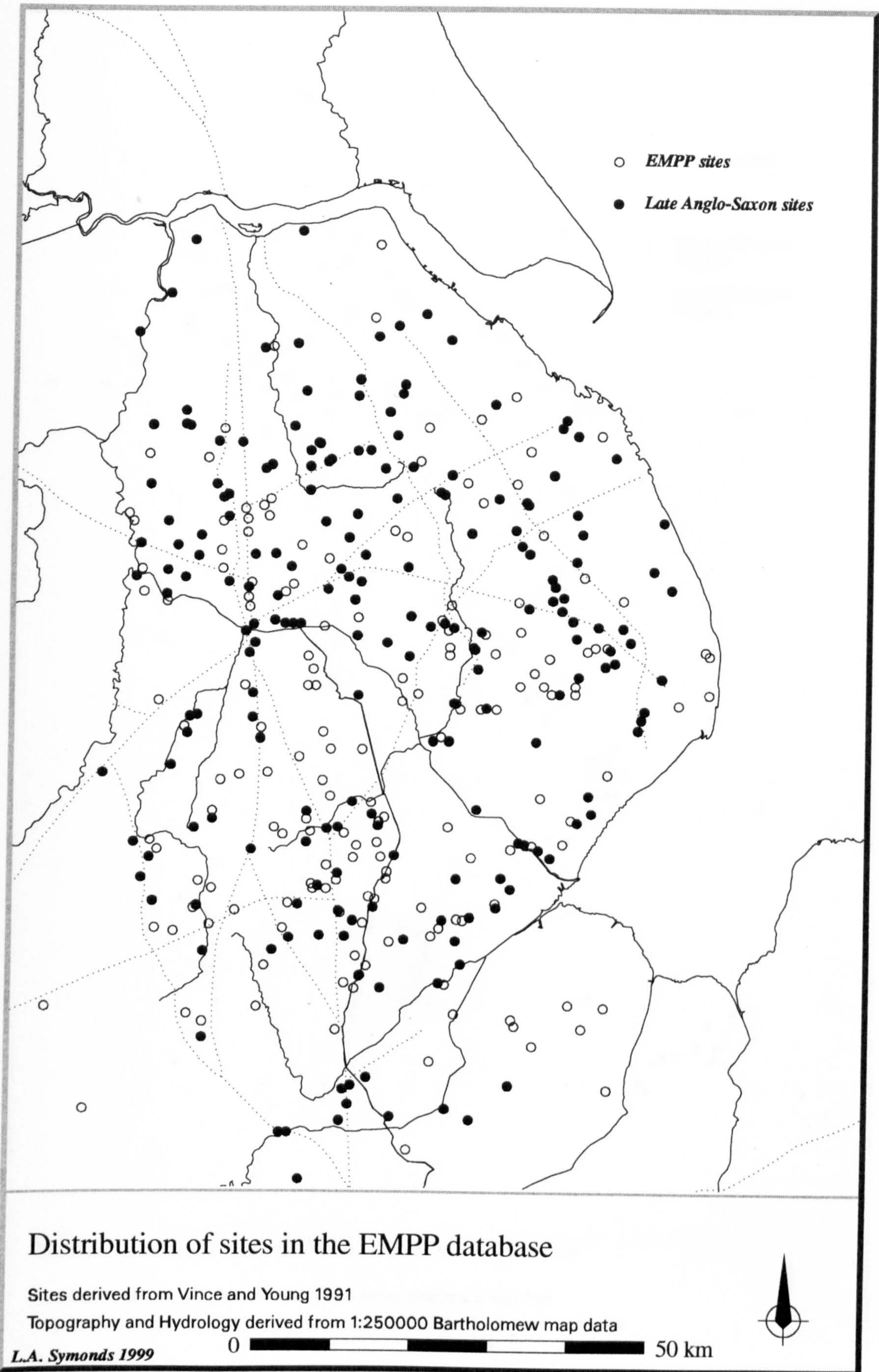


Figure 67

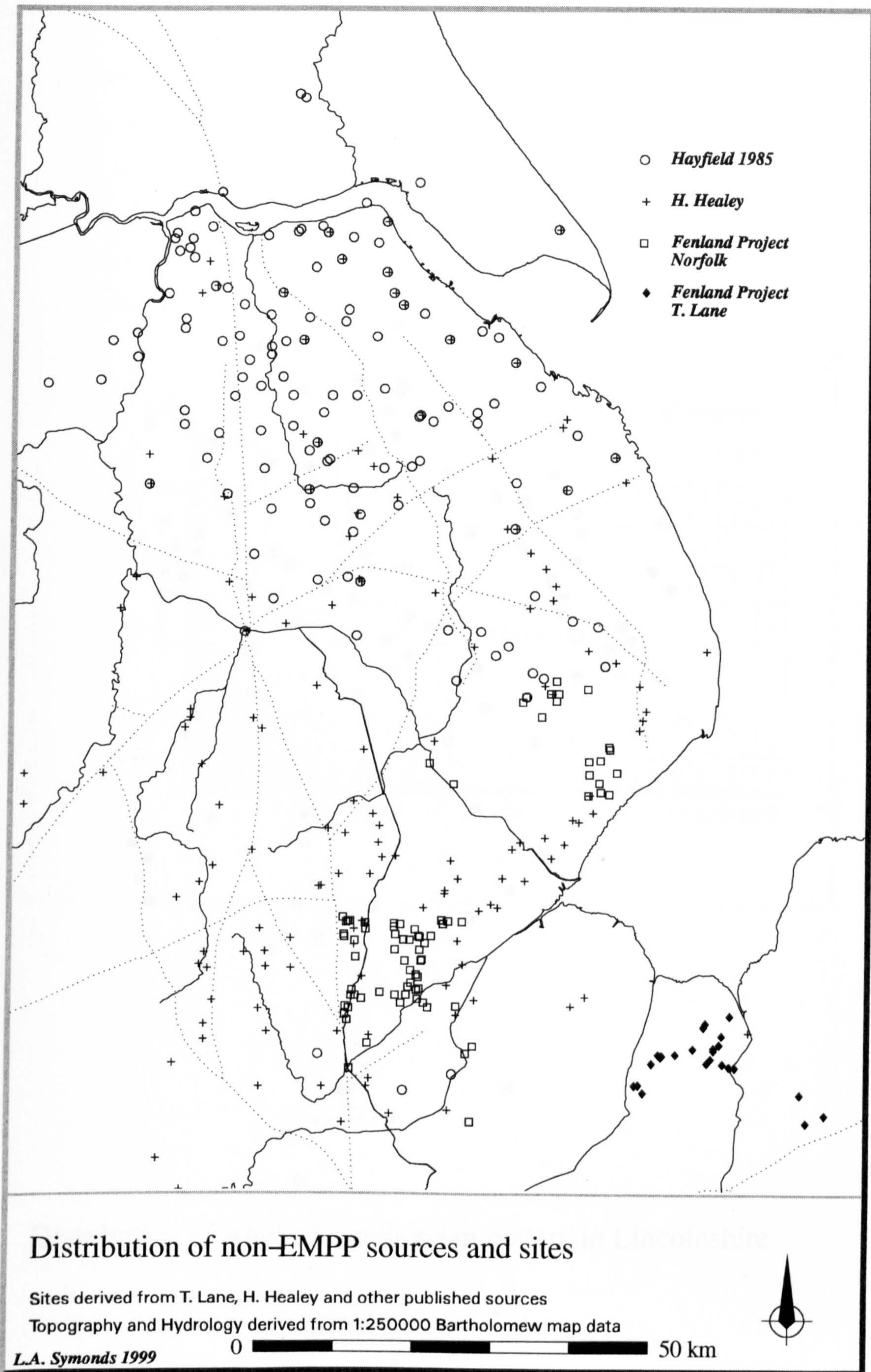
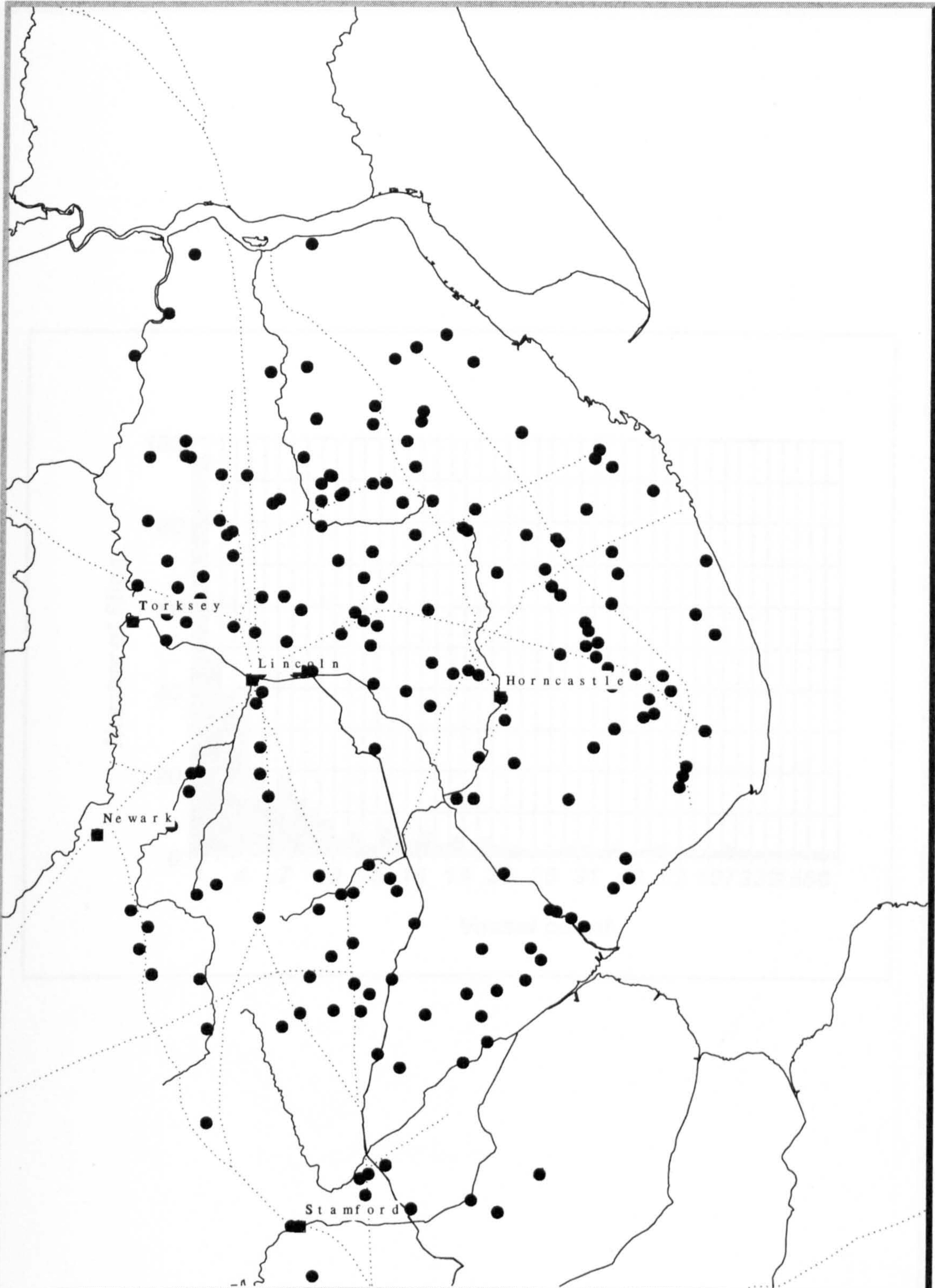


Figure 68



Distribution of Anglo-Scandinavian pottery in Lincolnshire

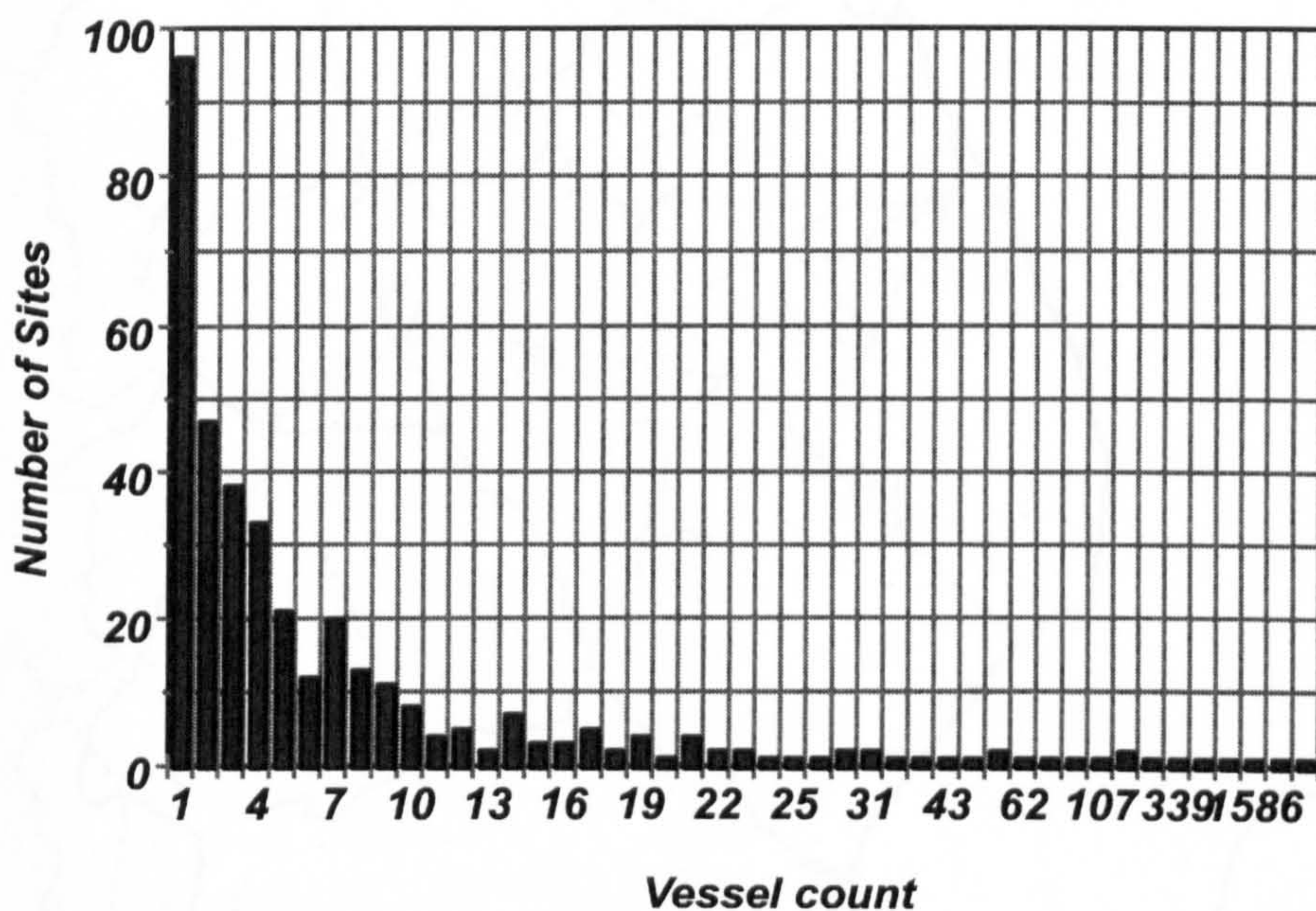
Sites derived from Vince and Young 1991

Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999



Figure 69

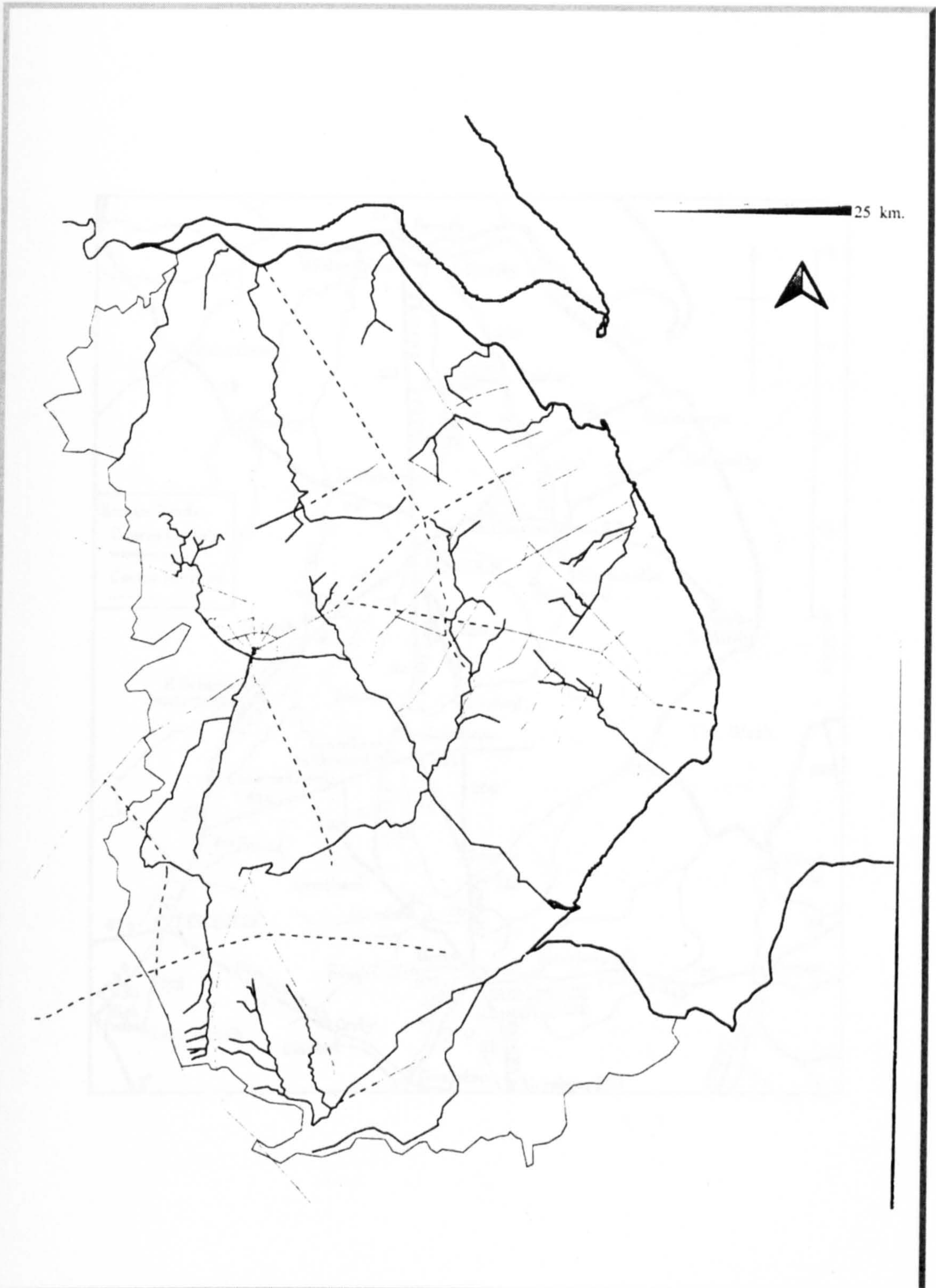


Number of sites per number of vessels

Stem and Leaf diagrams

L.A. Symonds 1999

Figure 69b



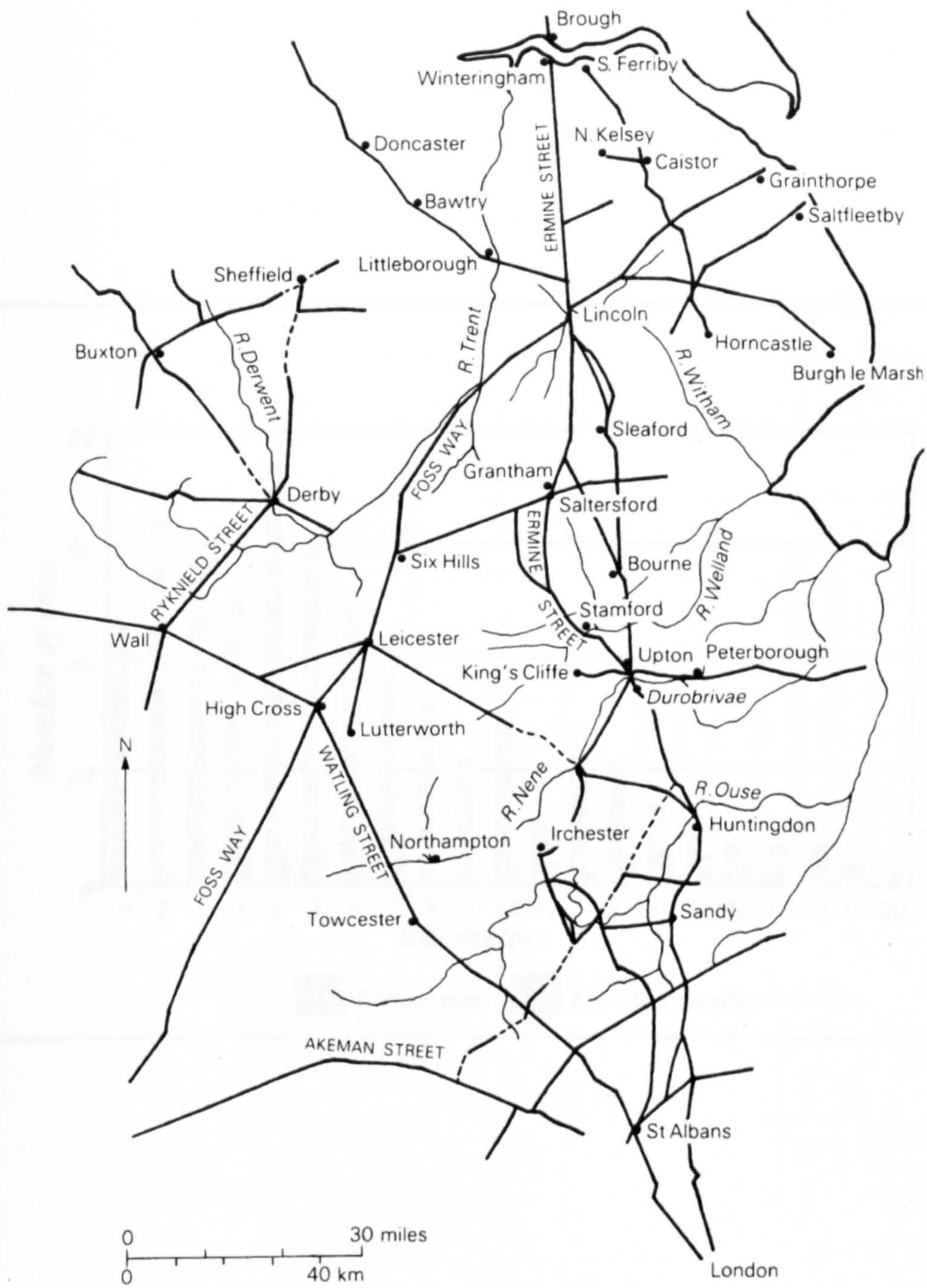
Sawyer's Map of Roman Roads

Solid line = certain; broken line = deduced

from A. Vince and A. Oliver in Sawyer 1998: 17.

L.A. Symonds 1999

Figure 70

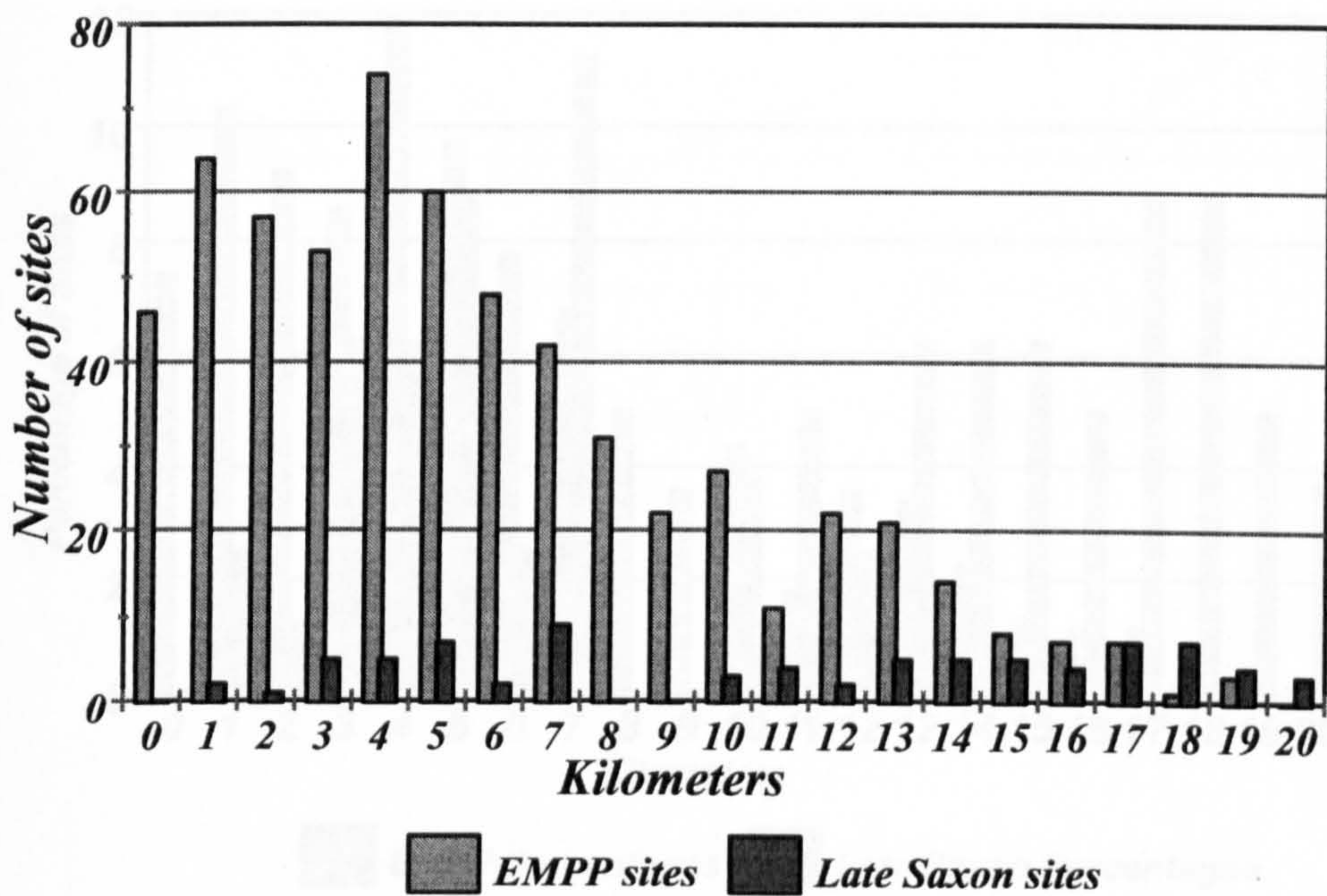


Stafford's Map of Roman Roads

From Stafford 1985: 10

L.A. Symonds 1999

Figure 72

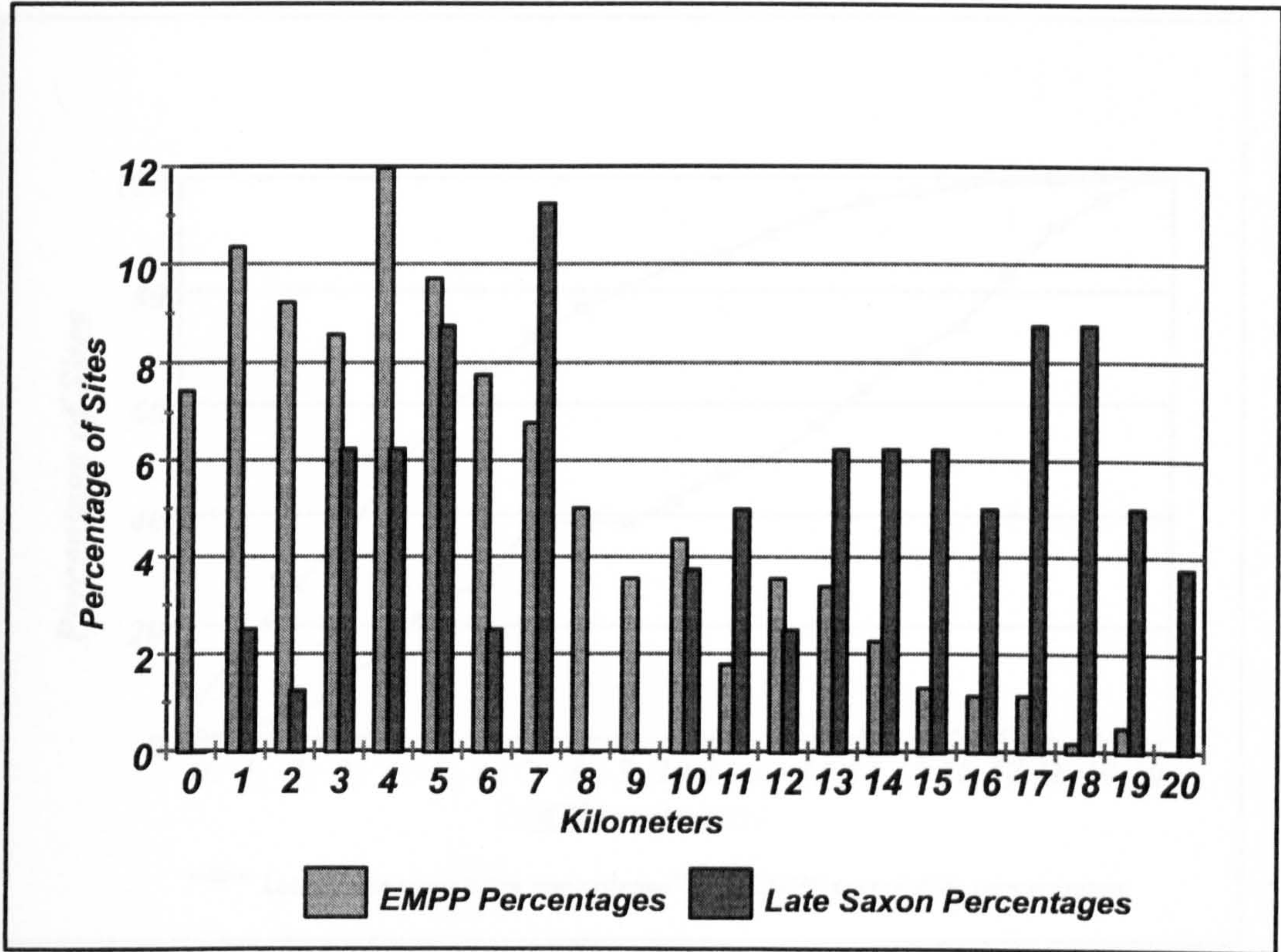


Proximity to Rivers

EMPP vs Late Saxon sites

L.A. Symonds 1999

Figure 73

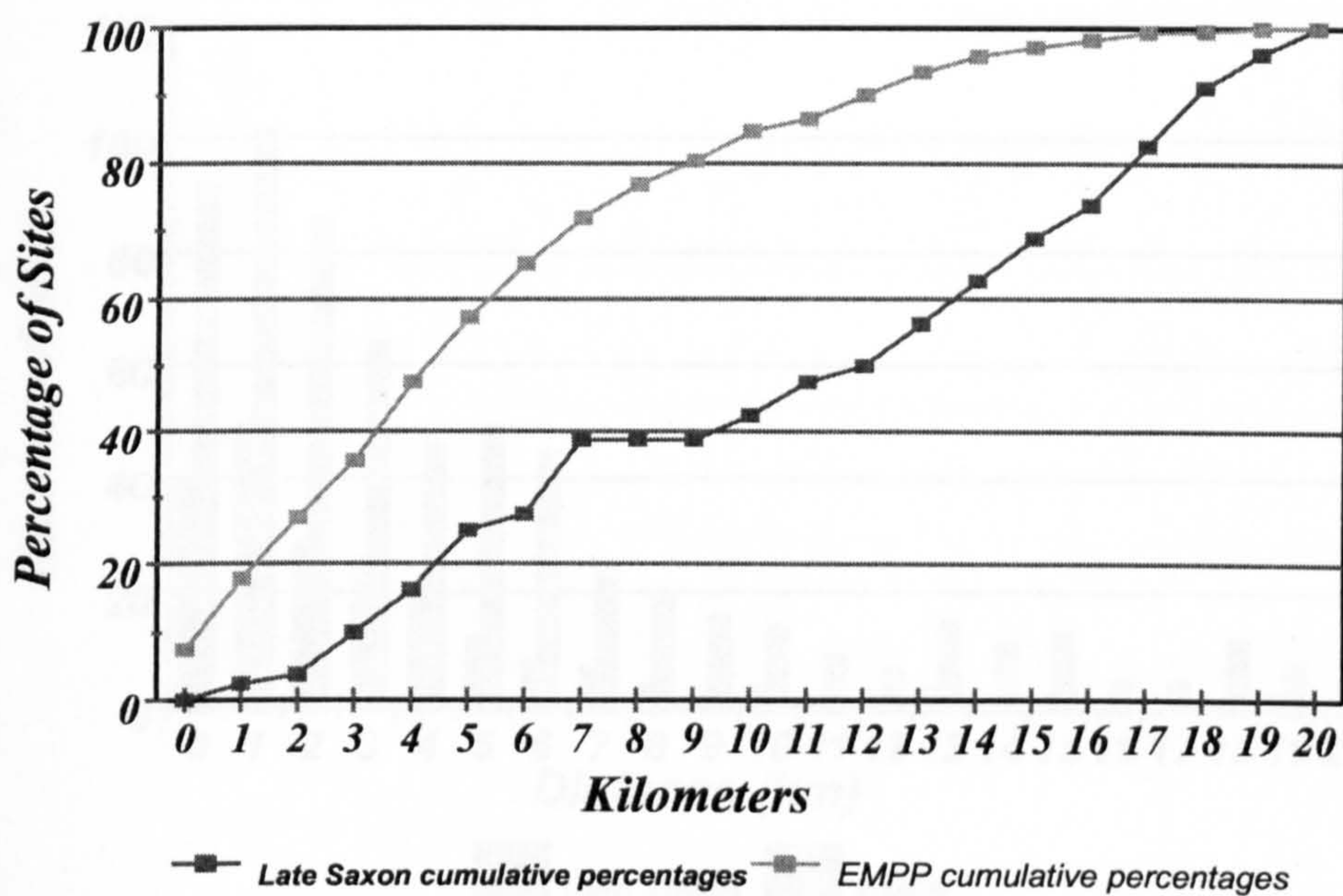


Proximity to Rivers

EMPP vs Late Saxon sites (percentages)

L.A. Symonds 1999

Figure 74

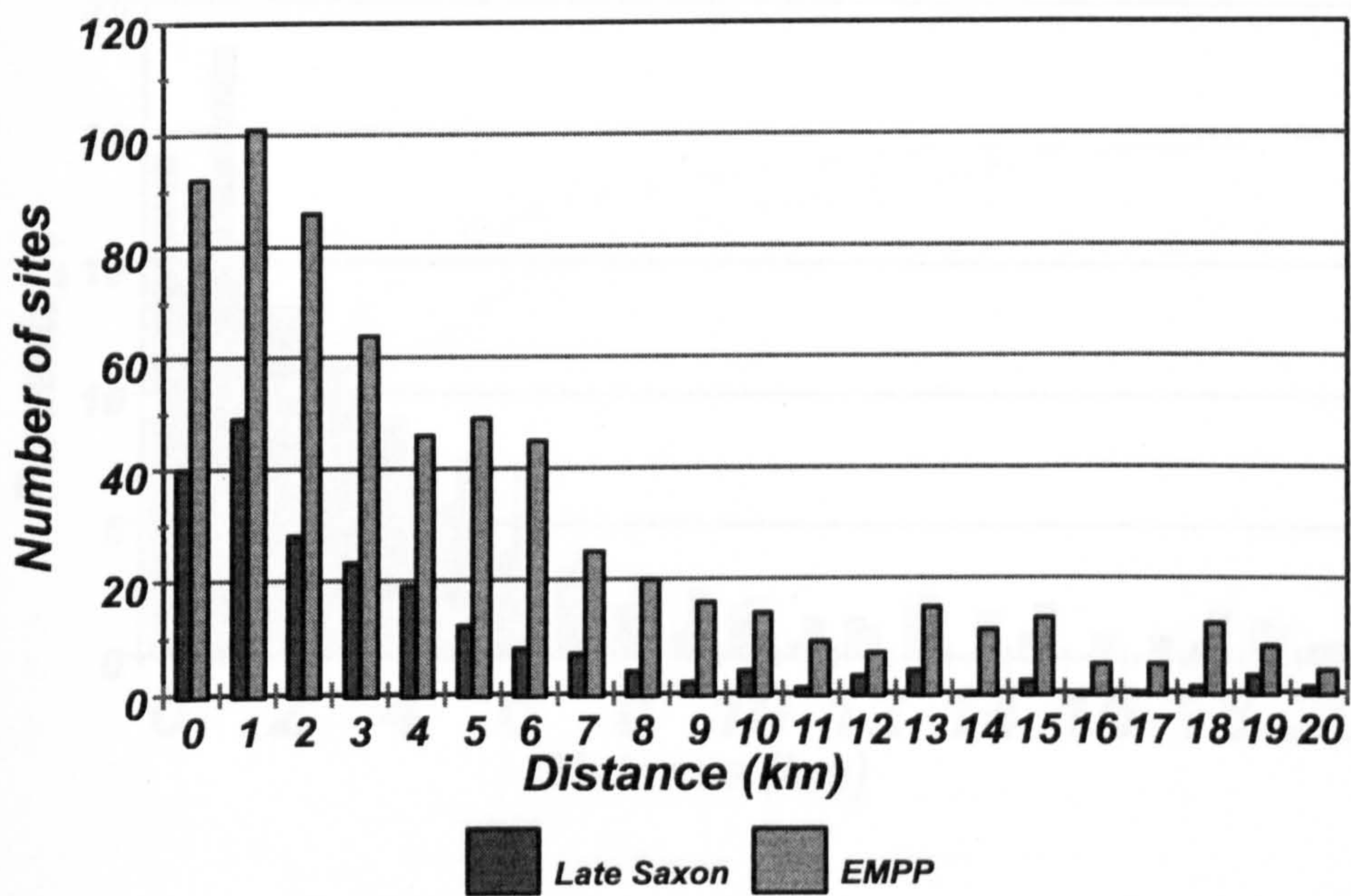


Proximity to Rivers

EMPP vs Late Saxon site (cumulative percentages)

L.A. Symonds 1999

Figure 75

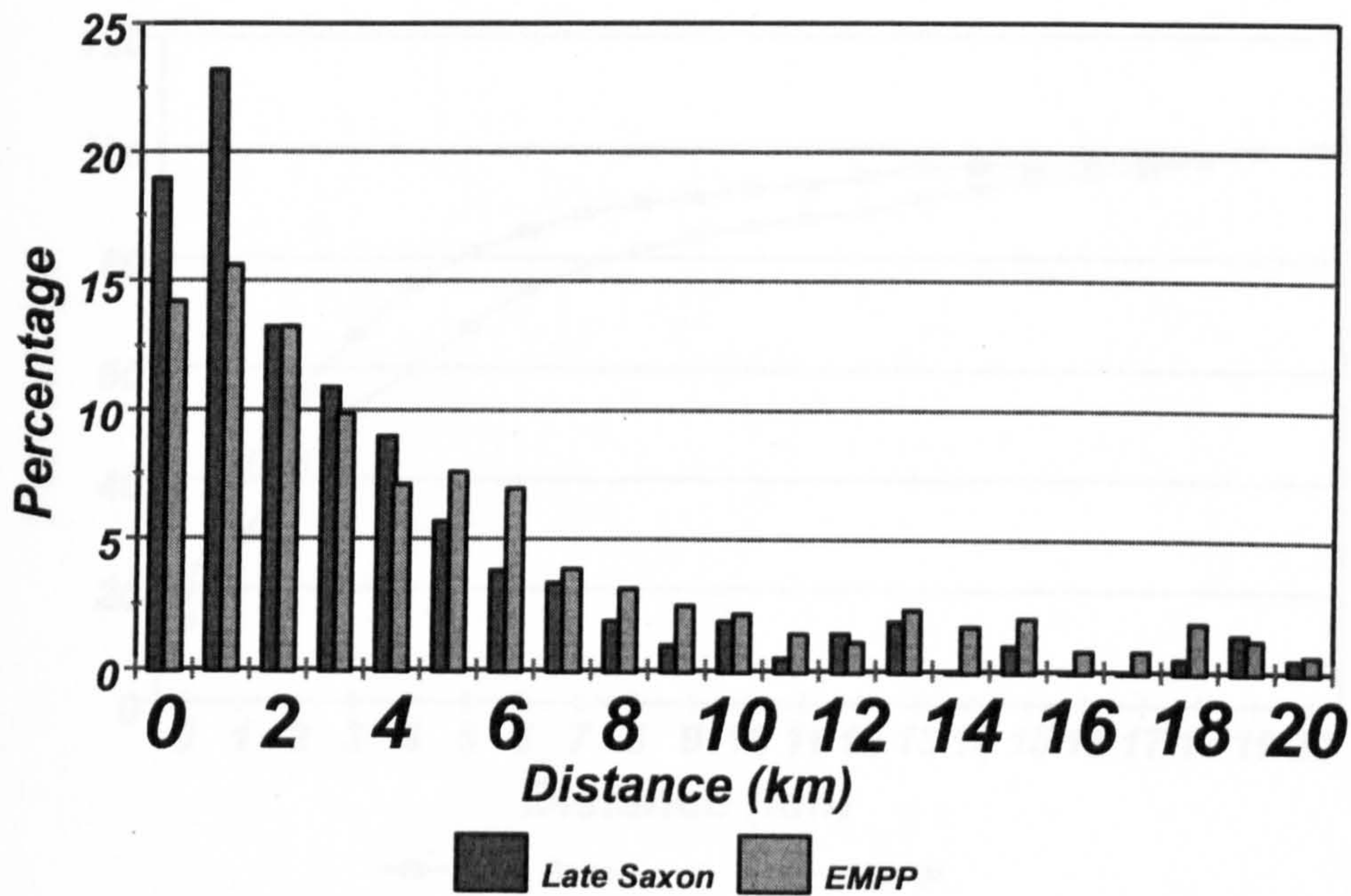


Proximity to Roads

EMPP vs Late Saxon sites

L.A. Symonds 1999

Figure 76

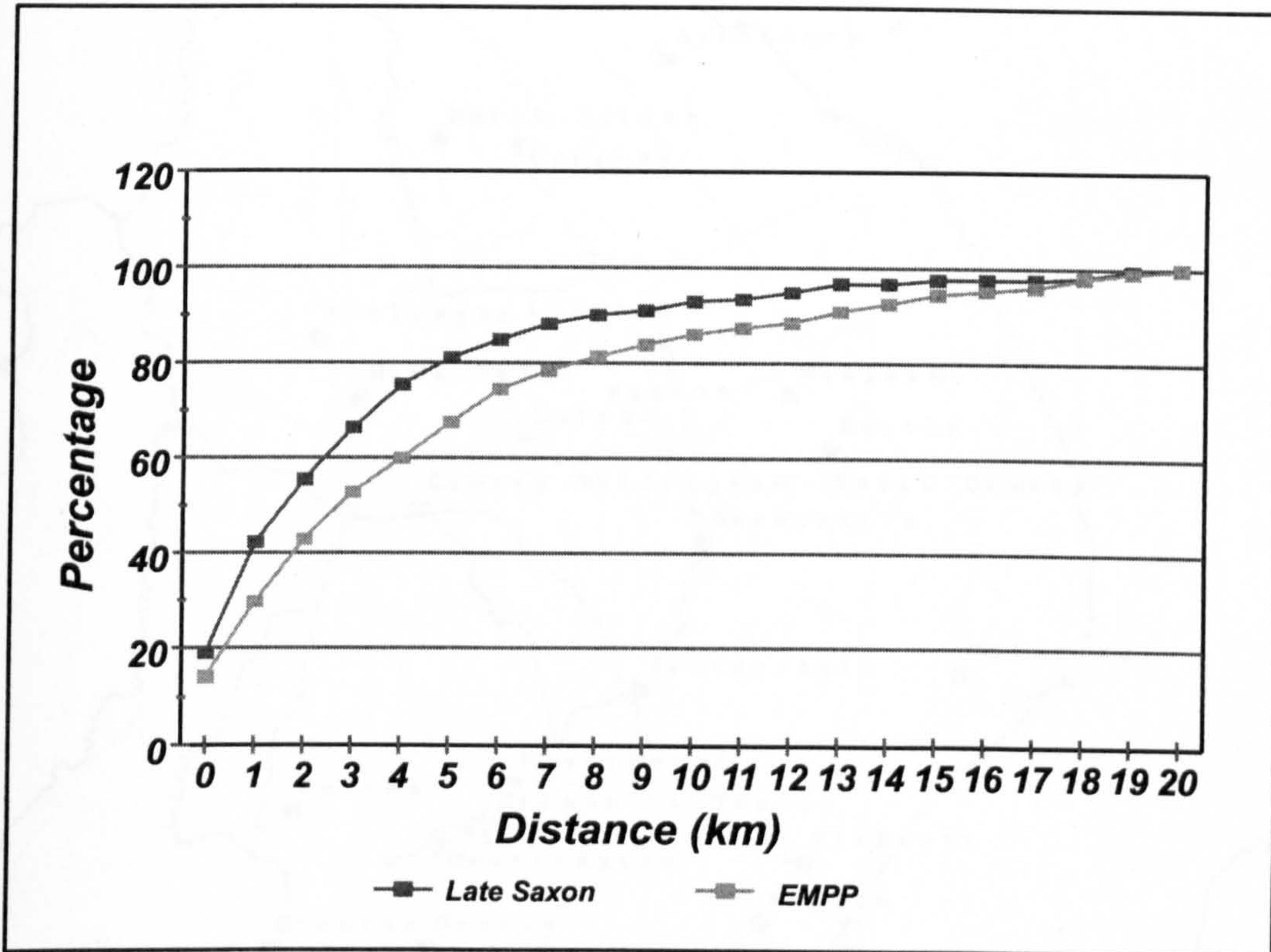


Proximity to Roads

EMPP vs Late Saxon site (percentages)

L.A. Symonds 1999

Figure 77

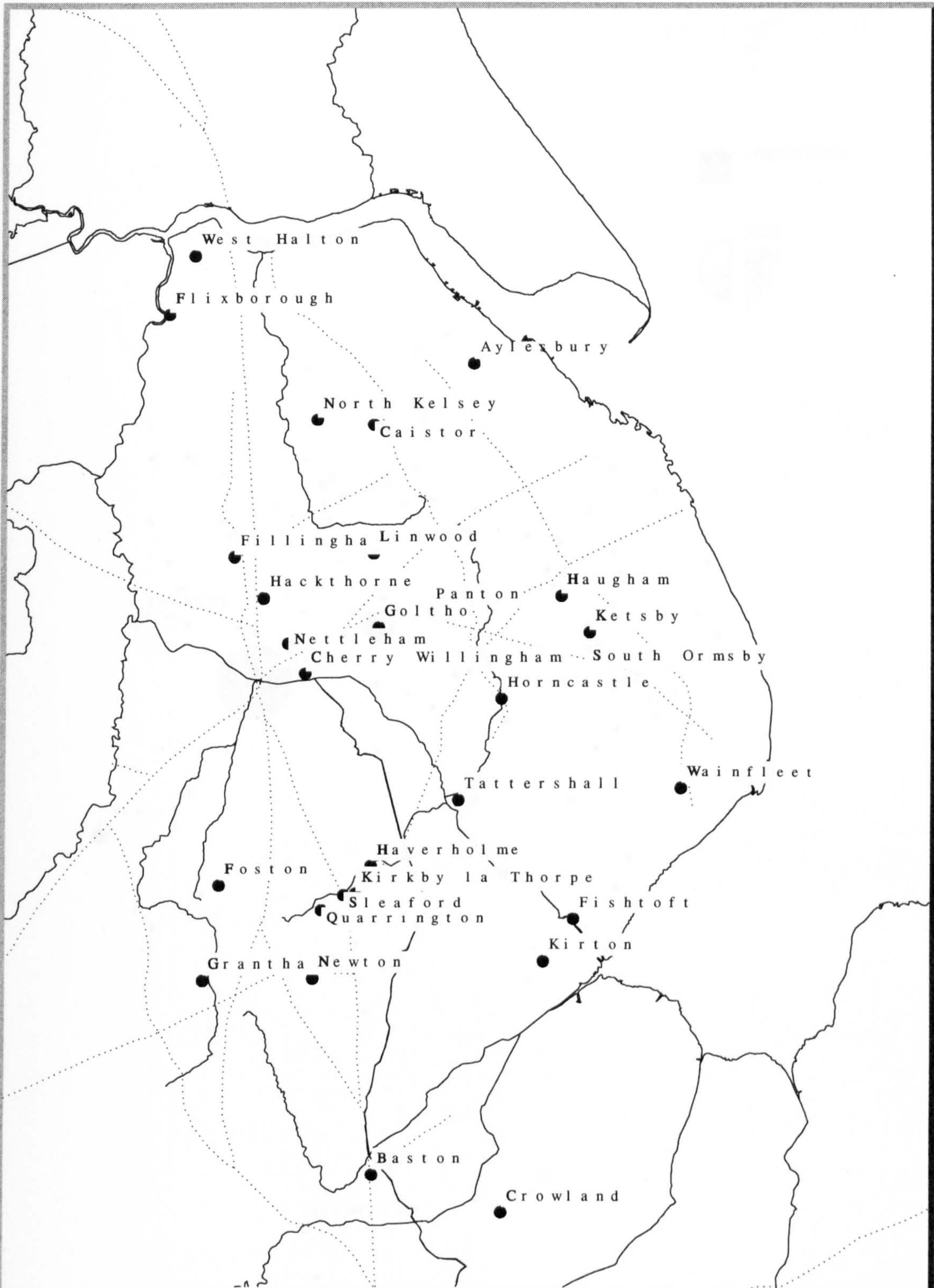


Proximity to Roads

EMPP vs Late Saxon site (cumulative percentages)

L.A. Symonds 1999

Figure 78



Distribution of sites with more than 10 vessels

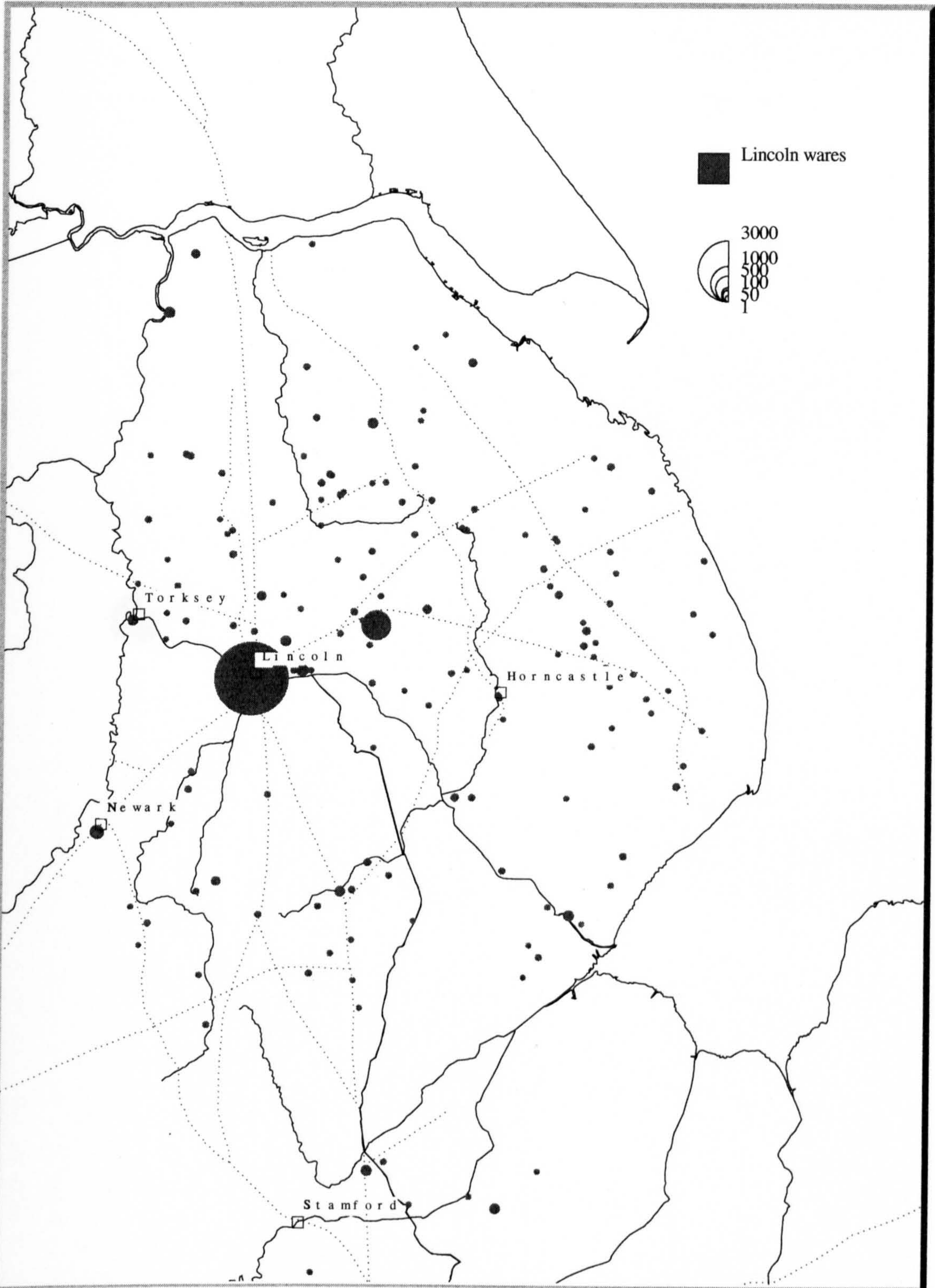
Sites derived from Vince and Young 1991

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

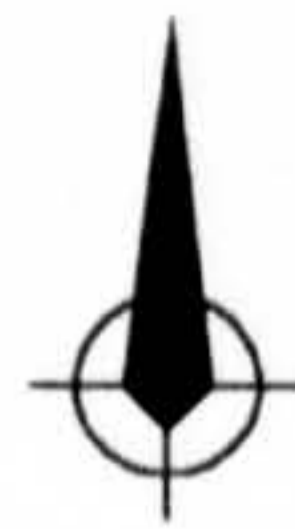
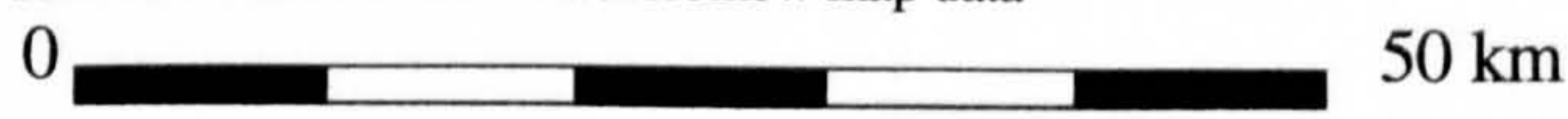
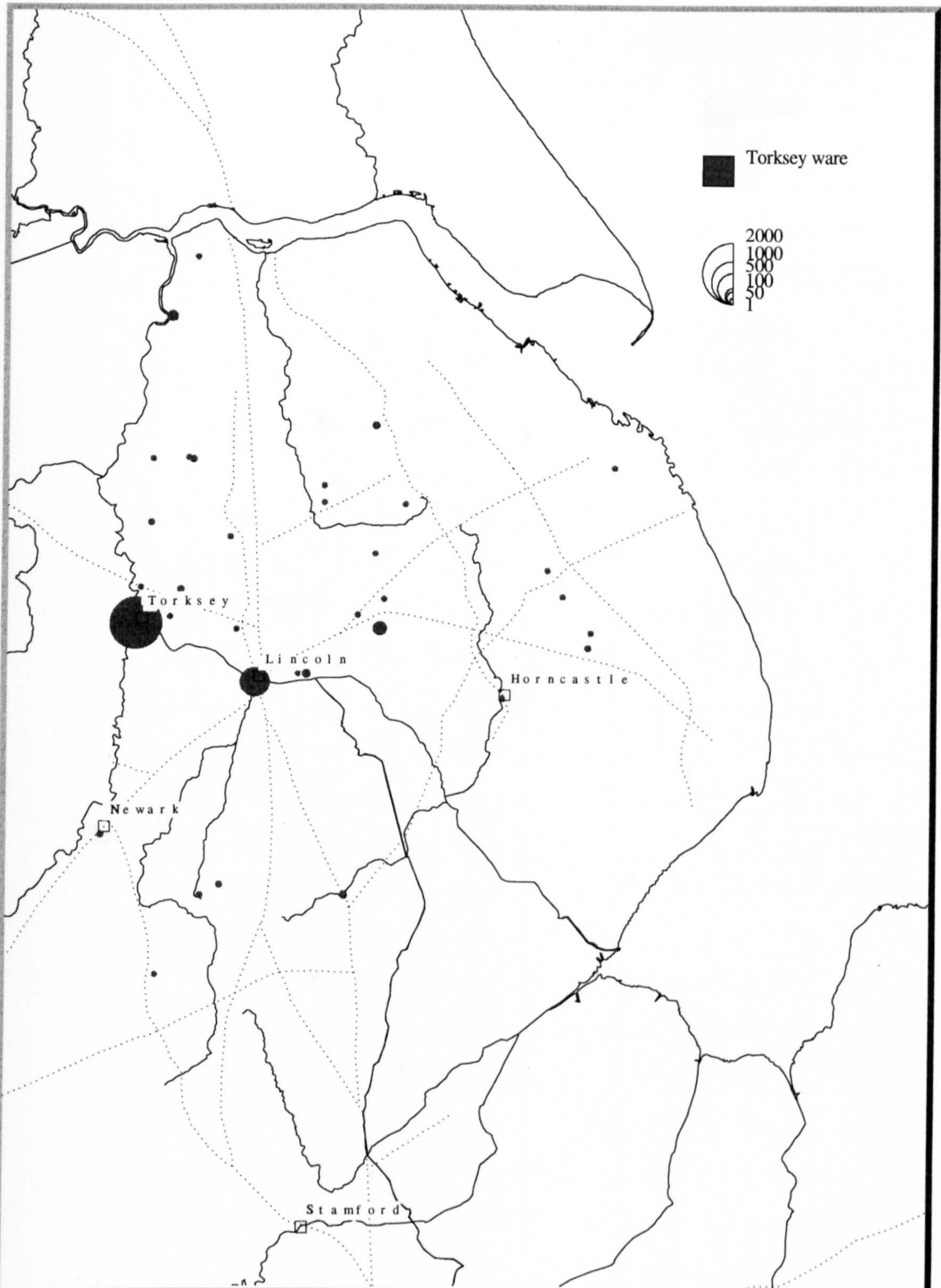


Figure 80



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

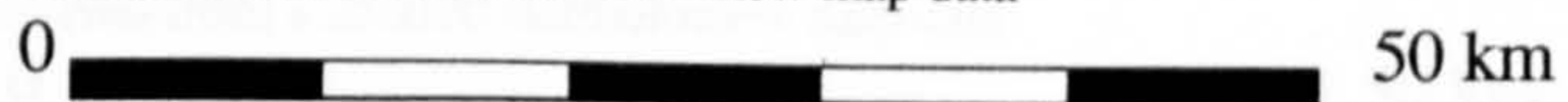
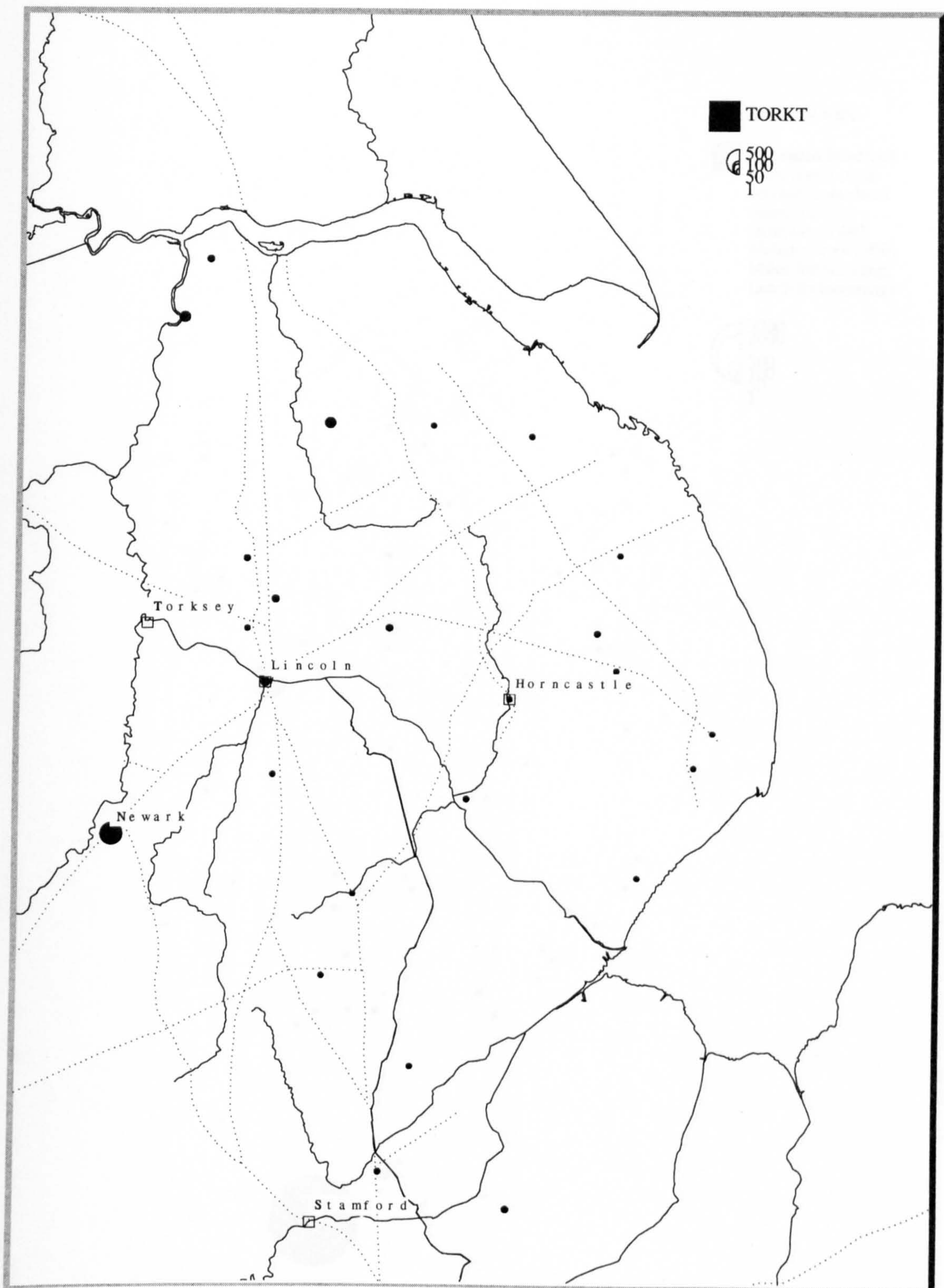


Figure 81



Distribution of TORKT in Lincolnshire

(quantity of vessels)

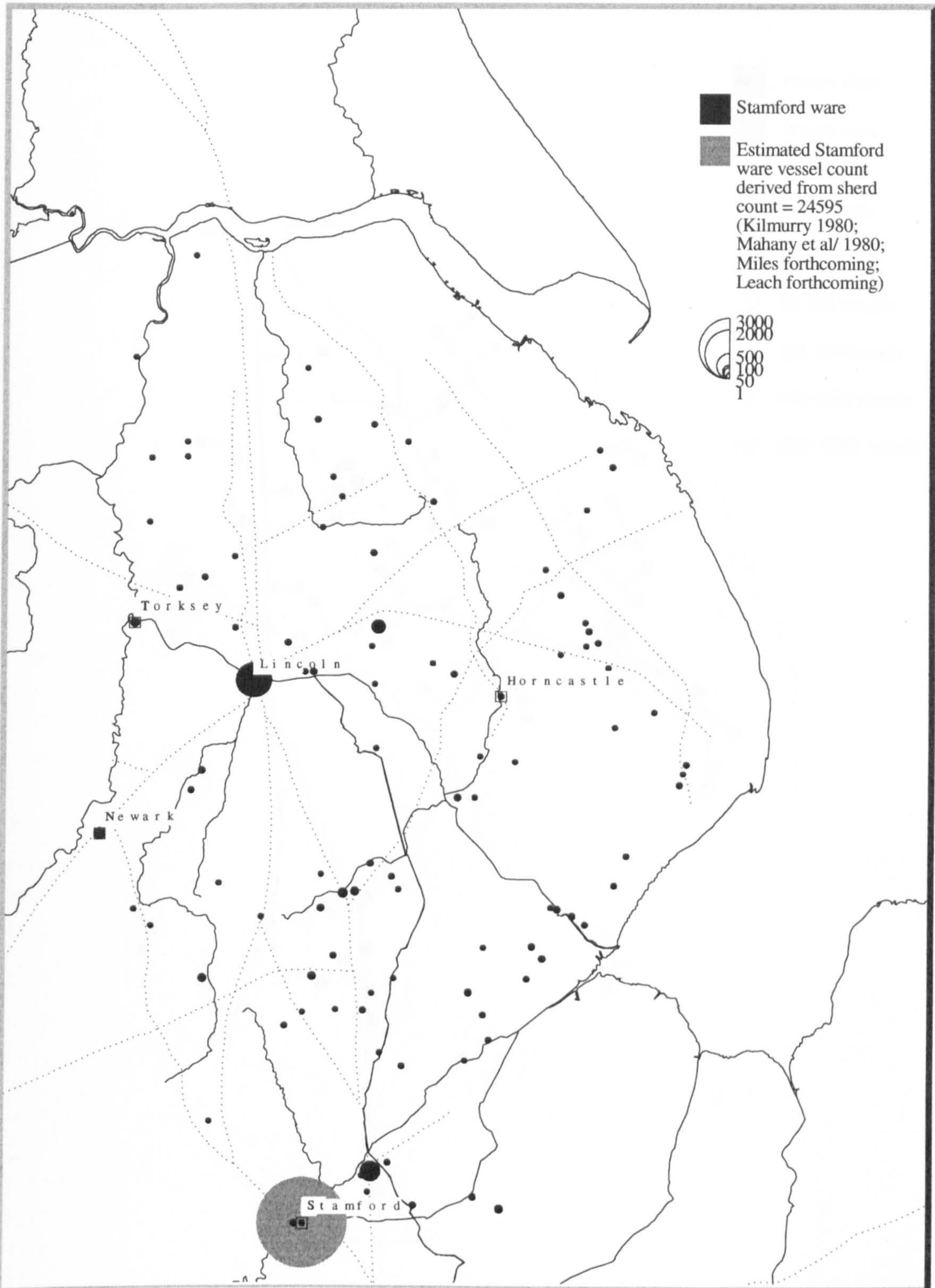
Sites derived from Vince and Young 1991

Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999



Figure 82



Distribution of ST in Lincolnshire

(quantity of vessels)

Sites derived from Vince and Young 1991

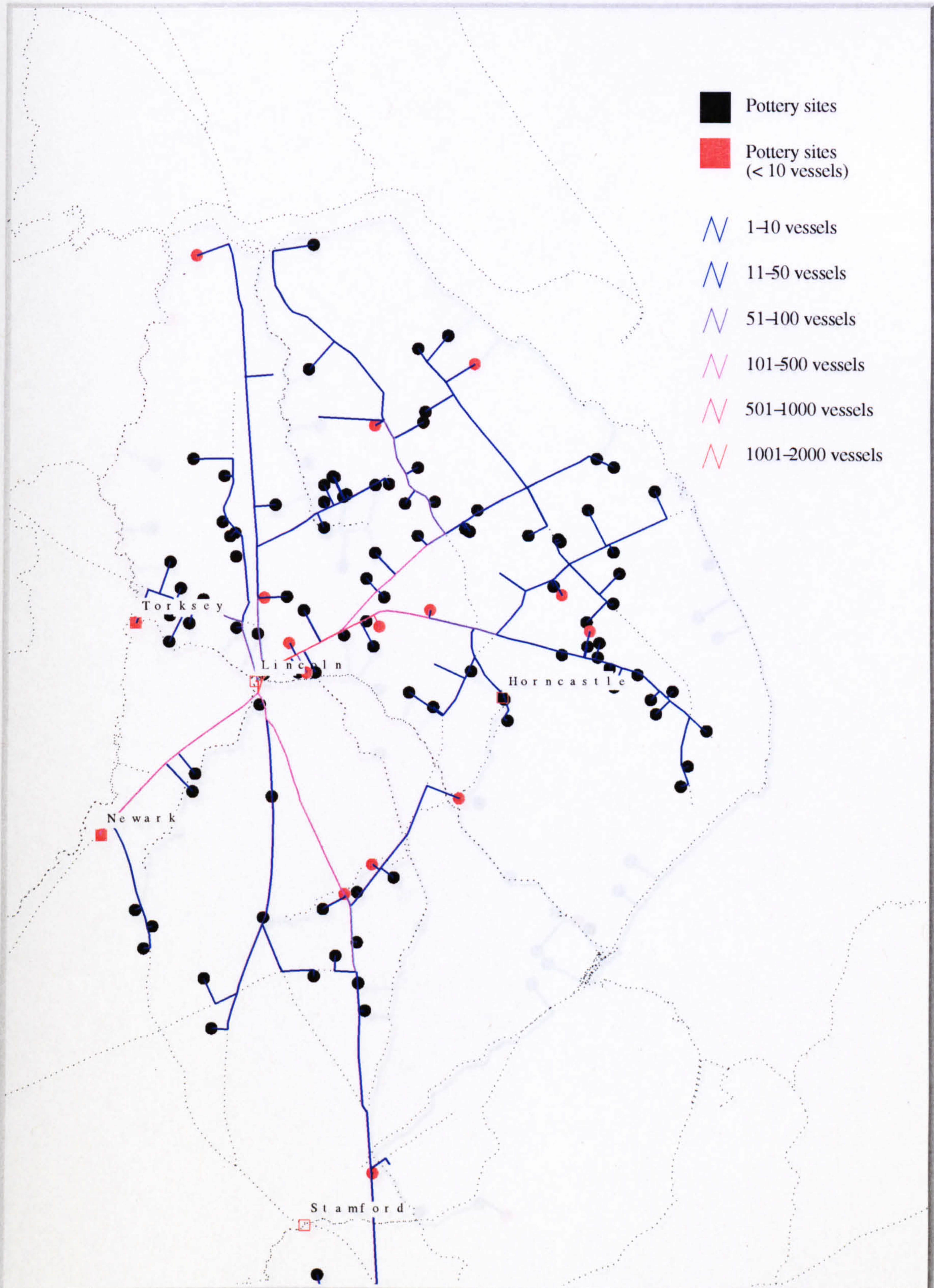
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999



Figure 83

- Pottery sites
- Pottery sites (< 10 vessels)
- ∧ 1-10 vessels
- ∧ 11-50 vessels
- ∧ 51-100 vessels
- ∧ 101-500 vessels
- ∧ 501-1000 vessels
- ∧ 1001-2000 vessels



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

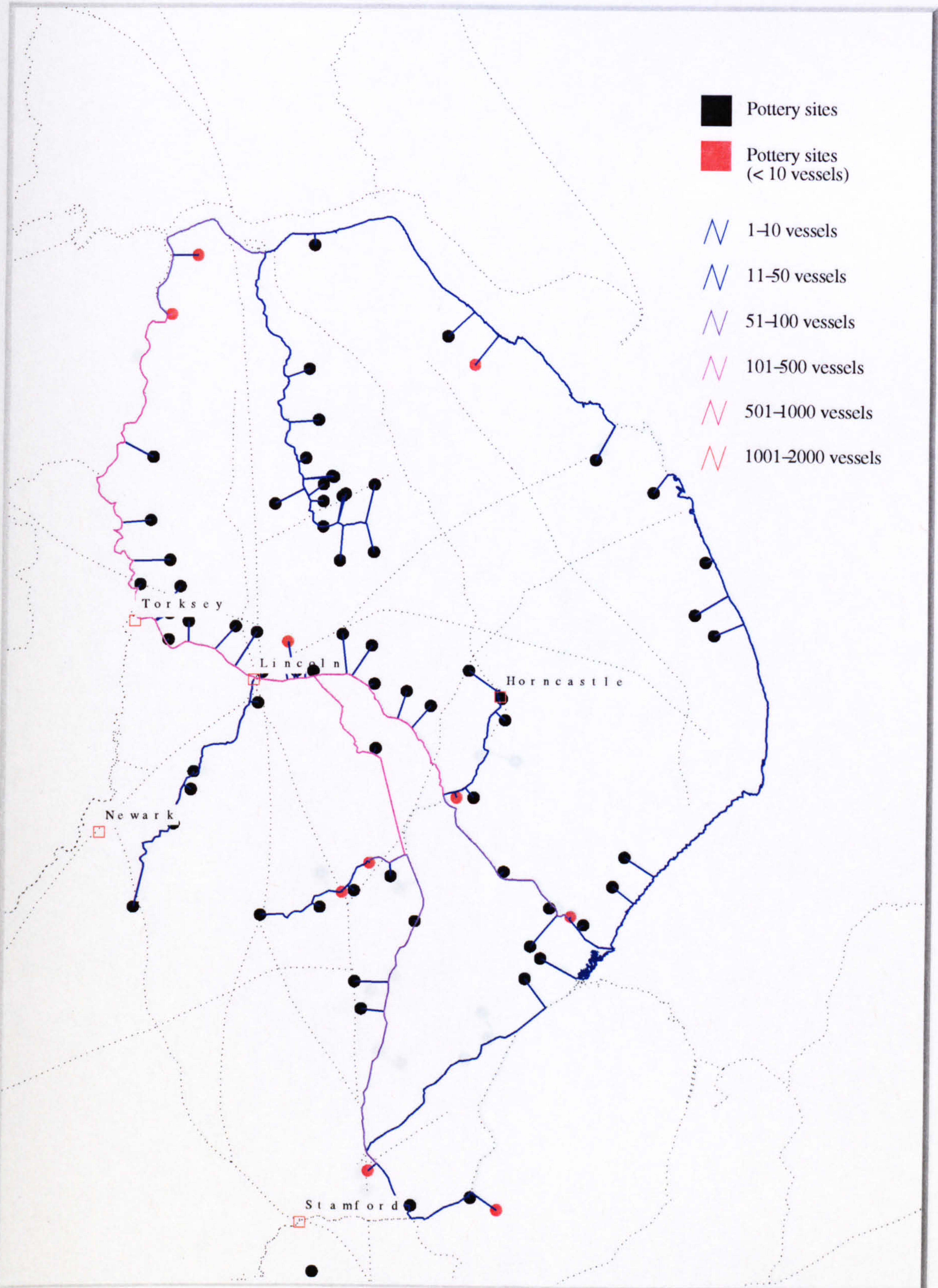
L.A. Symonds 1999

0  50 km



Original in Colour

Figure 84



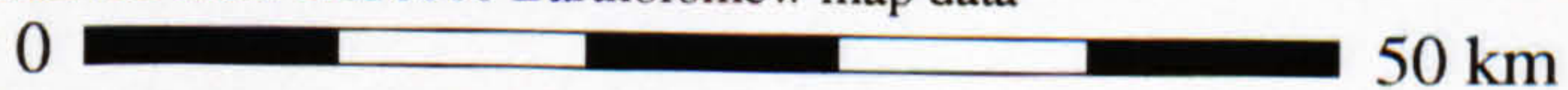
Traveling Pots: Lincoln wares

(quantities of pottery along rivers)

Sites derived from Vince and Young 1991

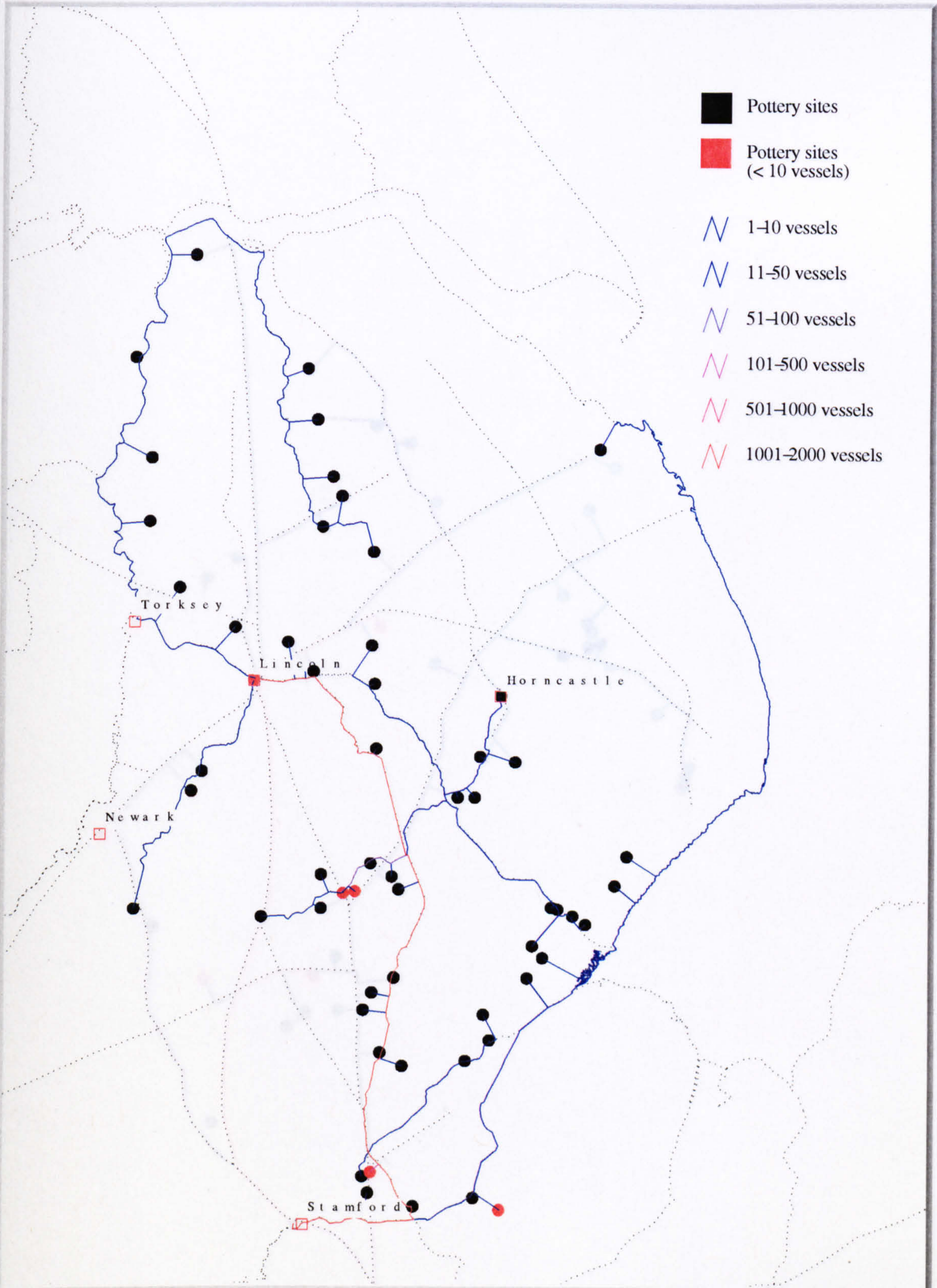
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. 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

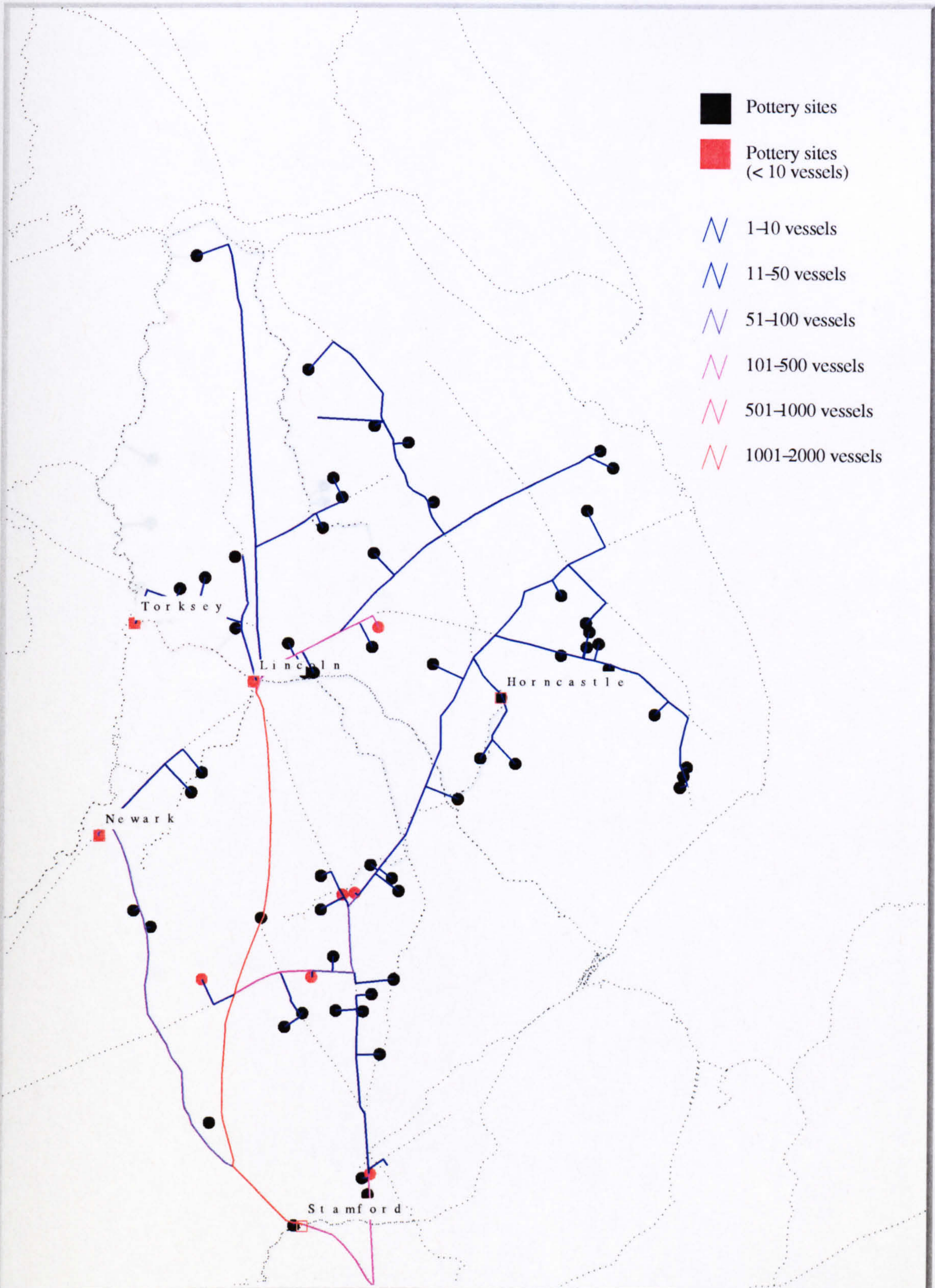
L.A. Symonds 1999

0 50 km



Original in Colour

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

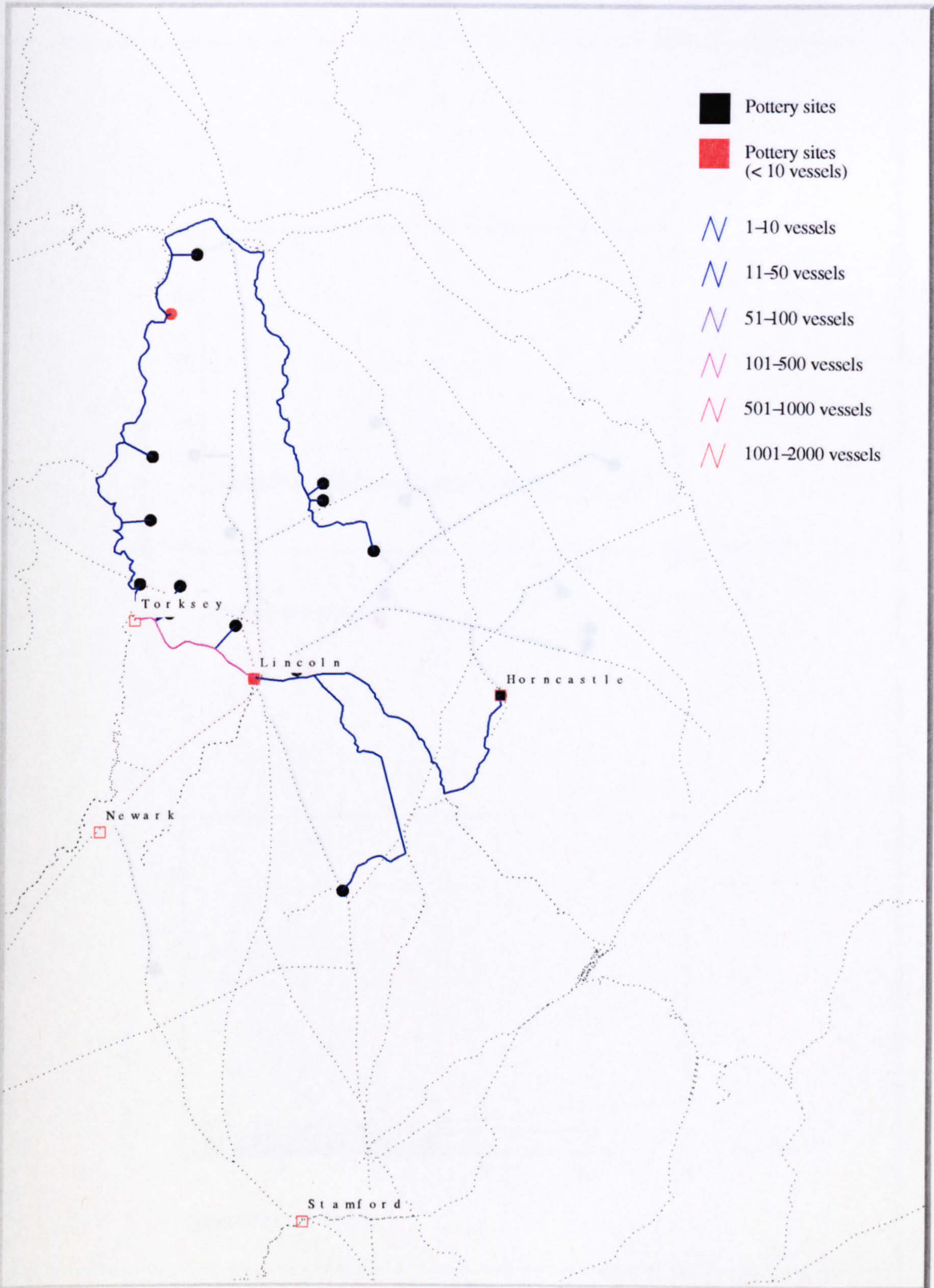
L.A. Symonds 1999

0  50 km



Original in Colour

Figure 87



- Pottery sites
- Pottery sites (< 10 vessels)
- 1-10 vessels
- 11-50 vessels
- 51-100 vessels
- 101-500 vessels
- 501-1000 vessels
- 1001-2000 vessels

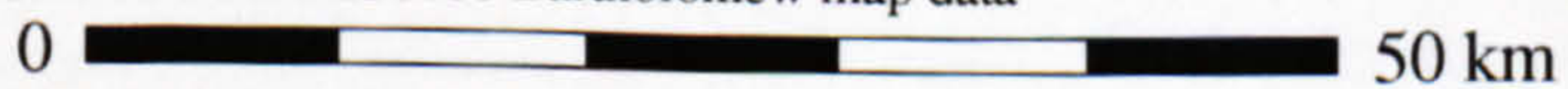
Traveling Pots: Torksey ware

(quantities of pottery along rivers)

Sites derived from Vince and Young 1991

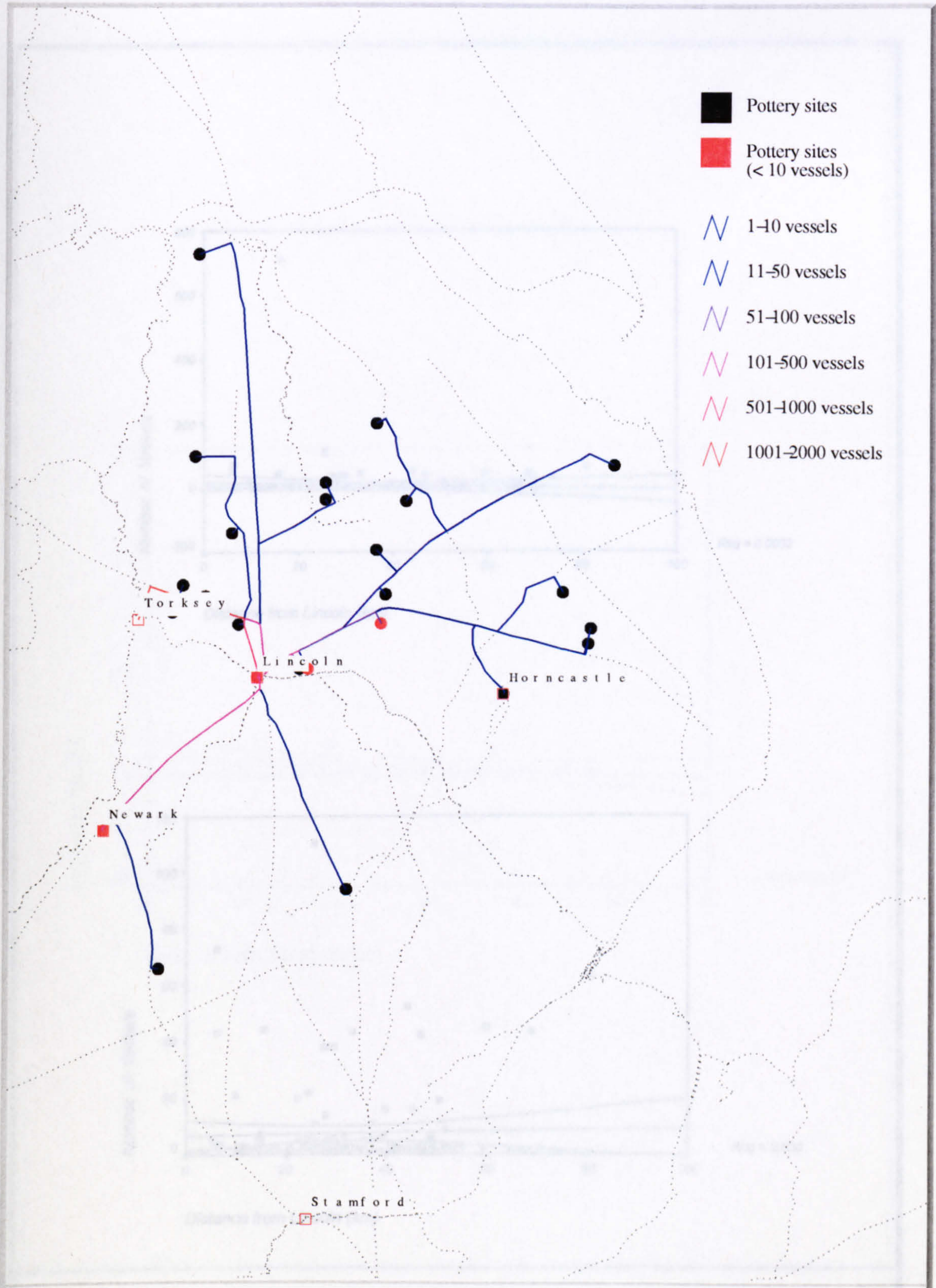
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999



Original in Colour

Figure 88



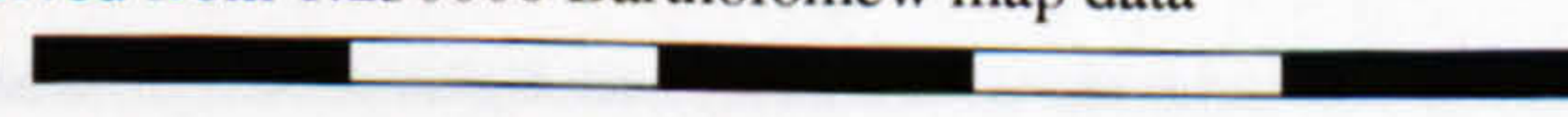
Traveling Pots: Torksey ware

(quantities of pottery along roads)

Sites derived from Vince and Young 1991

Topography and Hydrology derived from 1:250000 Bartholomew map data

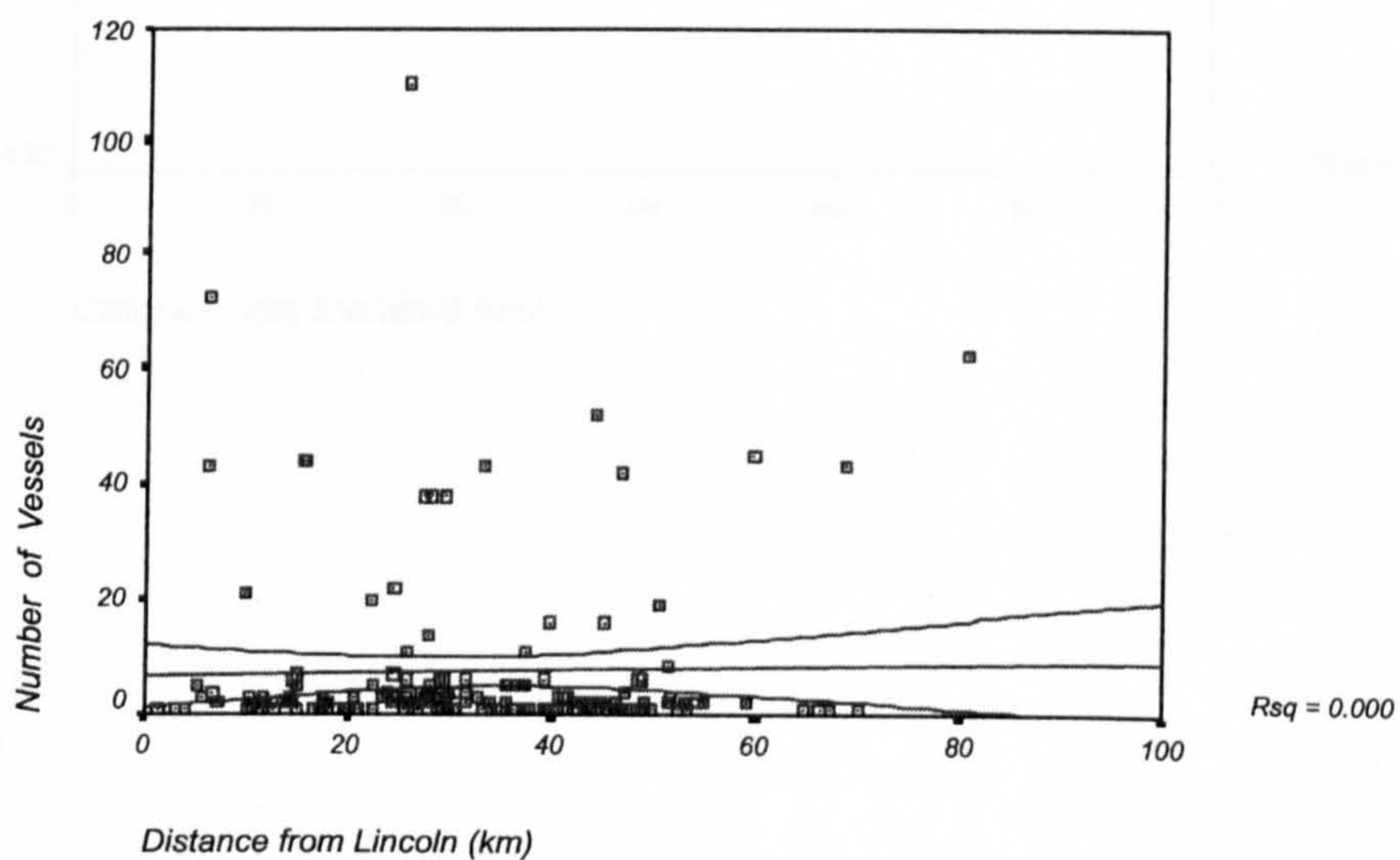
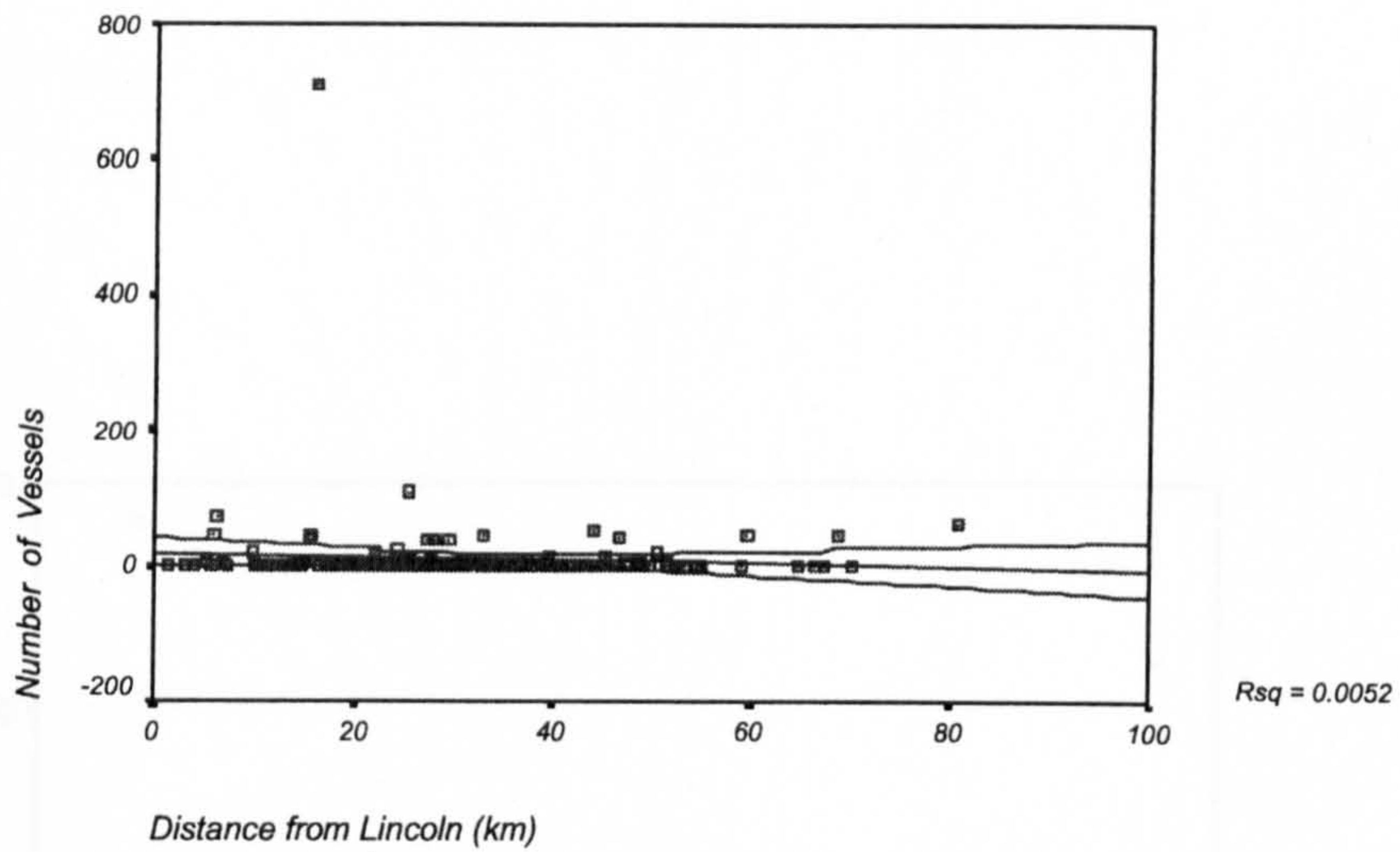
L.A. Symonds 1999

0  50 km



Original in Colour

Figure 89



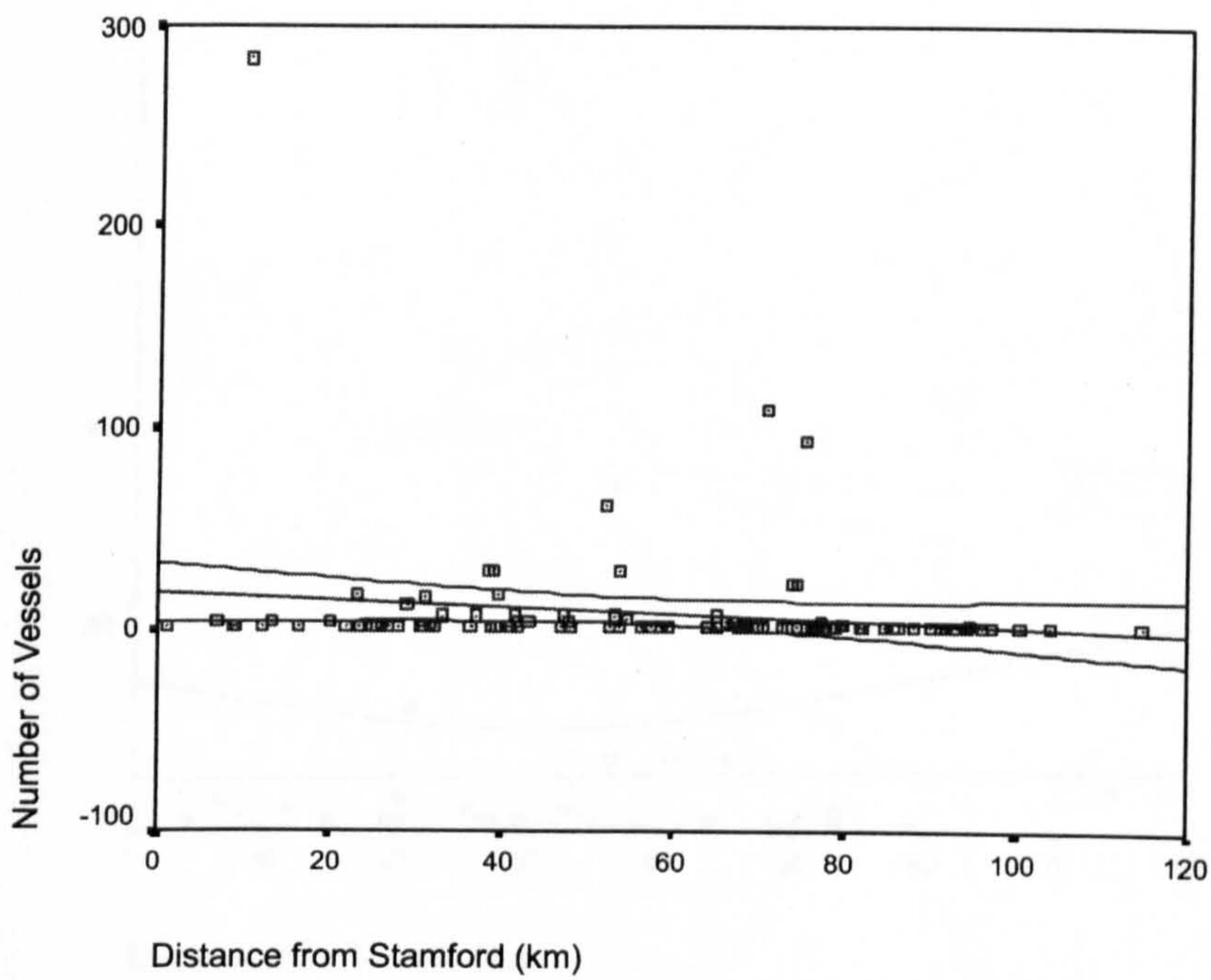
Regression of Lincoln wares

Euclidean distances

Including and excluding Goltho

L.A. Symonds 1999

Figure 90

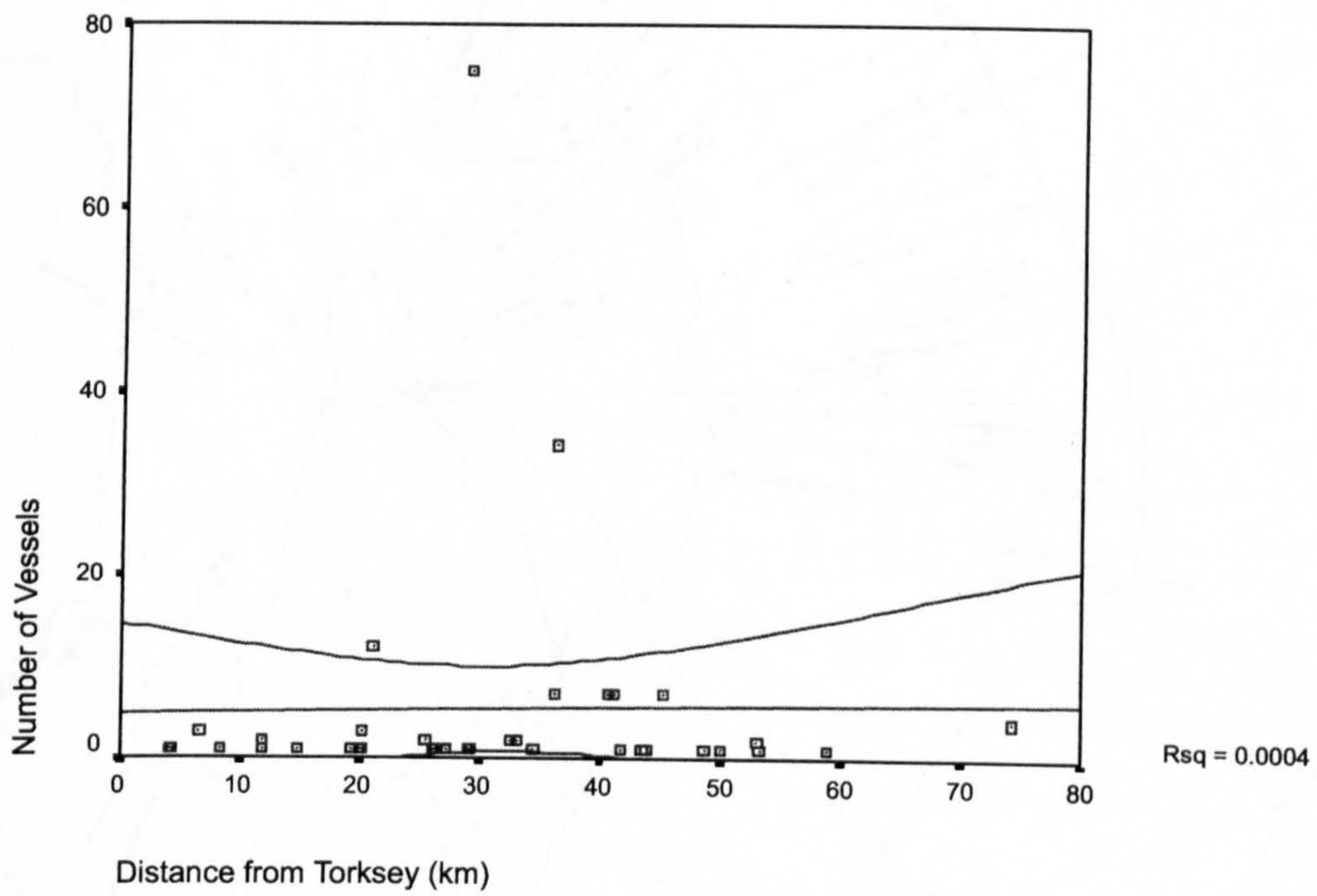


Regression of Stamford ware

Euclidean distances

L.A. Symonds 1999

Figure 91

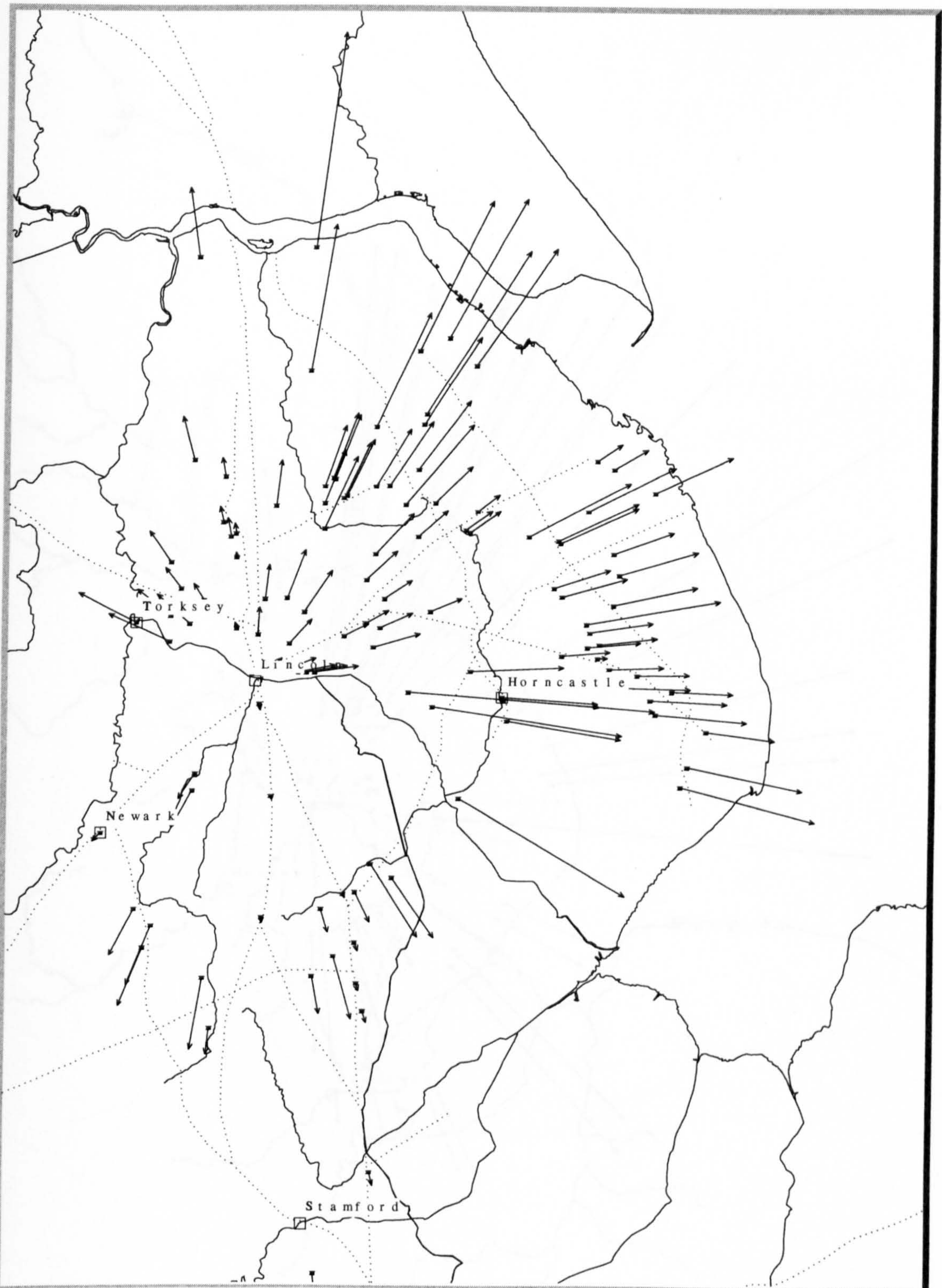


Regression of Torksey ware

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

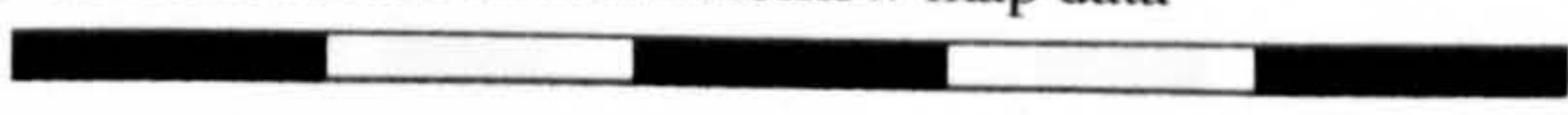
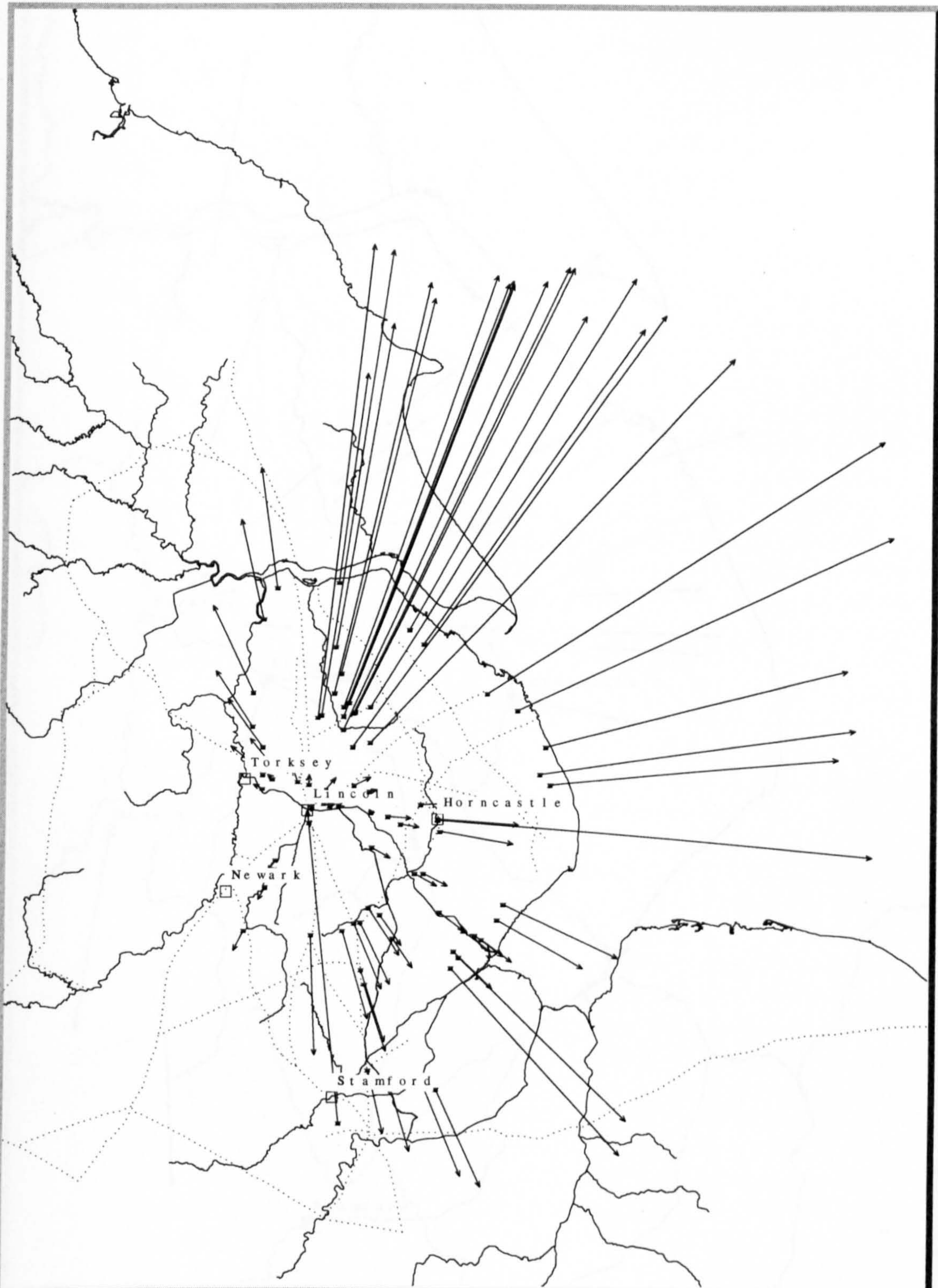
0  50 km



Figure 93



Temporal Distance Mapping: Lincoln wares

(along rivers)

Sites derived from Vince and Young 1991

Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999


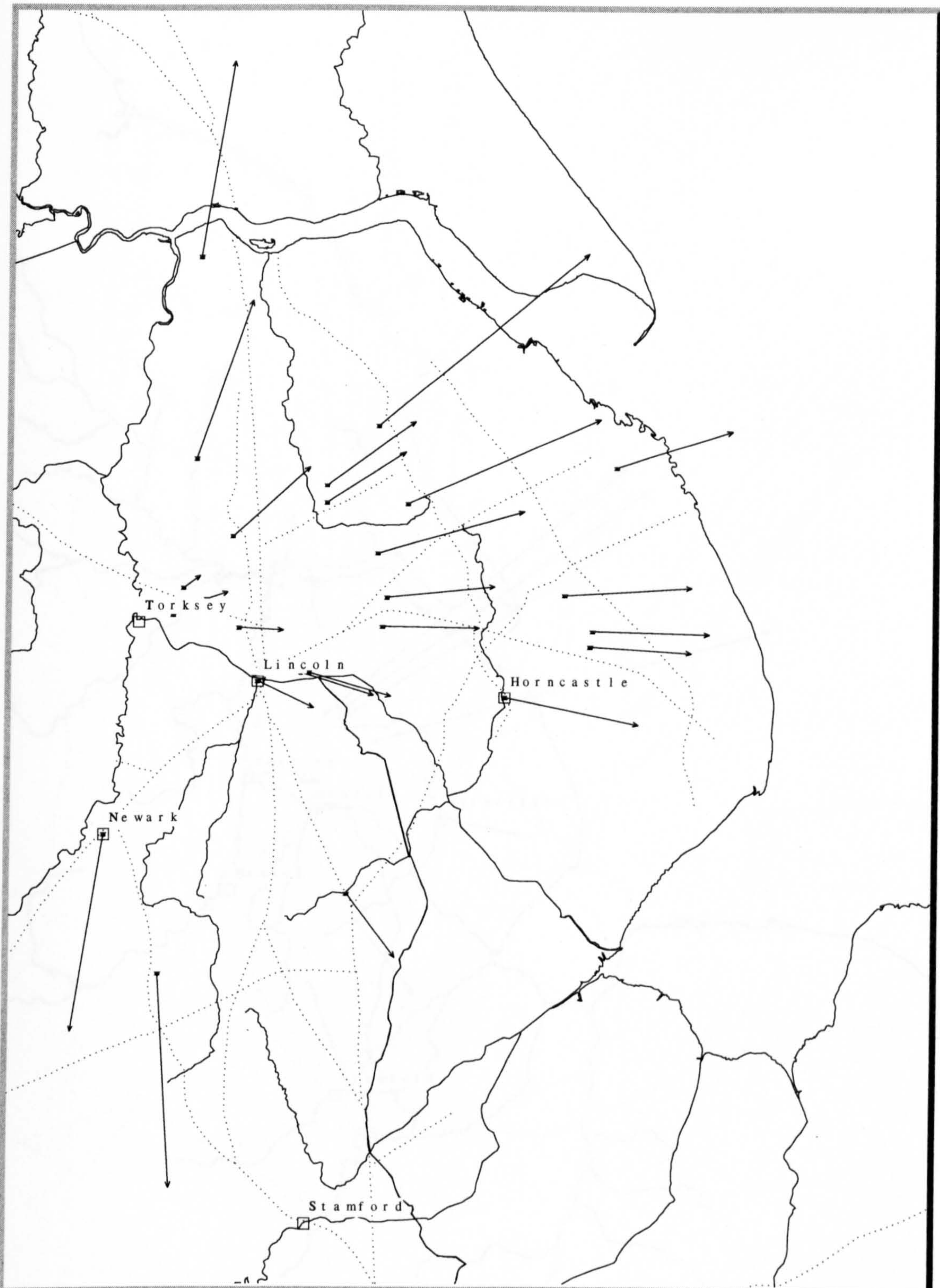
0  50 km



Figure 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

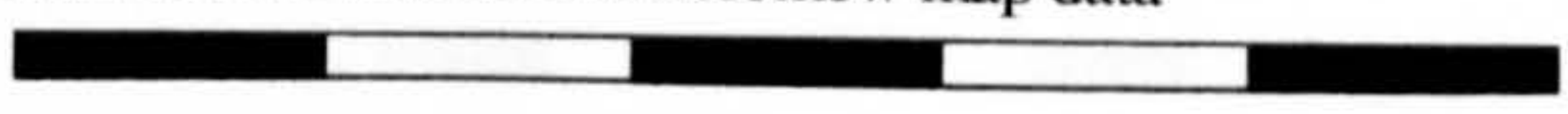
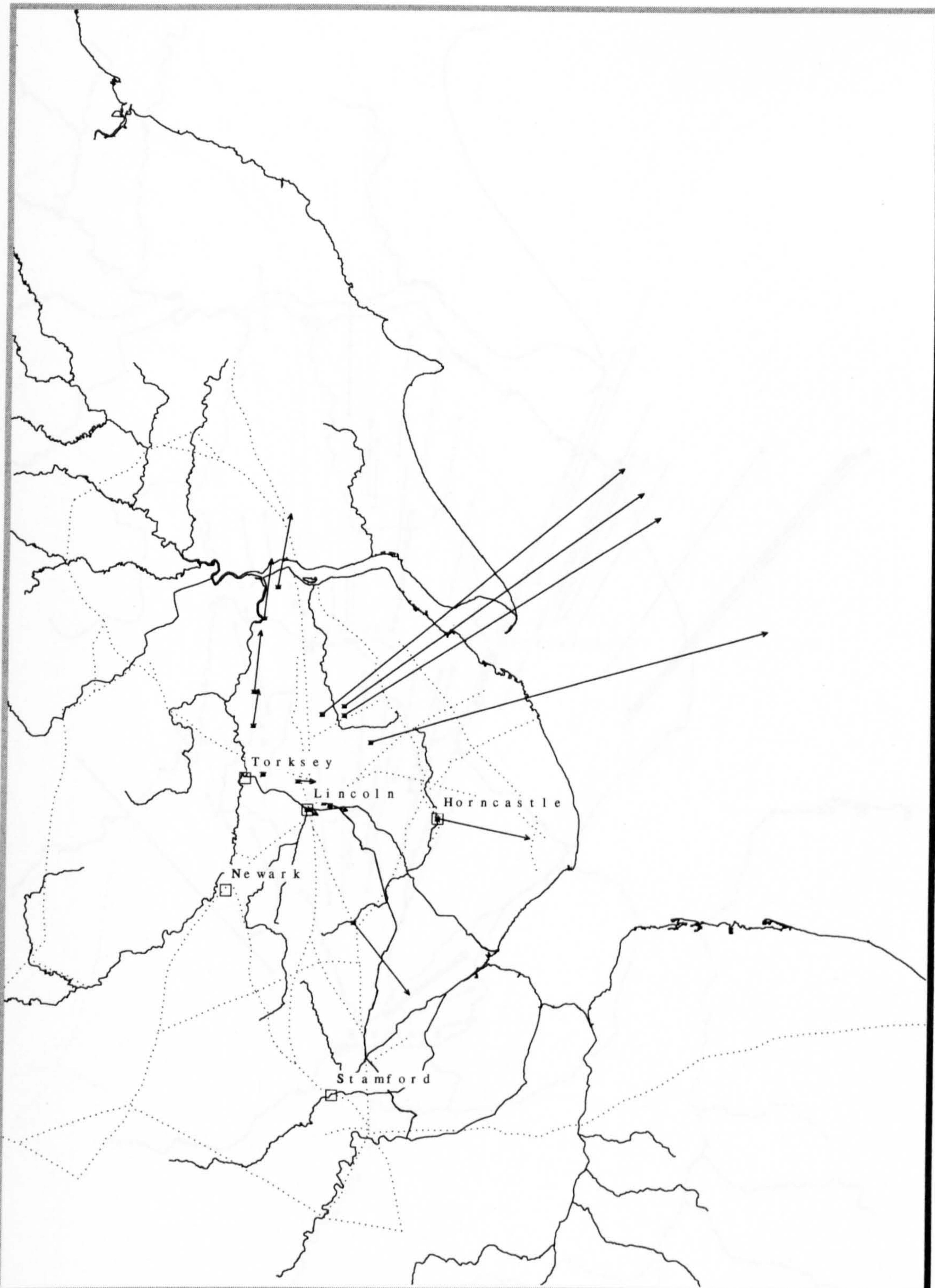
0  50 km



Figure 95



Temporal Distance Mapping: Torksey ware

(along rivers)

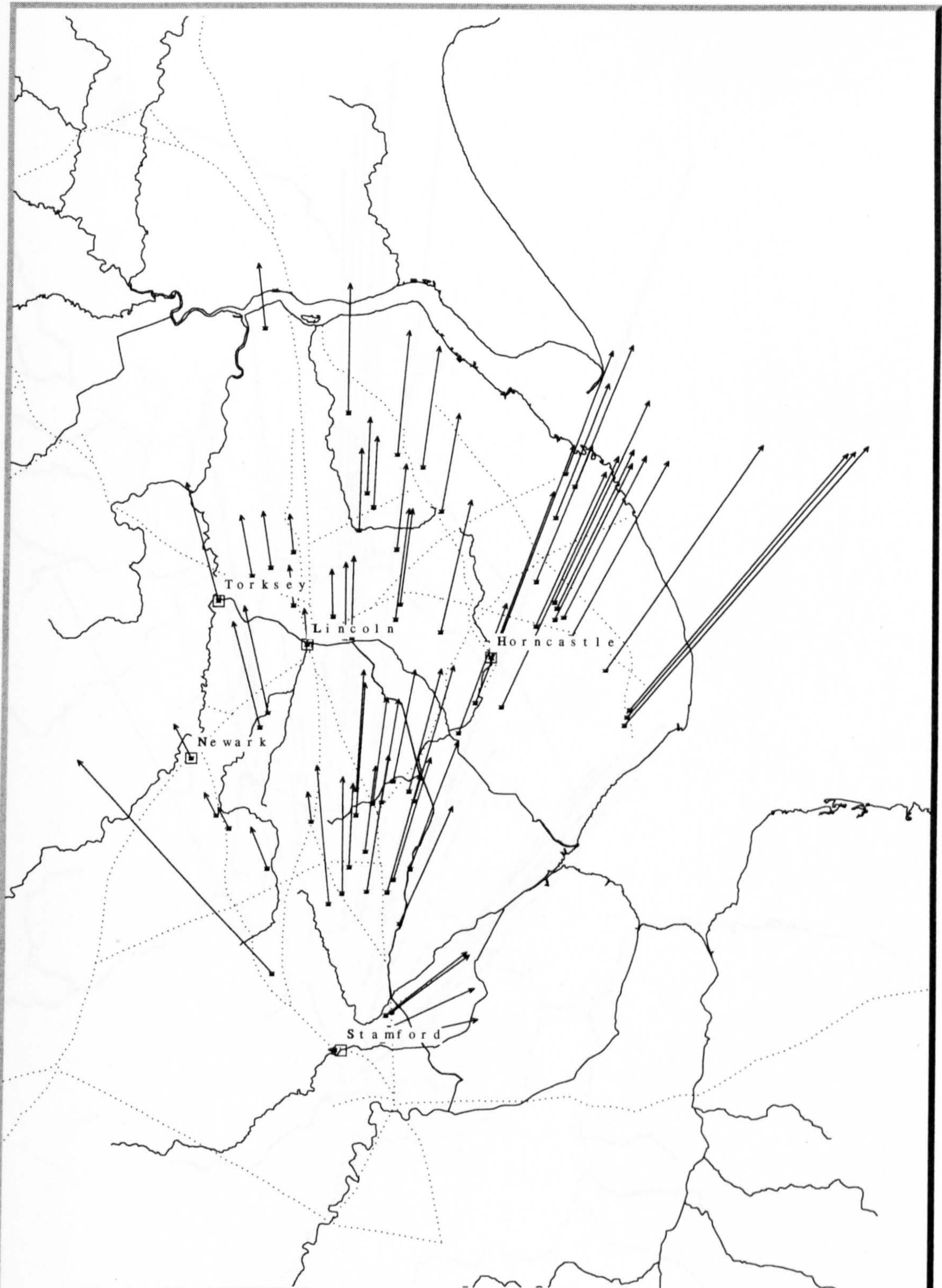
Sites derived from Vince and Young 1991

Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999



Figure 96



Temporal Distance Mapping: Stamford ware

(along roads)

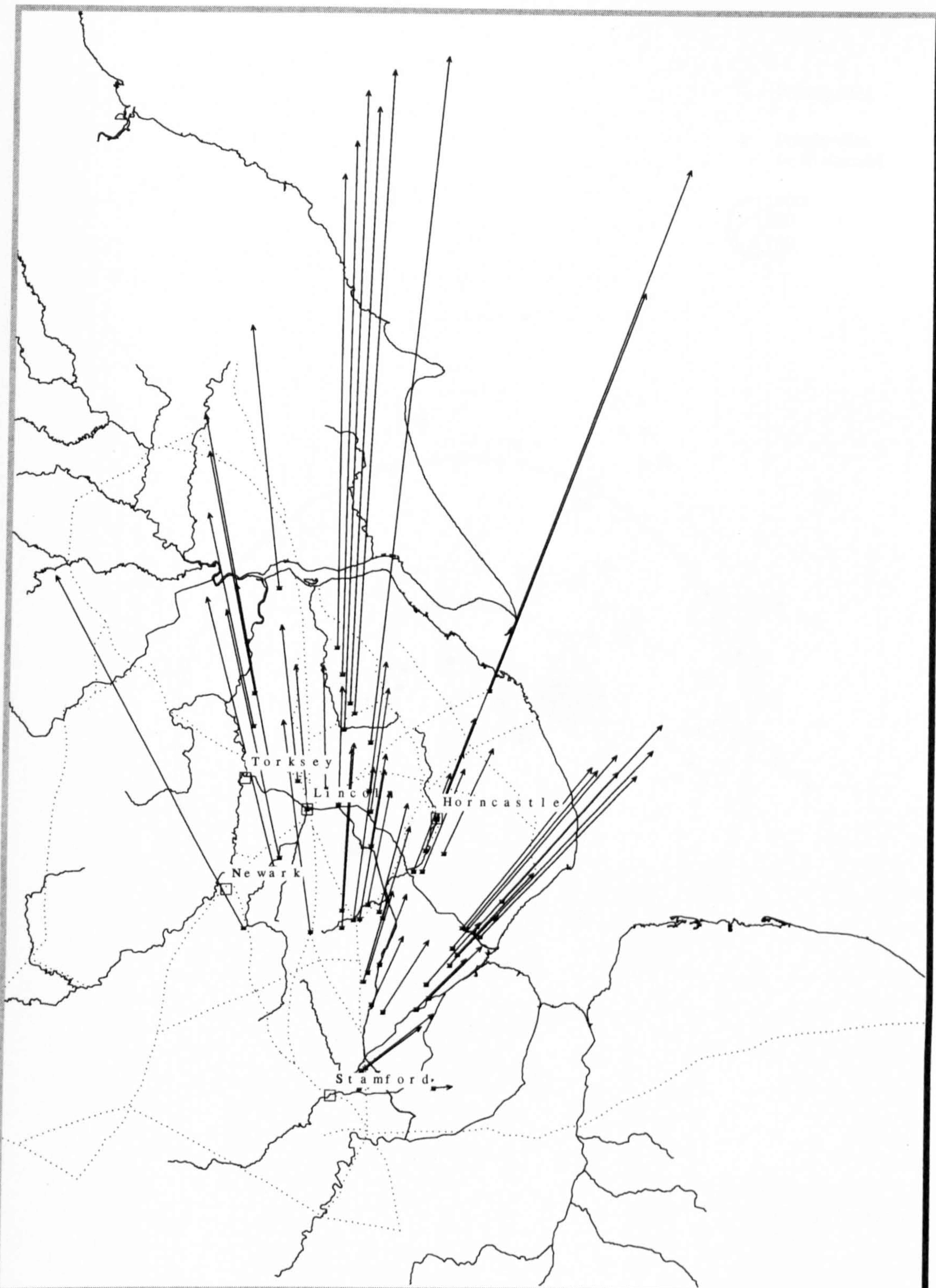
Sites derived from Vince and Young 1991

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

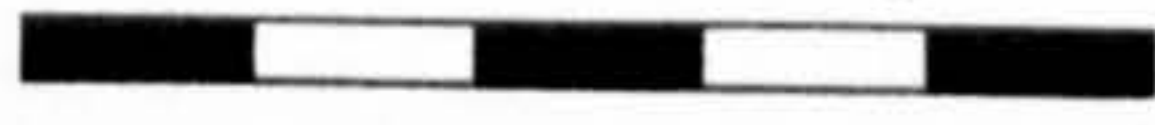
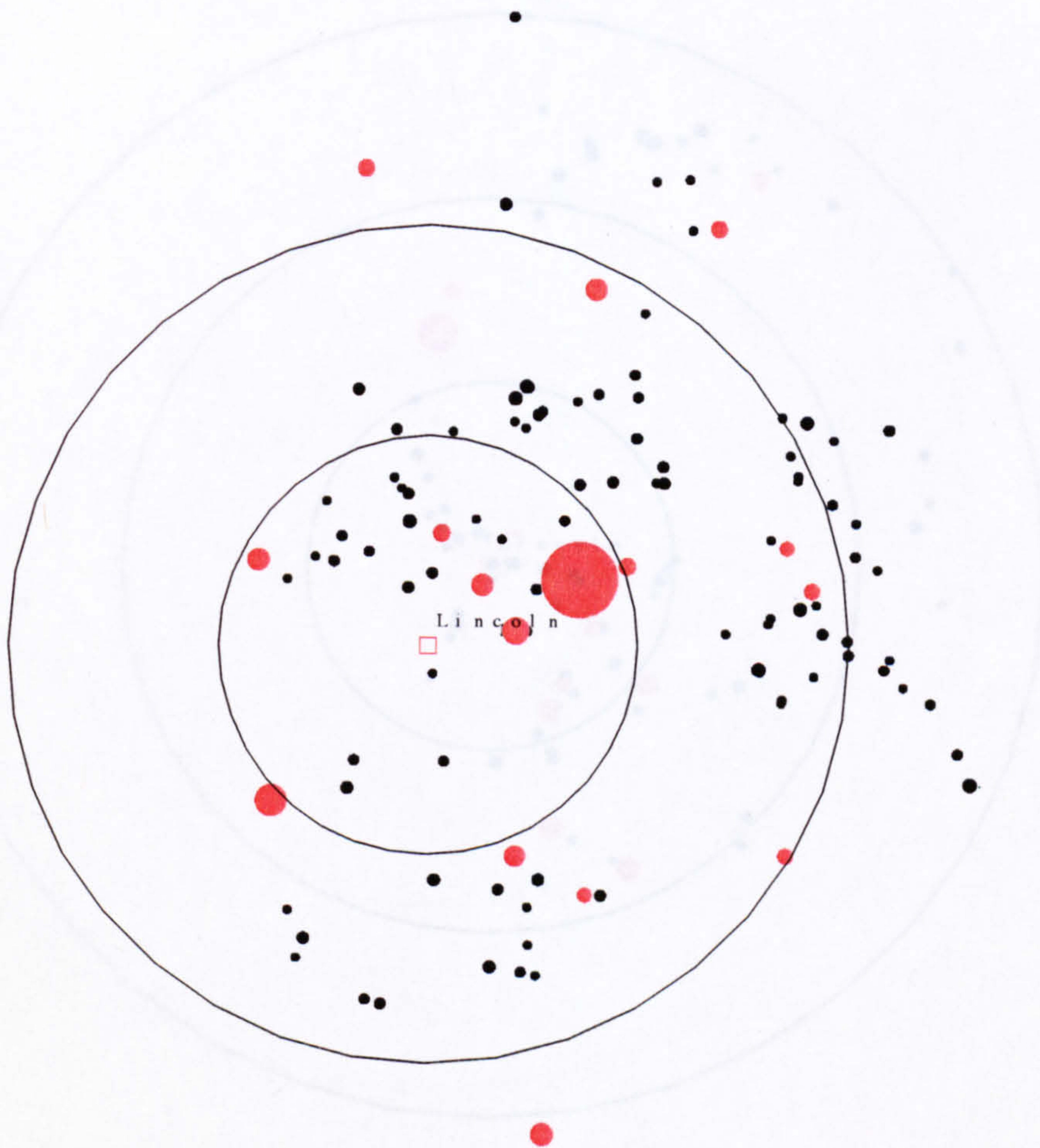
0  50 km



Figure 98

- Pottery sites
- Pottery sites (< 10 vessels)



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

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

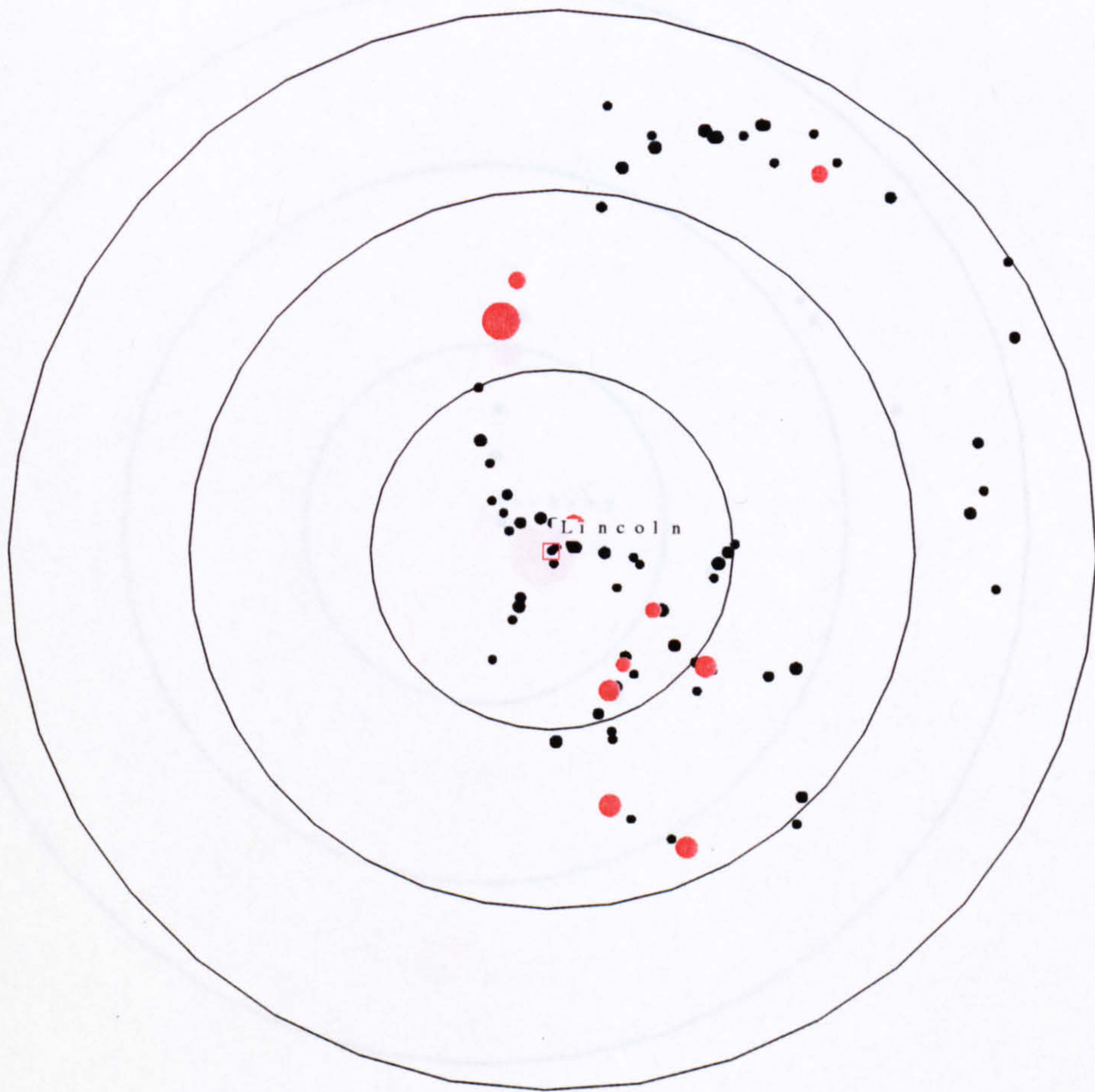
0 50 km



Original in Colour

Figure 99

- Pottery sites
- Pottery sites (< 10 vessels)



∇ Days of travel
(51.2 km (32 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

0  50 km



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

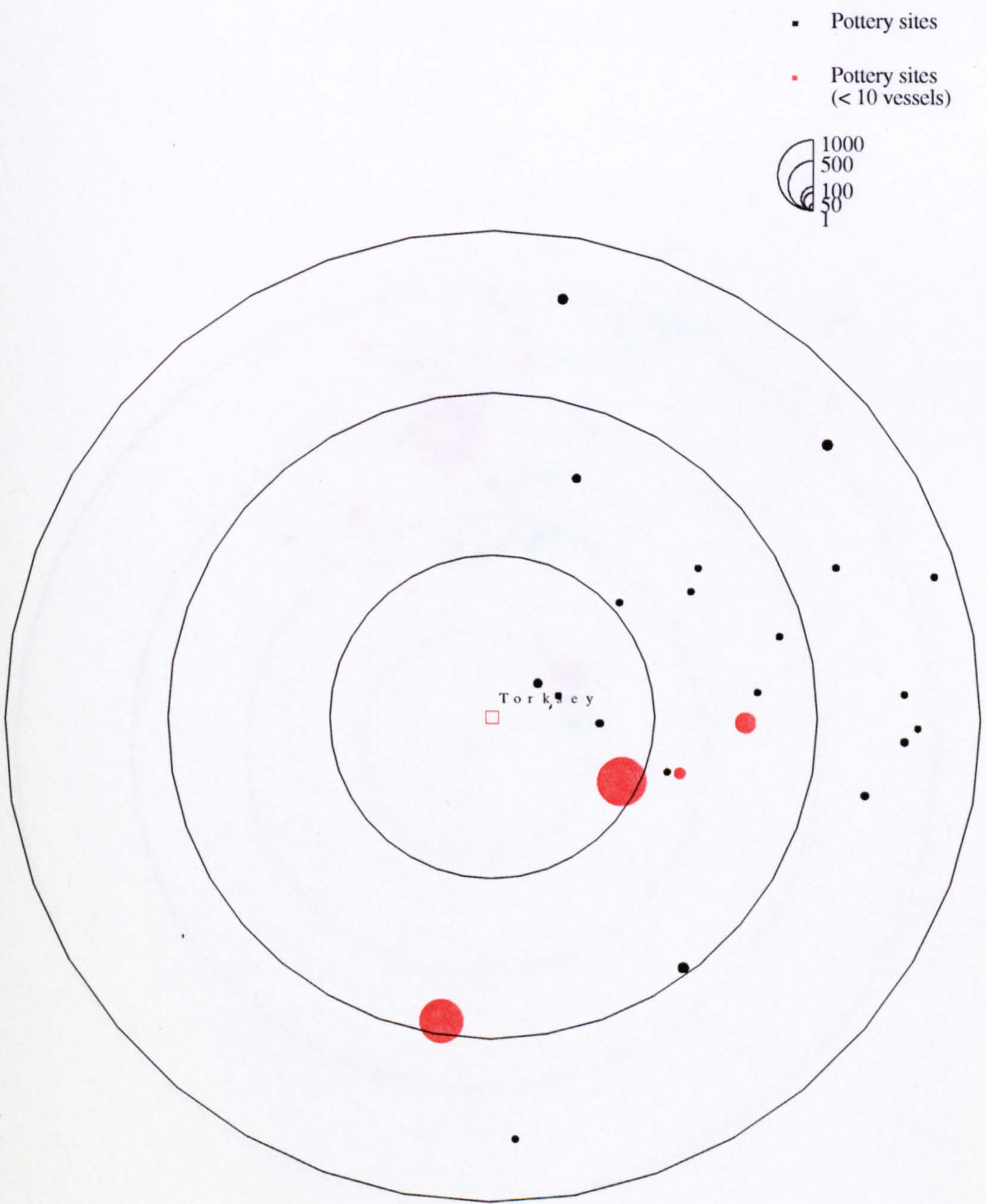
L.A. Symonds 1999

0 50 km



Original in Colour

Figure 101



- Pottery sites
- Pottery sites (< 10 vessels)



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

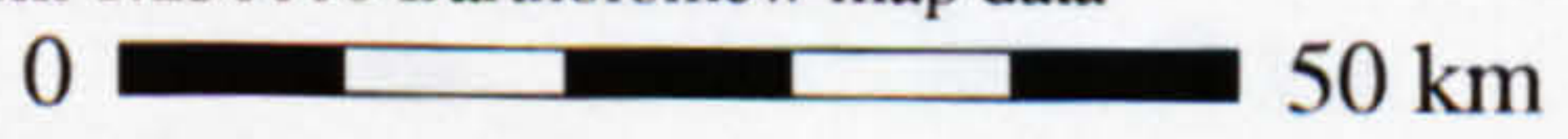
Temporal Distance Mapping: Torksey ware

(quantities of pottery along roads per days travel)

Sites derived from Vince and Young 1991

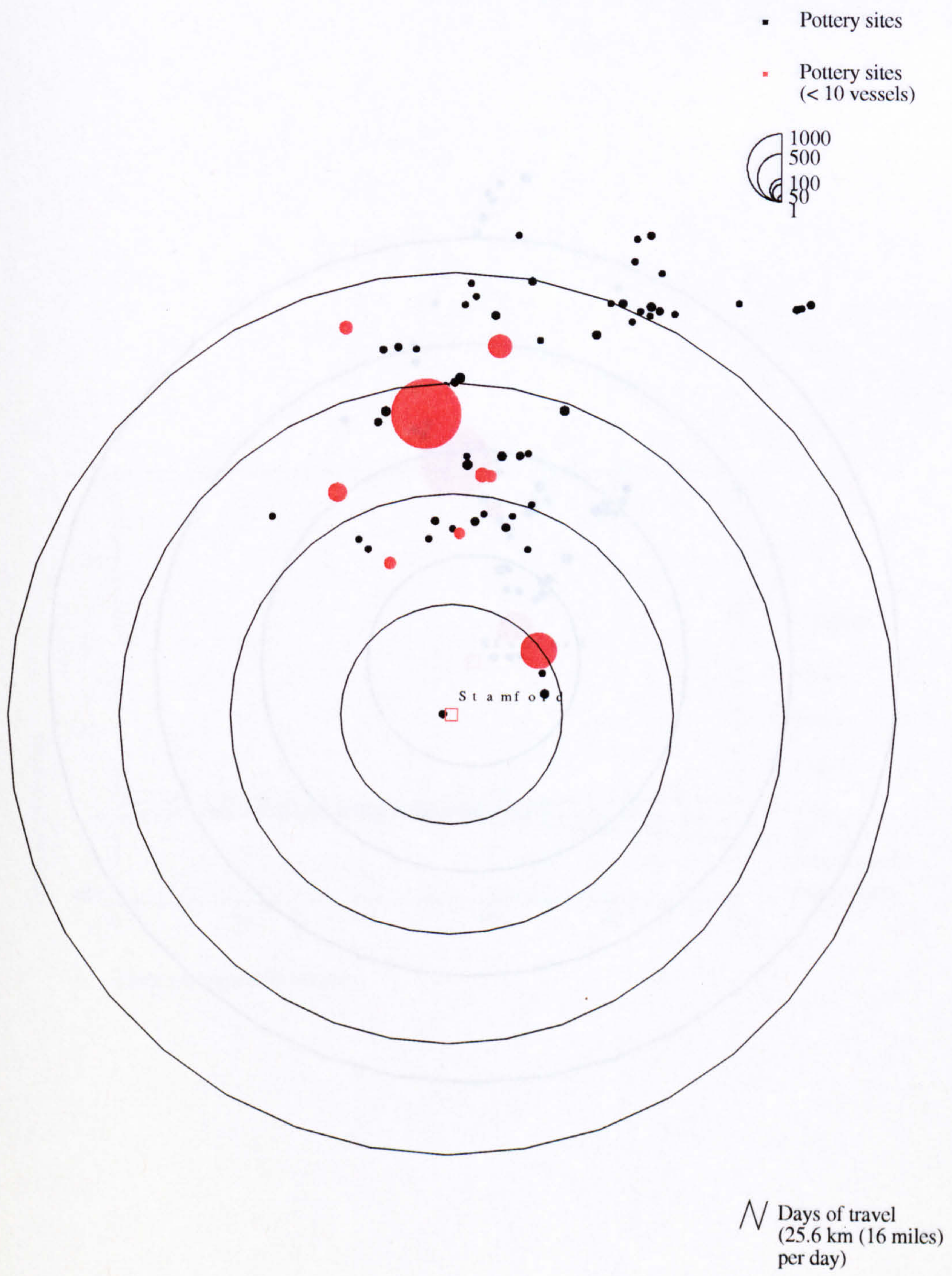
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999



Original in Colour

Figure 102



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

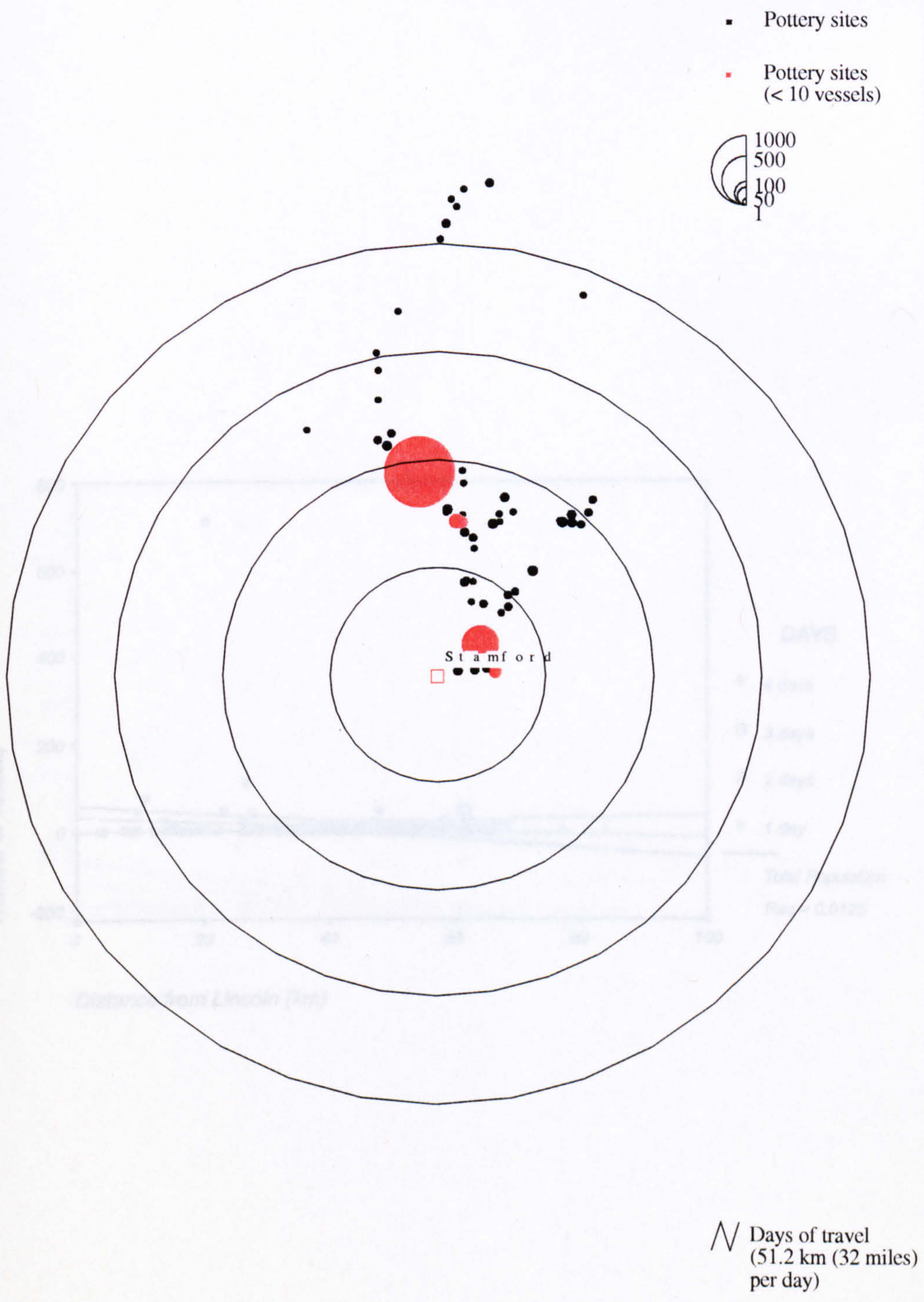
L.A. Symonds 1999

0 50 km



Original in Colour

Figure 103



Temporal Distance Mapping: Stamford ware

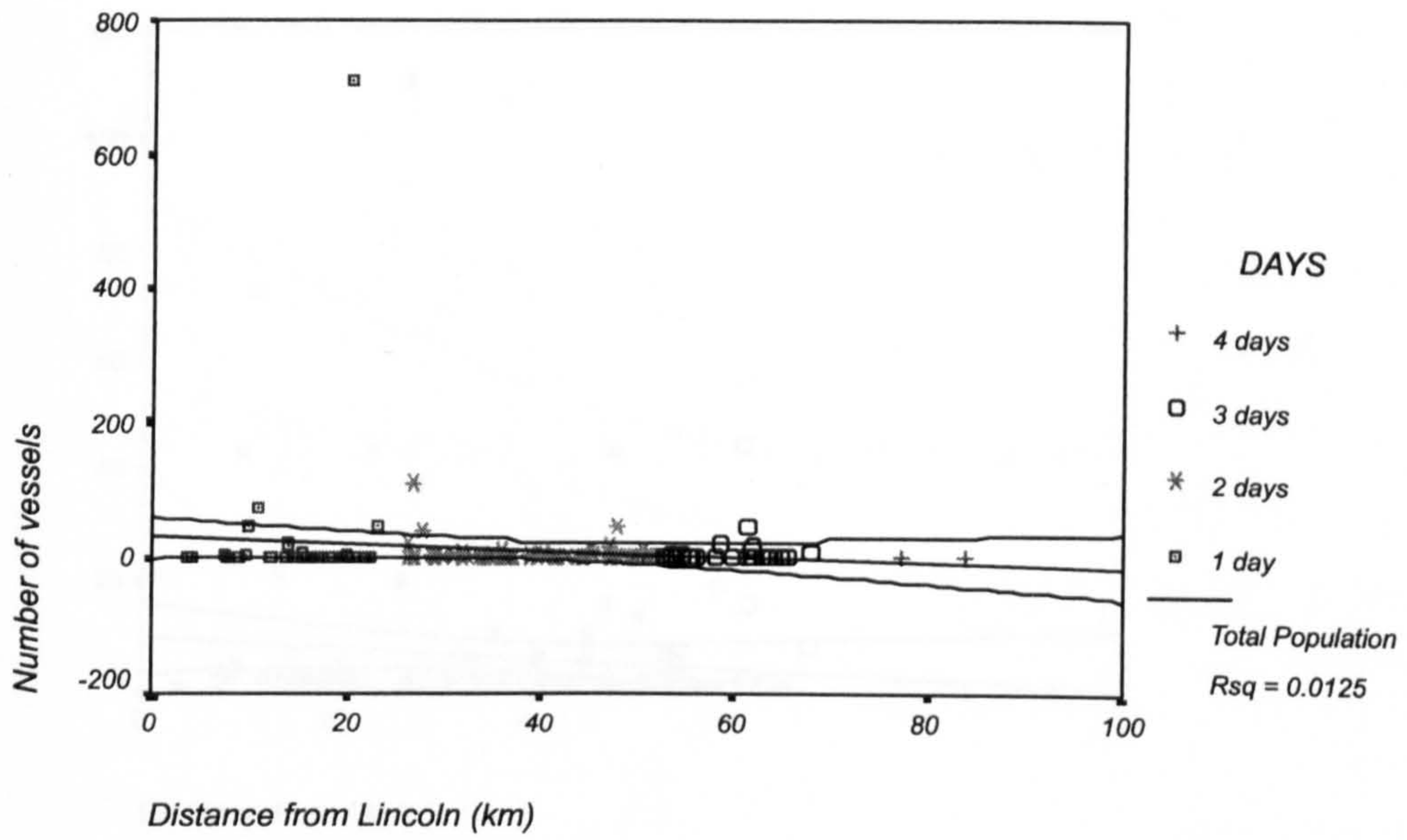
(quantities of pottery along rivers per days travel)

Sites derived from Vince and Young 1991

Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999



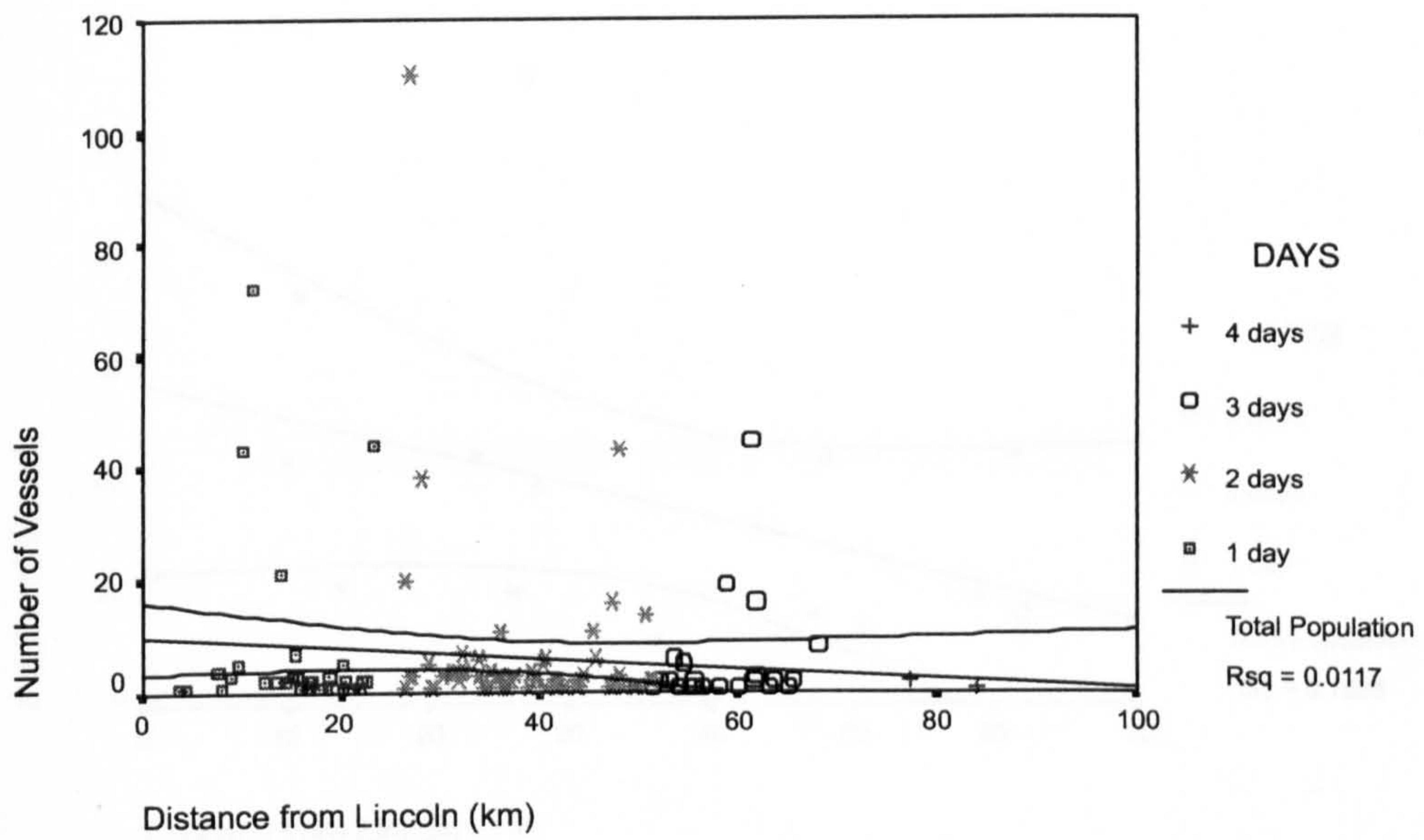


Regression of Lincoln wares

Road distances
Including Goltho

L.A. Symonds 1999

Figure 105

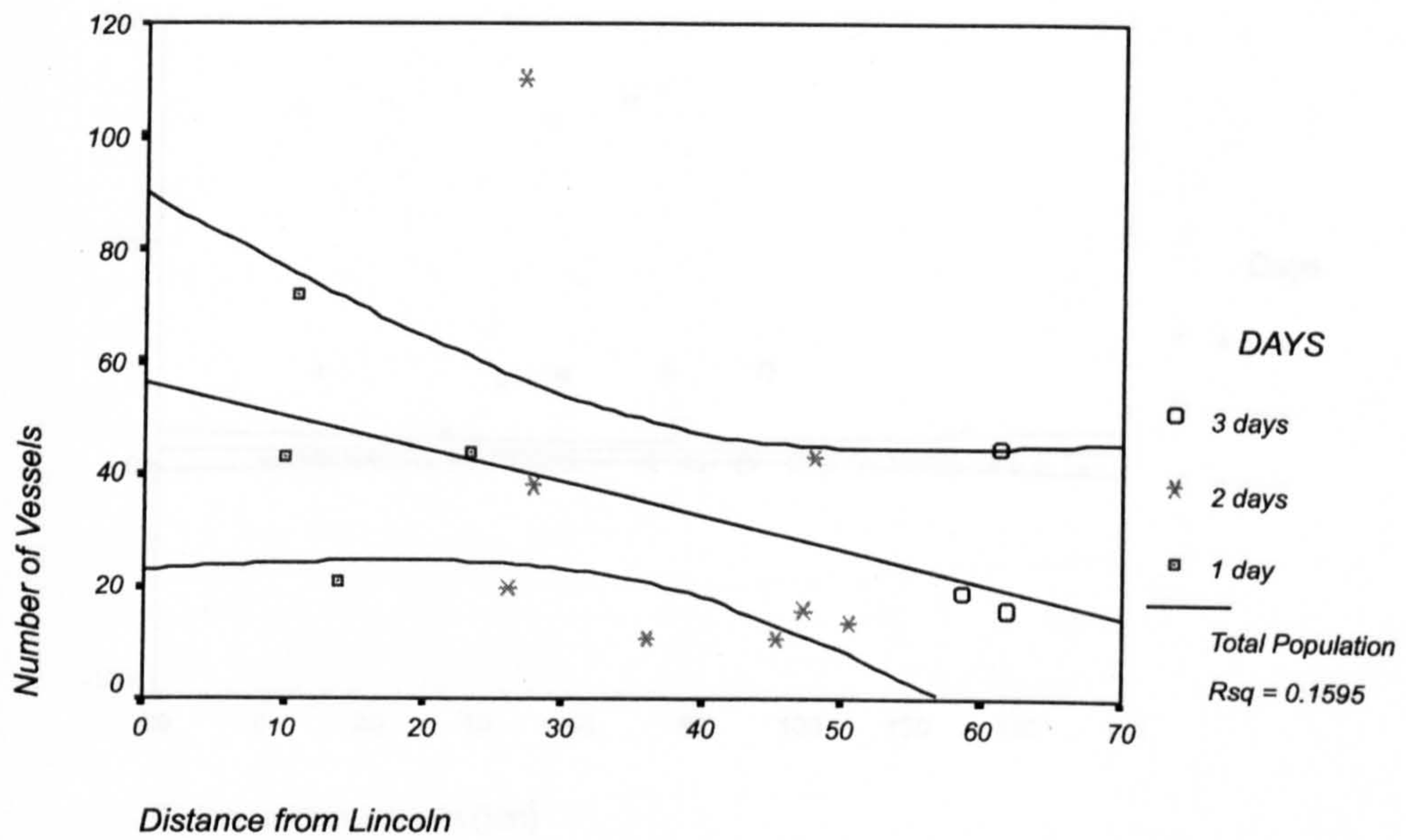


Regression of Lincoln wares

Road distances
Excluding Goltho

L.A. Symonds 1999

Figure 106

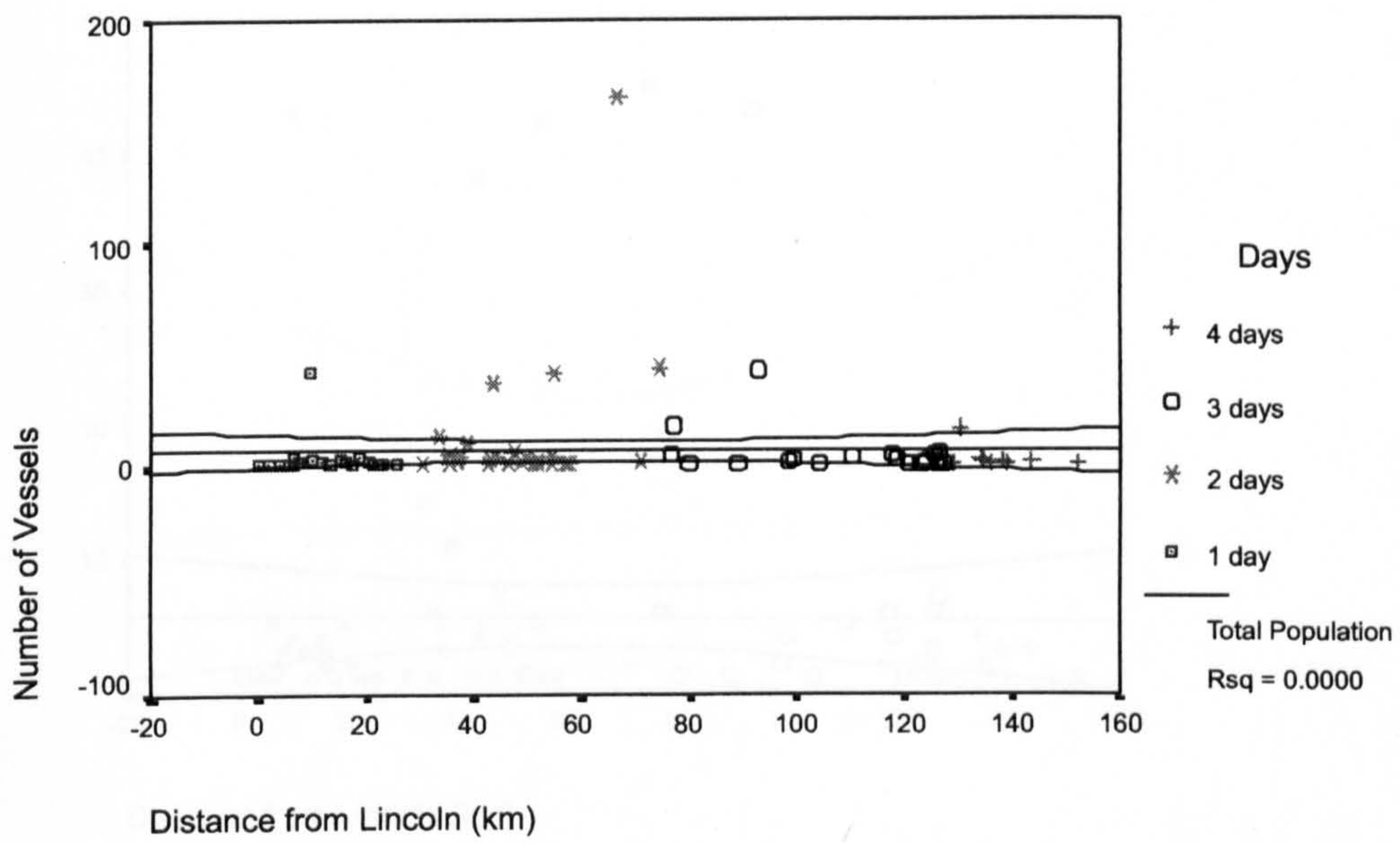


Regression of Lincoln wares

Road distances
 Sites with more than 10 vessels

L.A. Symonds 1999

Figure 107

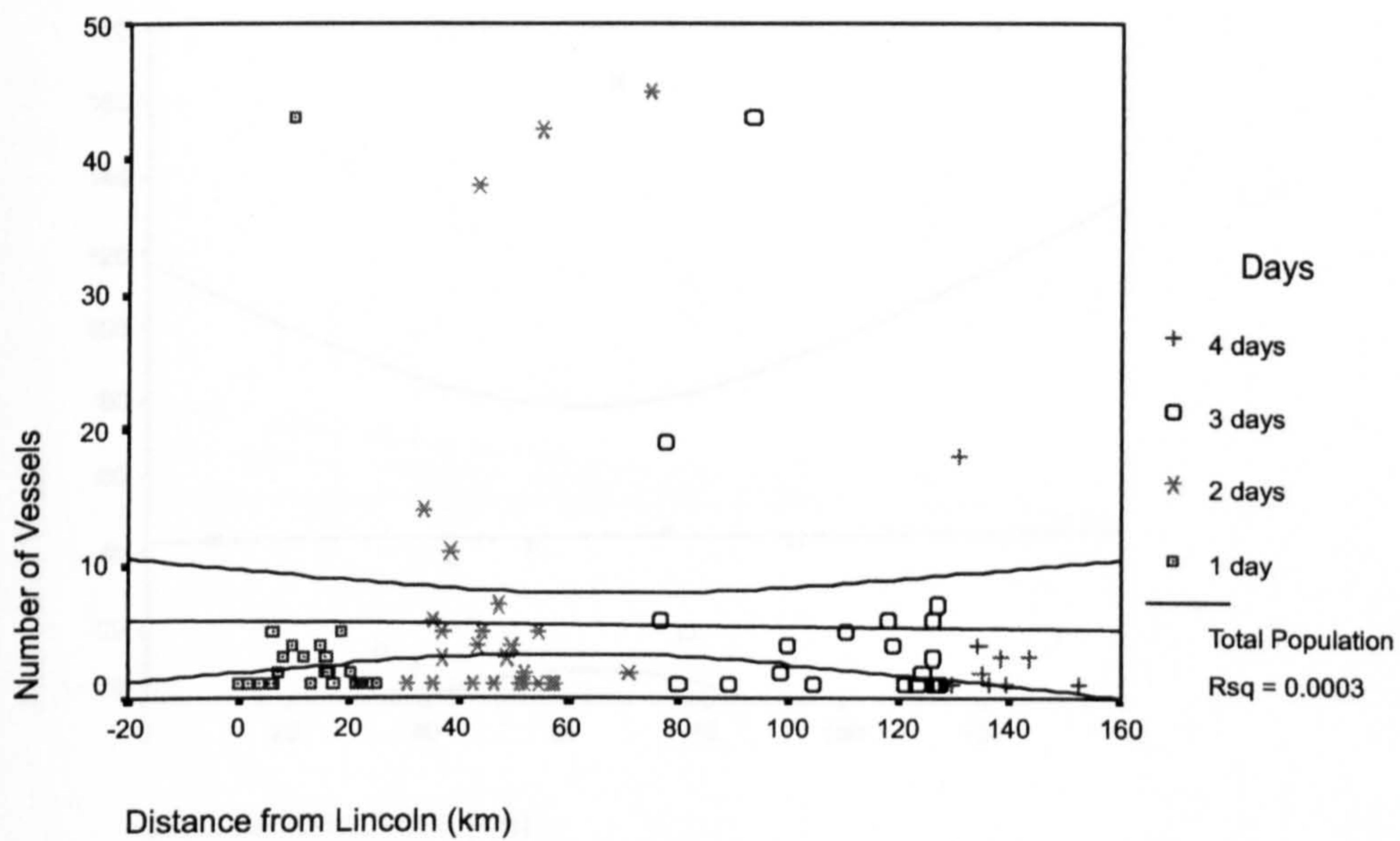


Regression of Lincoln wares

River distances
Including Flixborough

L.A. Symonds 1999

Figure 108

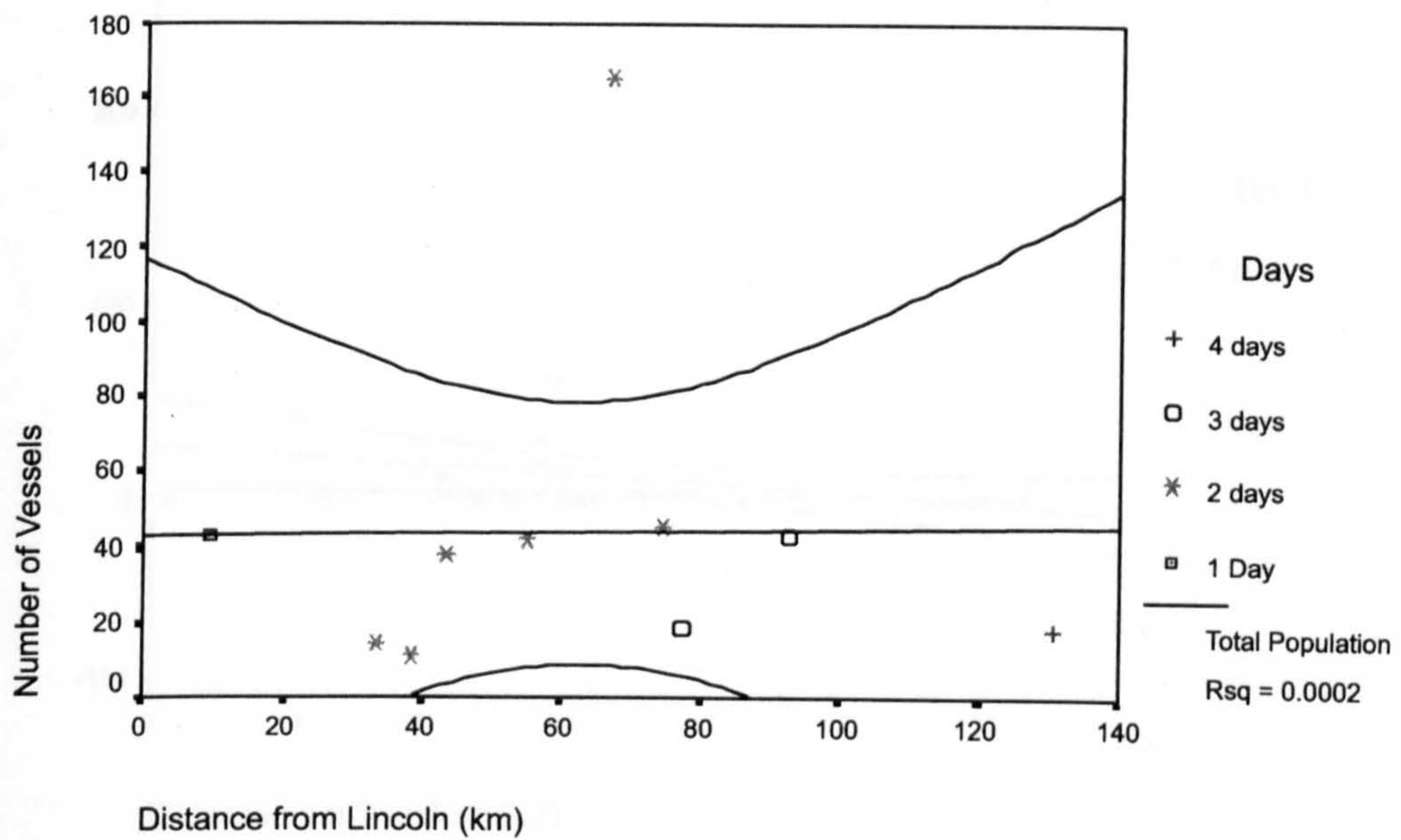


Regression of Lincoln wares

River distances
Excluding Flixborough

L.A. Symonds 1999

Figure 109



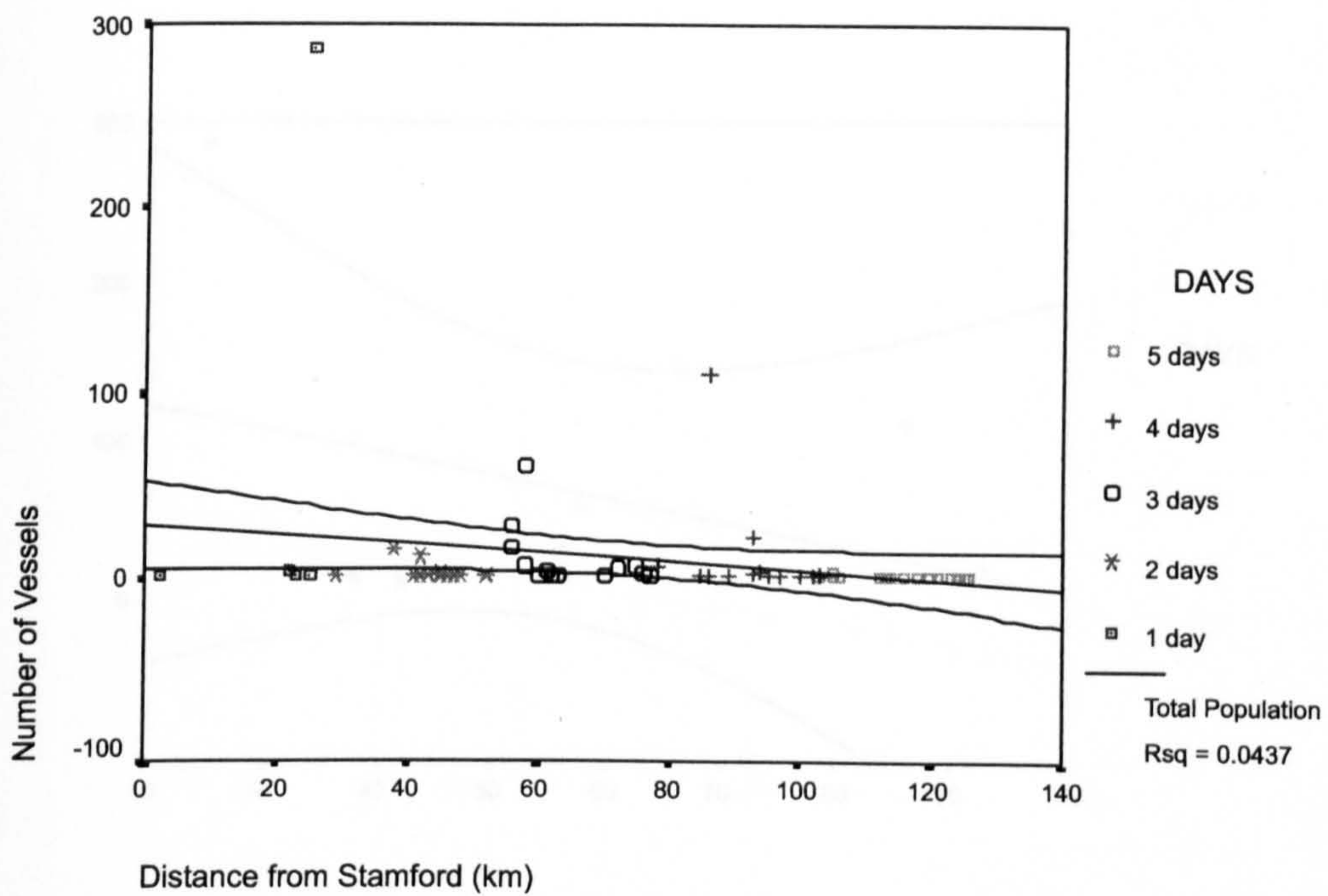
Regression of Lincoln wares

River distances

Sites with more than 10 vessels

L.A. Symonds 1999

Figure 110

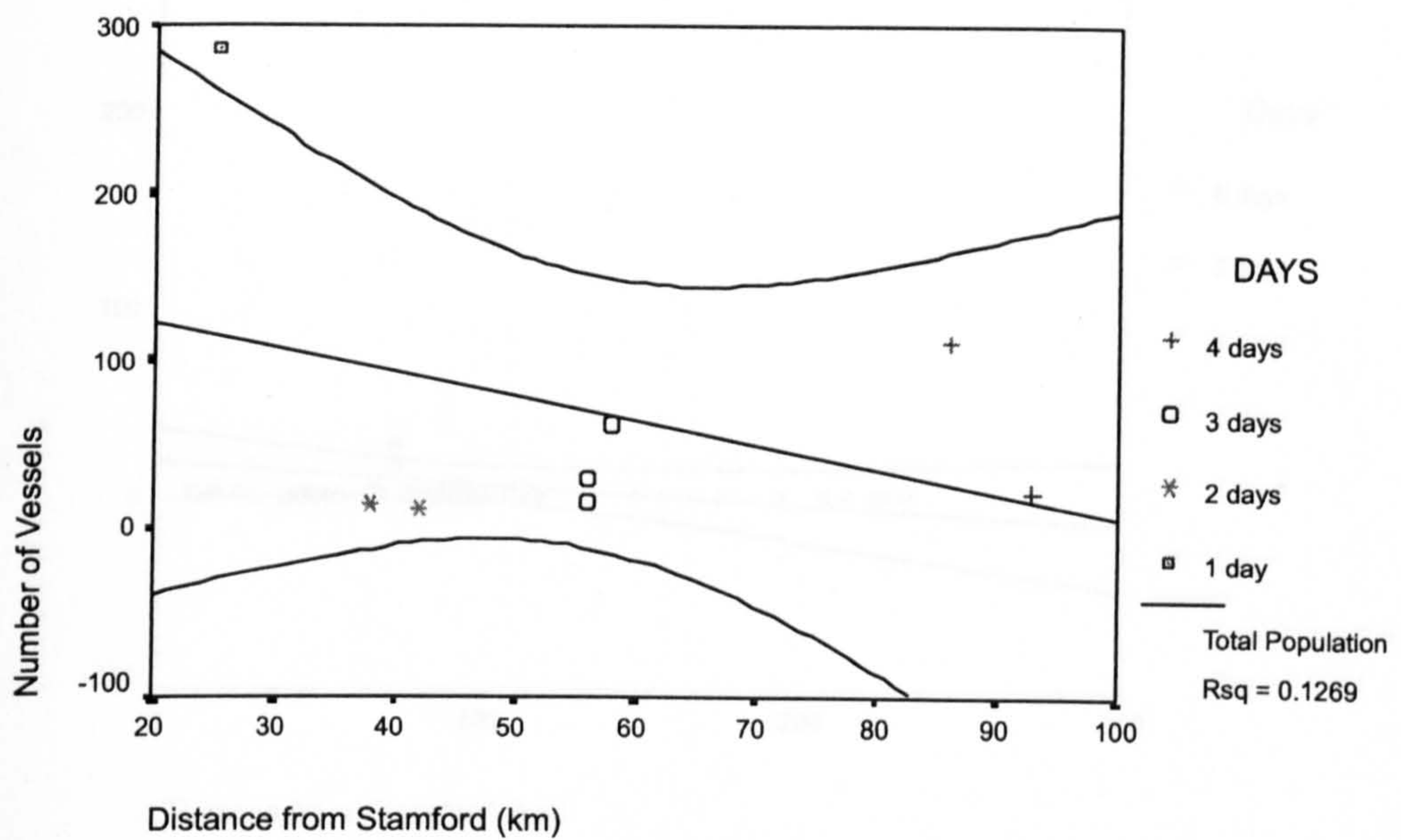


Regression of Stamford ware

Road distances

L.A. Symonds 1999

Figure 111

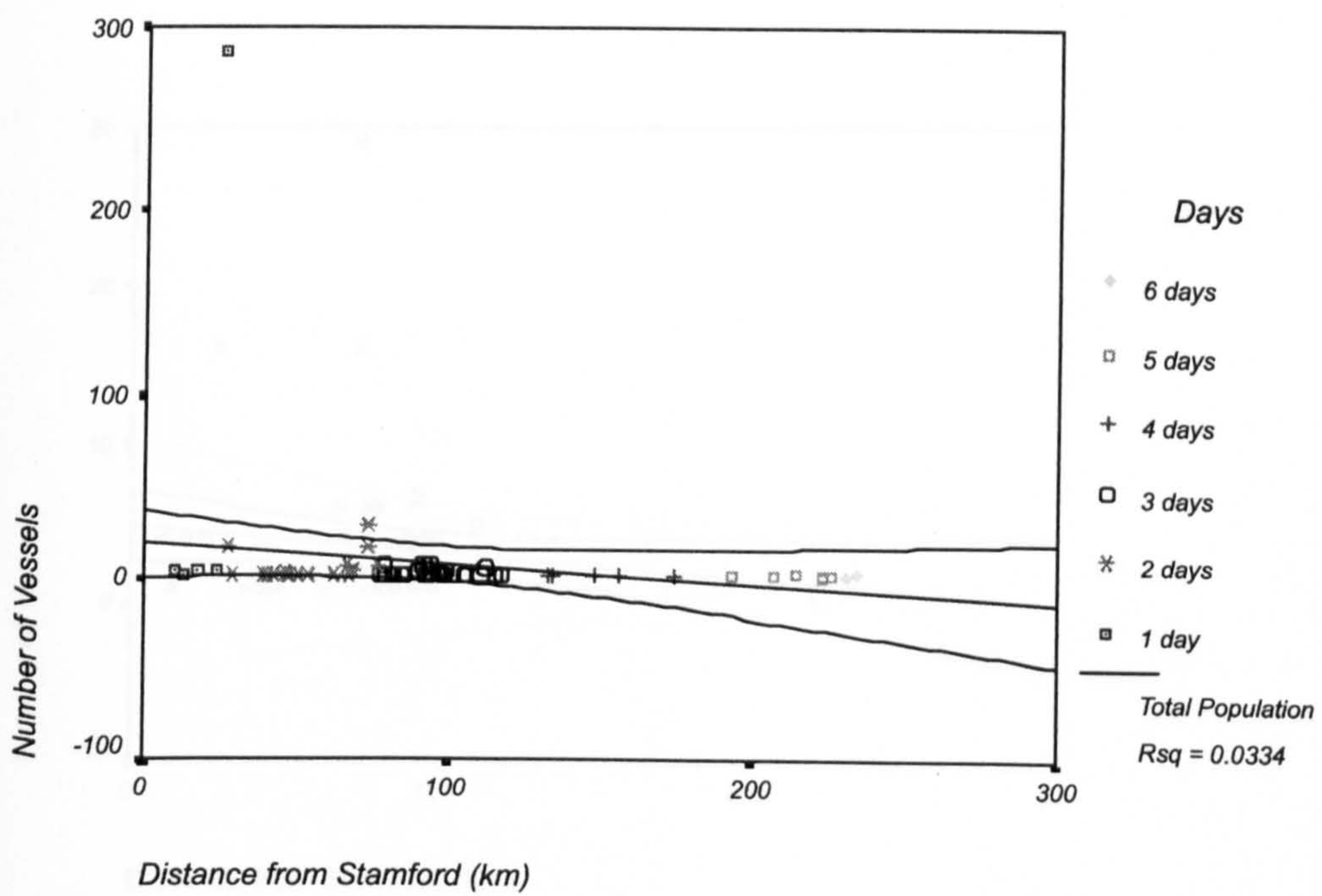


Regression of Stamford ware

Road distances
 Sites with more than 10 vessels

L.A. Symonds 1999

Figure 112

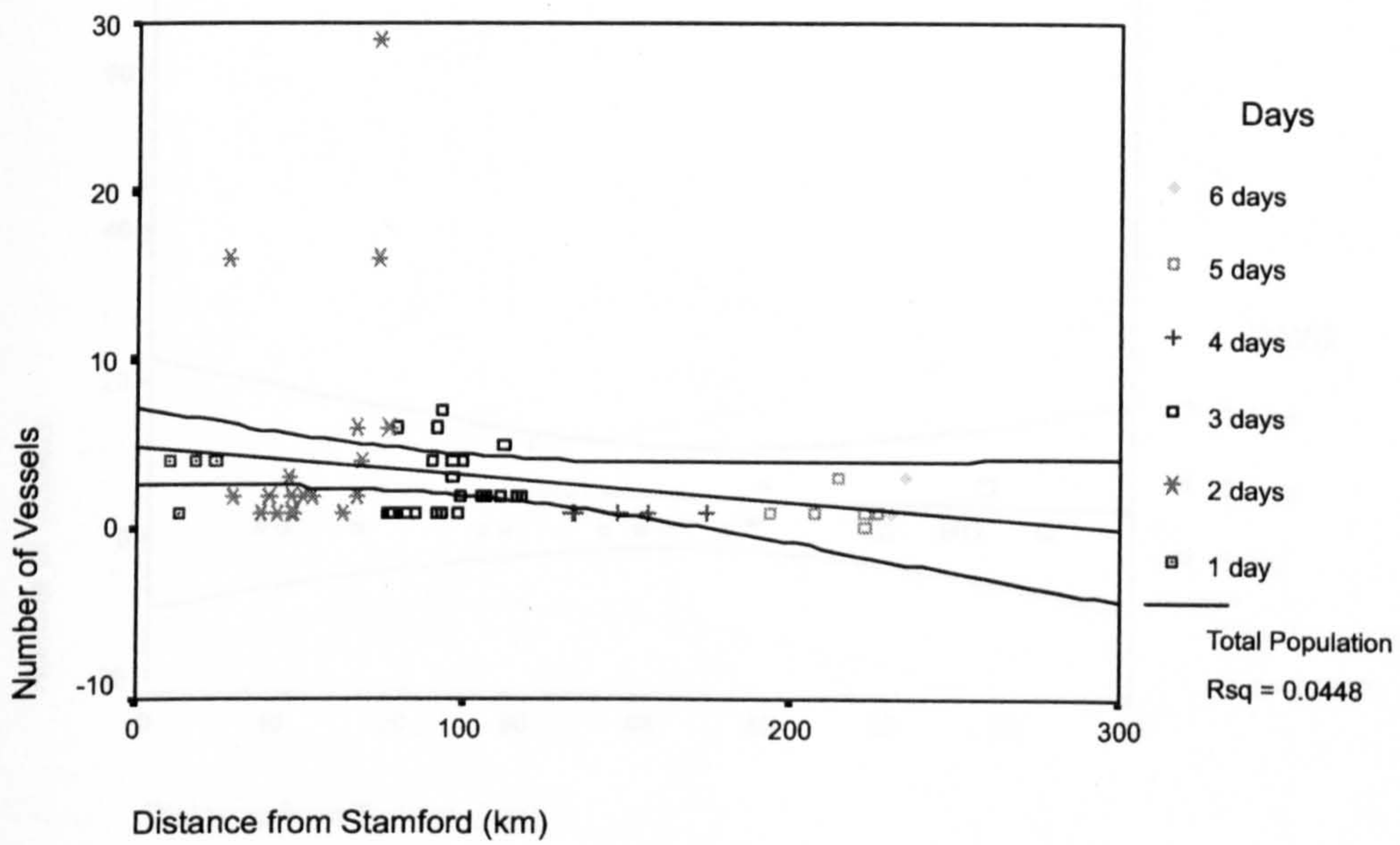


Regression of Stamford ware

River distances

L.A. Symonds 1999

Figure 113

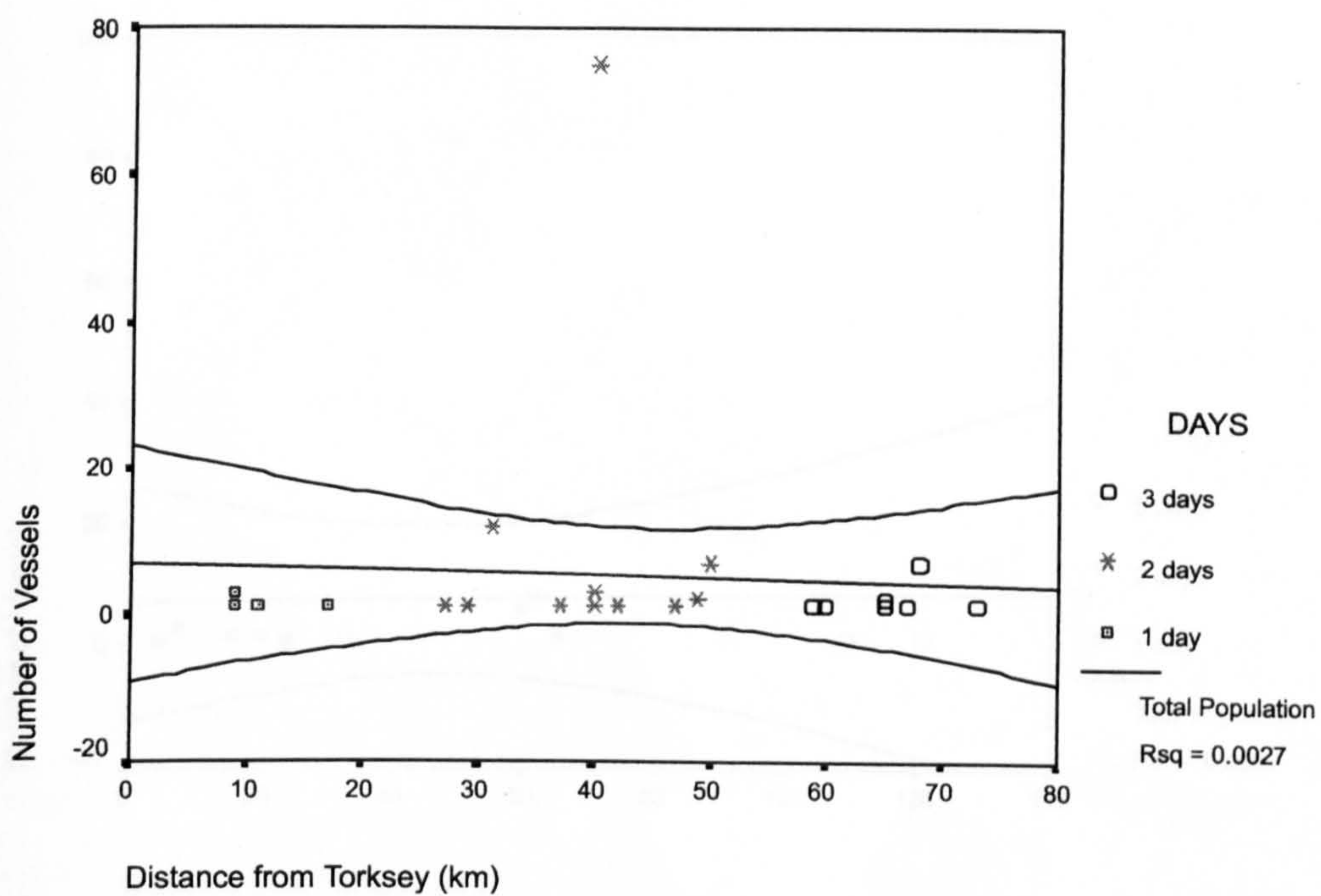


Regression of Stamford ware

River distances
Excluding Baston

L.A. Symonds 1999

Figure 114

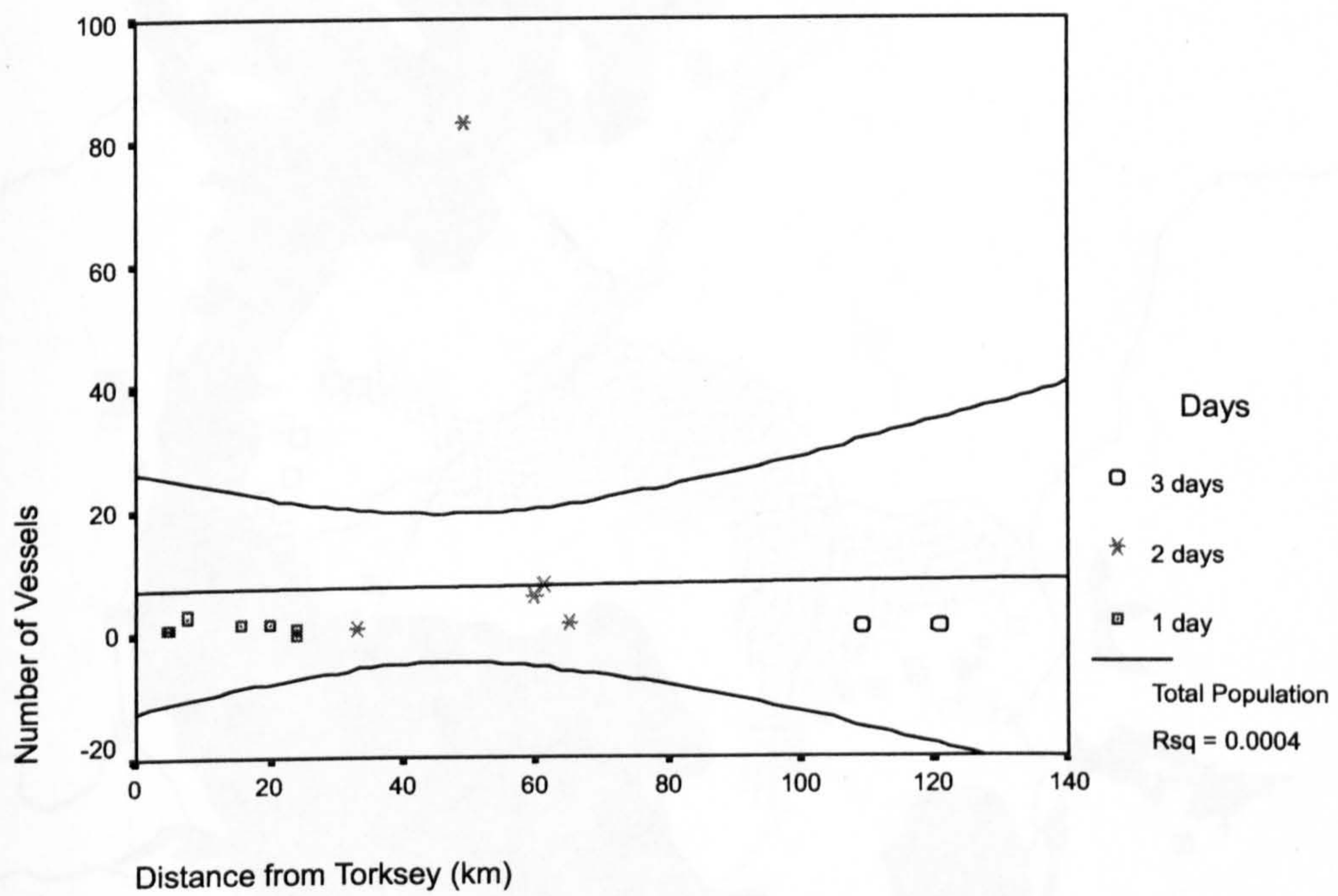


Regression of Torksey ware

Road distances

L.A. Symonds 1999

Figure 115



Regression of Torksey ware

River distances

L.A. Symonds 1999

Figure 116

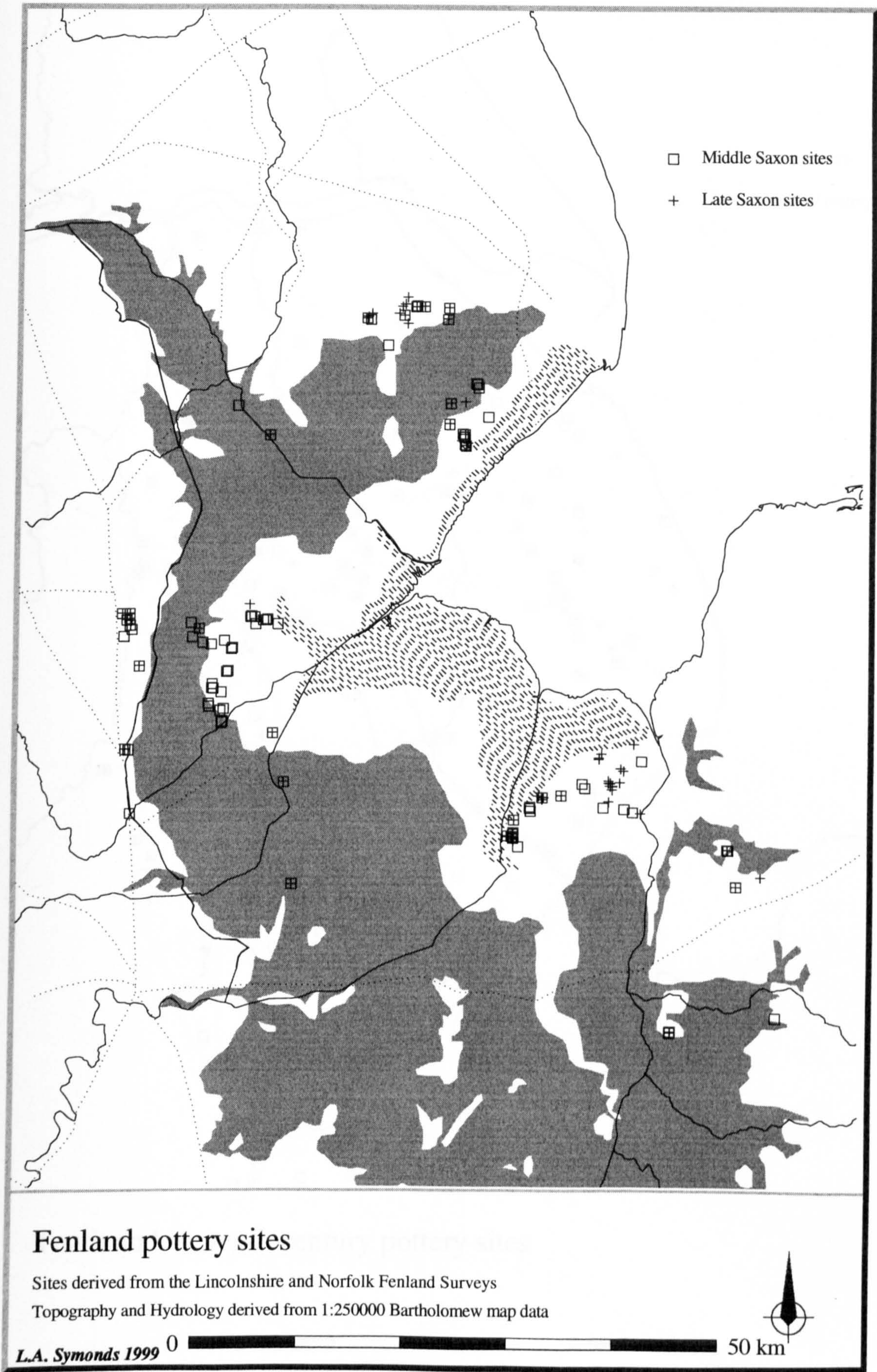
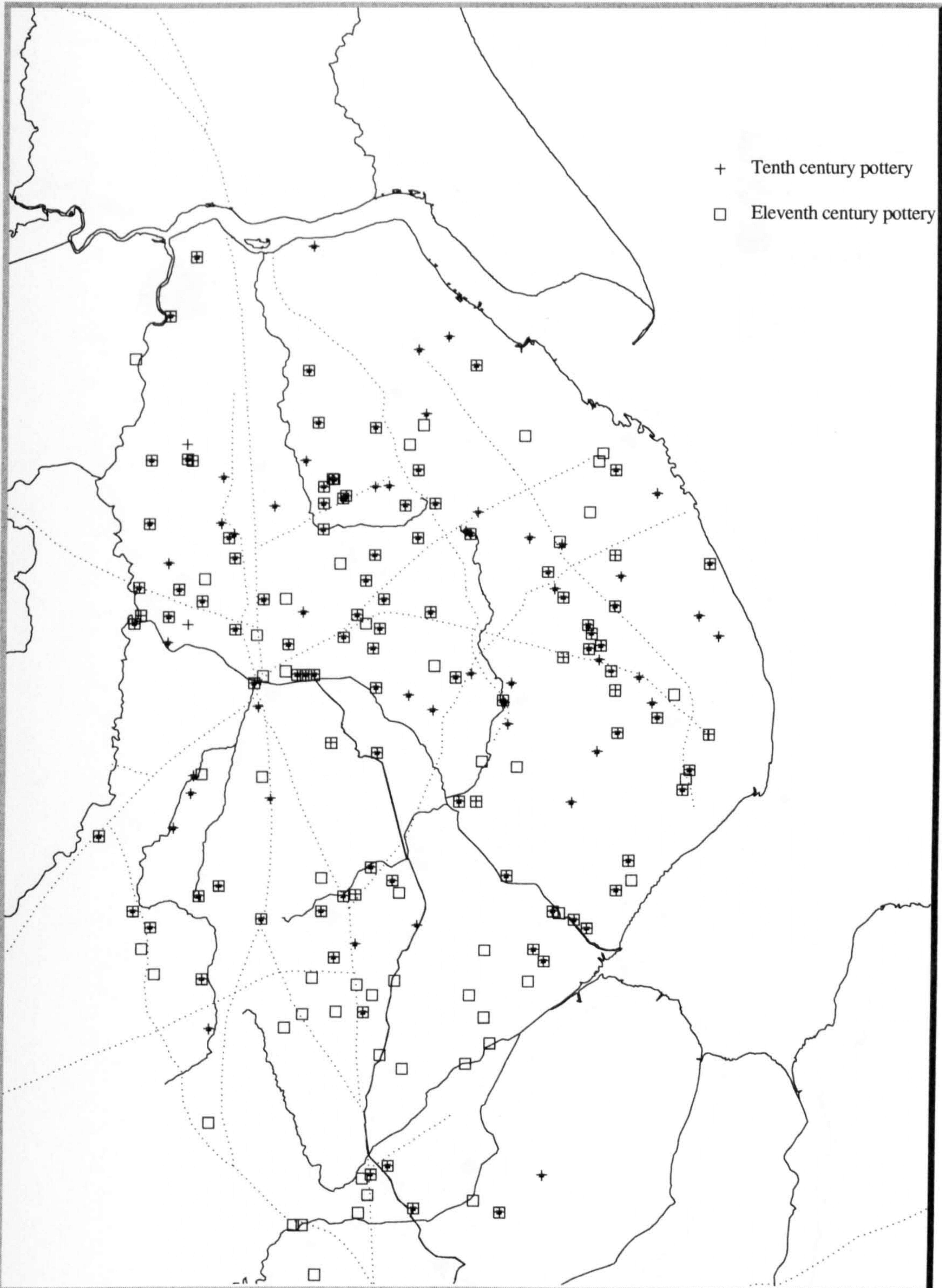


Figure 117



Tenth and eleventh century pottery sites

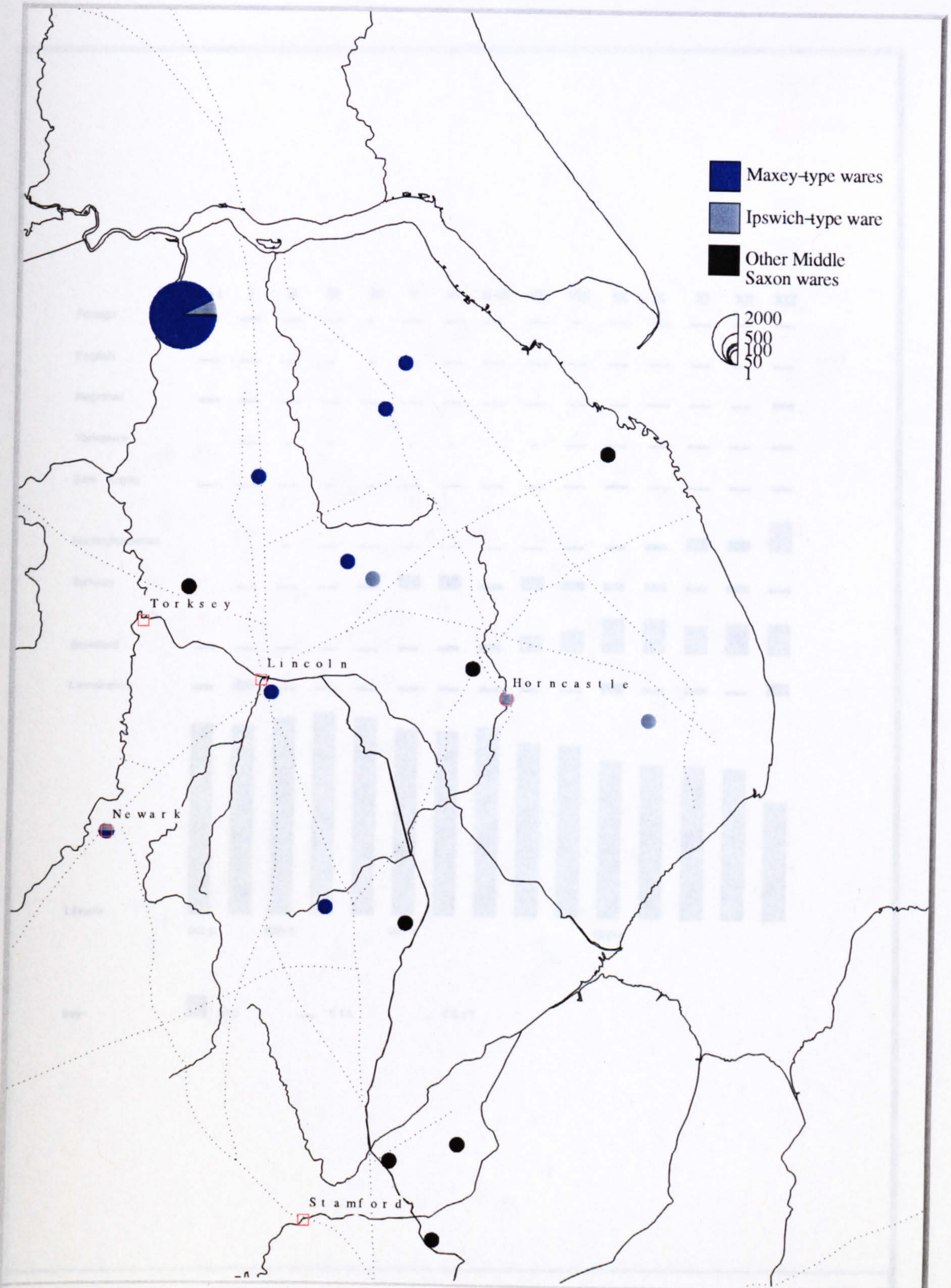
Sites derived from Vince and Young 1991

Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999



Figure 118



Distribution of Anglian wares in Lincolnshire

(quantity of vessels)

Sites derived from Vince and Young 1991

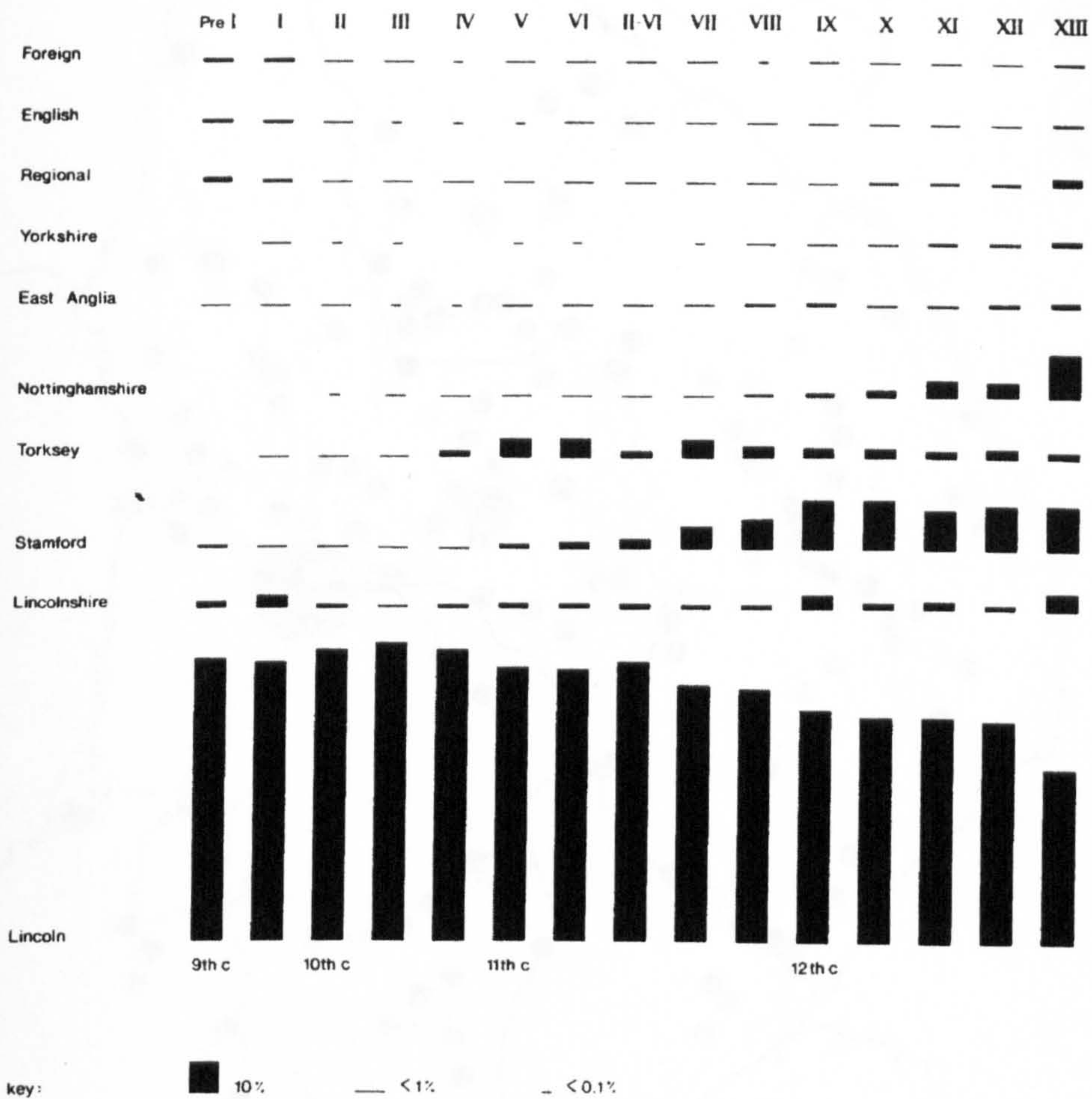
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999



Original in Colour

Figure 119

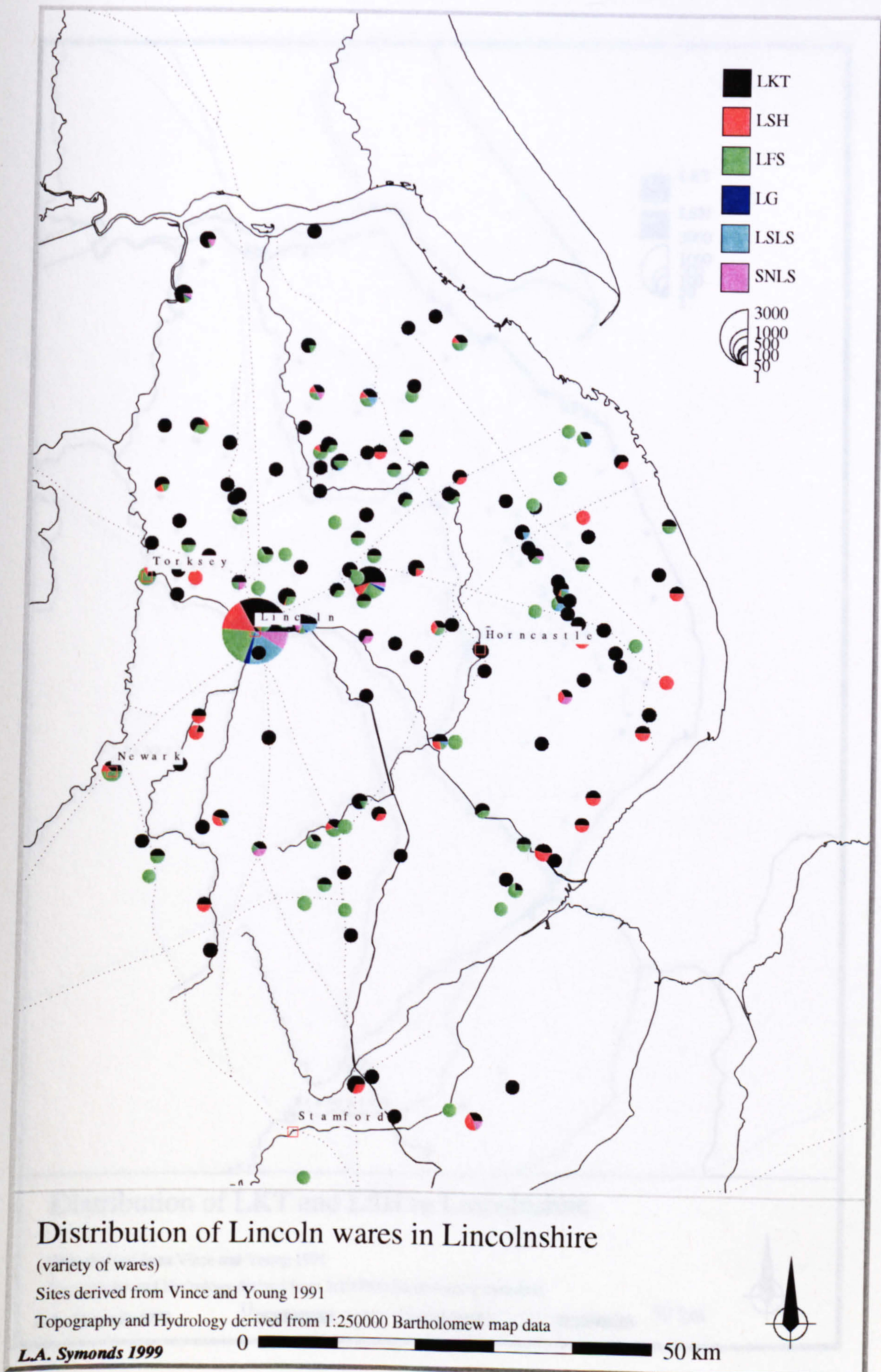


Proportion of Lincoln Wares at Flaxengate

From Adams Gilmour 1988

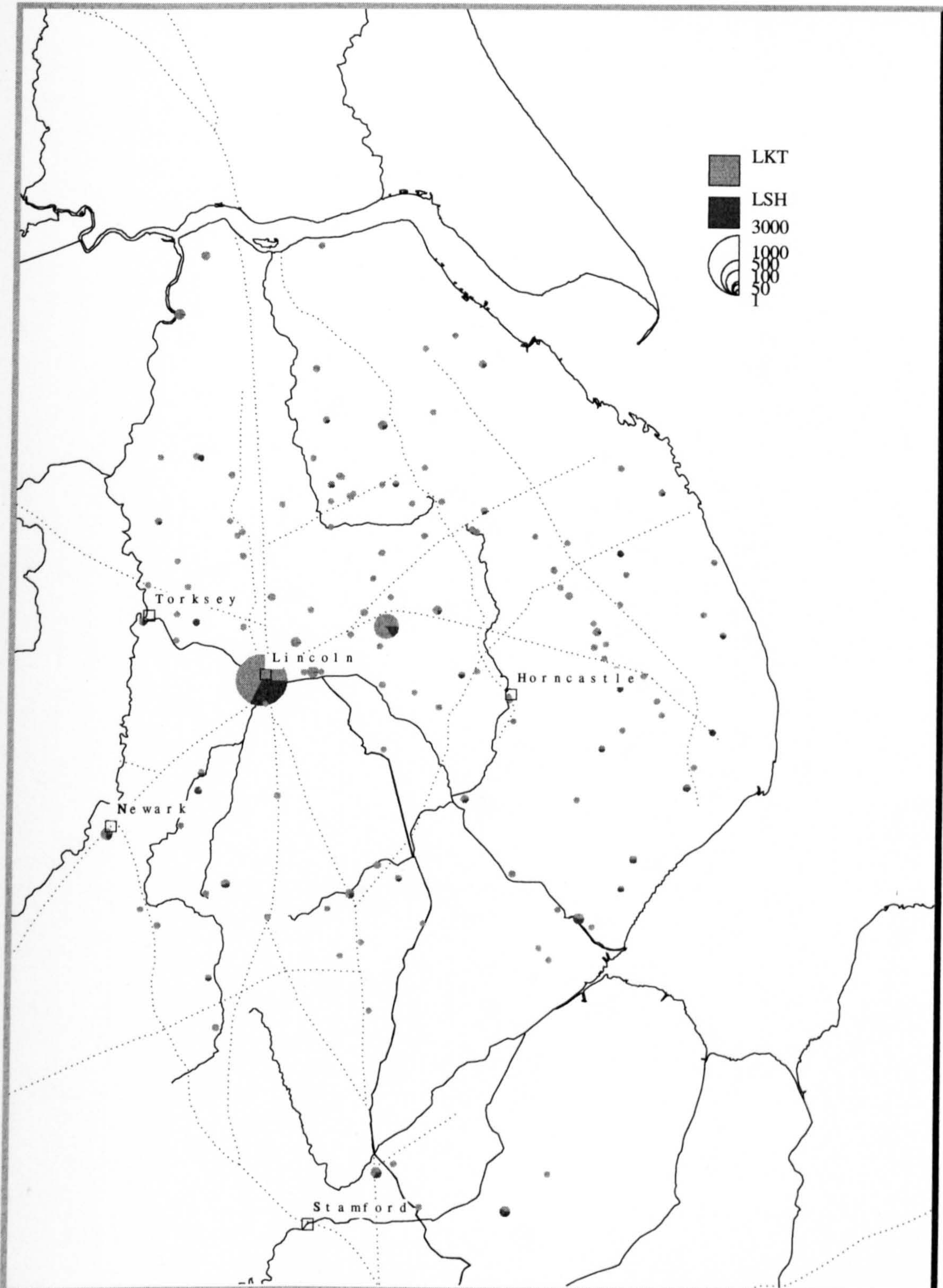
L.A. Symonds 1999

Figure 120



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



Figure 122

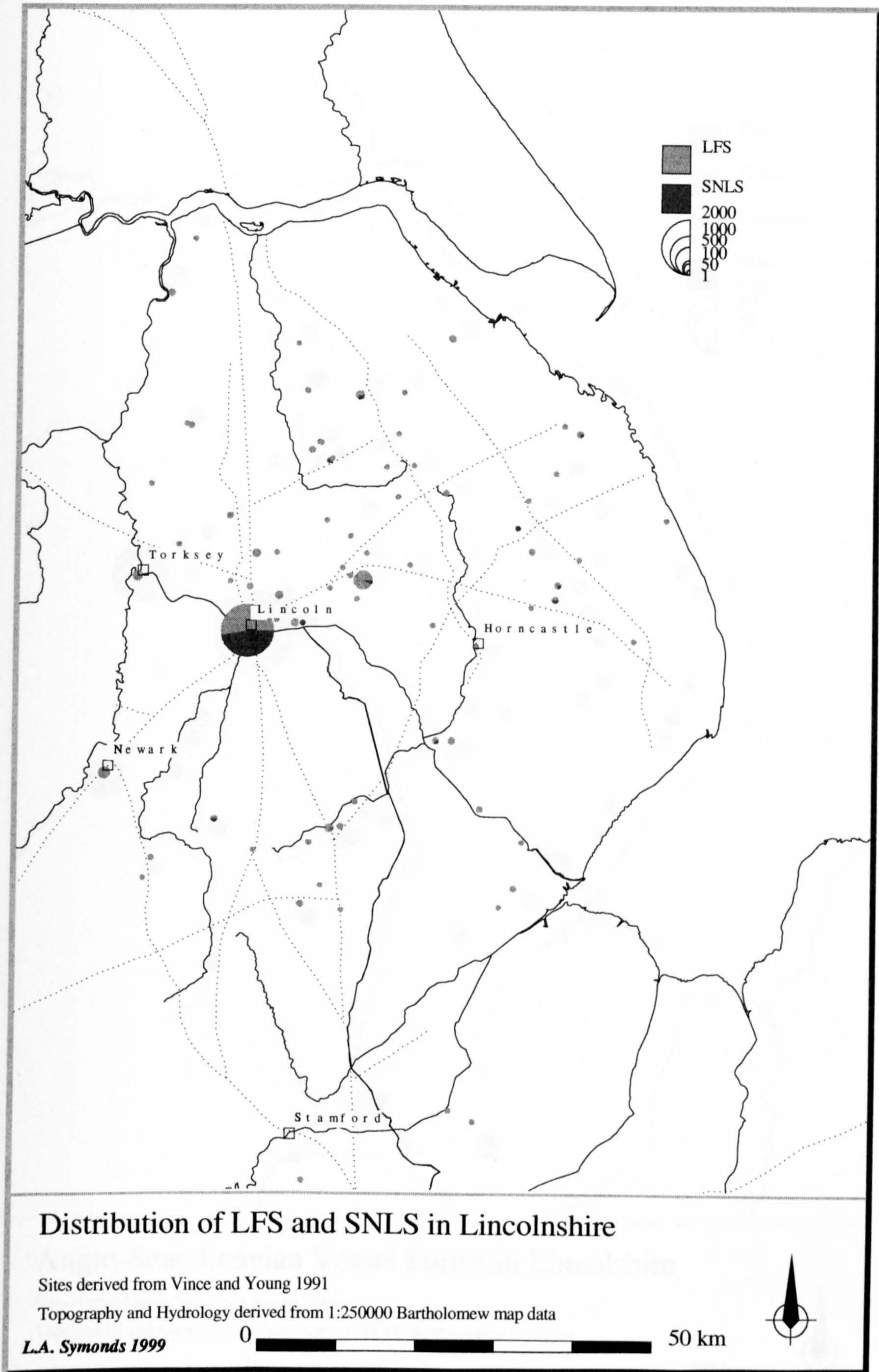
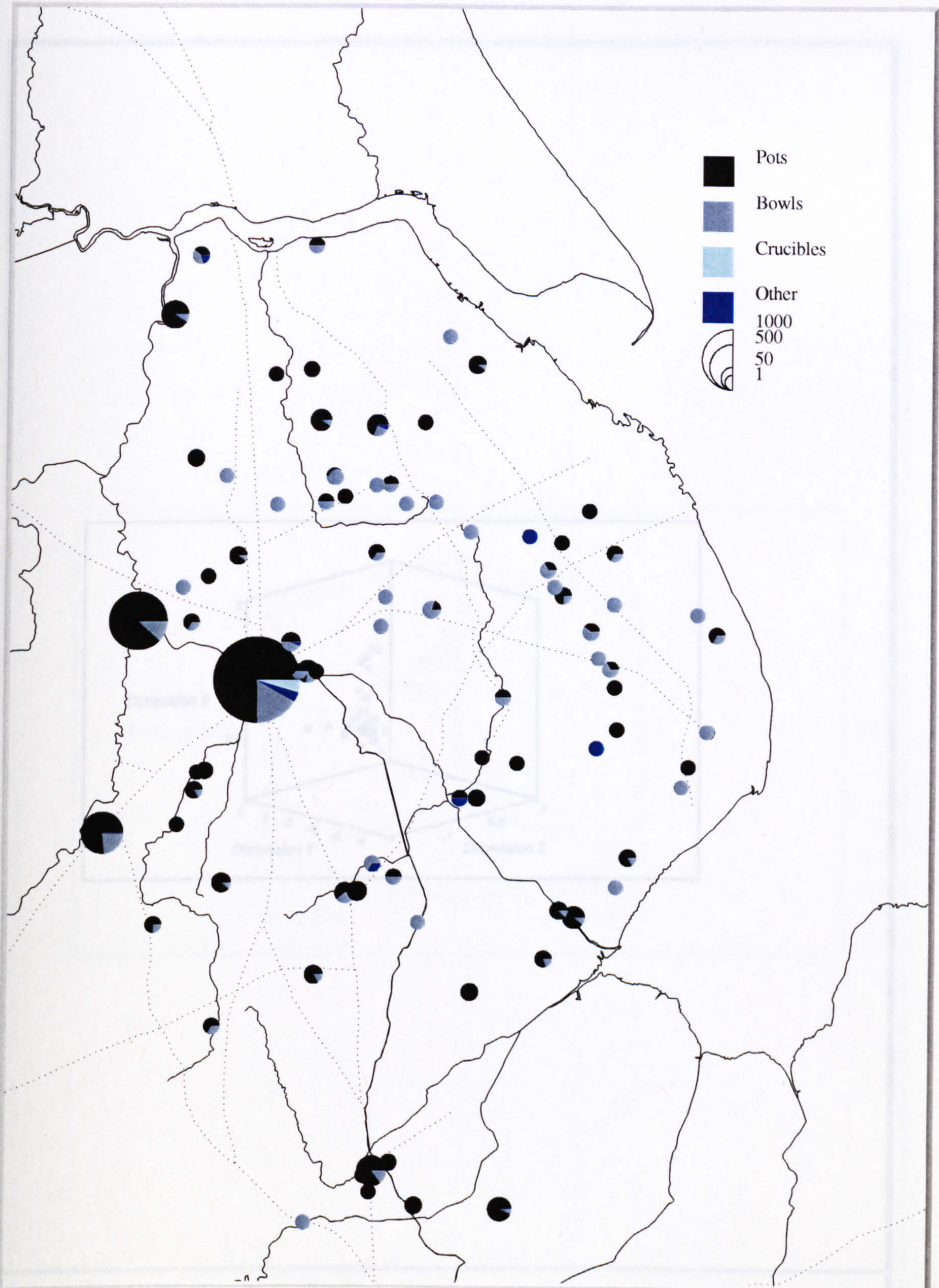


Figure 123



Anglo-Scandinavian Vessel Forms in Lincolnshire

Sites derived from Vince and Young 1991

Topography and Hydrology derived from 1:250000 Bartholomew map data

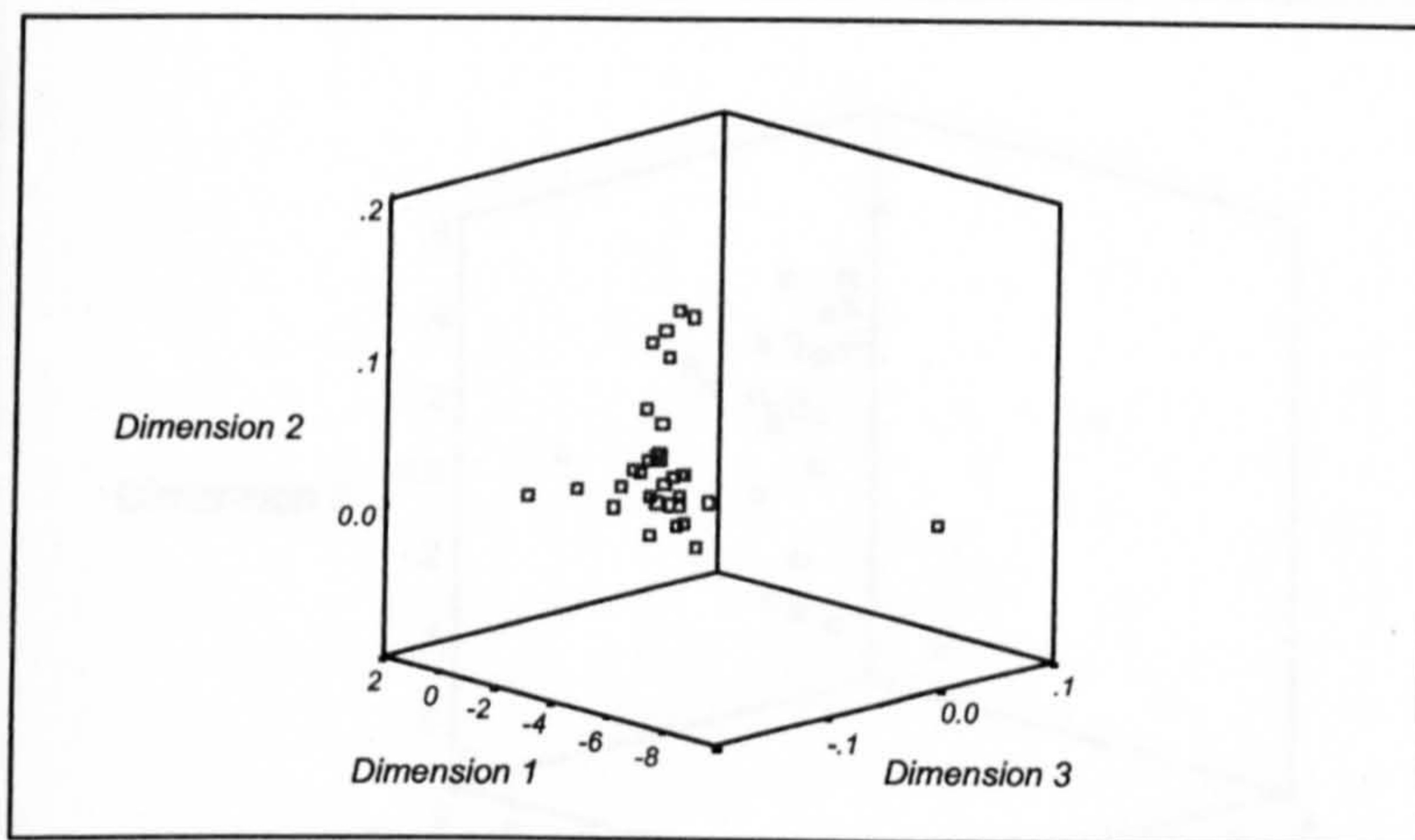
L.A. Symonds 1999



Original in Colour

Figure 124

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AS ORIGINAL**

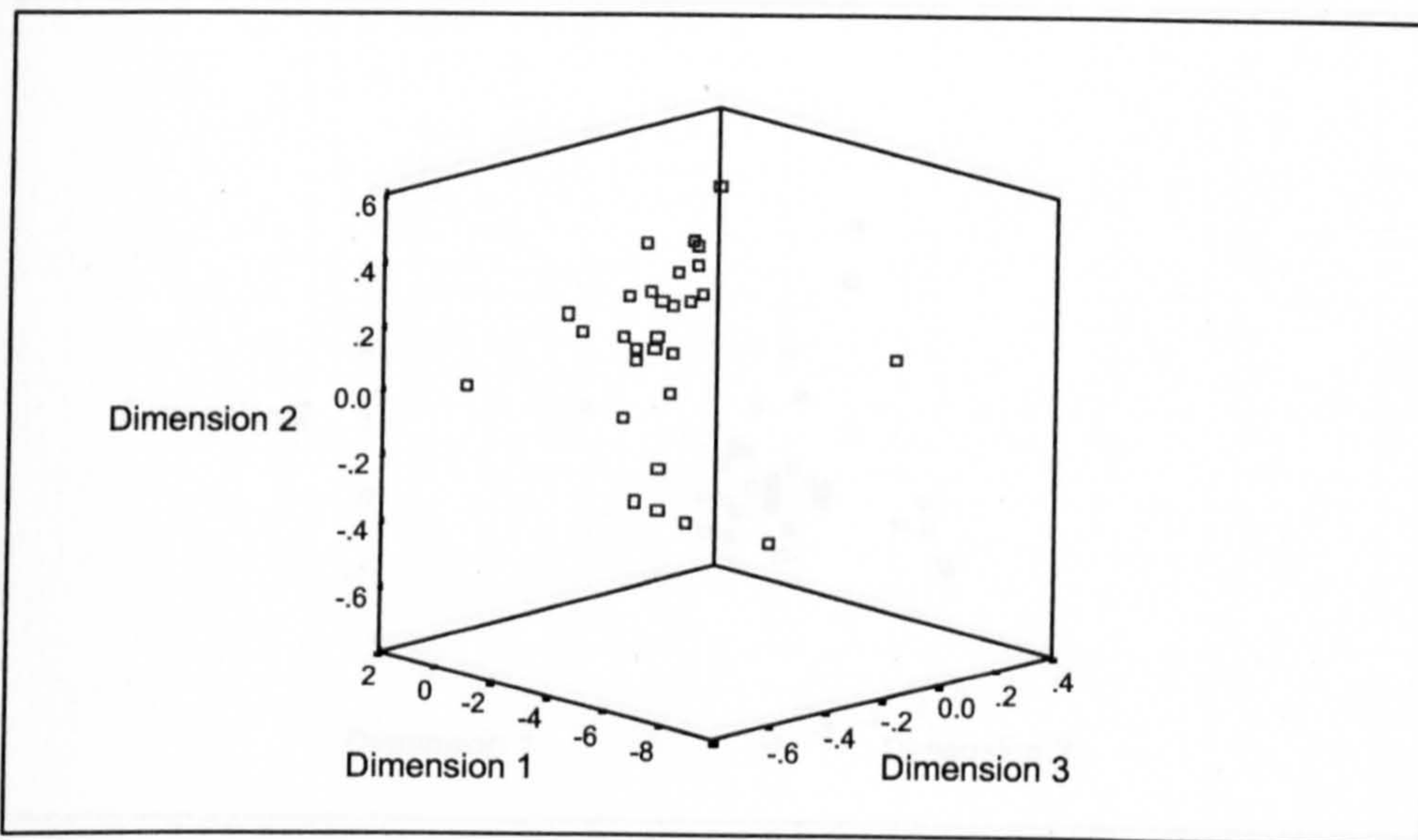


MDS model of distances between sites

Sites including towns

Variables including vessel counts

L.A. Symonds 1999



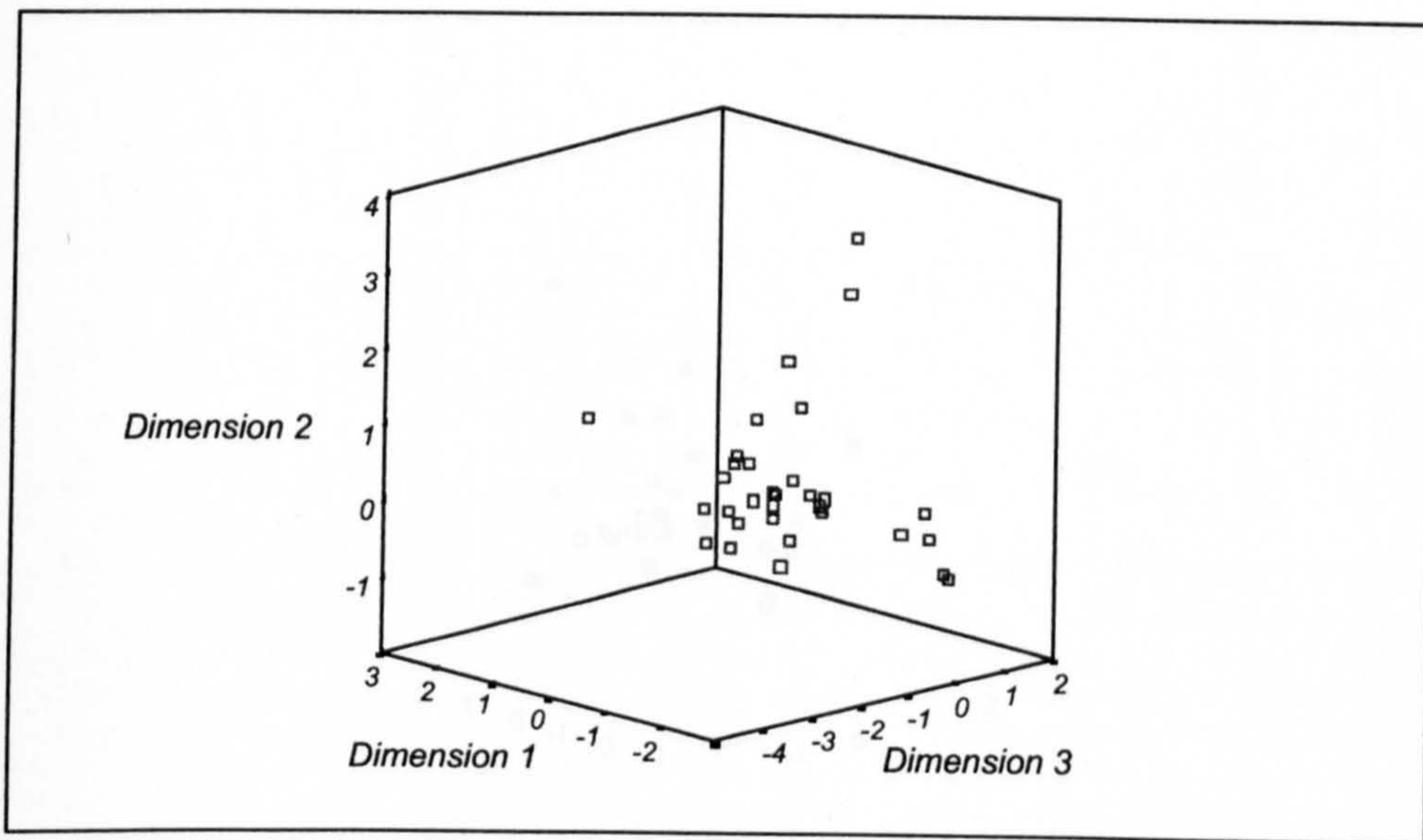
MDS model of distances between sites

Sites excluding towns

Variables including vessel counts

L.A. Symonds 1999

Figure 127

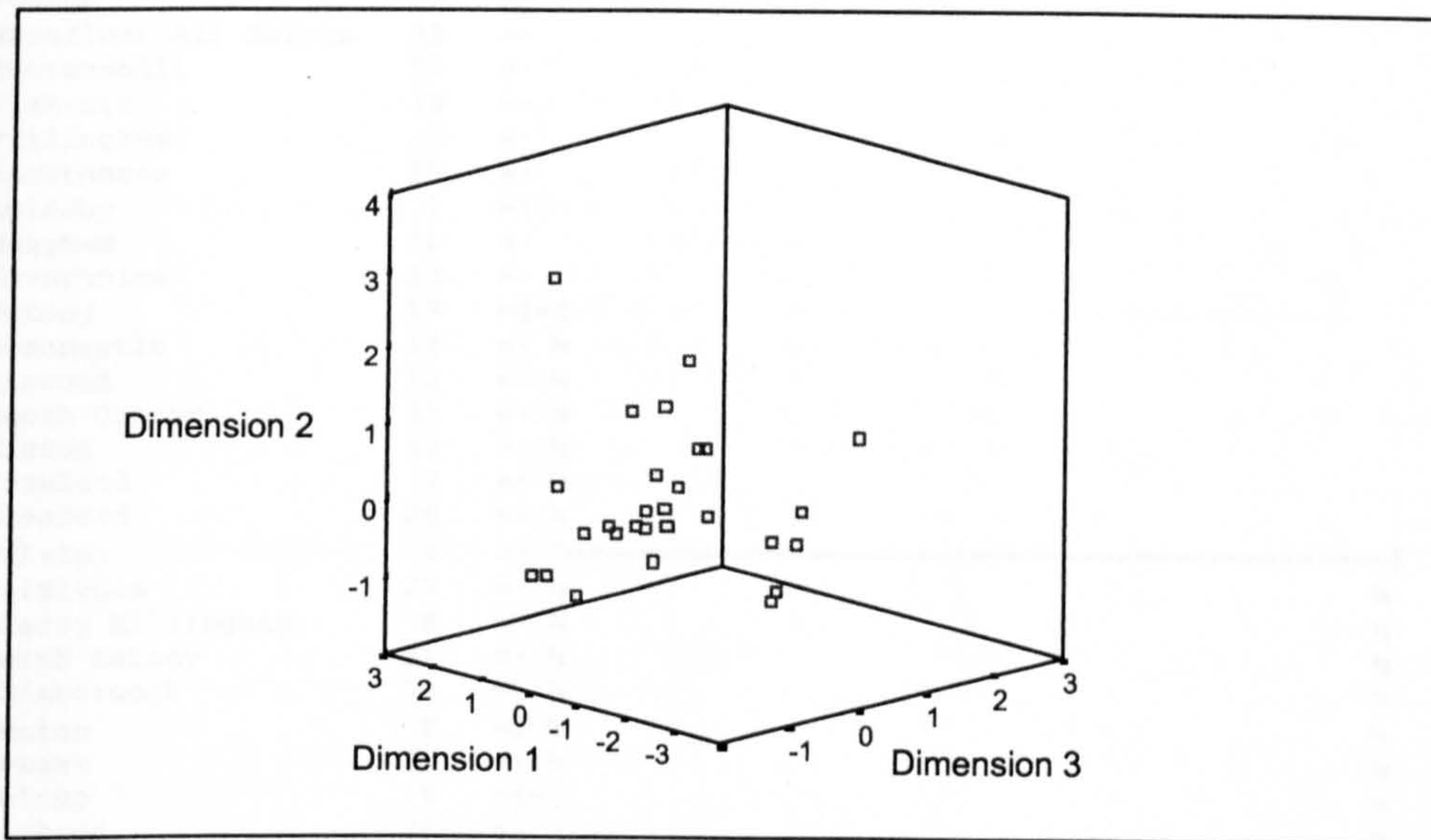


MDS model of distances between sites

Sites including towns

Variables excluding vessel counts

L.A. Symonds 1999



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

Label	C A S E	Num	Rescaled Distance Cluster Combine						
			0 +++++	5	10	15	20	25	
Kirkby la Thorpe		19	-E						
Newton		22	-.						
Quarrington		25	-.						
Grantham		11	-.						
West Halton		16	-.						
Panton		24	-.						
Foston		3	-.						
Wainfleet All Saints		31	-.						
Tattershall		27	-.						
Fishtoft		29	-.						
Fillingham		5	-.						
Hackthorne		15	-.						
Aylesby		1	-.						
Haugham		12	-.						
Haverholme		13	-.						
Ketsby		17	-q=E						
Horncastle		14	-.	¼					
Linwood		18	-.	¼					
South Ormsby		32	-.	¼					
Kirton		30	-.	¼					
Crowland		7	-.	¼					
Sleaford		26	-.	¼					
Caistor		4	-.	-----E					
Nettleham		23	-.	¼				¼	
Cherry Willingham		8	-.	¼				¼	
North Kelsey		21	-.	¼				¼	
Flixborough		10	-.	¼				¼	
Baston		2	-E	¼				¼	
Newark		20	-.	¼				¼	
Golto		9	-q=.					¼	
Torksey		28	-.					¼	
Lincoln		6	-----						

Hierarchical Cluster Analysis

Sites including towns

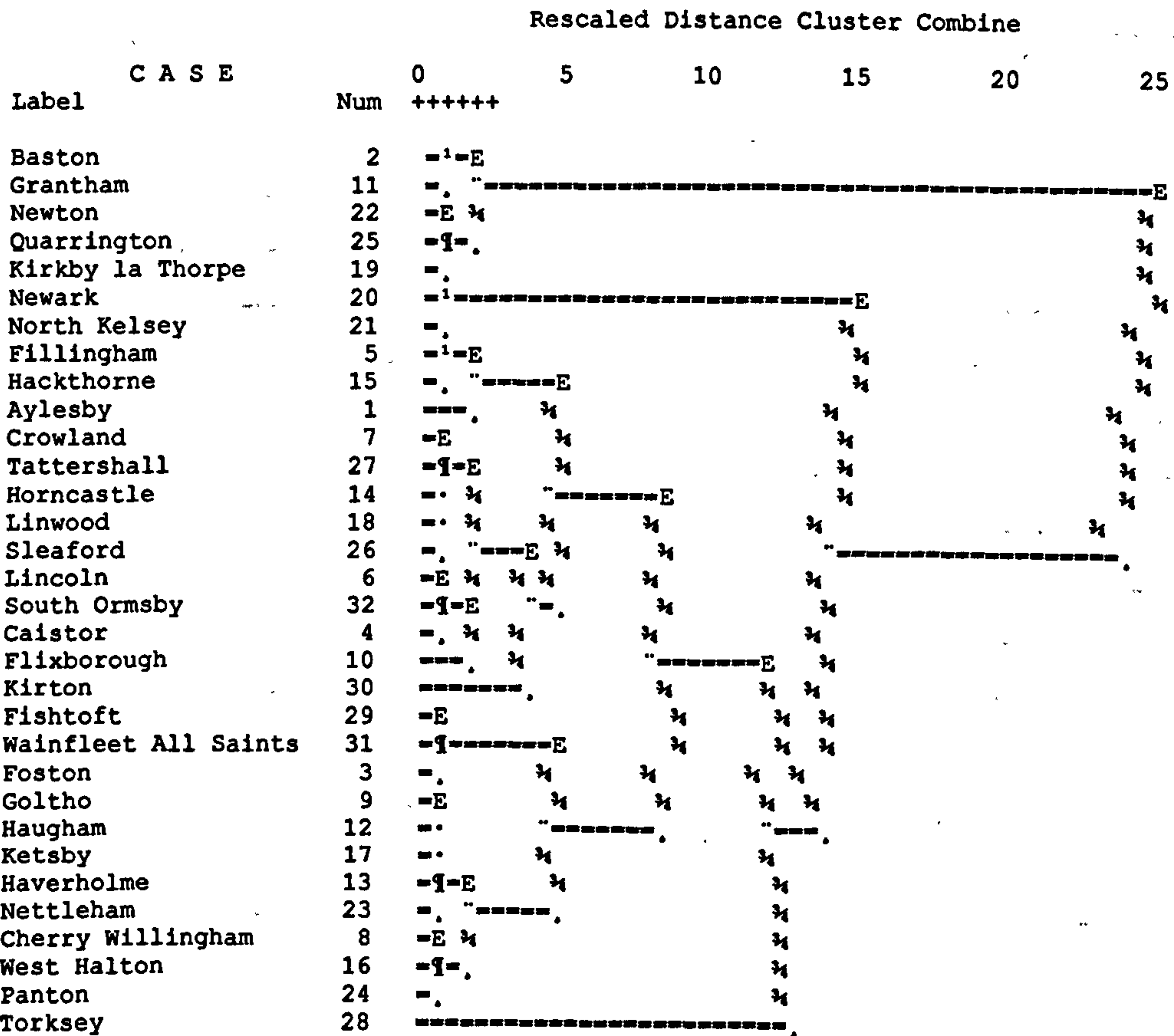
Variables including vessel counts

L.A. Symonds 1999

Figure 130

Hierarchical Cluster Analysis Dendrogram
 sites including towns
 variables excluding vessel counts

Dendrogram using Ward Method



Hierarchical Cluster Analysis

Sites including towns

Variables excluding vessel counts

L.A. Symonds 1999

Figure 131

K-means cluster results using Ward's Method and defining 8 clusters
Variables excluding vessel counts

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

Figure 132

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

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

Figure 133

K-means cluster results using Ward's Method and defining 10 clusters
Variables excluding vessel count

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

Figure 134

K-means cluster results using Ward's Method and defining 8 clusters
Variables including vessel count

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

Figure 135

**K-means cluster results using Ward's Method and defining 9 clusters
Variables including vessel count**

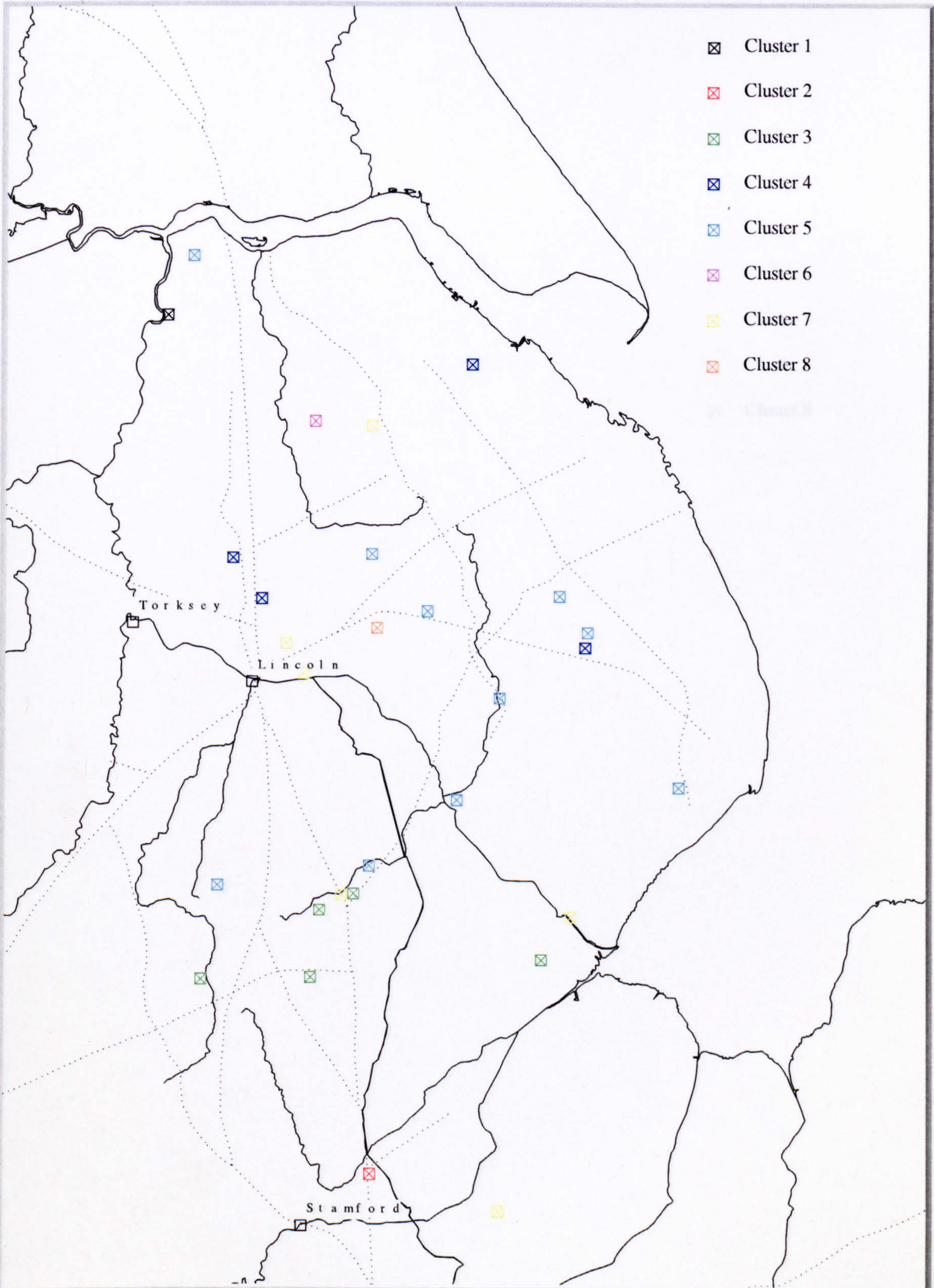
Settlement	Cluster	Distance
Aylesby	1	23.021
Fillingham	1	19.011
Hackthorne	1	25.469
South Ormsby	1	30.339
Baston	2	0
Kirton	3	0
Foston	4	25.552
Haugham	4	18.211
Haverholme	4	20.971
Horncastle	4	24.272
West Halton	4	29.636
Ketsby	4	13.548
Linwood	4	25.936
Panton	4	37.89
Tattershall	4	24.283
Wainfleet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

Figure 136

K-means cluster results using Ward's Method and defining 10 clusters
Variables including vessel count

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

Figure 137



Geographic Representation of K-means Cluster Analysis

8 clusters (including vessels)

Topography and Hydrology derived from 1:250000 Bartholomew map data

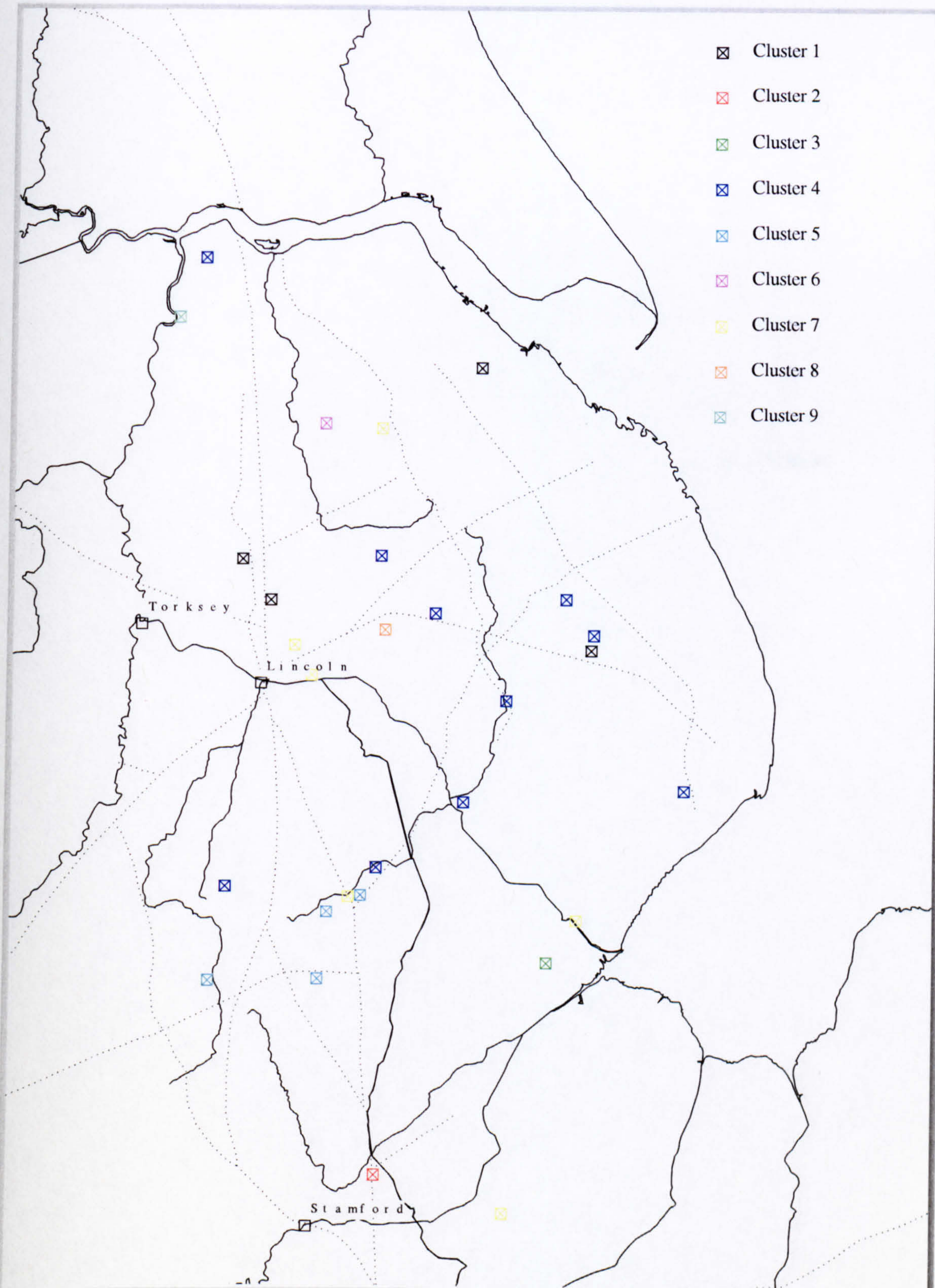


L.A. Symonds 1999



Original in Colour

Figure 138



Geographic Representation of K-means Cluster Analysis

9 clusters (including vessels)

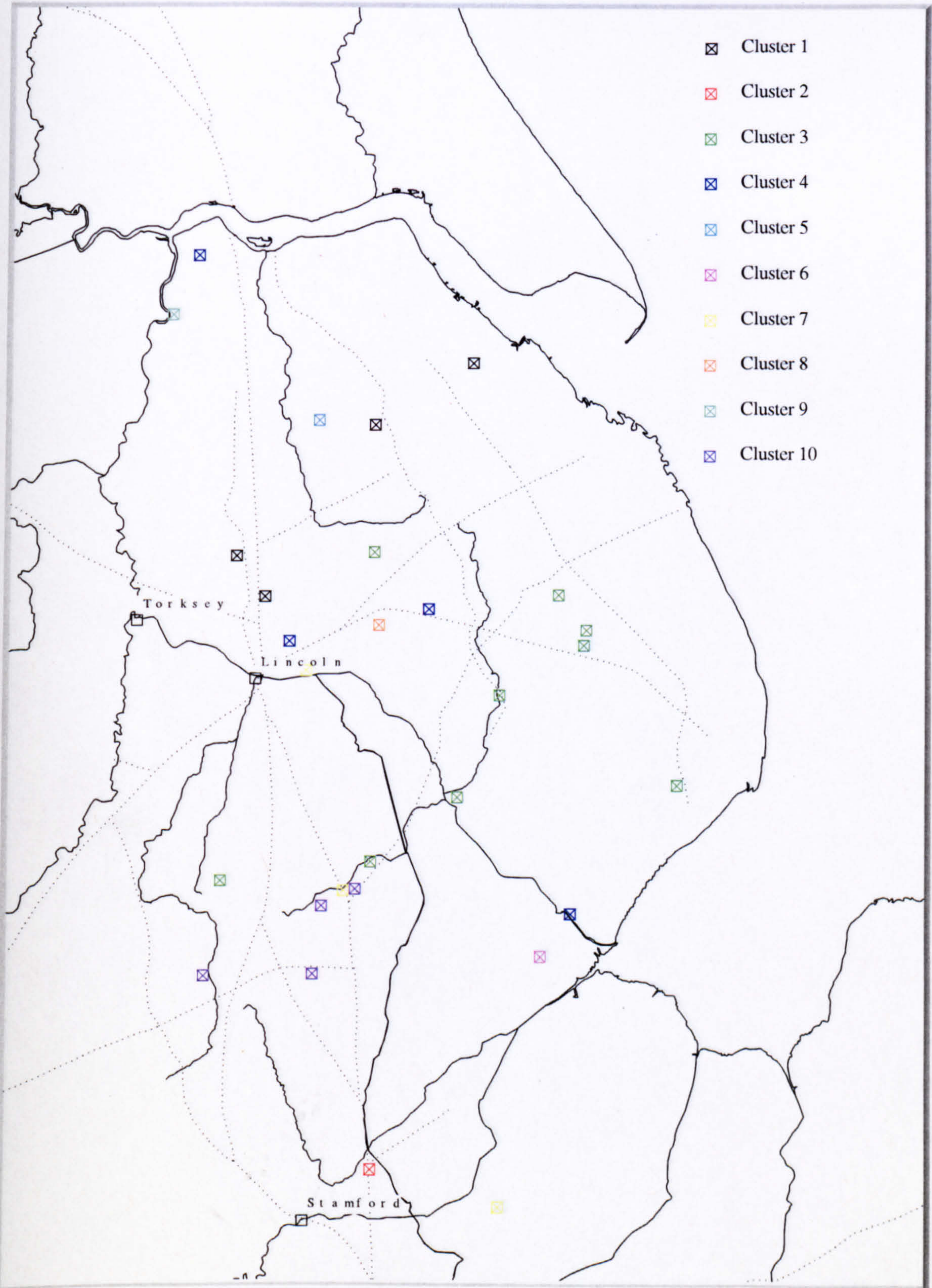
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999



Original in Colour

Figure 139



Geographic Representation of K-means Cluster Analysis

10 clusters (including vessels)

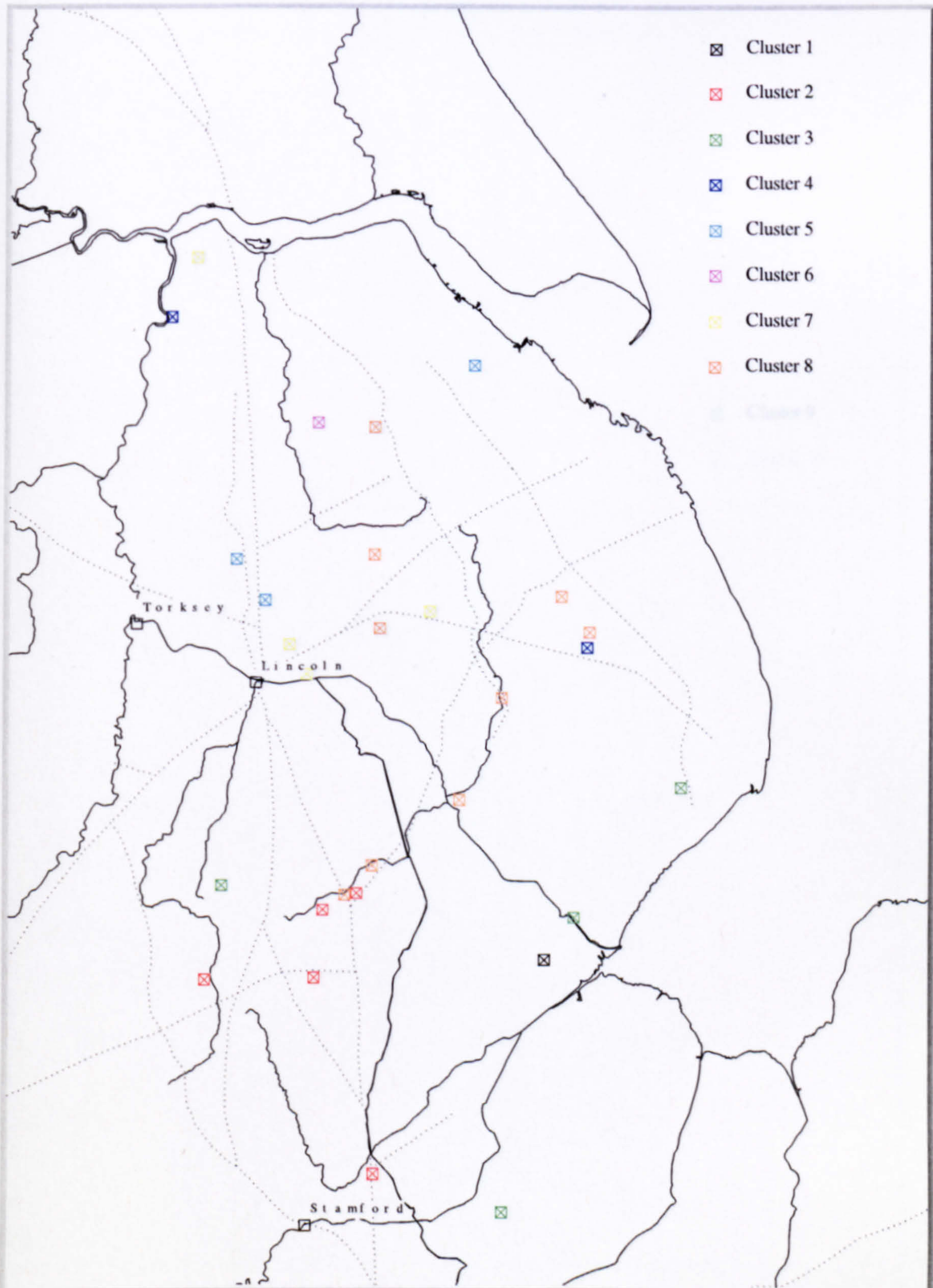
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999



Original in Colour

Figure 140



Geographic Representation of K-means Cluster Analysis

8 clusters (excluding vessels)

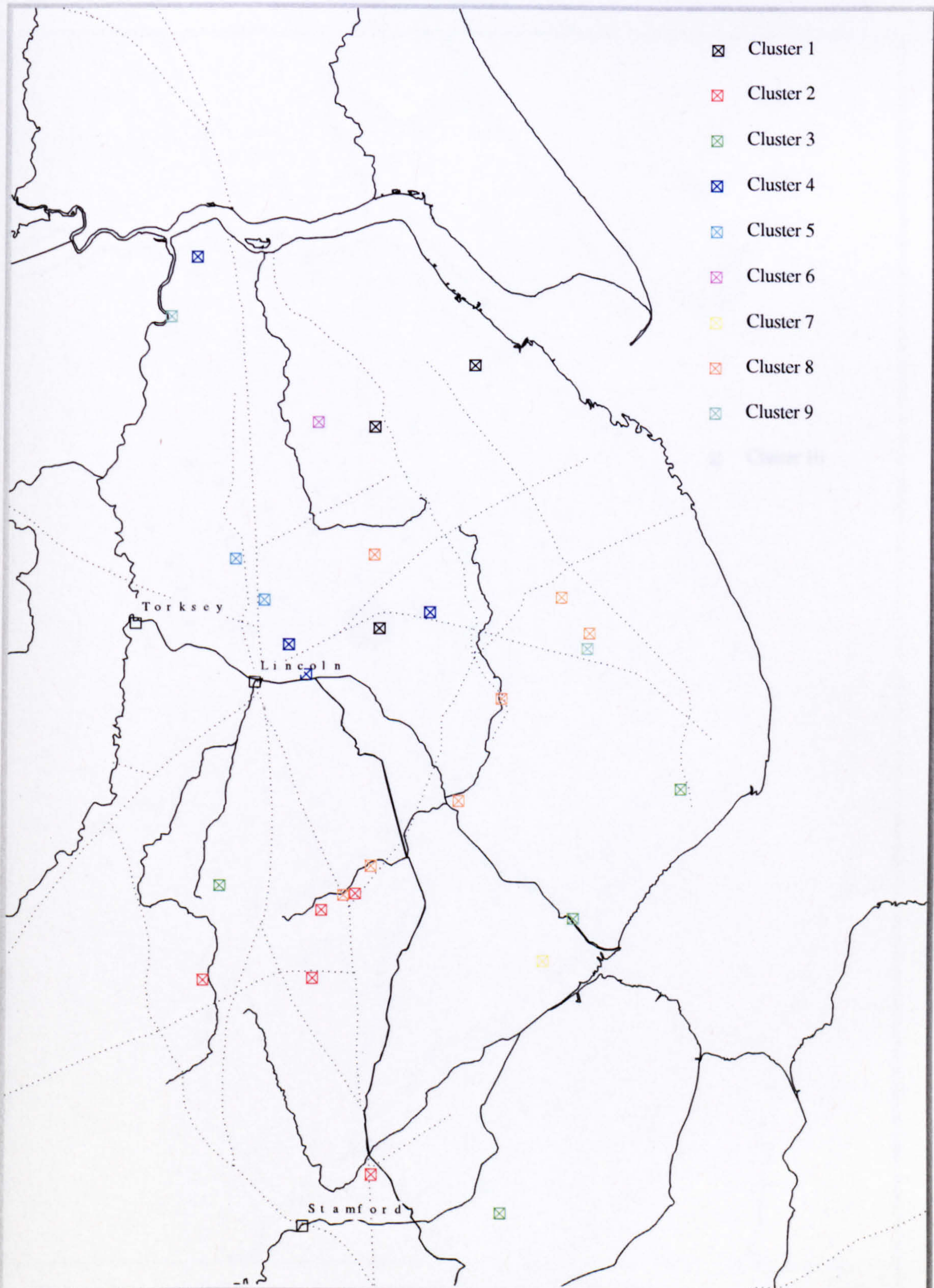
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999



Original in Colour

Figure 141



Geographic Representation of K-means Cluster Analysis

9 clusters (excluding vessels)

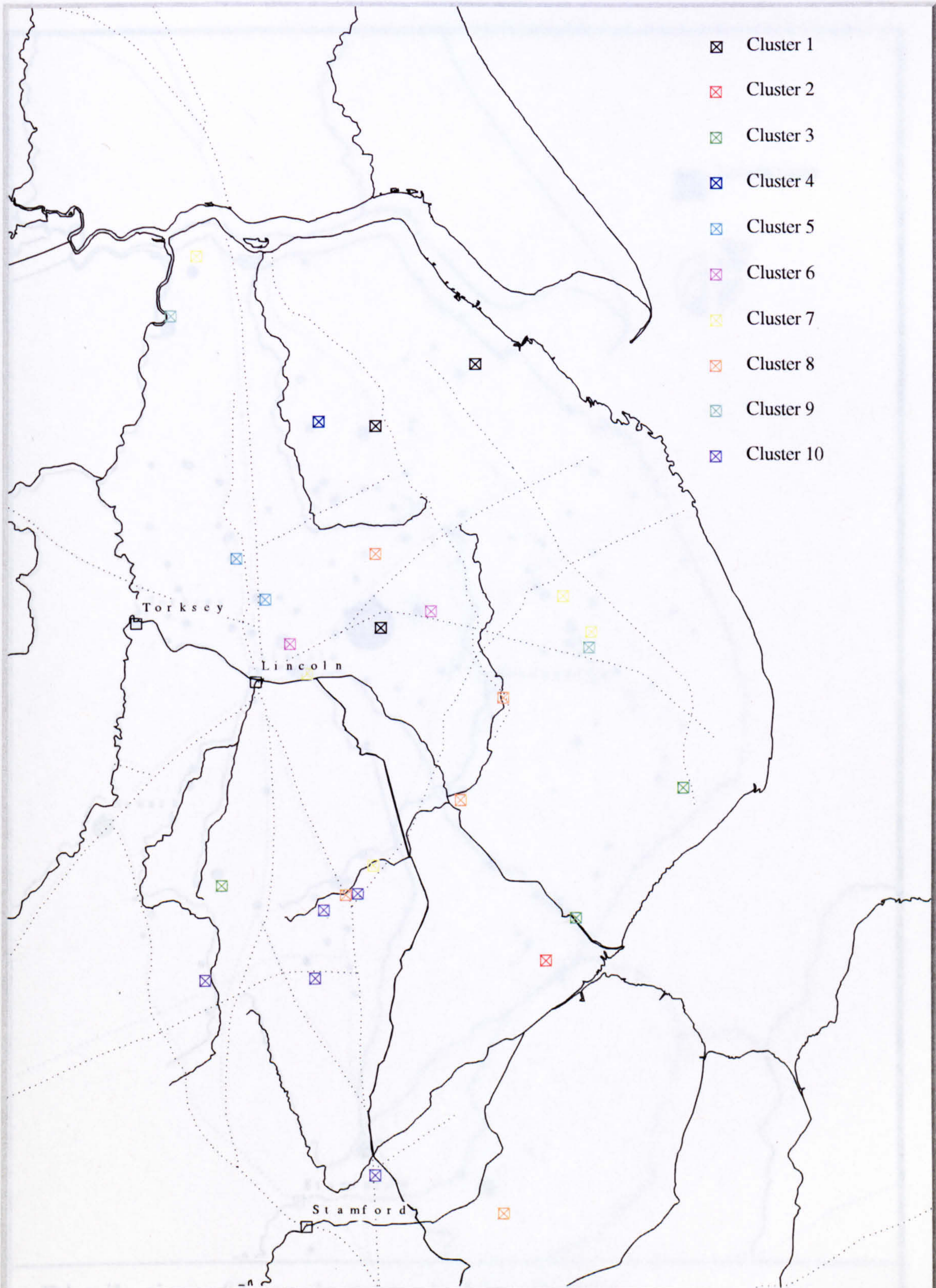
Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999



Original in Colour

Figure 142



Geographic Representation of K-means Cluster Analysis

10 clusters (excluding vessels)

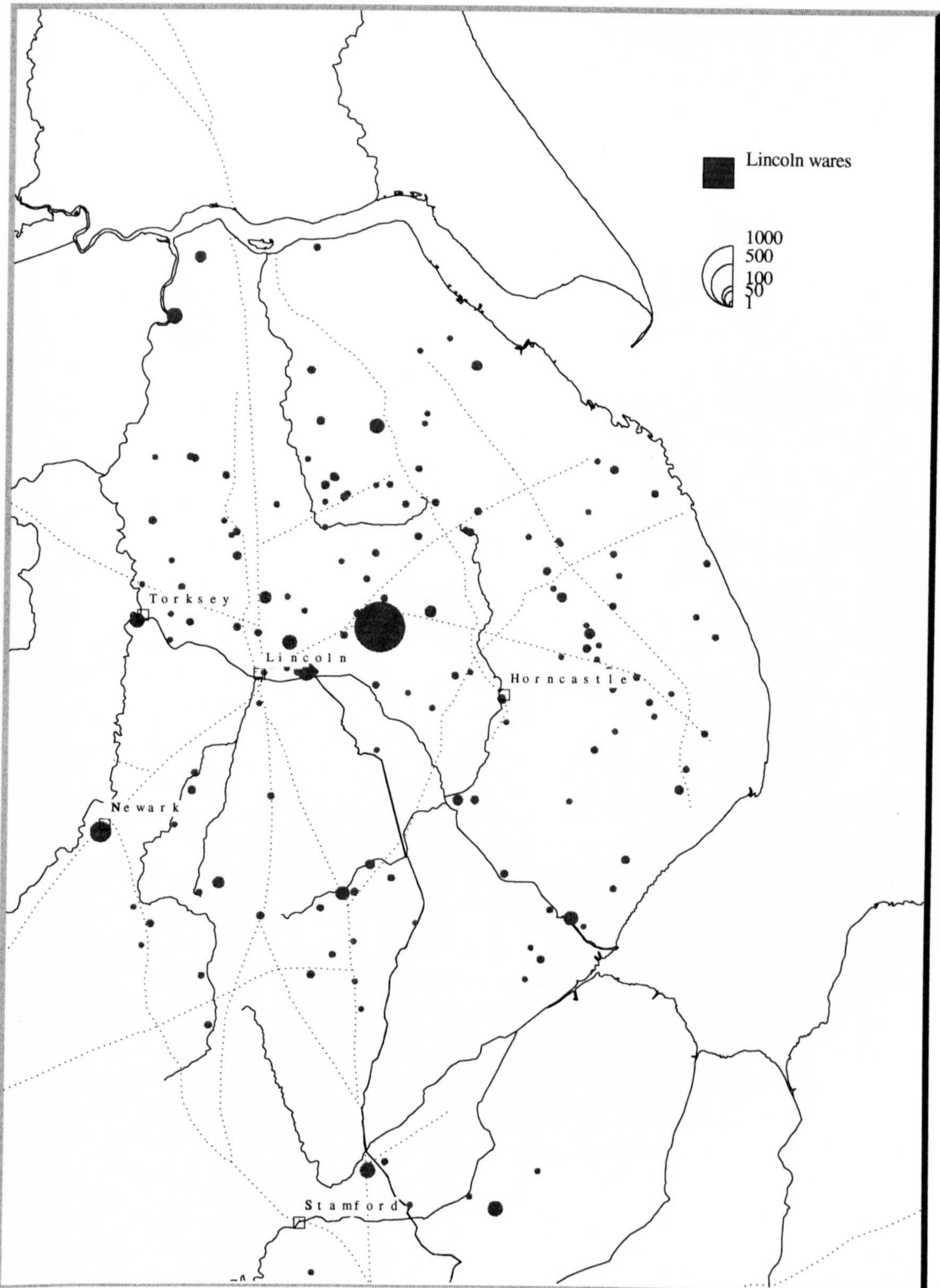
Topography and Hydrology derived from 1:250000 Bartholomew map data



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

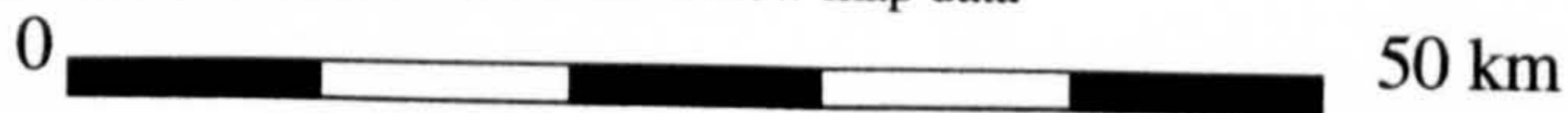
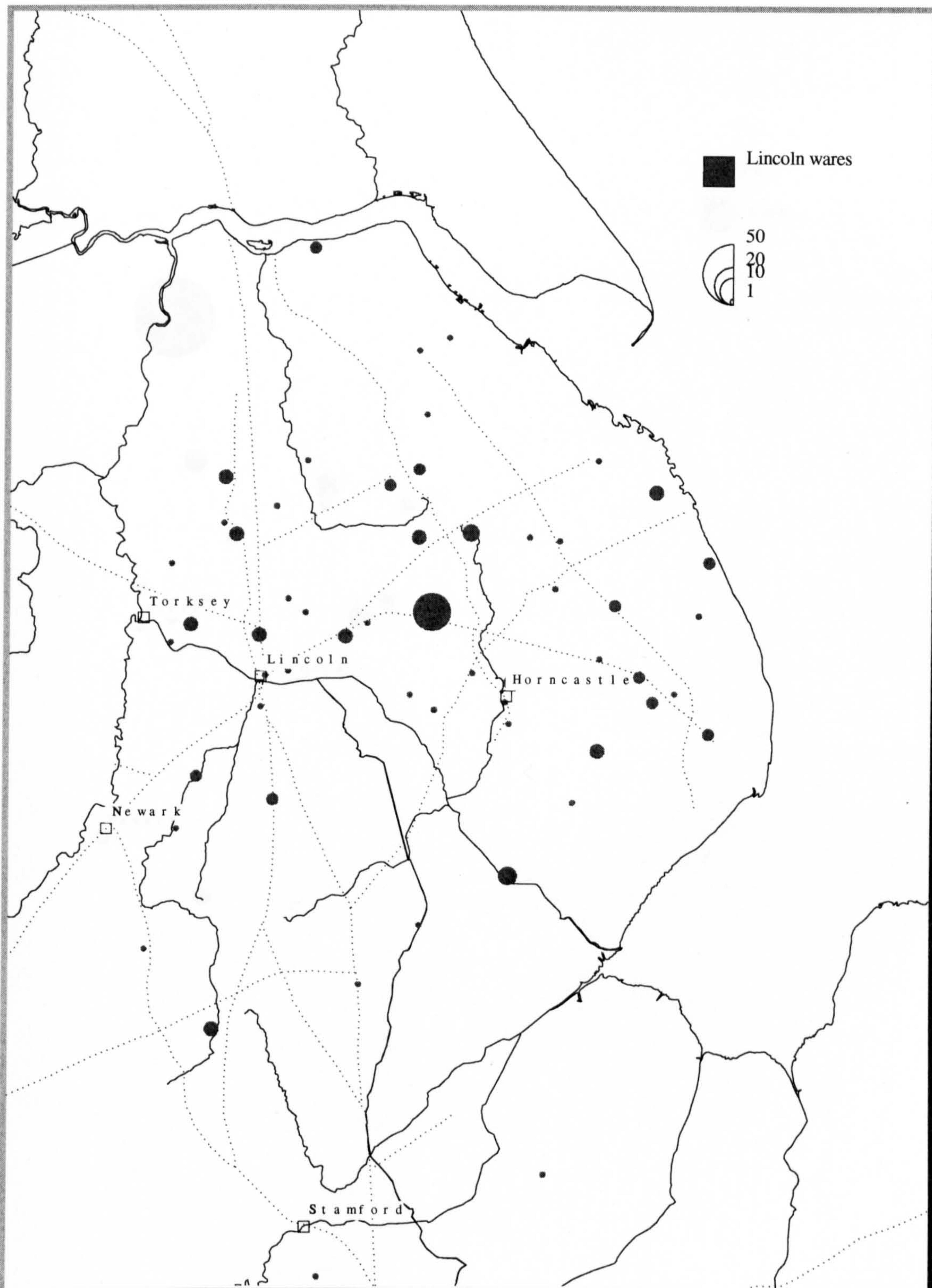


Figure 144



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

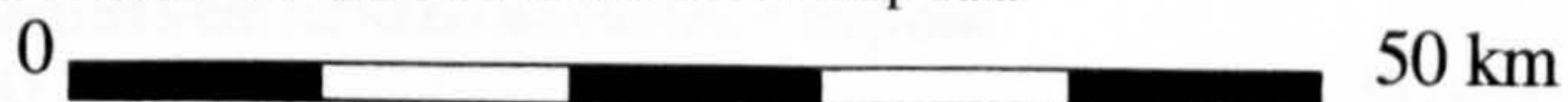
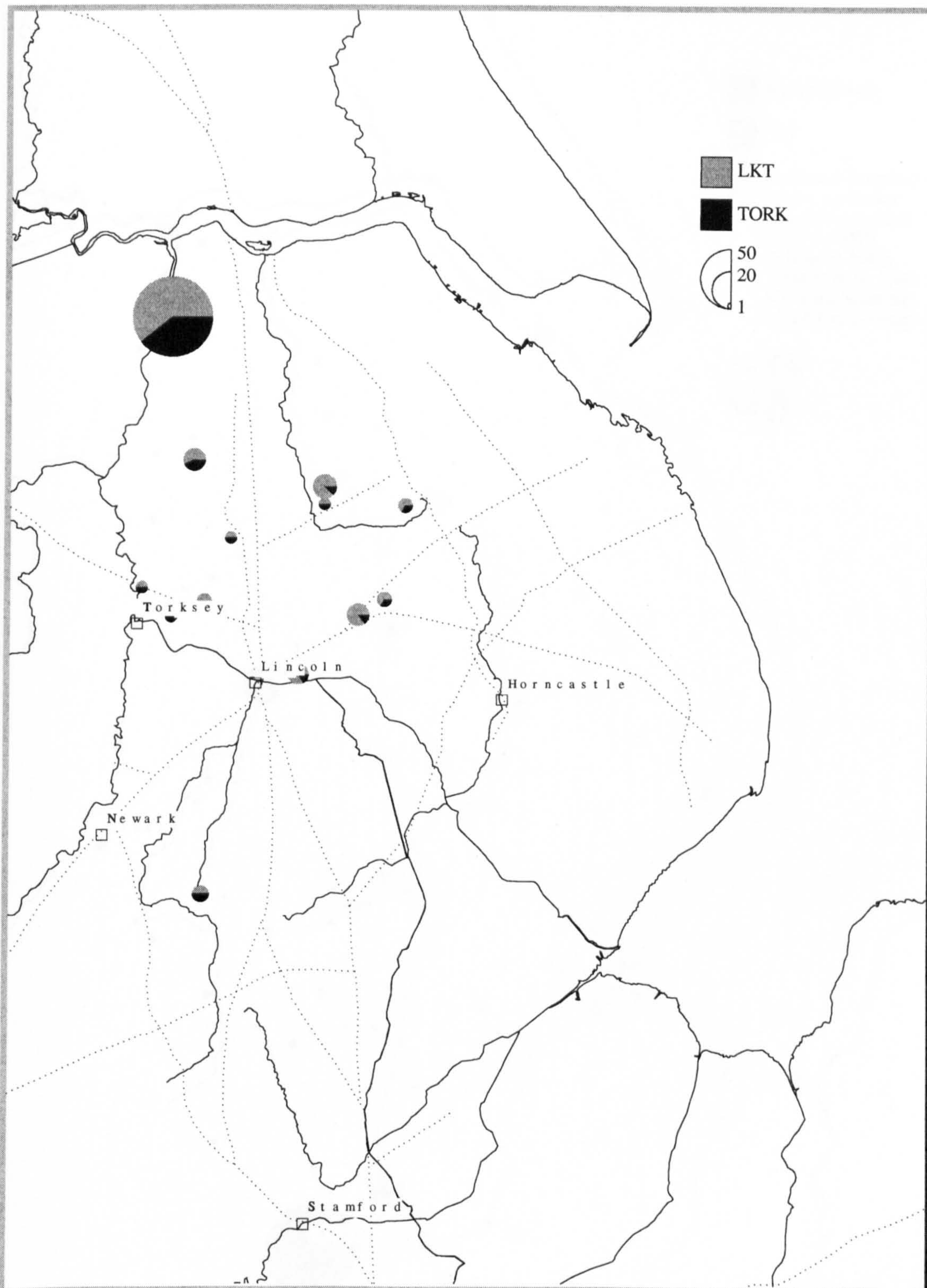


Figure 145



Distribution of Torksey ware in Lincolnshire

(with only Lincoln wares)

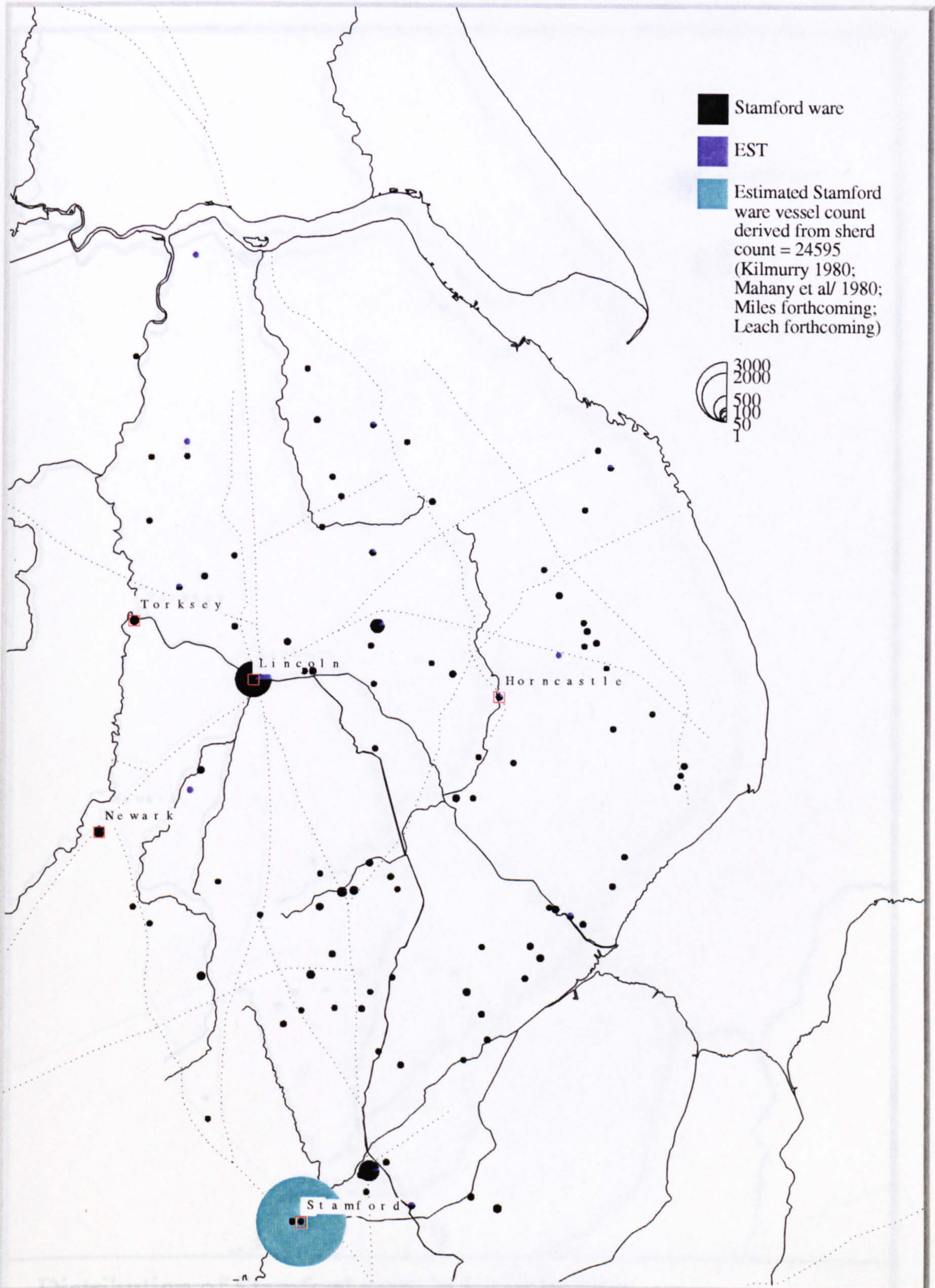
Sites derived from Vince and Young 1991

Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999



Figure 146



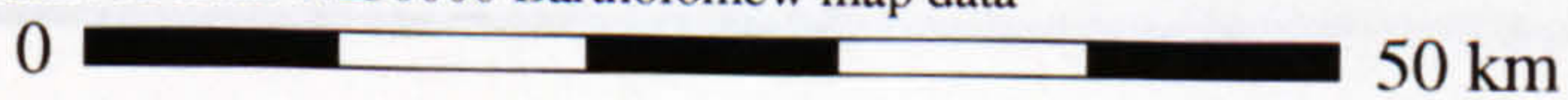
Distribution of ST and EST in Lincolnshire

(quantity of vessels)

Sites derived from Vince and Young 1991

Topography and Hydrology derived from 1:250000 Bartholomew map data

L.A. Symonds 1999



Original in Colour

Figure 147

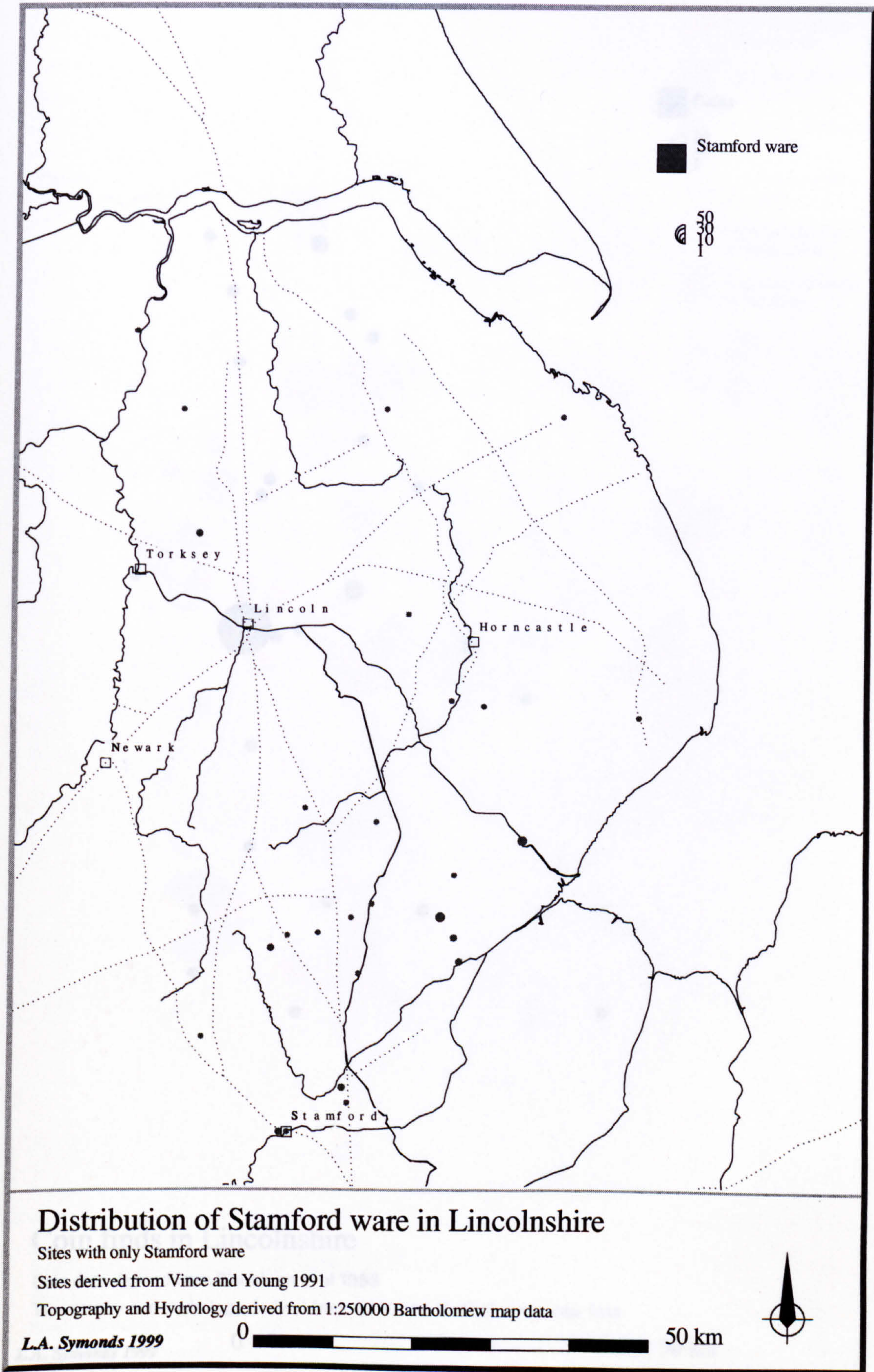
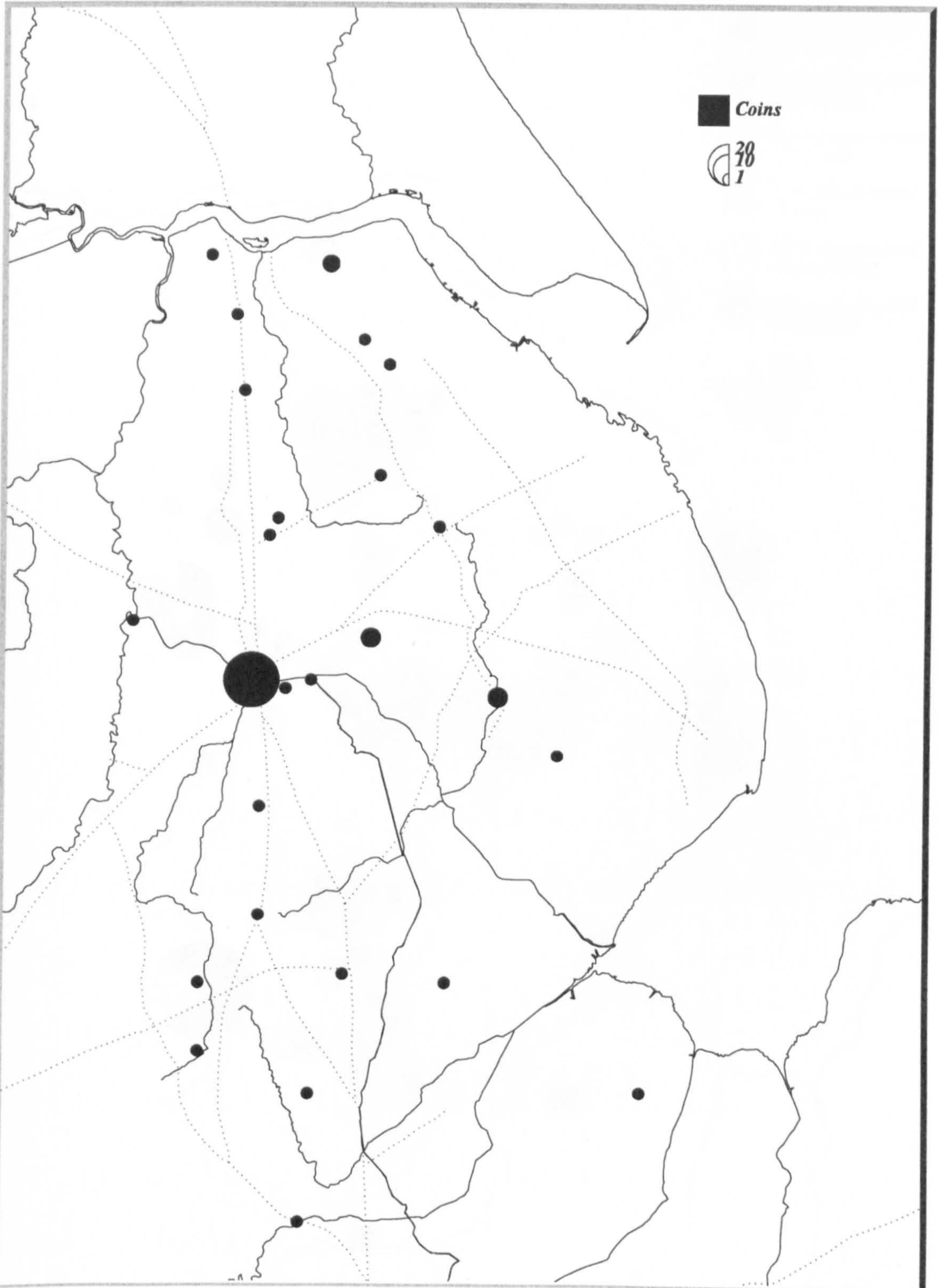


Figure 148



Coin finds in Lincolnshire

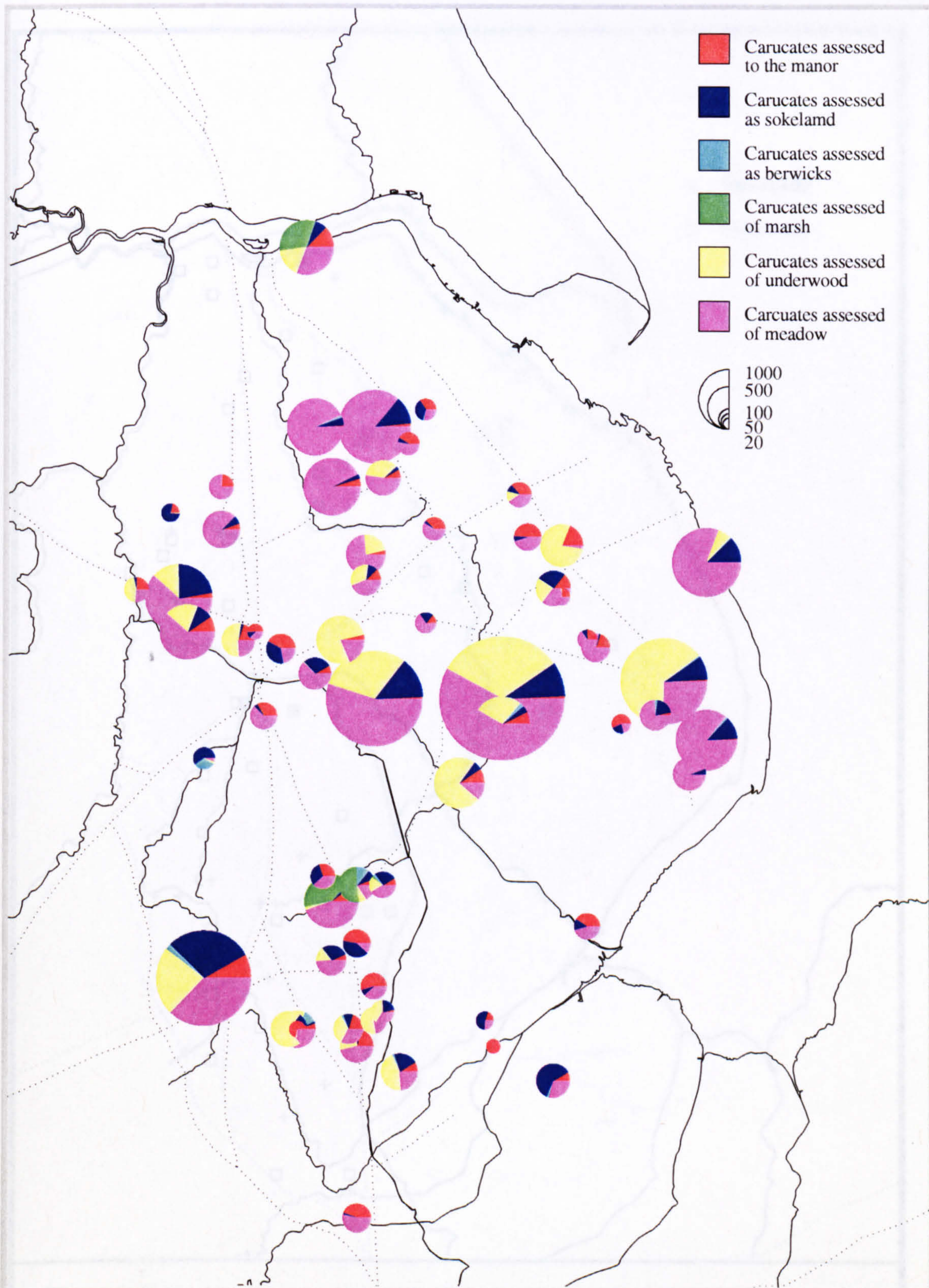
Coin data derived from Blackburn et al 1983

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

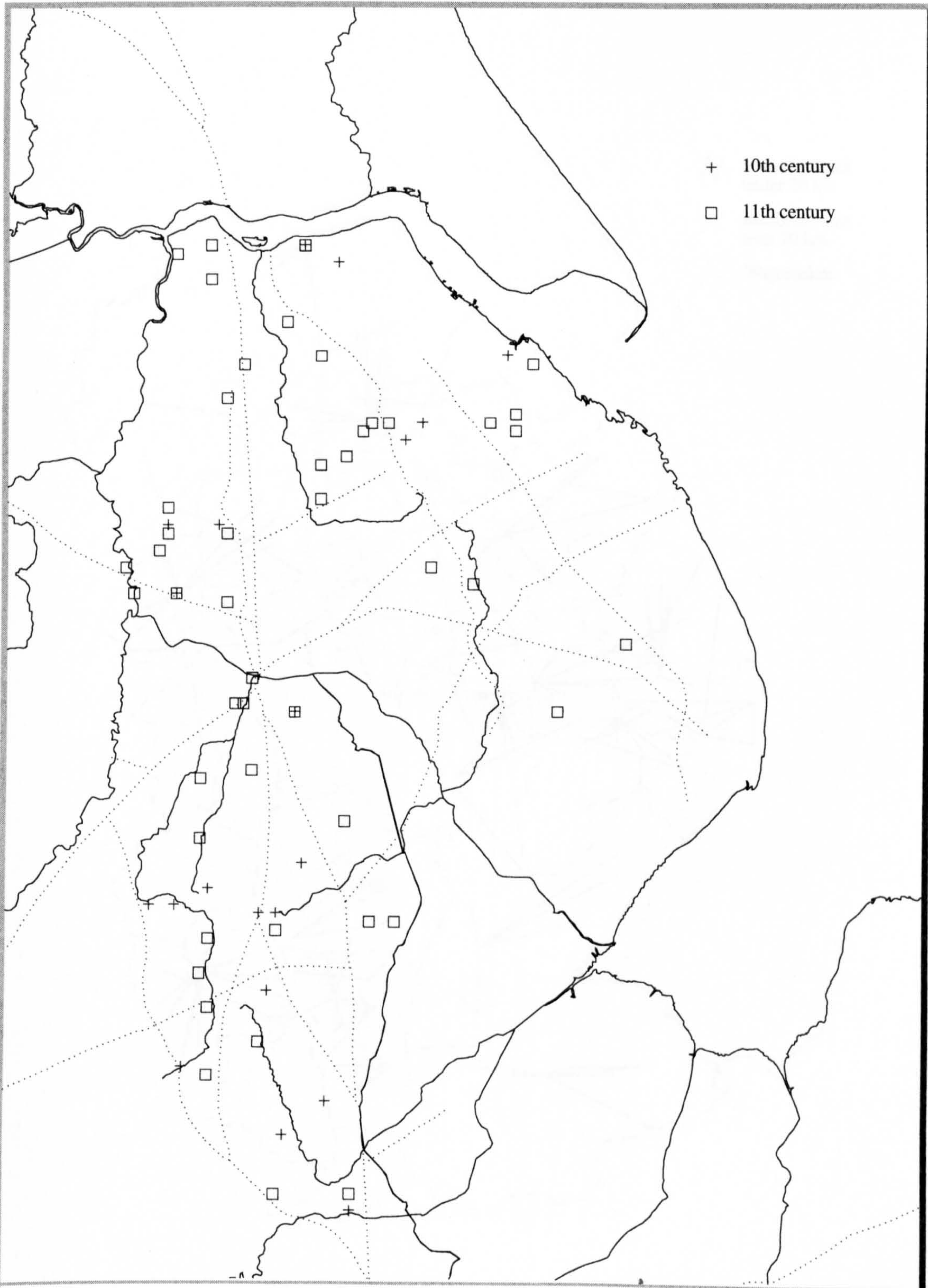
L.A. Symonds 1999

0 50 km



Original in Colour

Figure 150



+ 10th century
 □ 11th century

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



Figure 151

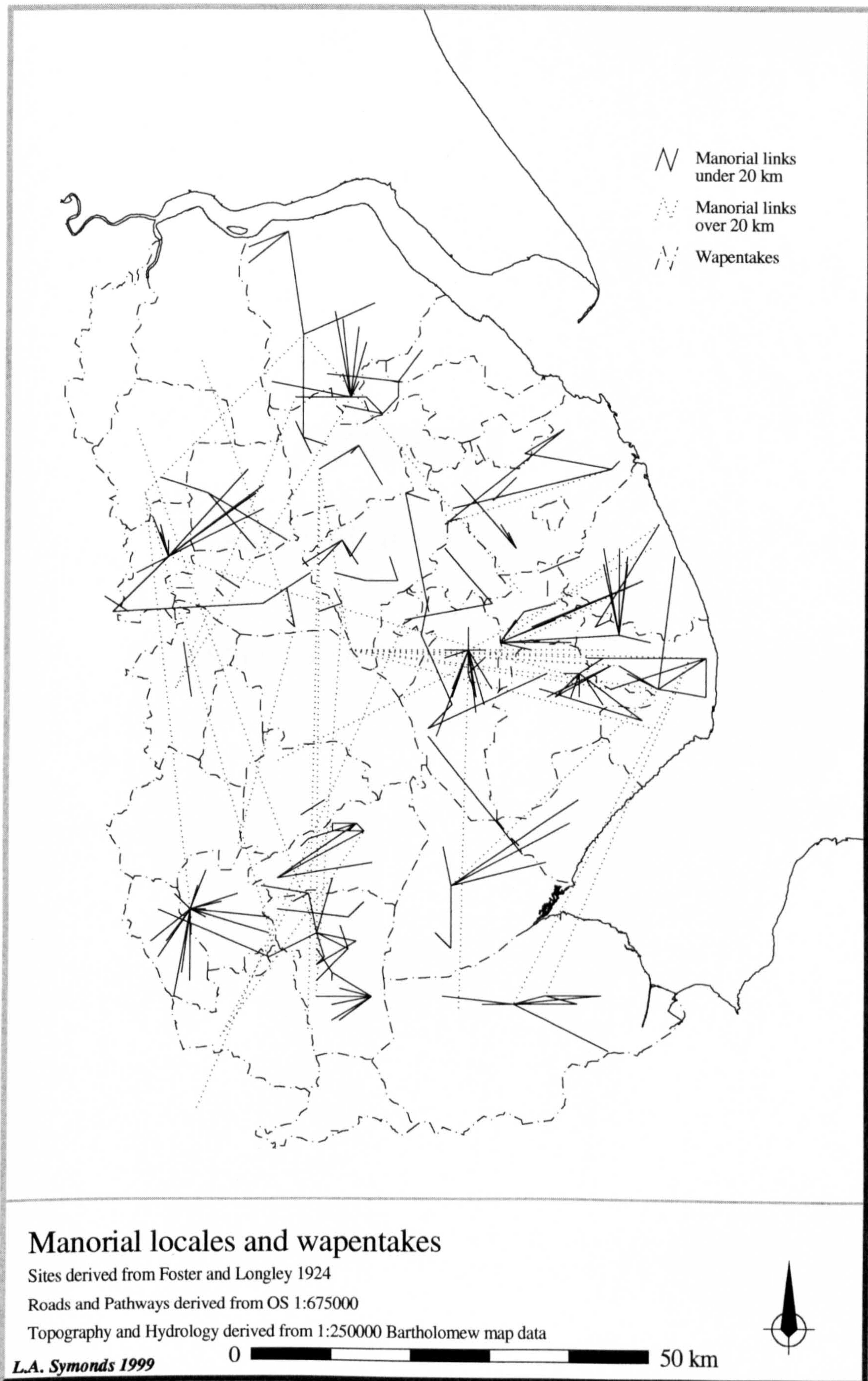
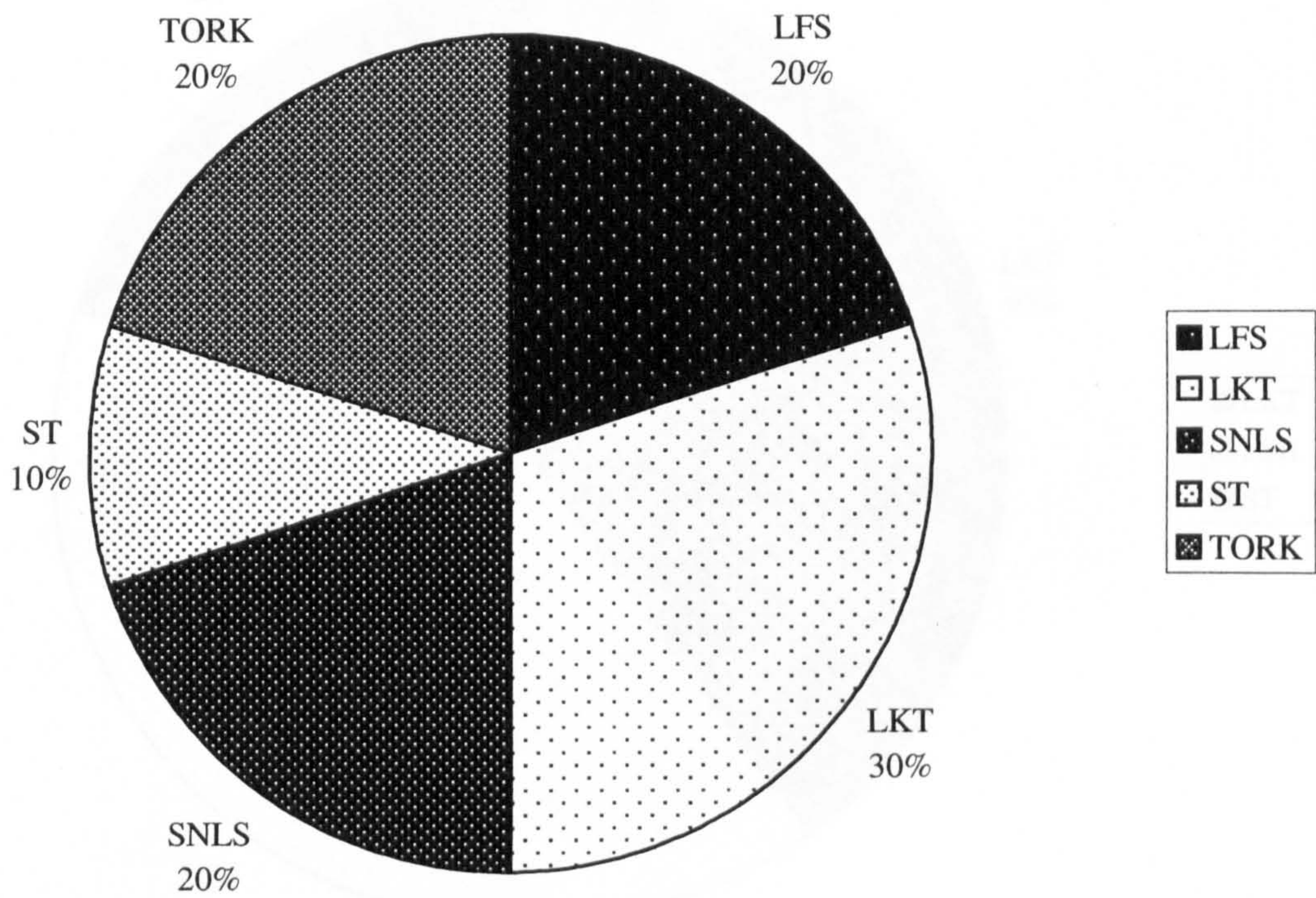


Figure 152

APPENDIX I
ASSEMBLAGE CHARTS
OF
SITES WITH 10 OR MORE VESSELS

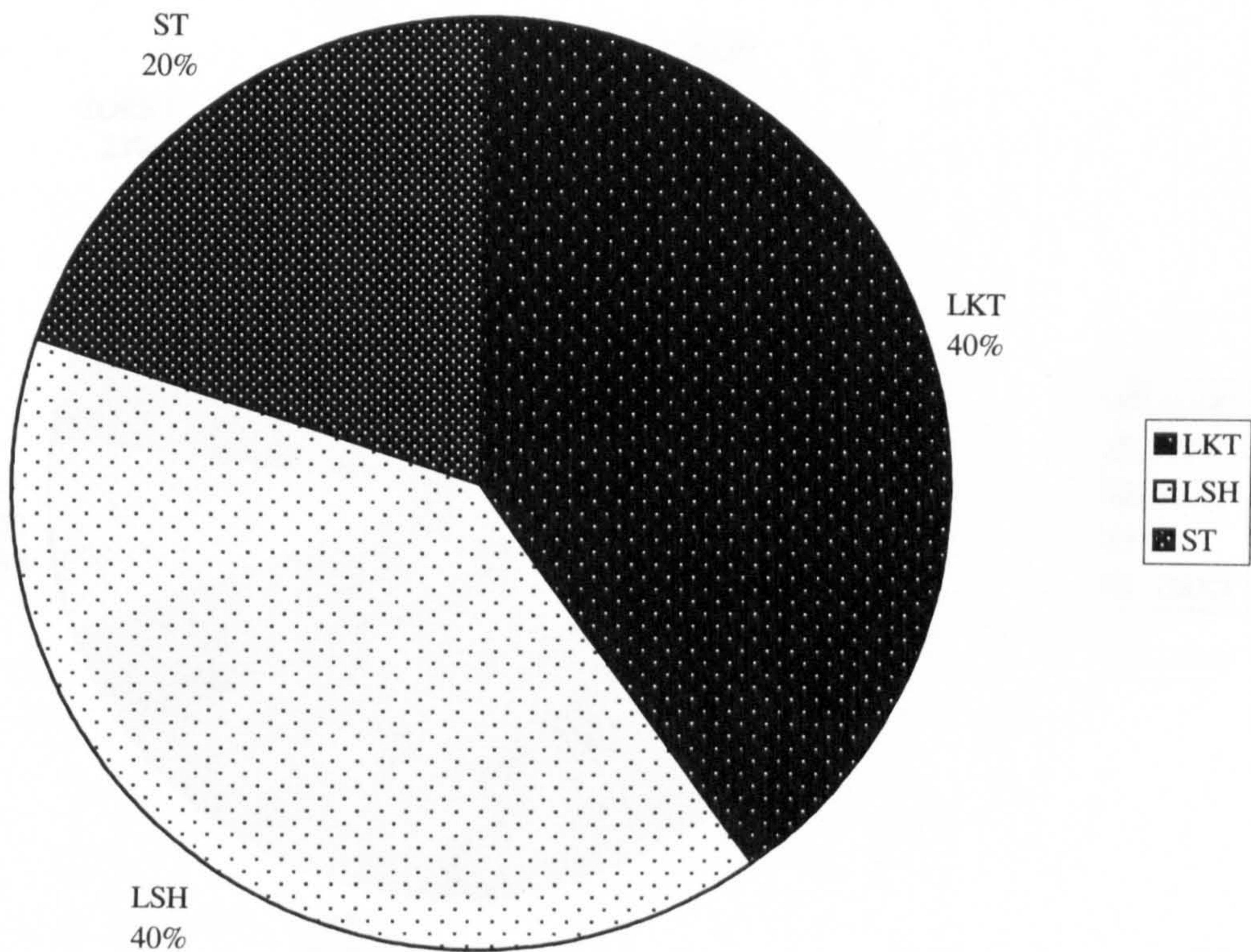
South Ormsby



Vessel Count: 10

Figure 153

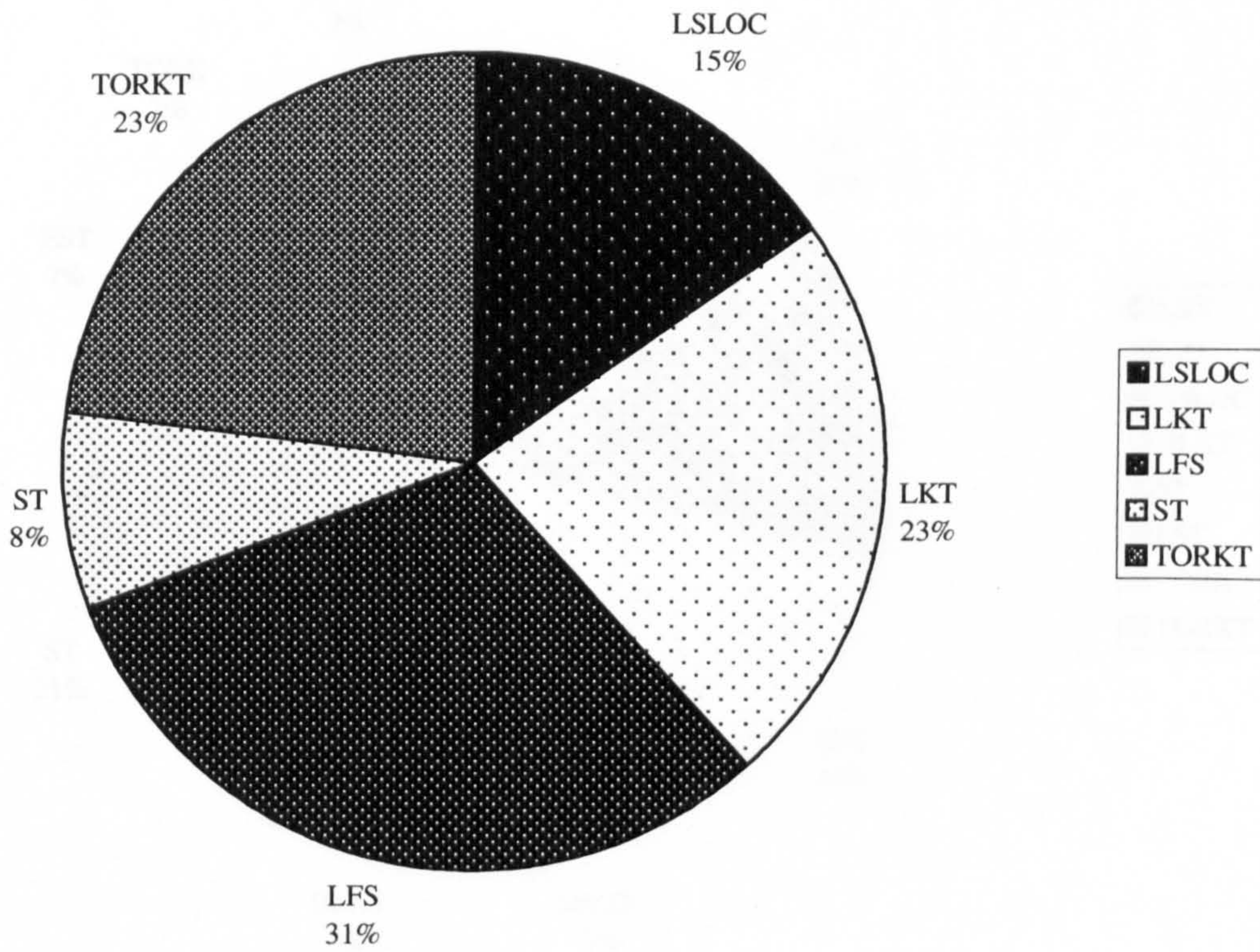
Wainfleet All Saints



Vessel count: 10

Figure 154

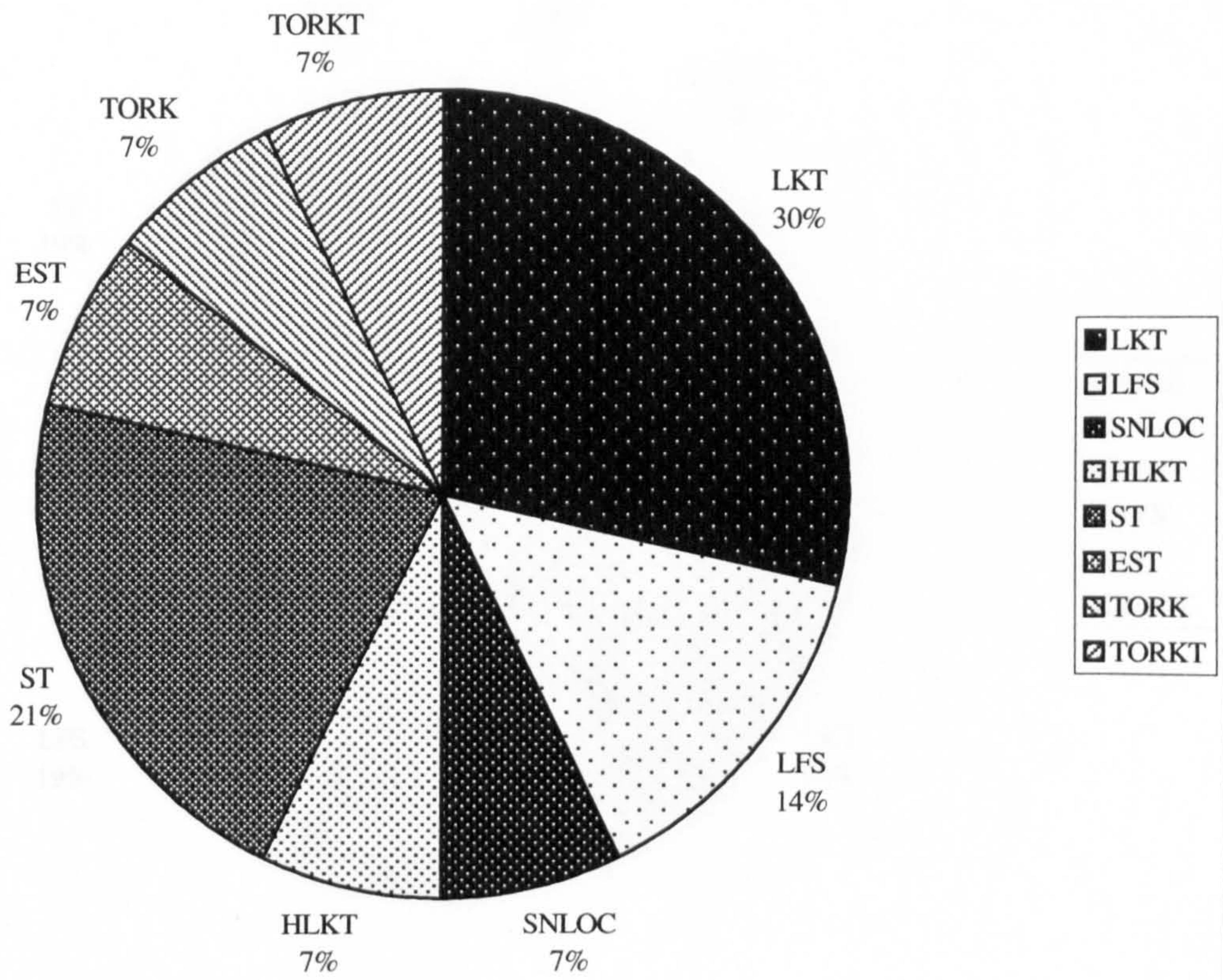
Fillingham



Vessel count: 13

Figure 155

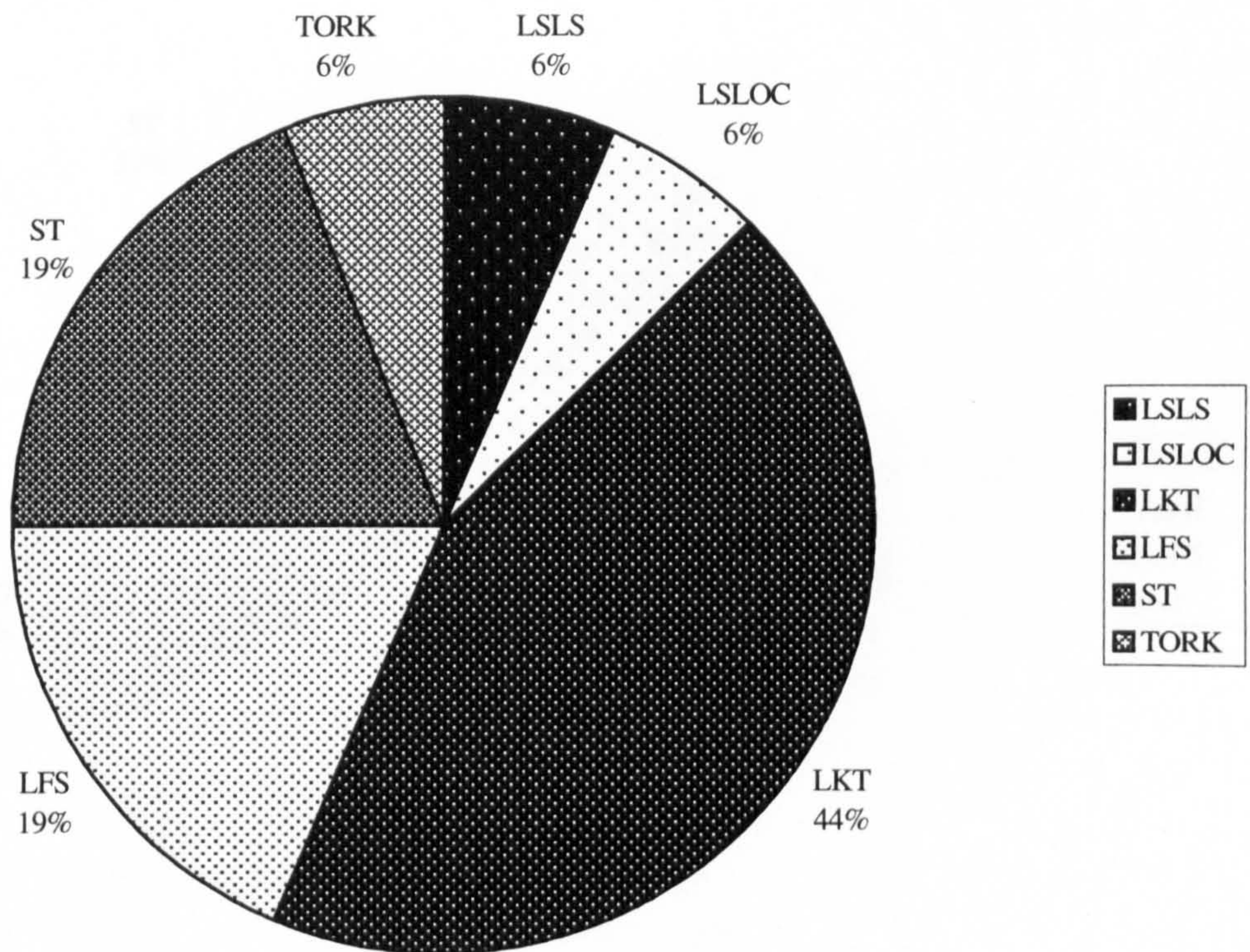
Horncastle



Vessel count: 14

Figure 156

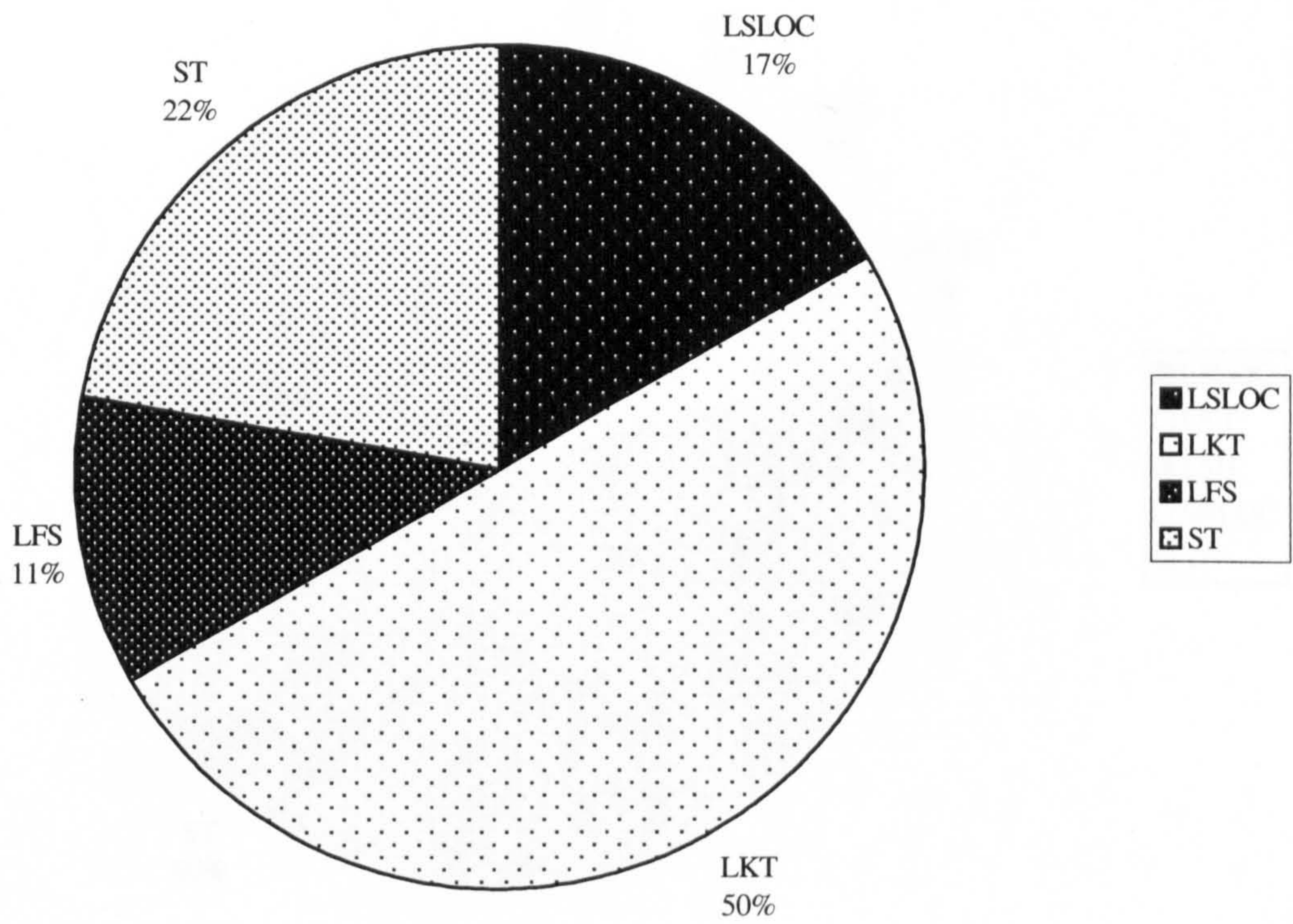
Haugham



Vessel count: 16

Figure 157

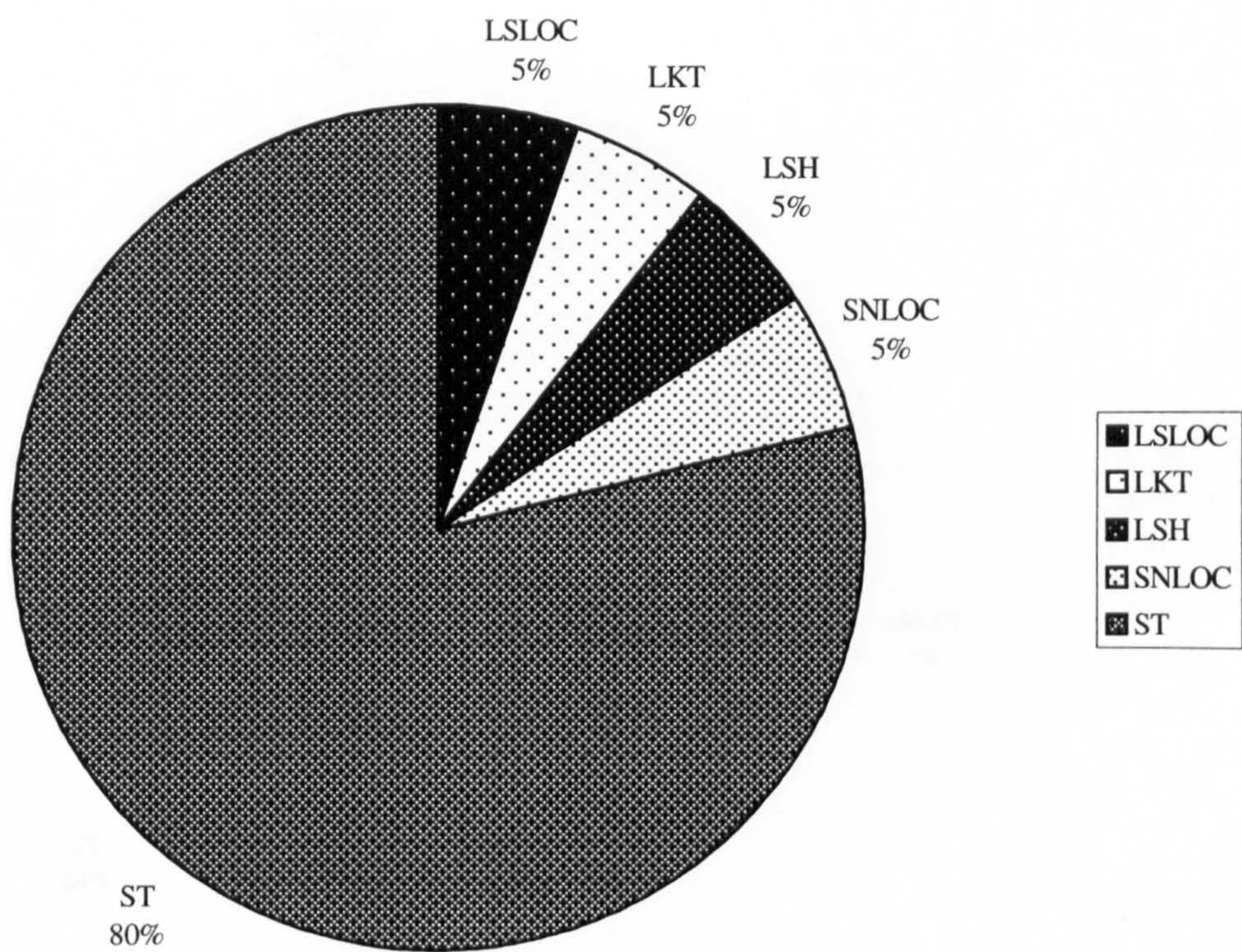
Haverholme



Vessel count: 18

Figure 158

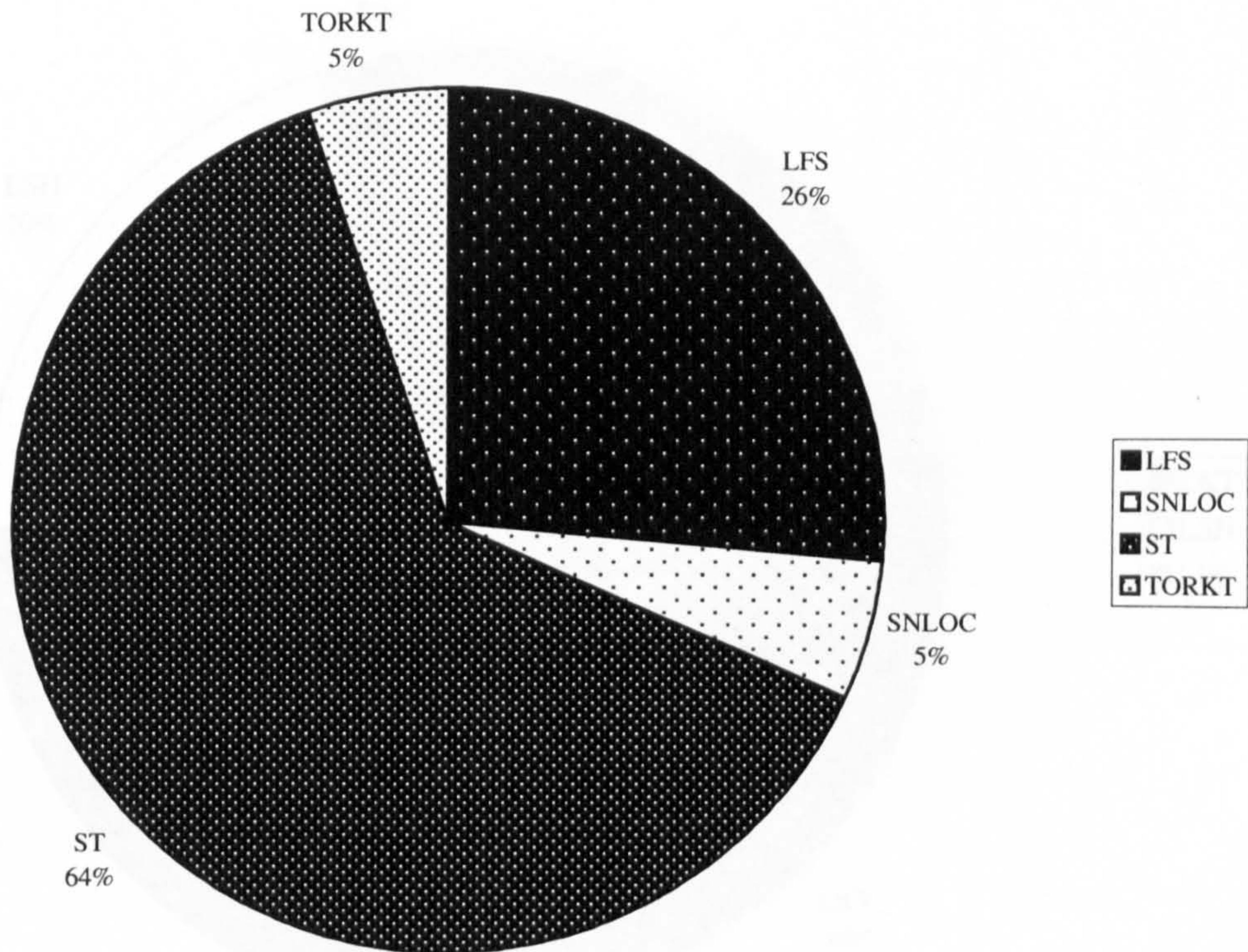
Grantham



Vessel count: 19

Figure 159

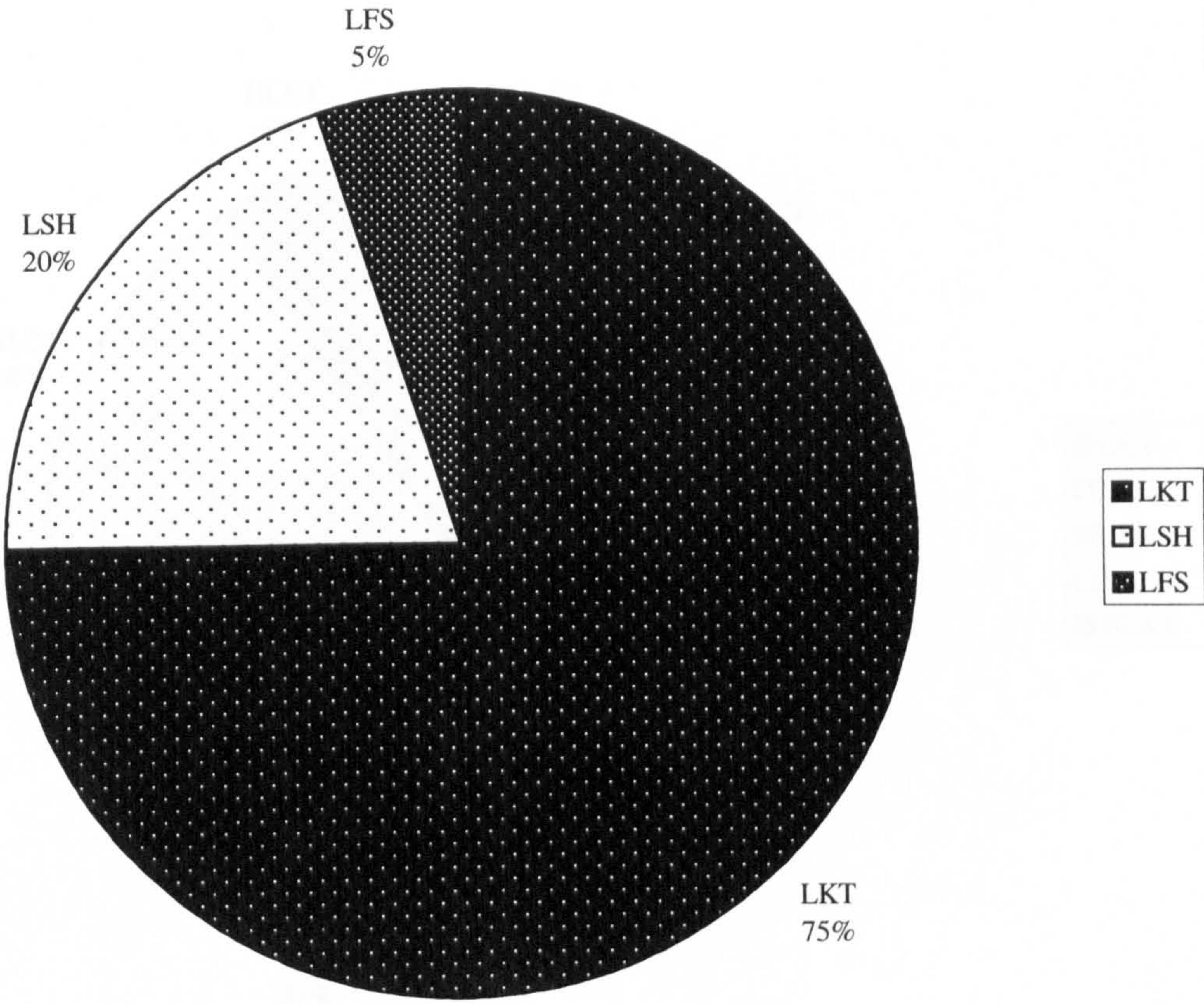
Newton



Vessel count: 19

Figure 160

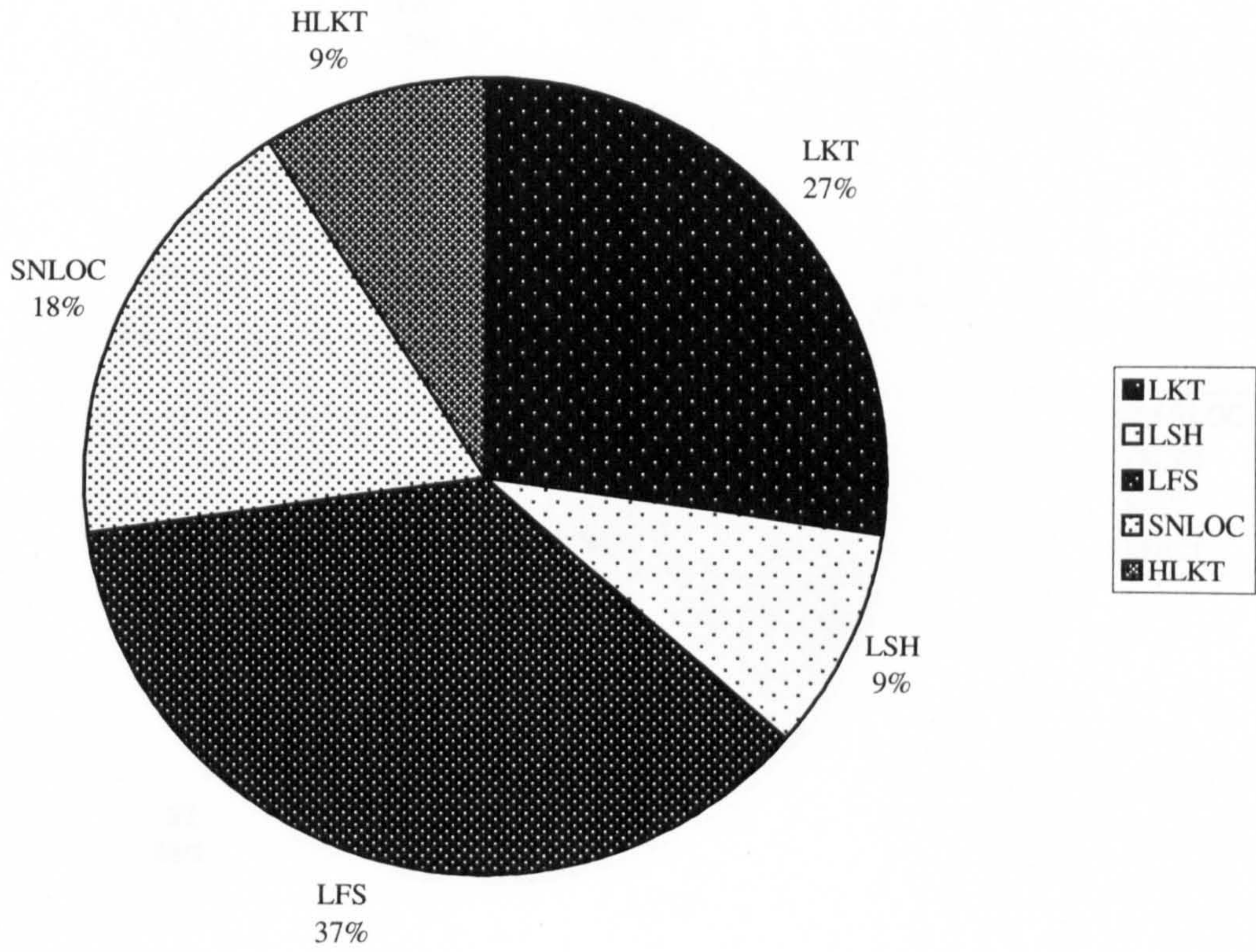
Panton



Vessel count: 20

Figure 161

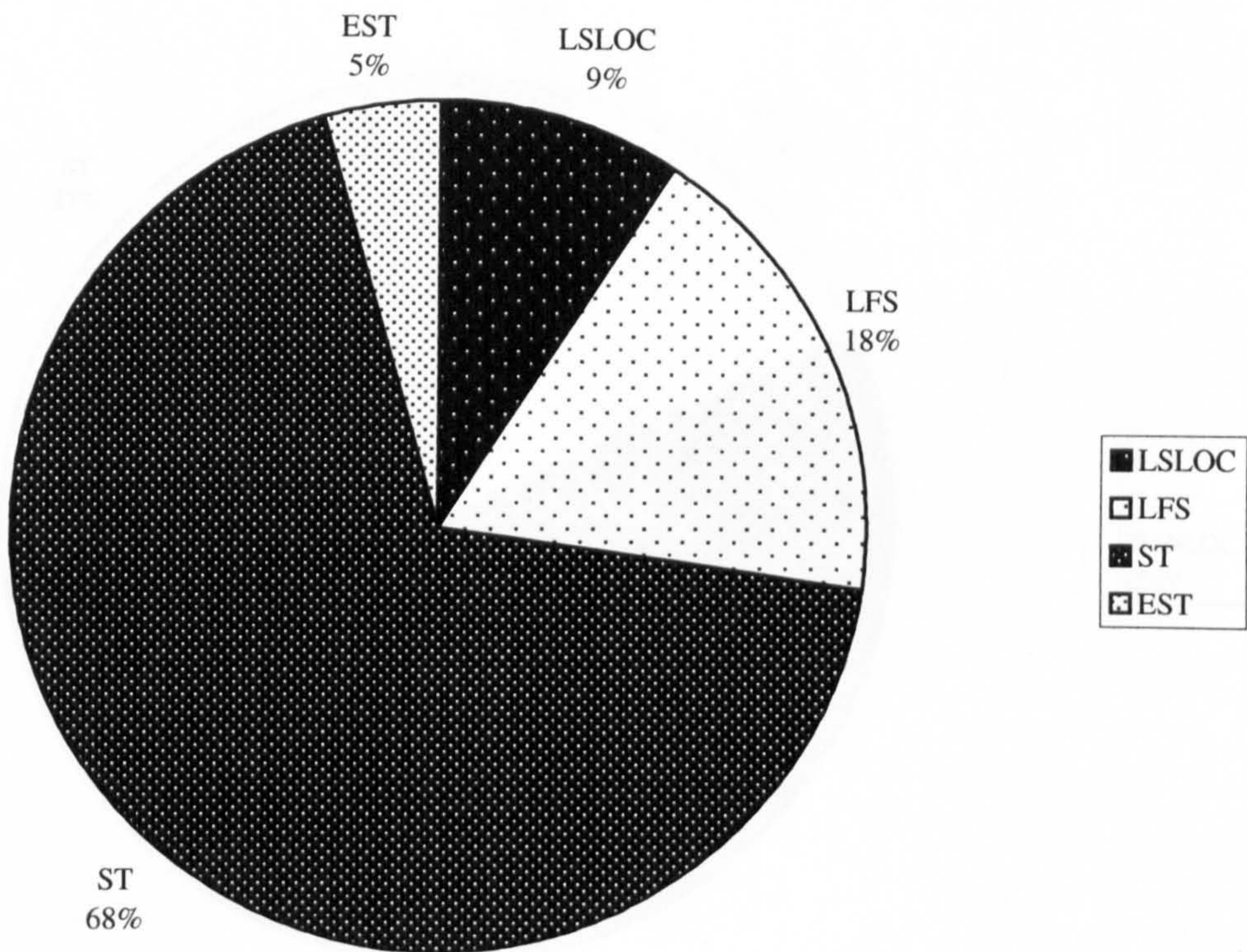
Aylesby



Vessel count: 22

Figure 162

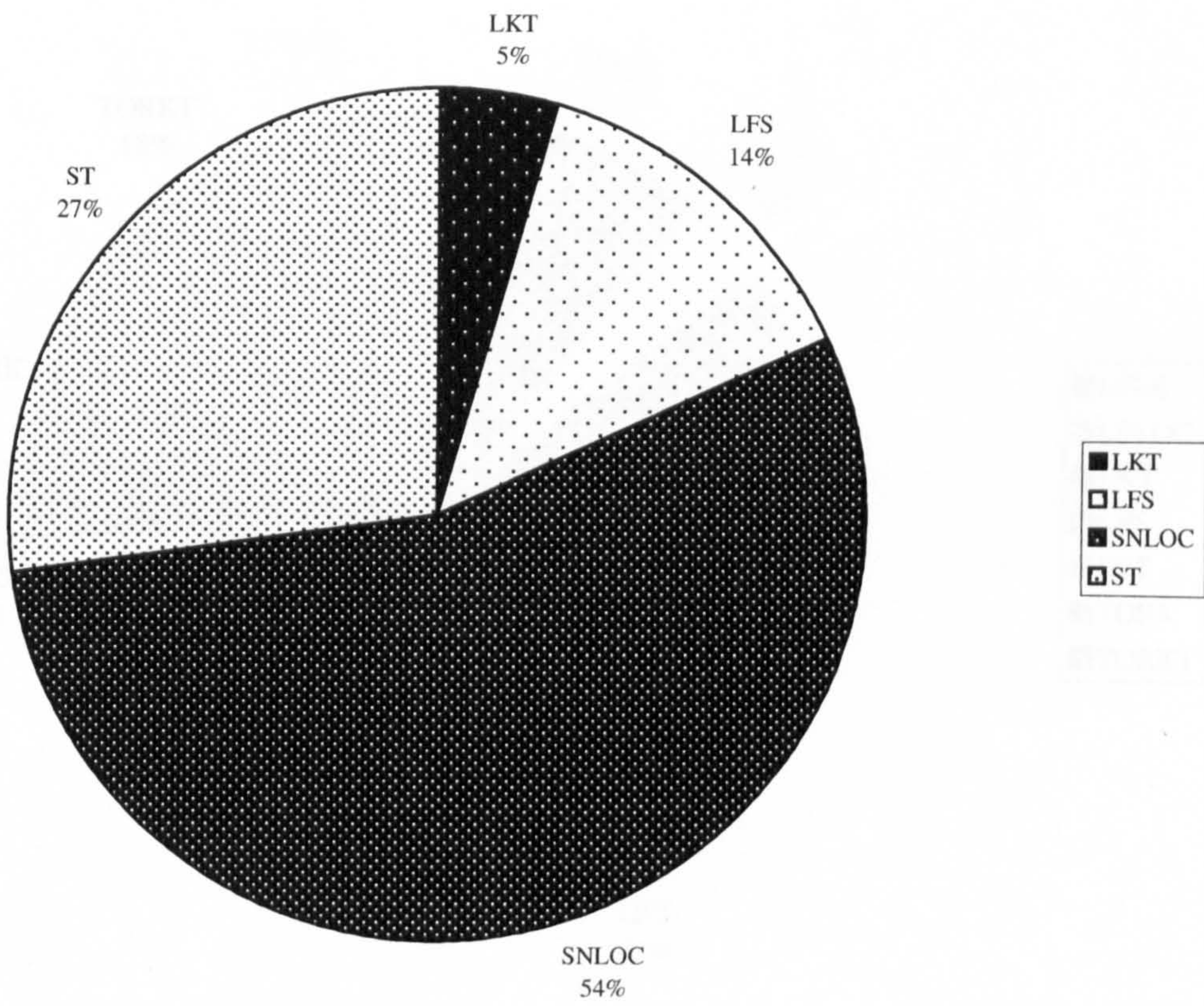
Kirby la Thorpe



Vessel count: 22

Figure 163

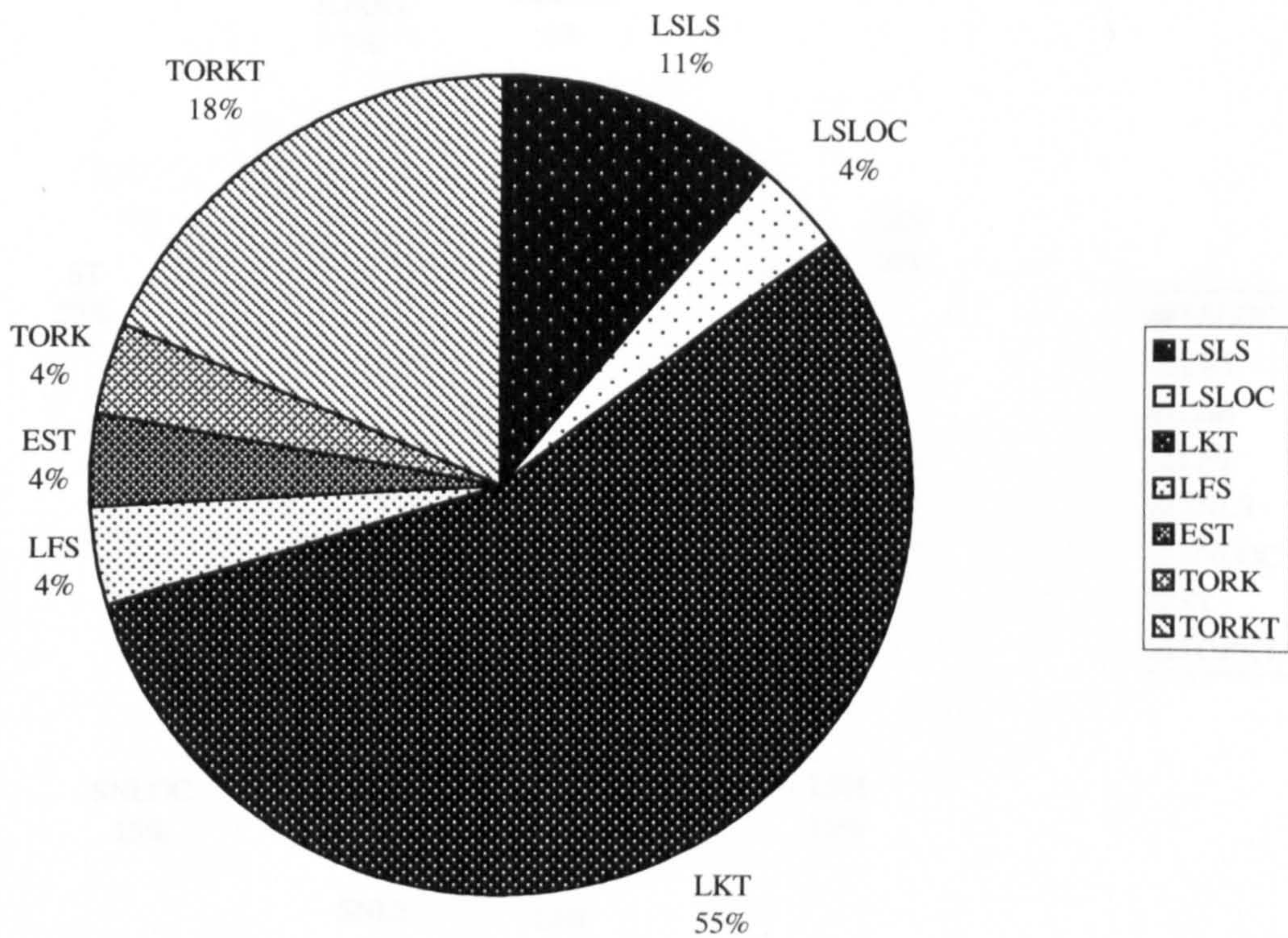
Kirton



Vessel count: 22

Figure 164

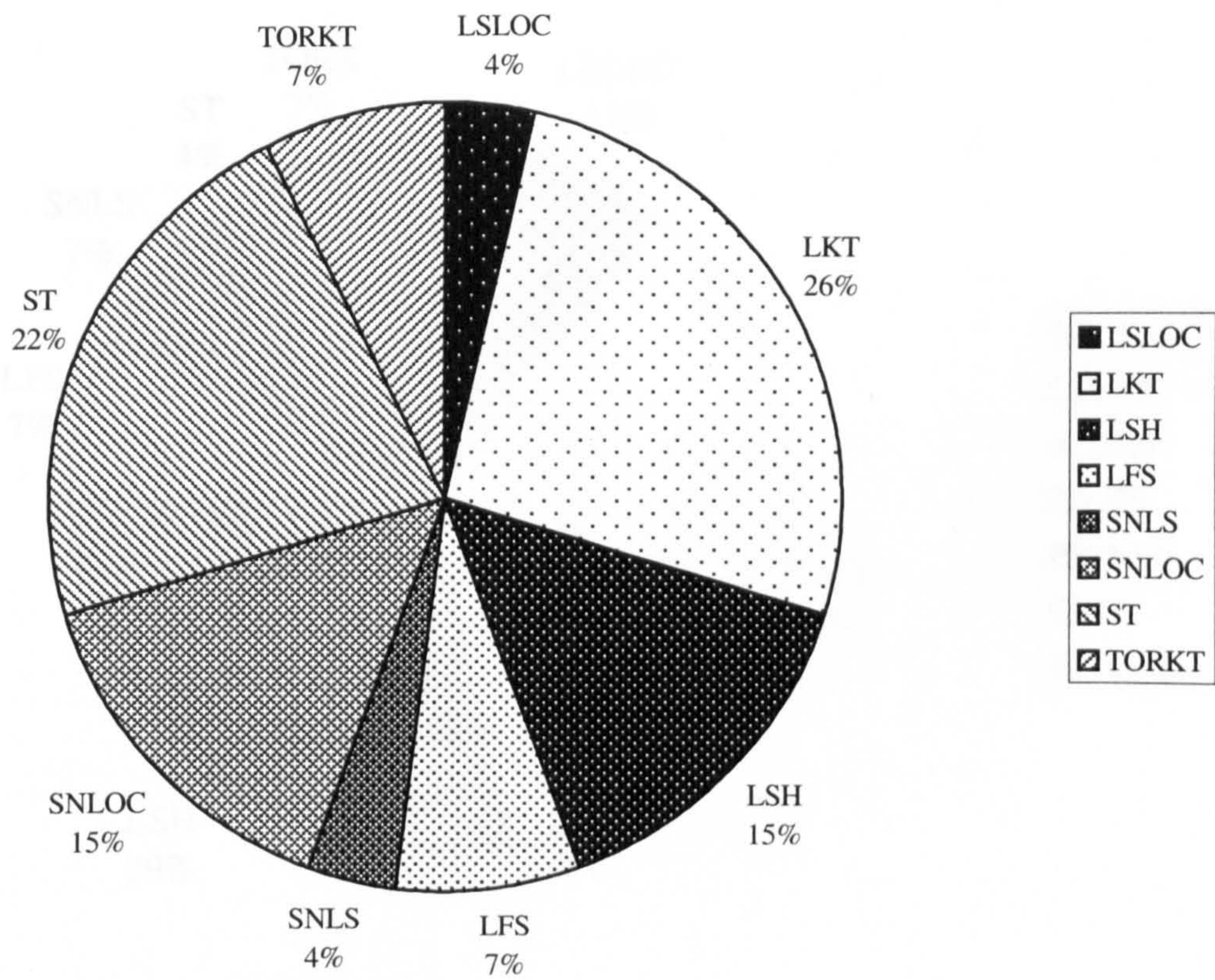
West Halton



Vessel count: 27

Figure 165

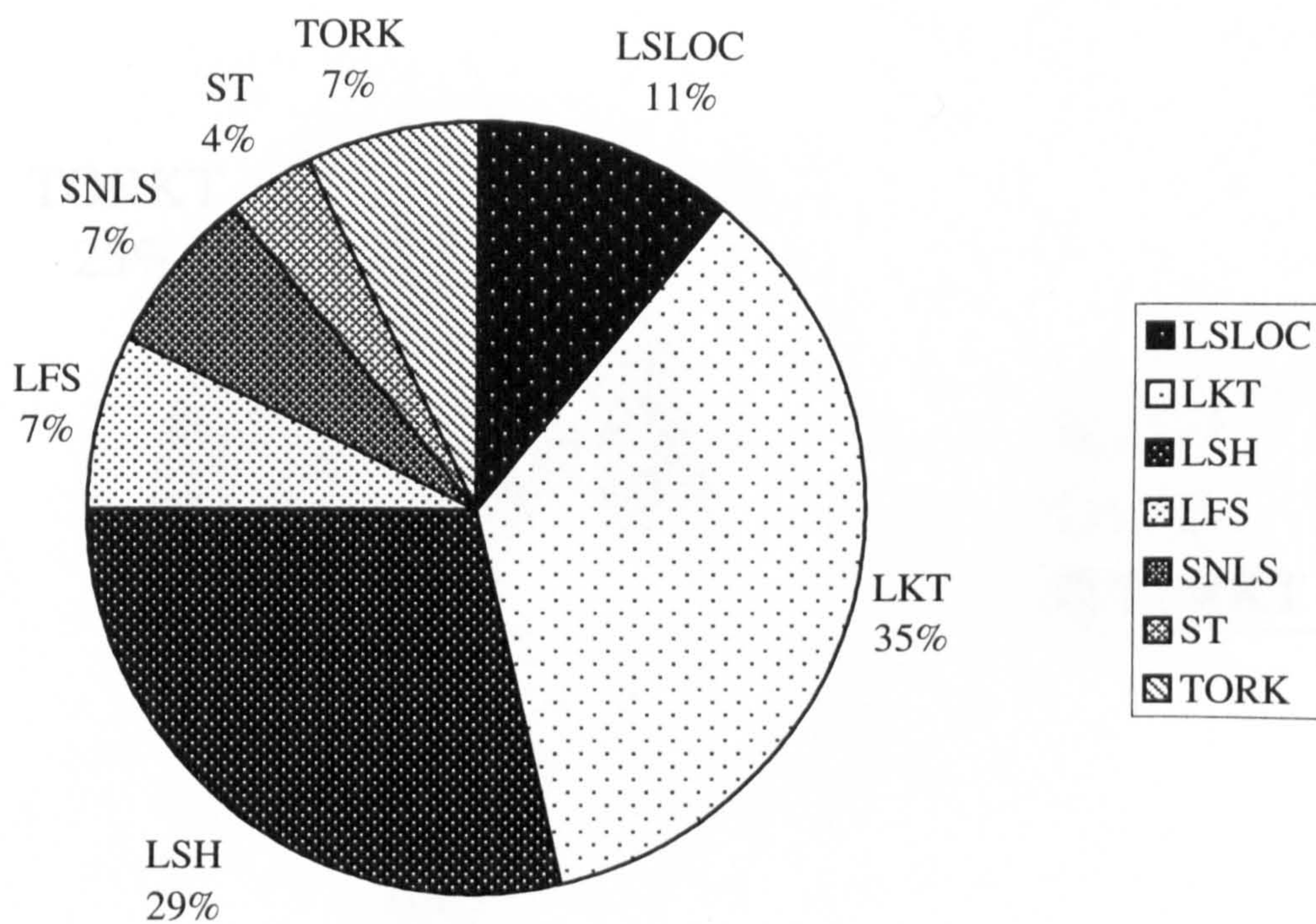
Tattershall



Vessel count: 27

Figure 166

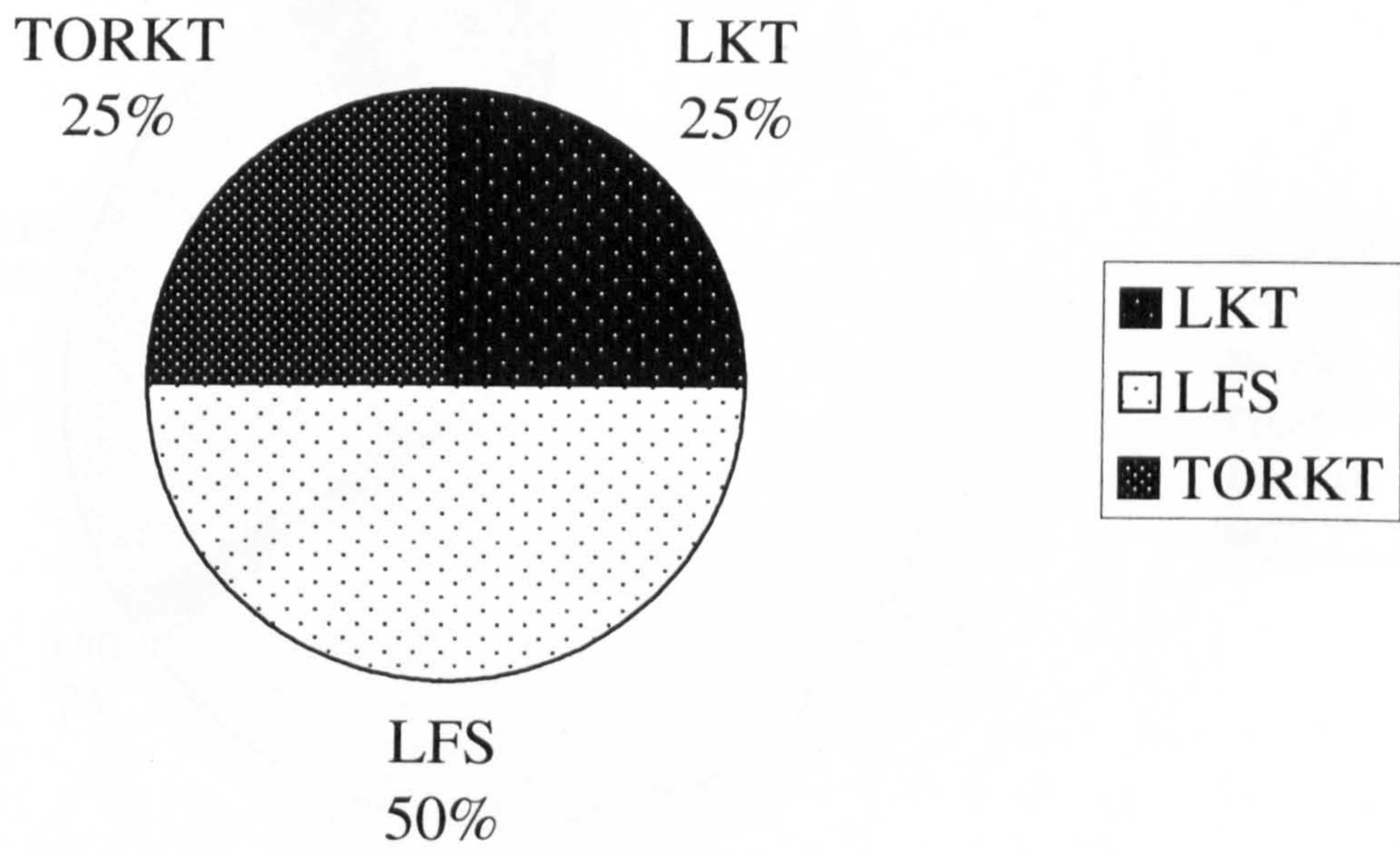
Foston



Vessel count: 28

Figure 167

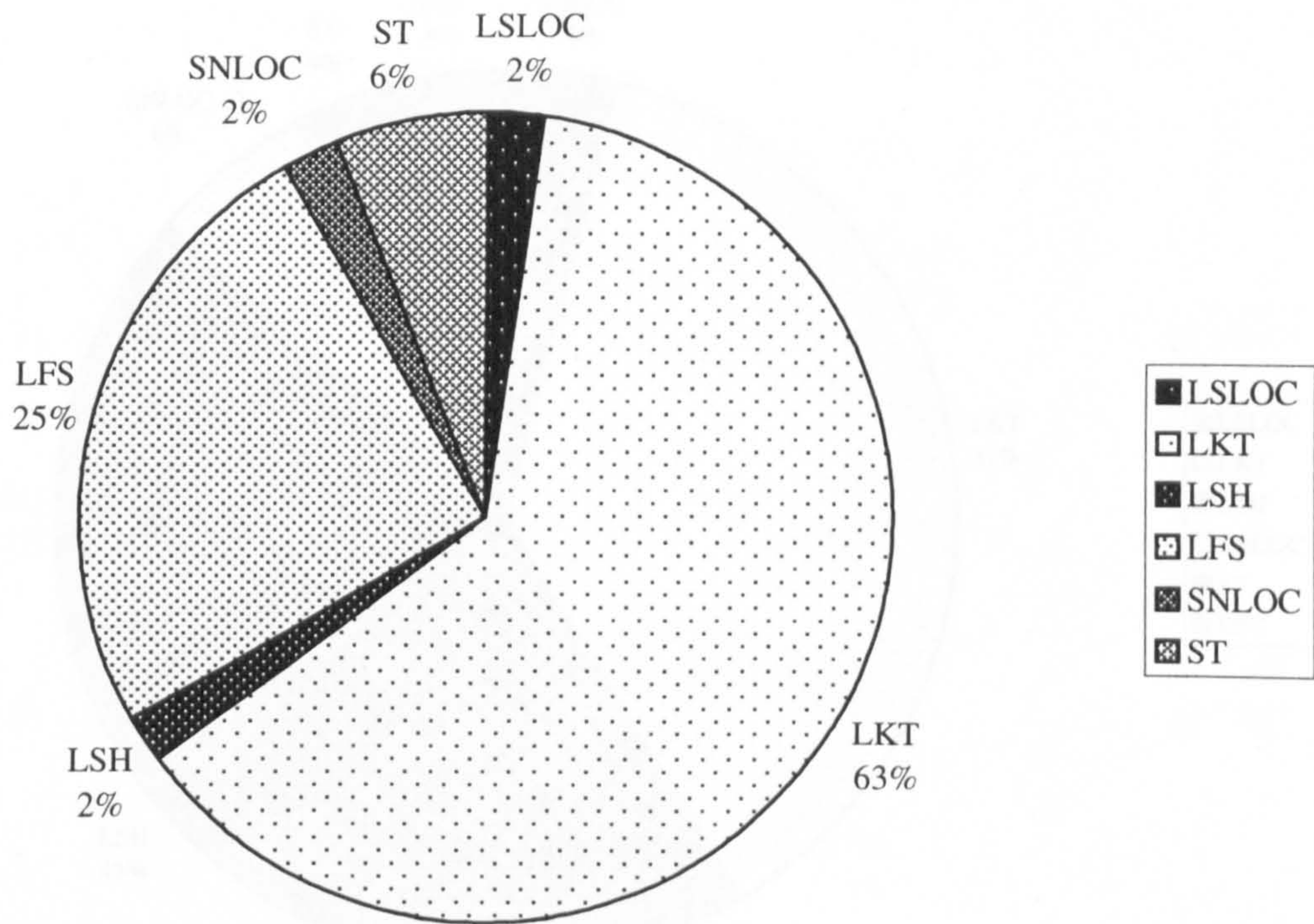
Hackthorne



Vessel count: 28

Figure 168

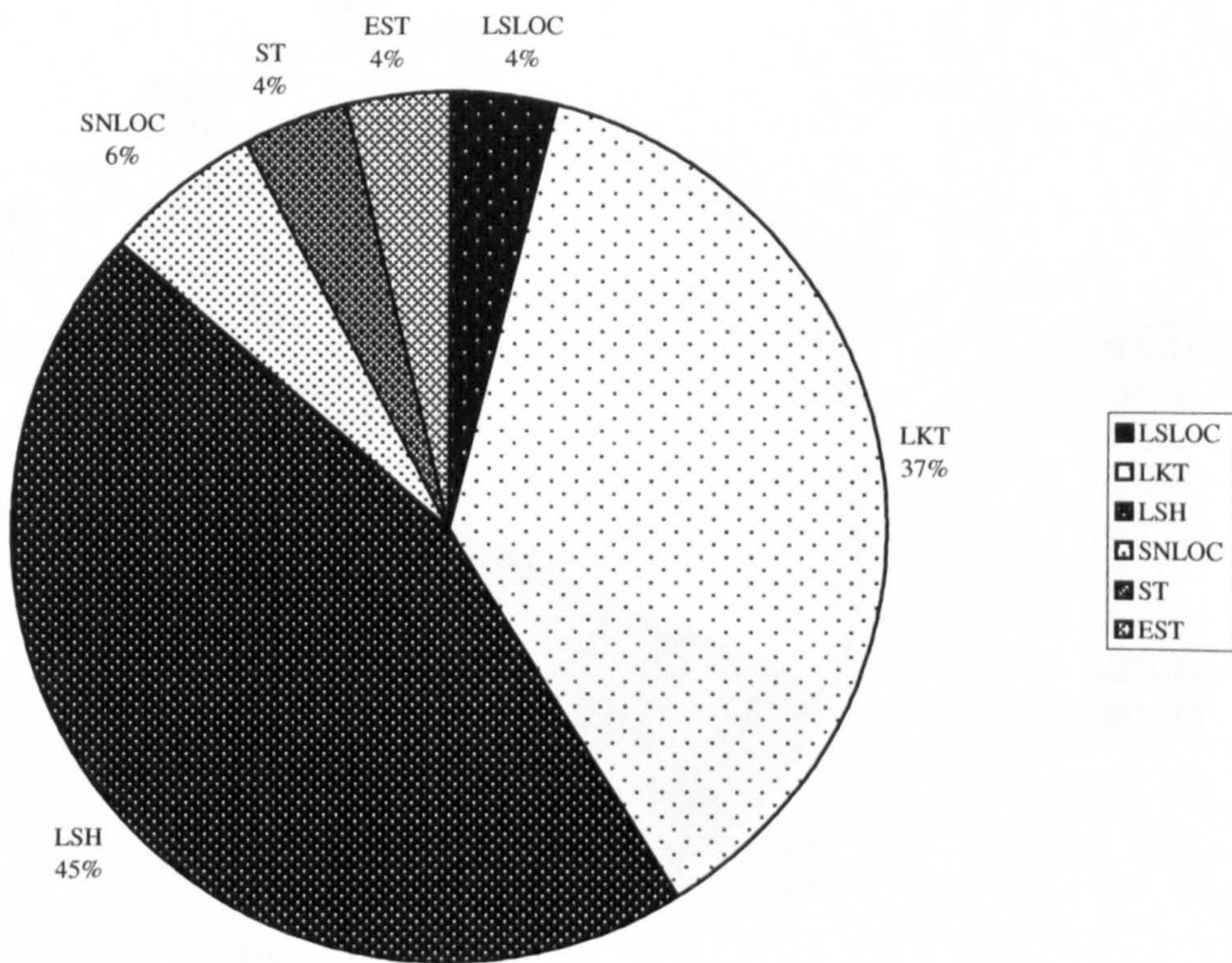
Nettleham



Vessel count: 48

Figure 169

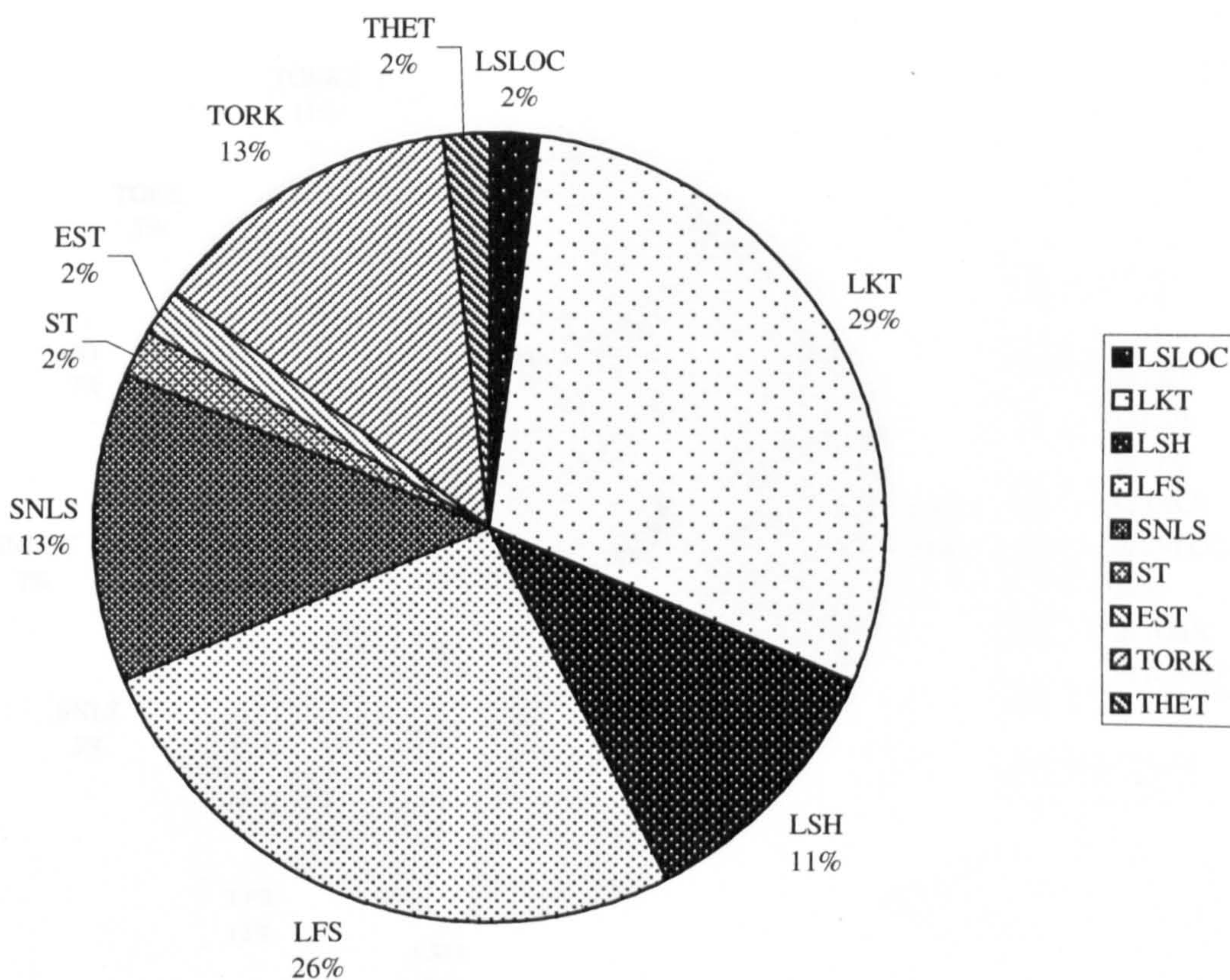
Fishtoft



Vessel count: 51

Figure 170

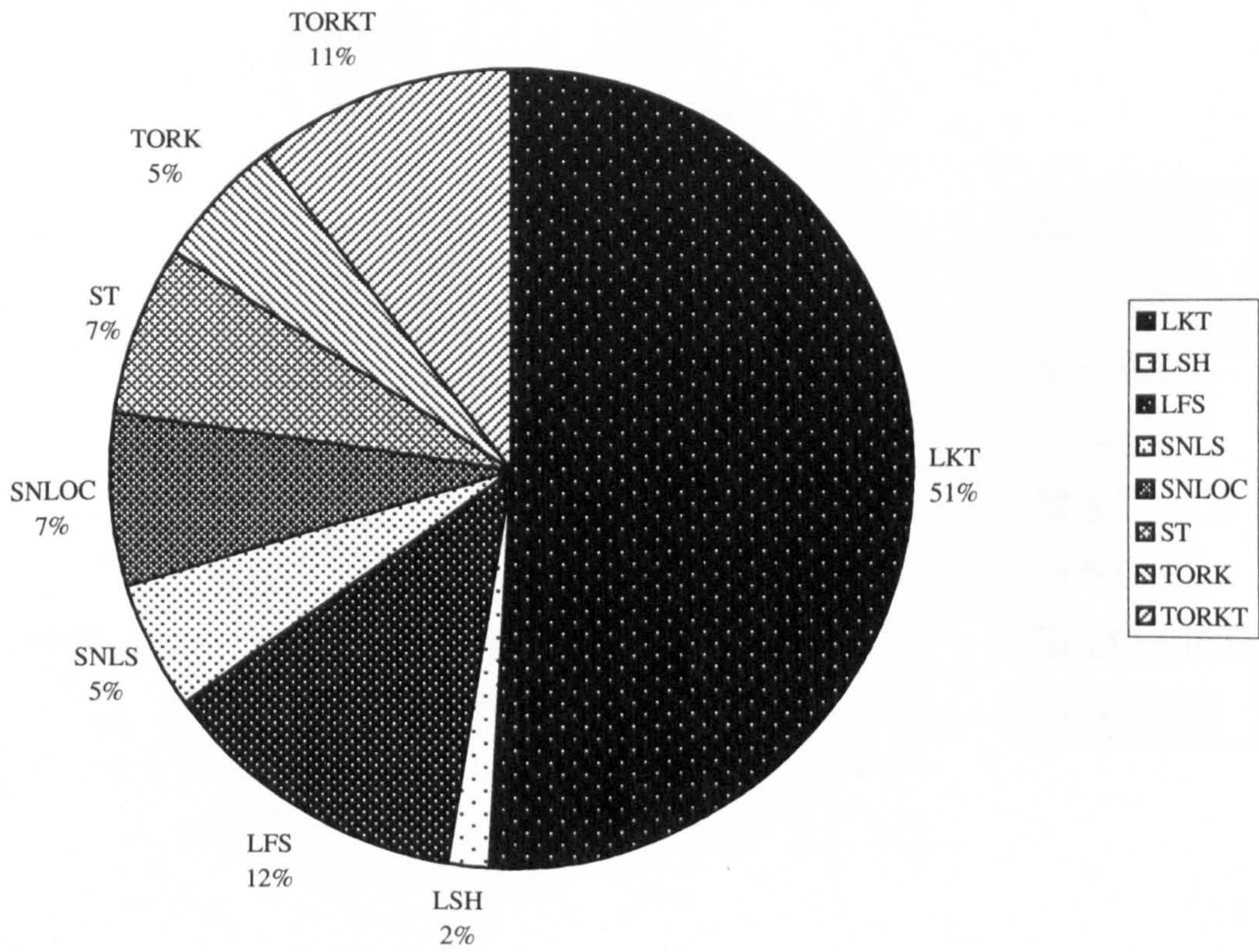
Caistor



Vessel count: 54

Figure 171

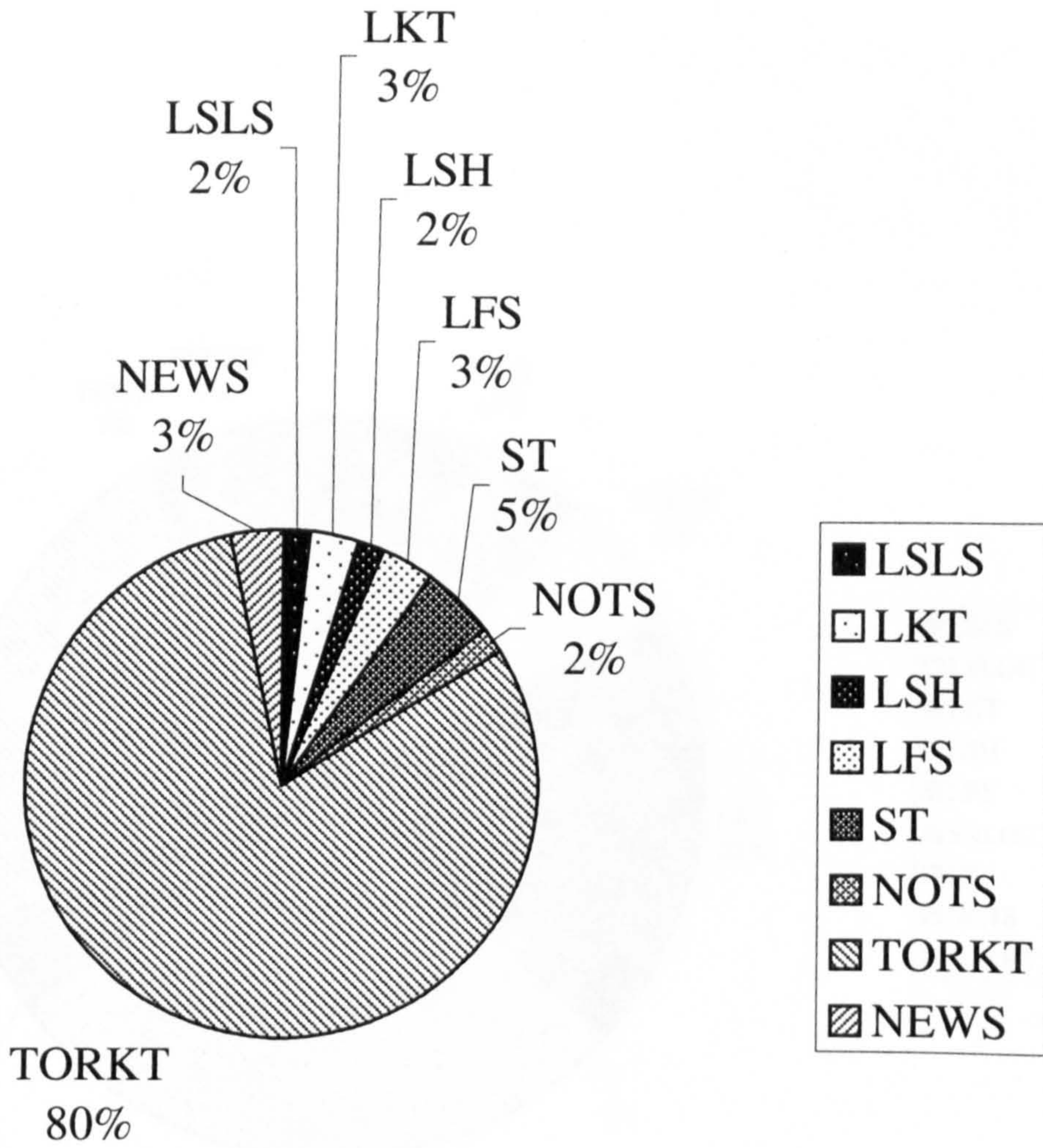
Ketsby



Vessel count: 57

Figure 172

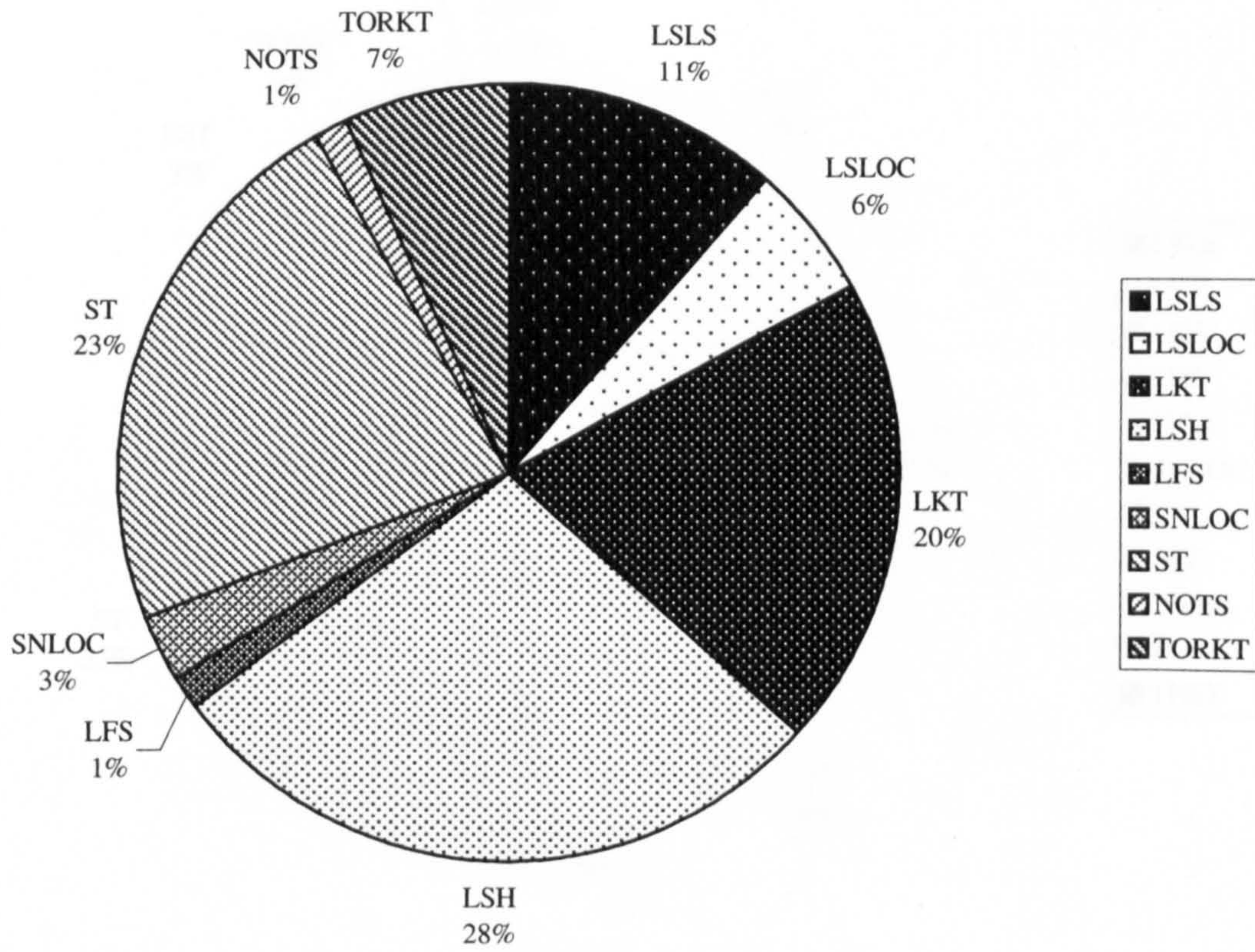
North Kelsey



Vessel count: 62

Figure 173

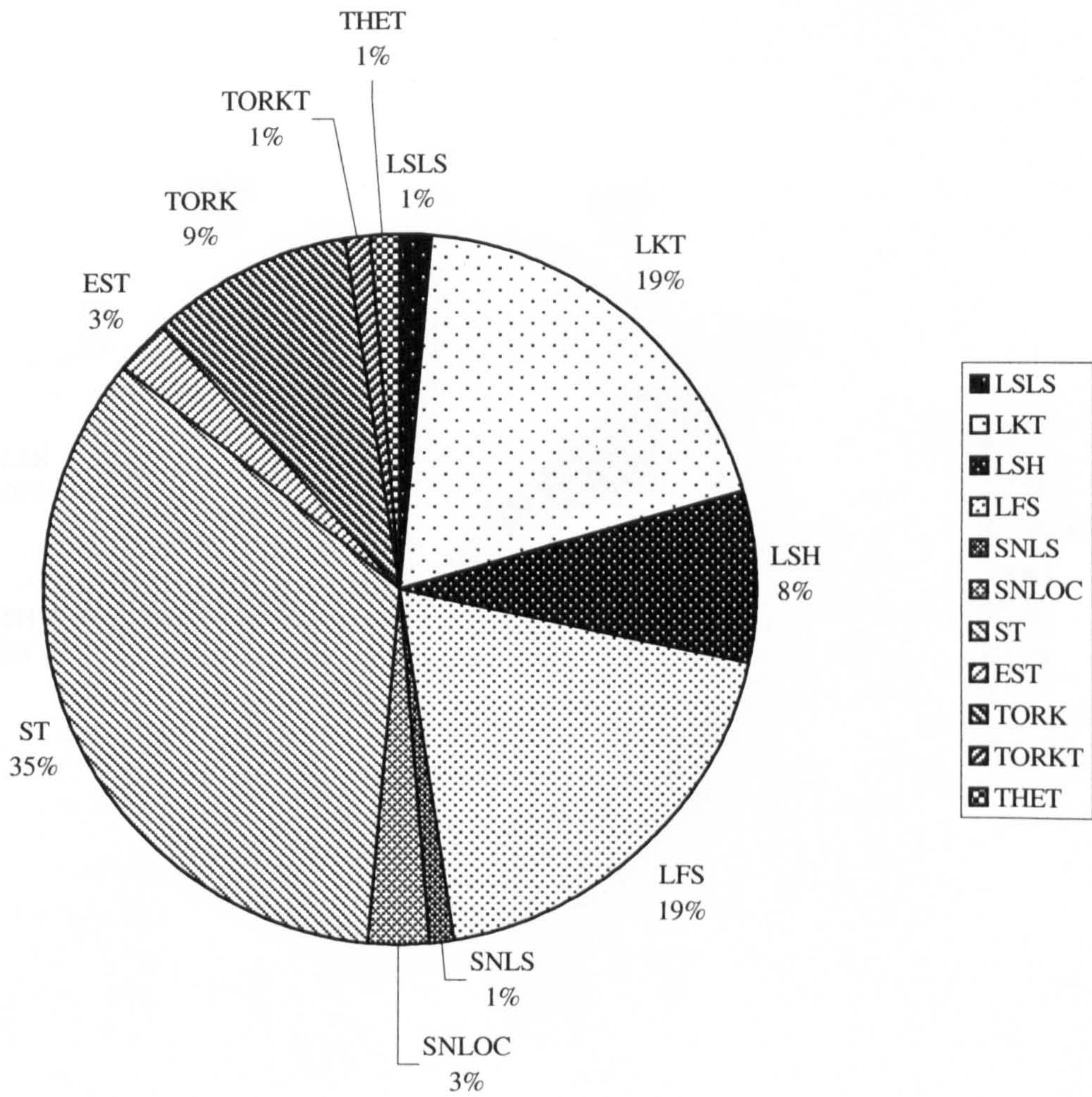
Crowland



Vessel count: 71

Figure 174

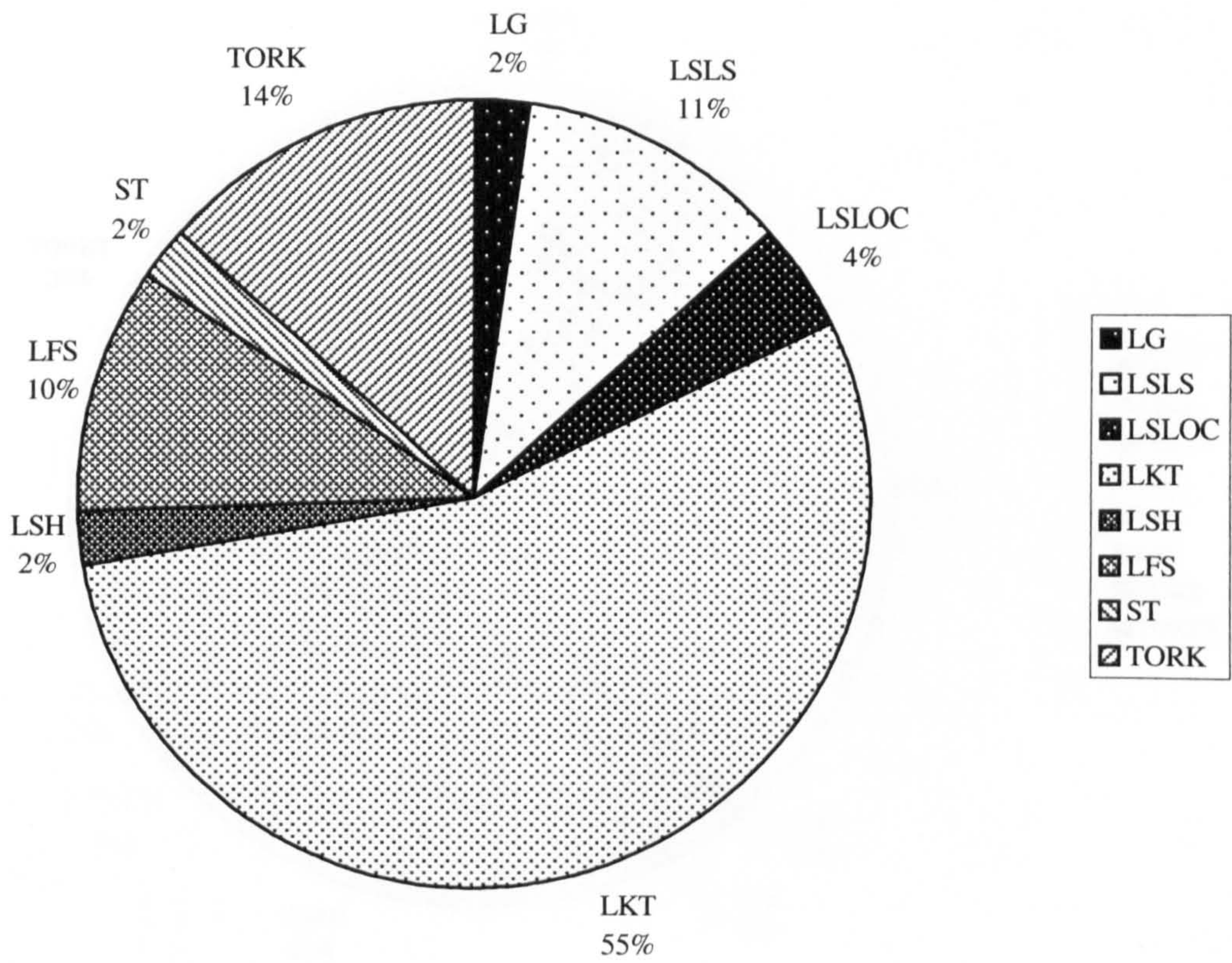
Sleaford



Vessel count: 78

Figure 175

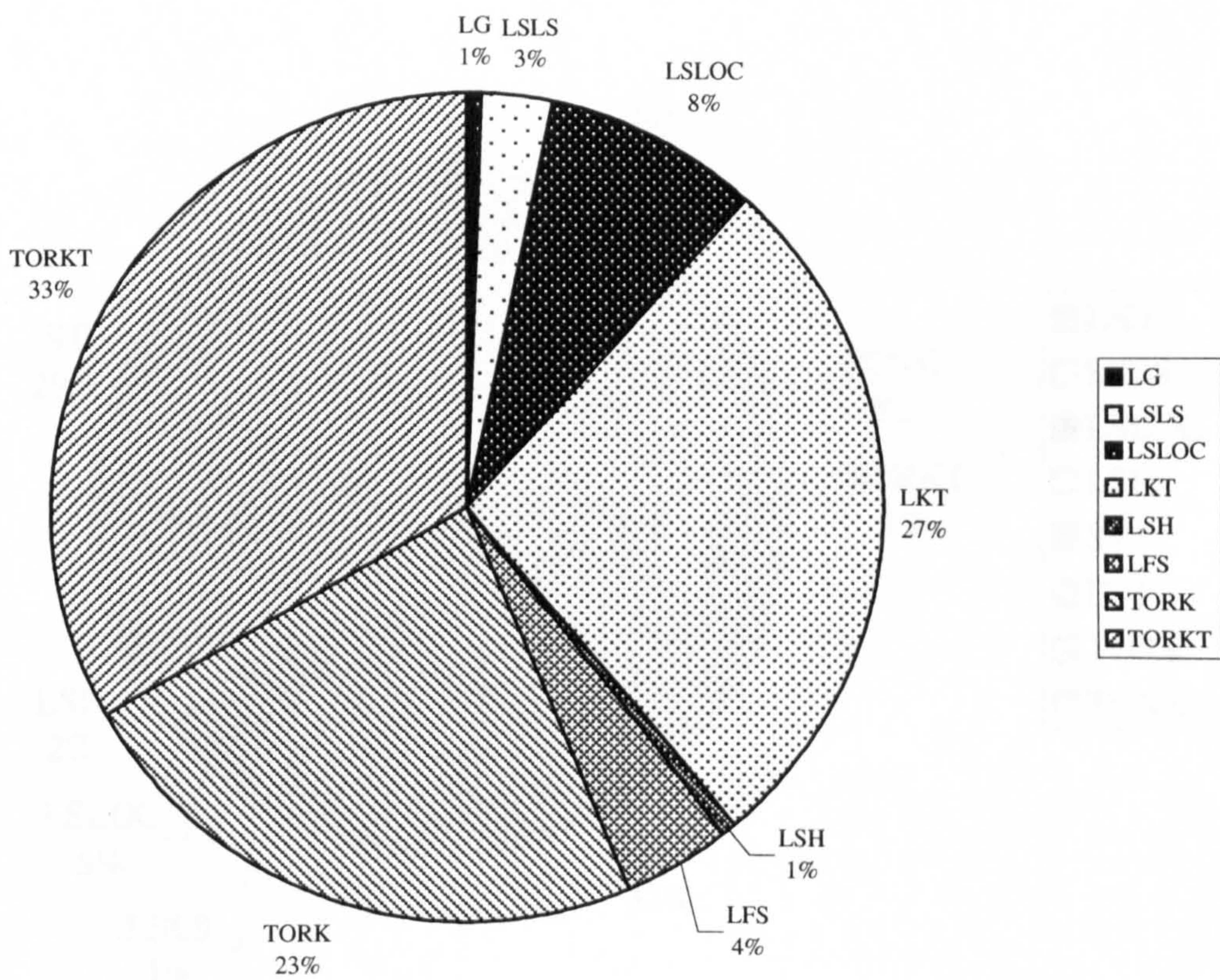
Cherry Willingham



Vessel count: 90

Figure 176

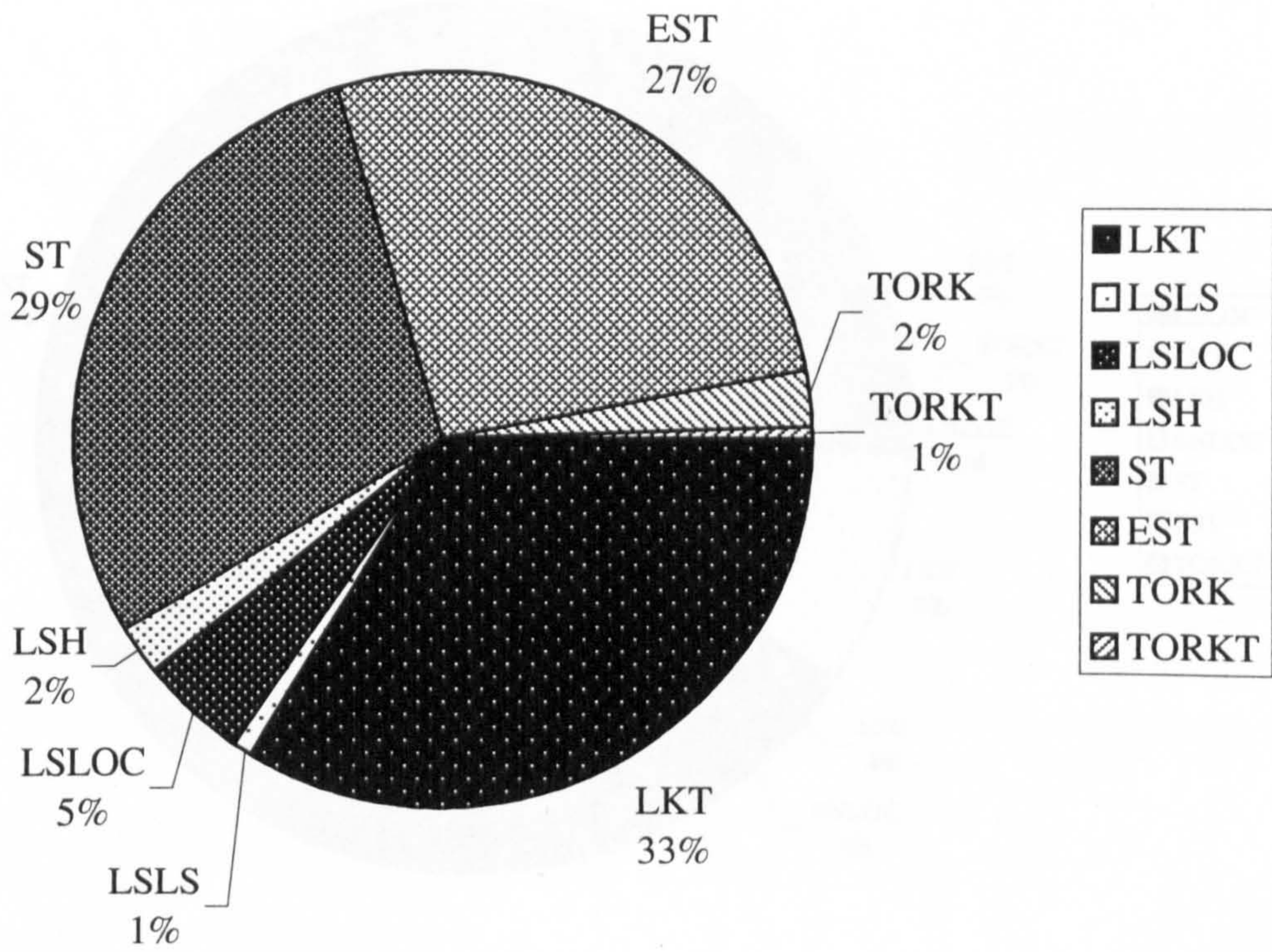
Flixborough



Vessel count: 147

Figure 177

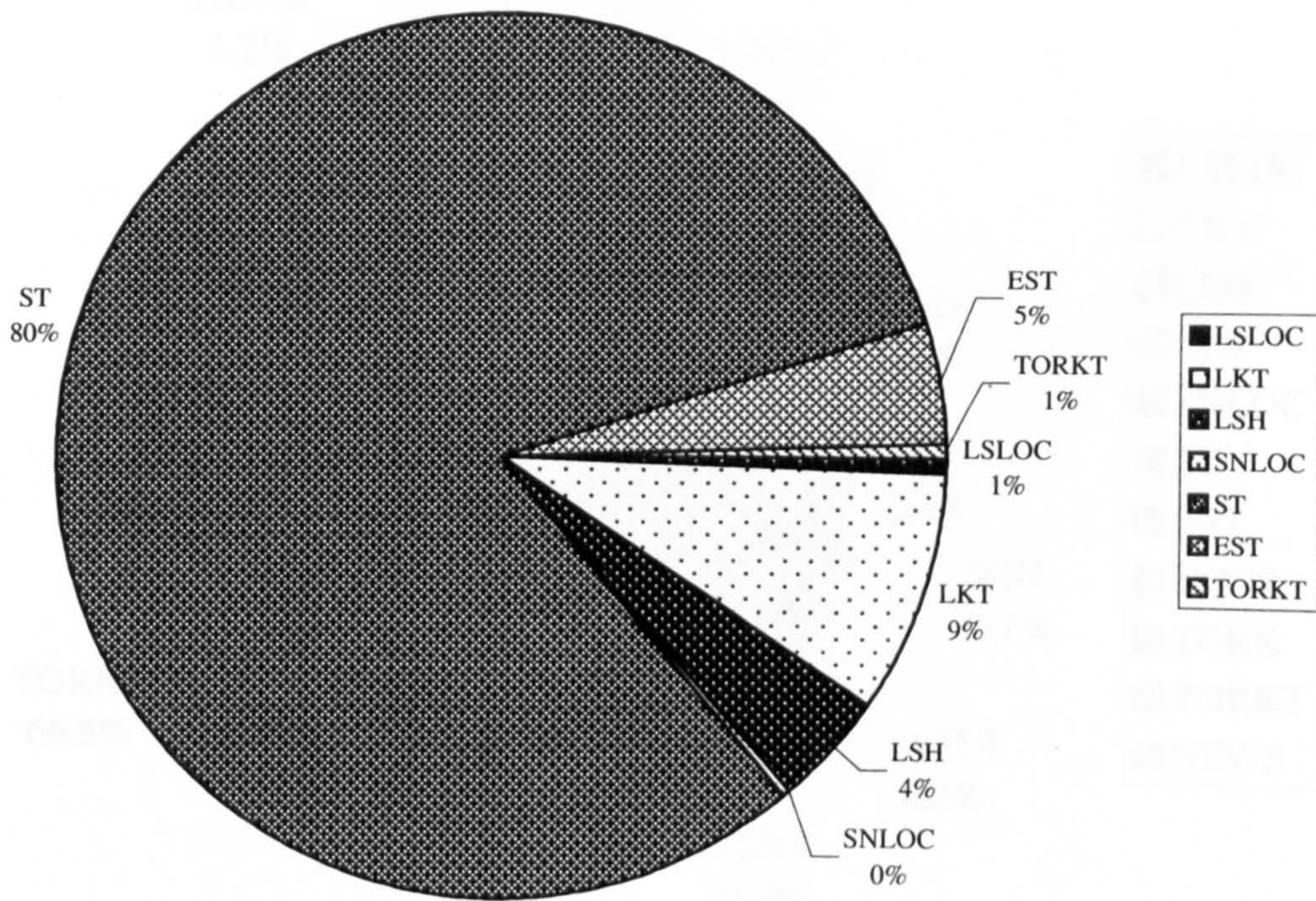
Repton



Vessel count: 169

Figure 178

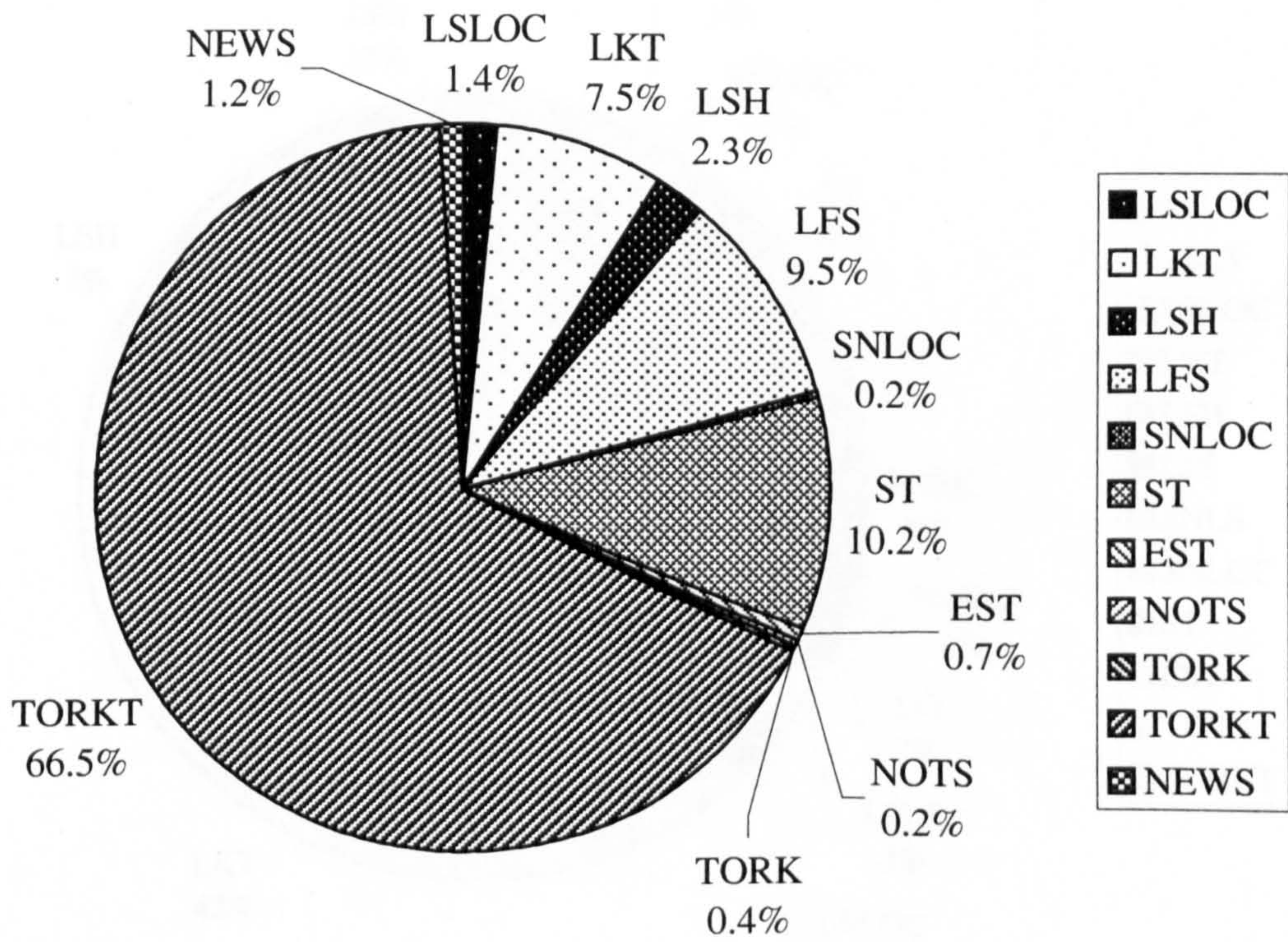
Boston



Vessel count: 322

Figure 179

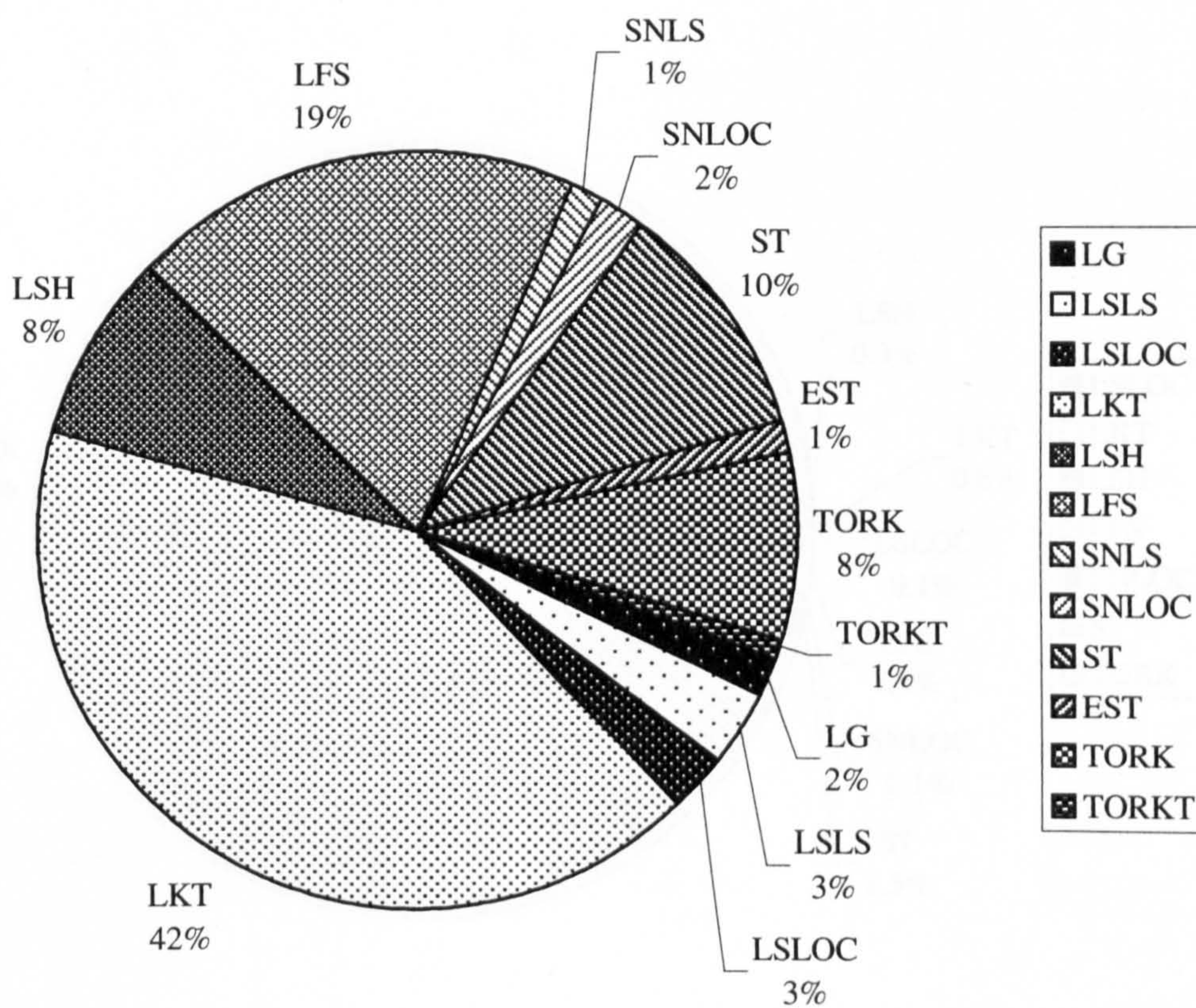
Newark



Vessel count: 571

Figure 180

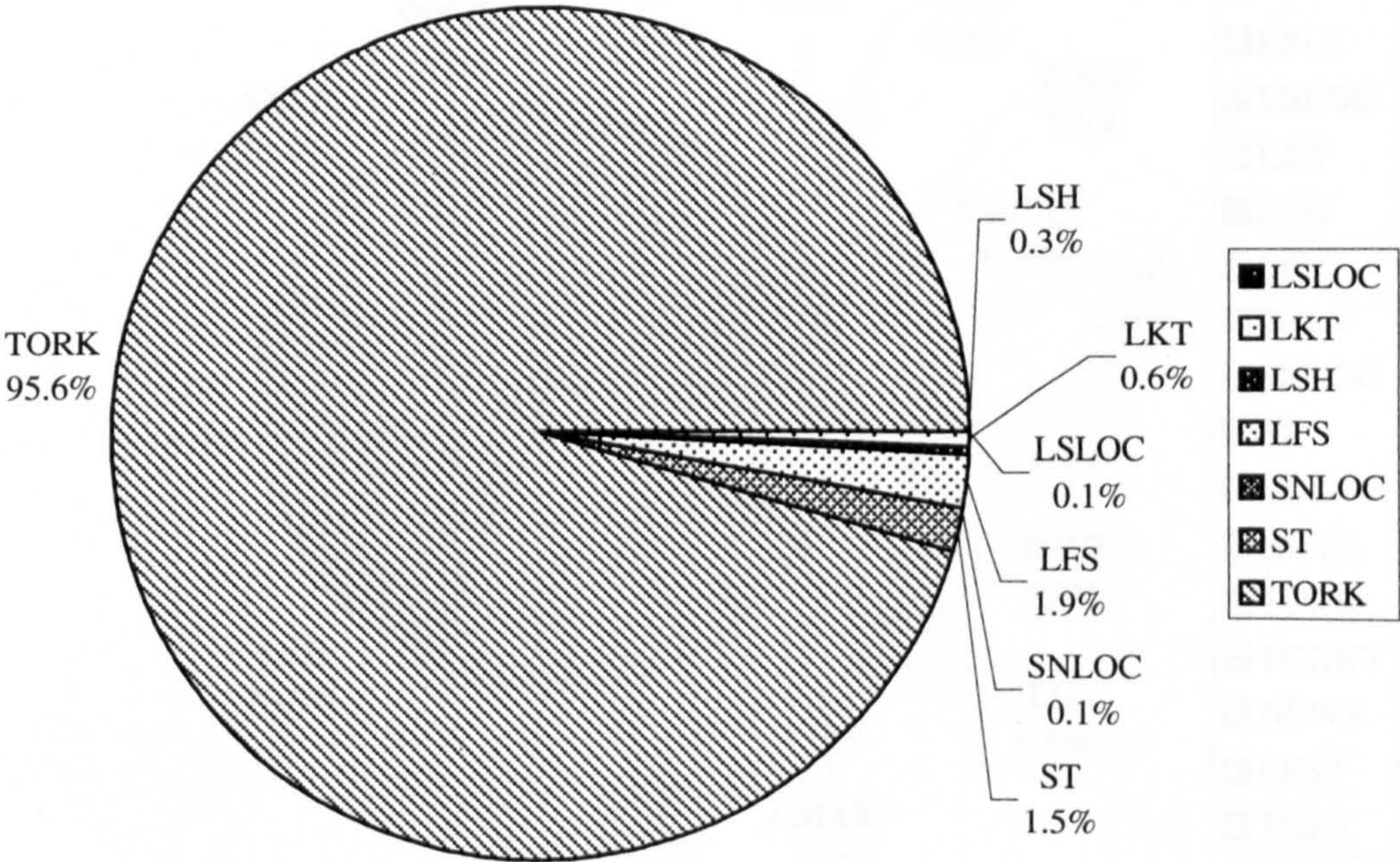
Golto



Vessel count: 956

Figure 181

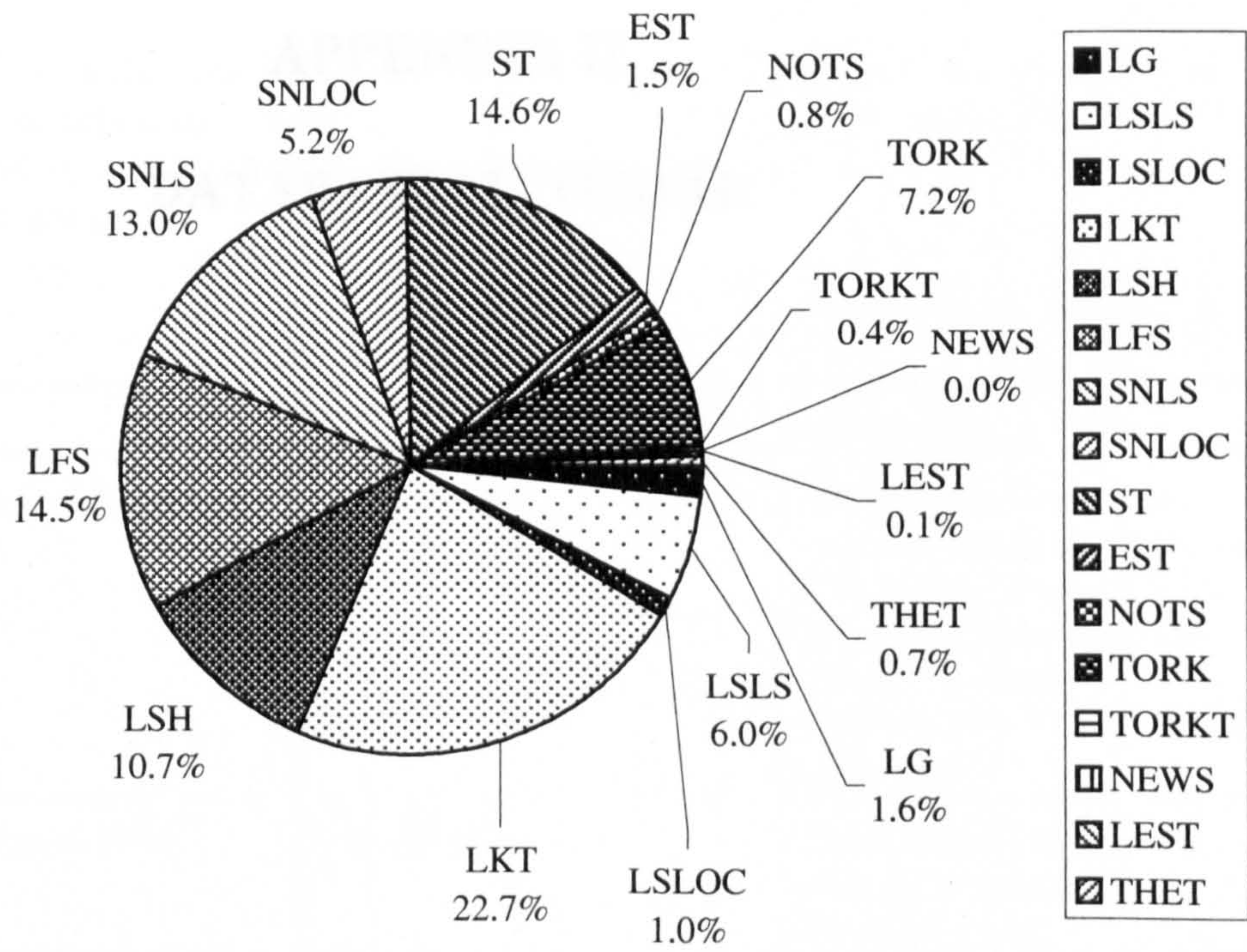
Torksey



Vessel count: 1586

Figure 182

Lincoln



Vessel count: 6563

Figure 183

APPENDIX II
DATABASE MATERIAL

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.

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

Pottery Data:

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

APPENDIX III

STATISTICS

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:

Town	Database	SPSS output
Lincoln	lincdist.dbf	euclreg.spo
Stamford	stdist.dbf	eucstreg.spo
Torksey	torkdist.dbf	euctreg.spo

Cognitive Regression:***Regression along rivers:***

Town	Database	SPSS output
Lincoln	lrivdist.dbf	rvlereg.spo
Stamford	srivdist.dbf	rvsreg.spo
Torksey	trivdist.dbf	rvtreg.spo

Regression along roads:

Town	Database	SPSS output
Lincoln	lrddist.dbf	rdlreg.spo
Stamford	srddist.dbf	rdsreg.spo
Torksey	trddist.dbf	rdtreg.spo

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.

Settlements	Database	SPSS output
Urban and rural	ware10t.dbf	mdstowns.spo
Rural	ware10nt.dbf	mdsrural.spo

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:

Settlement	Database	SPSS output
Urban and Rural	wares10t.dbf	hcltowns.spo
Rural	wares10nt.dbf	hclrural.spo

K-means Cluster Analyses:

Vessels	Database	SPSS output
Including vessels	kclvess.dbf	kclvess.spo
Excluding vessels	kclnv.dbf	kclnv.spo

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