

AGRICULTURAL RESEARCH COUNCIL

Soil Survey of England and Wales

The 1:25,000 mapping programme

by

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SUMMARY

A programme is presented for the production of 1:25,000 soil maps in selected areas of the counties of England and Wales. The areas are chosen for their representative geomorphological and pedological characteristics within each county, as well as for their current interest to the agricultural industry. When surveyed, and considered with work already done, they will form the basis on which will be constructed county, regional and national soil maps.

The fundamental scientific basis for the programme is expected to remain fairly constant, but the emphasis of interest in the agricultural industry may well change, and a periodic review by the user organizations is suggested.

INTRODUCTION

At a meeting in October, 1966, the Soil Survey Research Board agreed a new principle of mapping soils in England and Wales⁽¹⁾. Selected 38 sq. mile areas in each county will be surveyed at a scale of 1:25,000 and maps published at the same scale. The areas will correspond to the Ordnance Survey 10 km. x 10 km. Outline Edition 1:25,000 map series. They will be selected to aid the production of county, regional and national soil maps, and for their agricultural interest.

This paper describes the priorities now being given to counties, and lists for each the 1:25,000 O.S. map sheet areas selected for survey in the future. The interest shown by user organizations in many sheets is indicated, and suggestions are made for periodic reviews of the programme.

The paper is being circulated to appropriate departments in the Ministry of Agriculture, Fisheries and Food, for comment.

AIM OF THE PROGRAMME

Much information is already available in several counties at a scale of 1:25,000, obtained during the 3rd. Edition 1:63,000 mapping programme, now drawing to a close. The aim of the present programme is to supplement what has already been done, with detailed surveys of soils in selected areas of each county of England and Wales. The final objective is that the old work and the new, taken together, will be representative of the soils of each county as a whole.

REGIONAL AND COUNTY DISTRIBUTION OF MAPPING

Tables 1(a) to 1(g) show for each county, arranged regionally, the area that has already been surveyed in terms of "equivalent 1:25,000 sheets". These may be either an area corresponding exactly to an O.S. 1:25,000 sheet, or made up from parcels of land surveyed in several sheet areas of the county. The adjacent column shows the number of supplementary 1:25,000 sheet areas needed to enable the land area to be adequately sampled, and a third column gives the percentage of the total land area of each county that will have been covered by detailed mapping when the programme is complete. The

average for the whole country will be about 33 per cent.

Table 1(h)
Regional balances of past & future mapping

Region	1:25,000 sheets surveyed	1:25,000 sheets proposed
South-West	31	30
South-East	27	43
East Anglia	14	23
East Midlands	8	19
West Midlands	24	18
Wales	52	50
Northern	39	33

Table 1(h) shows the balance, in each region between mapping done and to be done. Noteable are the areas completed in Wales, and the West Midlands, from which it can be inferred that they will produce the first regional soil maps. The South-East and East Midlands show considerable areas yet to be surveyed, a factor to be considered in future staff deployment.

SELECTION OF SHEETS

All the 1:25,000 sheet areas to be covered in the new programme have been selected because of their geomorphological and pedological value in the understanding of the soils of a county. In addition, user organizations have been consulted, formally or informally, to find out their actual or potential interest in each sheet. Four of the columns to the right in Tables 1(a) to 1(g) show the numbers of sheets selected that are also of immediate practical interest, mainly in agriculture. The final column in this group gives the total number of the sheets selected in each county that are of interest industrially and administratively as well as scientifically. This figure will be useful in the future assessment of the priority to be given to a particular county within a region.

The priority now being given to each county within a region is shown on a 1, 2, 3 scale in the last column of the Tables. This is mainly a reflection of the staff position at present and in the immediate future which are in turn much influenced by agricultural needs over the last 5 - 10 years.

The key letters and numbers for the 1:25,000 sheets chosen are listed, by regions and counties, in Tables 2(a) to 2(g), with the interested user organizations.

REVIEW OF THE PROGRAMME

While the geomorphological and pedological basis for the programme is likely to need only minor, infrequent changes in the light of advances in knowledge, it seems probable that emphasis in the agricultural industrial interest will change both inside and between counties. This will call for a periodical review of the sheets of interest to the user organizations.

The intervals at which such reviews should be made must be long enough to avoid disrupting unduly the scientific and administrative continuity of the work of the Survey. It is suggested that user organizations could usefully review their interests biennially, and that a paper be offered to alternate April meetings of the Soil Survey Research Board giving suggestions for alternative sheets.

CONCLUSIONS

A programme for the production of 1:25,000 soil maps in selected areas of England and Wales is presented. The areas are chosen for their geomorphological and pedological characteristics, and their current interest to the agricultural industry. When surveyed, they will form the basis for the construction of county, regional and national soil maps.

RECOMMENDATIONS

The paper is offered to the Board for information.

REFERENCES

- (1) CLARE, K.E. The development of the Soil Survey of England and Wales. A.R.C. Soil Survey of England and Wales, Board Paper No. BP/1. Rothamsted Experimental Station, October, 1966. (The Survey).

Table 1. County priorities for mapping

(a) South West Region

Standard 1:250,000 map sheet numbers	County		1:25,000 map sheets		Final map density ⁽²⁾ (%)	1:25,000 map sheets needed by these organizations ⁽³⁾					County priority in 1967
	Name	Area (sq. m.) x 10 ³	Surveyed ⁽¹⁾	Proposed		N.A.A.S.	A.L.S.	L.D.D.	C.P.O.	Total	
1	Cornwall	1.4	-	6	16	6	-	-	-	6	3
2	Devon	2.6	9	6	22	6	2	1	2	6	1
3	Somerset	1.6	13	3	39	2	-	-	-	2	3
	Dorset	1.0	3	5	31	4	1	-	-	4	3
4	Gloucester	1.3	3	5	24	4	2	1	-	4	1
	Wiltshire	1.3	3	5	24	2	-	-	-	2	2

Notes: ⁽¹⁾ These are "equivalent 1:25,000 sheets", possibly comprising several portions of a larger number of O.S. sheets.

⁽²⁾ $100 \times (\text{mapped area} \div \text{total area})$

⁽³⁾ N.A.A.S. = National Agricultural Advisory Service
 A.L.S. = Agricultural Land Service
 L.D.D. = Land Drainage Division
 C.P.O. = County Planning Office
 M.A.F.F.)

Table 2

Representative 1:25,000 map sheets for Counties

(a) South West Region

County	1:25,000 Map Sheet	Sheet needed by:			
		N.A.A.S.	A.L.S.	L.D.D.	C.P.O.
Gloucester <i>SP 31</i>	SP.12	x			
	SO.82	x	x	x	
	SO.61				
	ST.69	x	x		
	ST.89	x			
Wiltshire <i>SP 30</i>	SU.05	x			
	ST.92				
	SU.26	x			
	SU.19				
	SU.13				
Somerset	SS.95				
	ST.12	x			
	ST.31	x			
Dorset	ST.40	x			
	ST.71	x			
	SY.69	x			
	SY.99	x	x		x
	SY.98				x
Devon	SS.30	x		x	
	SS.53	x	x		x
	SS.61	x			
	ST.10	x	x		x
	SX.47	x			
	SX.65	x			
Cornwall	SW.53	x			
	SW.72	x			
	SW.84	x			
	SW.96	x			
	SX.18	x			
	SX.26	x			

Table 1. County priorities for mapping

(b) South East Region

Standard 1:250,000 map sheet numbers	County		1:25,000 map sheets		Final map density ⁽²⁾ (%)	1:25,000 map sheets needed by these organizations ⁽³⁾					County priority in 1967
	Name	Area (sq. m.) x 10 ³	Surveyed ⁽¹⁾	Proposed		N.A.A.S.	A.L.S.	L.D.D.	C.P.O.	Total	
5	Berkshire	0.7	10	-	55	-	-	-	-	-	1
	Buckingham.	0.8	3	4	34	4	-	-	-	4	2
	Oxfordshire	0.8	3	4	34	1	-	-	-	1	1
6	Hampshire	1.5	1	6	18	4	-	-	6	6	3
7	Sussex	1.5	4	5	23	3	2	-	2	5	2
	Surrey	0.7	-	4	22	3	2	-	-	3	2
3	Kent	1.5	2	6	20	5	4	5	6	6	1
9	Essex	1.5	-	8	21	5	4	4	4	6	1
	Hertfordshire	0.6	3	2	32	2	-	-	-	2	3
	Bedfordshire	0.5	1	2	23	2	-	-	-	2	3

Notes: (1) These are "equivalent 1:25,000 sheets", possibly comprising several portions of a larger number of O.S. sheets.

(2) $100 \times (\text{raped area} \div \text{total area})$

(3) N.A.A.S. = National Agricultural Advisory Service
 A.L.S. = Agricultural Land Service
 L.D.D. = Land Drainage Division
 C.P.O. = County Planning Office

} M.A.F.F.

Table 2

Representative 1:25,000 map sheets for Counties

(b) South East Region

County	1:25,000 Map Sheet	Sheet needed by:			
		N.A.A.S.	A.L.S.	L.D.D.	C.P.O.
Buckingham.	SP.63	x			
	SP.71	x			
	SP.84	x			
	SP.98	x			
Oxfordshire	SP.30				
	SP.31	(x)			
	SP.60				
	SU.69				
Hampshire	SU.30				
	? SU.45	x			
	SU.45	x			
	SU.73	x			
	? SZ.39				
	or SZ48 SZ.58	x			x
Sussex	TQ.01	x			
	TQ.02	x			
	TQ.40	x	x		x
	TQ.42				x
	TQ.60		x		
Surrey	SU.94	x	x		
	SU.95	x			
	TQ.05		x		
	TQ.25	x			

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or SU 83.

Table 2

Representative 1:25,000 map sheets for Counties

(b) South East Region

County	1:25,000 Map Sheet	Sheet needed by:			
		N.A.A.S.	A.L.S.	L.D.D.	C.P.O.
Kent	TQ.55	x	x	x	x
	TQ.64	x	x	x	x
	TQ.77			x	x
	TQ.86	x	x		x
	TR.04	x	x	x	x
	TR.55	x		x	x
Essex	TL.53				
	TL.62				
	TL.71	x	x		x
	TL.80	x			
	TL.12	x	x	x	x
	TQ.59	x	x	x	x
	TQ.68		x	x	x
	TQ.99	x		x	
Hertfordshire	TL.20	x			
	TL.22	x			
Bedfordshire	SP.93	x			
	TL.14	x			

Table 1. County priorities for mapping

(c) East Anglian Region

Standard 1:250,000 map sheet numbers	County		1:25,000 map sheets		Final map density ⁽²⁾ (%)	1:25,000 map sheets needed by these organizations ⁽³⁾					County priority in 1967
	Name	Area (sq. m.) x 10 ³	Surveyed ⁽¹⁾	Proposed		N.A.A.S.	A.L.S.	L.D.D.	C.P.O.	Total	
10	Norfolk	2.1	2	11	24	2	-	2	3	5	1
	Suffolk	1.1	1	5	21	-	-	-	2	2	3
11	Huntingdon	0.4	-	4	39	1	-	-	3	3	1
	Cambridge	0.9	11	3	61	1	-	-	3	3	1

Notes: (1) these are "equivalent 1:25,000 sheets", possibly comprising several portions of a larger number of O.S. sheets.

(2) $100 \times (\text{mapped area} \div \text{total area})$

(3) N.A.A.S. = National Agricultural Advisory Service
 A.L.S. = Agricultural Land Service
 L.D.D. = Land Drainage Division
 C.P.O. = County Planning Office
 M.A.F.F.)

Table 2

Representative 1:25,000 map sheets for Counties

(c) East Anglian Region

County	1:25,000 Map Sheet	Sheet needed by:			
		N.A.A.S.	A.L.S.	L.D.D.	C.P.O.
Huntingdon	TF.10				X
	TL.28	X			X
	TL.26				
	TL.38				X
Cambridge	TF.41	X			X
	TL.34				X
	TL.54				X
Norfolk	TF.52	X		X	
	TF.60				X
	TF.82				
	TG.13/14				
	TG.00				
	TG.31				X ⁽¹⁾
	TM.49	X		X	
	TM.28				
	TF.74				
	TF.61				X
	TL.99				
Suffolk	TL.86				X
	TL.94				
	TM.26				
	TM.23				X
	TM.54/44				

Notes: (1) Also by Nature Conservancy

(2) Double numbers indicate coastal sheets.

Table 1. County priorities for mapping

(d) East Midlands Region

Standard 1:250,000 map sheet numbers	County		1:25,000 map sheets		Final map density ⁽²⁾ (%)	1:25,000 map sheets needed by these organizations ⁽³⁾					County priority in 1967
	Name	Area (sq. m.) x 10 ³	Surveyed ⁽¹⁾	Proposed		N.A.A.S.	A.L.S.	L.D.D.	C.P.O.	Total	
12	Lincoln ⁽⁴⁾	1.1	-	3	11	3	-	-	-	3	1
13	Leicester	1.4	2	3	14	-	-	-	-	-	2
	Northampton	0.9	-	4	17	4	4	-	-	4	3
	Rutland	0.2	-	1	20	-	-	-	-	-	3
14	Derby	1.0	4	4	33	1	-	-	-	1	2
	Nottingham	0.8	2	4	20	1	-	-	-	1	1

Notes: ⁽¹⁾ These are "equivalent 1:25,000 sheets", possibly comprising several portions of a larger number of O.S. sheets.

⁽²⁾ $100 \times (\text{mapped area} \div \text{total area})$

⁽³⁾ N.A.A.S. = National Agricultural Advisory Service
 A.L.S. = Agricultural Land Service
 L.D.D. = Land Drainage Division
 C.P.O. = County Planning Office
 } M.A.F.F.

⁽⁴⁾ Kesteven and Holland

Table 1. County priorities for mapping

(e) West Midlands Region

Standard 1:250,000 map sheet numbers	County		1:25,000 map sheets		Final map density ⁽²⁾ (%)	1:25,000 map sheets needed by these organizations ⁽³⁾					County priority in 1967
	Name	Area (sq. m.) $\times 10^8$	Surveyed ⁽¹⁾	Proposed		N.A.A.S.	A.L.S.	L.L.D.	C.P.O.	Total	
15	Warwick	1.0	1	4	20	4	3	-	-	4	3
	Stafford	1.2	-	6	20	6	5	-	-	6	3
16	Hereford	0.8	4	4	39	3	3	-	-	3	1
	Worcester	0.7	4	3	39	3	2	-	-	3	2
	Shropshire	1.5	15	1	48	1	-	-	-	1	2

Table 2
Representative 1:25,000 map sheets for Counties
(d) East and West Midland Regions

County	1:25,000 Map Sheet	Sheet needed by:			
		N.A.A.S.	A.L.S.	L.D.D.	C.P.O.
Derby	SK.08				
	SK.17				
	SK.46				
	SK.32	x			
Leicester	SK.40	x			
	SK.51	x			
	SK.69	x			
Lincoln	TF.04	x	x		
	TF.13	x	x		
	TF.16	x	x		
Northampton	SK.54	x	x		
	SK.66	x	x		
	SK.97	x	x		
	TL.03	x	x		
Nottingham	SK.64	x			
	SK.66	x			
	SK.78	x			
	SK.85	x			
Rutland	SK.90	x			
<u>Hereford</u>	SO.52	x	x		
	SO.32				
	SO.74	x	x		
	SO.55	x	x		
Worcester	SO.85	x	x		
	SO.87	x			
	SP.05	x	x		
Shropshire	SJ.60	x			
Warwick	SP.29	x			
	SP.36	x	x		
	SP.47	x	x		
	SP.48	x	x		
Stafford	SK.00	x	x		
	SK.05	x			
	SK.10	x	x		
	SK.12	x	x		
	SJ.82	x	x		
	SO.89	x			

Table 1. County priorities for mapping

(f) Wales

Standard 1:250,000 map sheet numbers	County		1:25,000 map sheets		Final map Density ⁽²⁾ (%)	1:25,000 map sheets needed by these organizations ⁽³⁾					County priority in 1967
	Name	Area (sq. m.) x 10 ³	Surveyed ⁽¹⁾	Proposed		N.A.A.S.	A.L.S.	L.D.D.	C.P.O.	Total	
17	Caernarvon	0.6	10	-	63	- Survey practically complete -					-
	Denbigh	0.4	7	3	95	3	-	3	1	3	1
	Flint	0.3	1	1	25	1	-	1	-	1	2
	Anglesey	0.3	7	-	100	- Survey complete -					-
13	Merioneth	0.7	-	5	27	5	-	5	-	5	1
	Montgomery	0.8	2	4	28	4	-	4	3	4	2
	Radnor	0.5	1	6	55	6	-	-	1	6 ⁽⁴⁾	1
19	Cardigan	0.7	10	2	67	2	2	2	2	2	1
	Pembroke	0.6	-	4	26	4	3	-	3	4 ⁽⁴⁾	1
	Carnarthen	0.9	-	6	26	5	2	6	2	6 ⁽⁴⁾	2
20	Glamorgan	0.8	14	7	100	7	2	5	1	7 ⁽⁴⁾	1
	Monmouth	0.5	-	6	47	6	2	3	3	6 ⁽⁴⁾	1
	Brecon	0.7	-	6	34	6	-	4	-	6 ⁽⁴⁾	2

Notes: (1) - (3) As before

(4) Includes some sheets of interest to Forestry Commission

Table 2

Representative 1:25,000 map sheets for Counties

(f) Principality of Wales (North)

County	1:25,000 Map Sheet	Sheet needed by:			
		N.A.A.S.	A.I.S.	L.D.D.	C.P.O.
Merioneth	SH.52	x		x	
	SH.62	x		x	
	SH.71	x		x	
	SH.74	x		x	
	SH.93	x		x	
Montgomery	SH.91	x		x	
	SJ.21	x		x	x
	SO.09	x		x	x
	SO.19	x		x	x
Radnor	SO.05	x			
	SO.15	x			
	SO.16	x			
	SO.26	x			
	SO.17	x			
	SN.96	x			x
Caernarvon	-				
Denbigh	SJ.12	x		x	
	SJ.24	x		x	
	SJ.35	x		x	x
Flint	SJ.17	x		x	
Anglesey	-				

Table 2

Representative 1:25,000 map sheets for Counties

(f) Principality of Wales (South)

County	1:25,000 Map Sheet	Sheet needed by:			
		N.A.A.S.	A.L.S.	L.D.D.	C.P.O.
Glamorgan	SS.43	x			
	SS.88	x		x	
	SS.97	x	x		x
	ST.07	x	x	x	
	ST.18	x		x	
	ST.19	x		x	
	SN.90	x		x	
Monmouth	ST.29	x			
	ST.39	x			
	SO.30	x	x	x	x
	SO.31	x			x
	SO.22	x			
	ST.48	x	x	x	x
Brecon	SO.12	x		x	
	SO.02	x			
	SN.92	x		x	
	SO.03	x			
	SO.04	x		x	
	SO.05	x		x	
Cardigan	SN.24	x	x	x	x
	SN.45	x	x	x	x
Pembroke	SN.90	x	x		x
	SN.91	x	x		
	SN.03	x			
	SN.11	x	x		x
Carmarthen	SN.33	x		x	
	SN.50	x	x	x	x
	SN.52	x		x	
	SN.61		x	x	x
	SN.72	x		x	
	SN.74	x		x	

Table 1. County priorities for mapping

(c) Northern Region

Standard 1:250,000 map sheet numbers	County		1:25,000 map sheets		Final map density ⁽²⁾ (%)	1:25,000 map sheets needed by these organizations ⁽³⁾					County priority in 1967
	Name	Area (sq. m.) x 10 ³	Surveyed ⁽¹⁾	Proposed		N.A.A.S.	A.L.S.	L.D.D.	C.P.O.	Total	
21	Lancashire	1.9	12	-	23	← Survey complete →					-
	Cheshire	1.0	-	3	11	-	-	-	2	2	1
22	Yorks. (W.R.)	2.8	7	4	15	1	-	-	4	4	1
23	Yorks. (E.R.)	1.2	8	5	41	1	-	-	1	2	1
	Lincs. (Ind.)	1.5	-	← To follow →					2		
24	Yorks. (N.R.)	2.1	3	6	16	-	-	-	-	-	2 ⁽⁴⁾
25	Durham	1.0	1	3	15	-	-	-	1	1	2
	Northumberland	2.0	6	5	21	-	-	-	-	-	1
26	Westmorland	0.8	2	2	19	-	-	-	-	-	1
	Cumberland	1.5	-	5	13	-	-	-	-	-	2

Notes: ⁽¹⁾ These are "equivalent 1:25,000 sheets", possibly comprising several portions of a larger number of O.S. sheets.

⁽²⁾ $100 \times (\text{mapped area} \div \text{total area})$

⁽³⁾ N.A.A.S. = National Agricultural Advisory service)

A.L.S. = Agricultural Land Service

L.D.D. = Land Drainage Division

C.P.O. = County Planning Office

) M.A.F.F.

⁽⁴⁾ Includes a sheet of interest to Forestry Commission.

Table 2

Representative 1:25,000 map sheets for Counties

(a) Northern Region

County	1:25,000 Map Sheet	Sheet needed by:			
		N.A.A.S.	A.L.S.	L.D.D.	C.P.O.
Lancashire	--				
Cheshire	SJ.37				
	SJ.65				x
	SJ.67				x
Yorks. (W.R.)	SD.05				
	SE.04				
	SE.20				
	SE.60	x			
Yorks. (E.R.)	SE.97				
	TA.03				
	TA.05				
	TA.14	x			
	TA.22				x
Lincs. (Lind.)	To follow				
Yorks. (N.R.)	NY.82				
	NY.90				
	NZ.40				
	SE.18				
	SE.38				
	SE.88				
Durham	NZ.24				x
	NZ.31				
	NZ.33				
N'umberland	NT.91				
	NT.93				
	NU.03				
	NU.11				
	NY.89				
W'morland	NY.62				
	SD.58				
O'berland	NY.02				
	NY.22				
	NY.25				
	NY.46				
	NY.57				