

**SHROPSHIRE STRUCTURE PLAN
CRAVEN ARMS
LAND EAST OF WATLING STREET**

**Agricultural Land Classification
ALC Map and Report**

May 1999

Resource Planning Team
Northern Region
FRCA Wolverhampton

RPT Reference: 25/RPT/0954 & 054/98
MAFF Reference: EL35/11859

AGRICULTURAL LAND CLASSIFICATION REPORT
SHROPSHIRE STRUCTURE PLAN
CRAVEN ARMS, LAND EAST OF WATLING STREET

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 5.7 ha of land east of Watling Street, to the north-west of Craven Arms, Shropshire. The survey was carried out in March 1999.
2. The survey was undertaken by the Farming and Rural Conservation Agency (FRCA)¹ on behalf of the Ministry of Agriculture, Fisheries and Food (MAFF). This survey was carried out in connection with MAFF's statutory input to the Shropshire Structure Plan. This survey supersedes any previous ALC information for this land.
3. The work was conducted by members of the Resource Planning Team in the Northern Region of FRCA. The land has been graded in accordance with the published MAFF ALC guidelines and criteria (MAFF, 1988). A description of the ALC grades and subgrades is given in Appendix I.
4. At the time of survey the site was under permanent pasture. Areas mapped as 'Other land' include a building and small field in the north-west of the survey area.

SUMMARY

5. The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:10 000. It is accurate at this scale but any enlargement would be misleading.
6. The area and proportions of the ALC grades and subgrades on the surveyed land are summarised in Table 1.

Table 1: Area of grades and other land

Grade/Other land	Area (hectares)	% Total agricultural land area	% Total survey area
1	-	-	-
2	-	-	-
3a	1.8	32	31
3b	3.8	68	67
4	-	-	-
5	-	-	-
Agricultural land not surveyed	-	-	-
Other land	0.1	-	2
Total agricultural land area	5.6	100	-
Total survey area	5.7	-	100

¹ FRCA is an executive agency of MAFF and the Welsh Office

7. The fieldwork was conducted at an average density of 1 boring per hectare of agricultural land. A total of 6 borings and 1 soil pit was described.
8. The agricultural land on this site has been classified as Subgrade 3a (good quality), and Subgrade 3b (moderate quality). The principal limitation to the agricultural use of this land is soil wetness.
9. Land of good quality (Subgrade 3a) is found in the north and west of the survey area. Soils comprise medium silty clay loam topsoils over medium silty clay loam, medium clay loam, heavy clay loam and clay subsoils. Generally subsoil clay content increases with depth. Soil wetness is the principal limitation to the agricultural use of this land.
10. Land of moderate quality (Subgrade 3b) is found in the southern part of the survey area. Soils consist of medium silty clay loam and medium clay loam topsoils, over medium clay loam, medium silty clay loam, heavy clay loam and clay subsoils. Generally clay content in these subsoils increases with depth. Soil wetness is the principal limitation to the agricultural use of this land.

FACTORS INFLUENCING ALC GRADE

Climate

11. Climate affects the grading of land through the assessment of an overall climatic limitation and also through interactions with soil characteristics.
12. The key climatic variables used for grading this site are given in Table 2 and were obtained from the published 5km grid datasets using the standard interpolation procedures (Met. Office, 1989).

Table 2: Climatic and altitude data

Factor	Units	Values
Grid reference	N/A	SO428832
Altitude	m, AOD	125
Accumulated Temperature	day°C (Jan-June)	1362
Average Annual Rainfall	mm	770
Field Capacity Days	days	186
Moisture Deficit, Wheat	mm	91
Moisture Deficit, Potatoes	mm	77
Overall climatic grade	N/A	Grade 1

13. The climatic criteria are considered first when classifying land as climate can be overriding in the sense that severe limitations will restrict land to low grades irrespective of favourable site or soil conditions.

14. The main parameters used in the assessment of an overall climatic limitation are average annual rainfall (AAR), as a measure of overall wetness, and accumulated temperature (AT0, January to June), as a measure of the relative warmth of a locality.
15. The combination of rainfall and temperature at this site mean that there is no overall climatic limitation. The site is climatically Grade 1.

Site

16. The site lies at an altitude of 125m AOD, and is level. The site is bordered to the west by Watling Street, and to the north east and south by agricultural land.

Geology and soils

17. The published solid geological information for this area (BGS, 1974) maps the site as being underlain by Wenlock Shales. Drift geological information for this area (BGS, 1967) indicates that the site is underlain by undifferentiated river terraces.
18. The most recent published soils information (SSEW, 1983) maps the soils within the survey area as belonging to the Rowton association. Soils of this association are described as being 'yellowish brown silty soils', found on 'gently undulating glaciofluvial terraces and till in the Welsh borderland' (SSEW 1984). A detailed earlier survey (SSEW 1964), which mapped soils at the series level, shows the site to comprise undifferentiated alluvial soils. These soils, which occur on floodplains and adjoining low terraces, are described as medium or fine-textured, and imperfectly drained (SSEW, 1966).
19. Upon detailed field examination, soil profiles broadly consistent with the above description were found across the site.

AGRICULTURAL LAND CLASSIFICATION

20. The details of the classification of the site are shown on the attached ALC map and the area statistics of each grade are given in Table 1, page 1.

Subgrade 3a

21. Land of good quality occupies 1.8 ha (31%) of the total survey area, and is found in the north and west of the site. The principal agricultural limitation to this land is soil wetness.
22. Within the Subgrade 3a mapping unit, topsoils comprise stoneless medium silty clay loams. These overlie stoneless medium silty clay loam, medium clay loam, heavy silty clay loam and clay subsoils. All profiles were found to extend to at least 120cm. Observed depths of gleying and slowly permeable layers in relation to the local climatic regime, places these soils into Wetness Classes II and III, and Subgrade 3a.

Subgrade 3b

23. Moderate quality land occupies 3.8 ha (67%) of the total survey area, and is found in the southern part of the site. The principal limitation to the agricultural use of this land is soil wetness.
24. Within the Subgrade 3b mapping unit, topsoils comprise stoneless, or very slightly stony medium silty clay loams and medium clay loams. These overlie medium clay loam, heavy clay loam, heavy silty clay loam and clay subsoils. These subsoils are generally only slightly stony. All profiles were found to extend to at least 120cm. Observed depths of gleying and slowly permeable layers in relation to the local climatic regime, places these soils into Wetness Classes IV, and Subgrade 3b.

William Fearnough
Resource Planning Team
Northern Region
FRCA Wolverhampton

SOURCES OF REFERENCE

British Geological Survey (1974) *Sheet No. 166, Church Stretton. (1:50 000)*.
BGS: London.

British Geological Survey (1967) *Sheet No. 166, Church Stretton. (1:63 360)*.
BGS: London.

Ministry of Agriculture, Fisheries and Food (1988) *Agricultural Land Classification of England and Wales: Revised guidelines and criteria for grading the quality of agricultural land*.
MAFF: London.

Met. Office (1989) *Climatological Data for Agricultural Land Classification*.
Met. Office: Bracknell.

Soil Survey of England and Wales (1964) *Sheet 166, Church Stretton (1:63 360)*.
SSEW: Harpenden.

Soil Survey of England and Wales (1966) *The Soils of the Church Stretton District of Shropshire*.
SSEW: Harpenden.

Soil Survey of England and Wales (1983). *Sheet 3, Soils of Midland and Western England. (1:250 000)*.
SSEW: Harpenden .

Soil Survey of England and Wales (1984). *Soils and their use in Midland and Western England*.
SSEW: Harpenden.

APPENDIX I

DESCRIPTIONS OF THE GRADES AND SUBGRADES

Grade 1: Excellent Quality Agricultural Land

Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.

Grade 2: Very Good Quality Agricultural Land

Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural or horticultural crops can usually be grown but on some land of this grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1 land.

Grade 3: Good to Moderate Quality Land

Land with moderate limitations which affect the choice of crops, the timing and type of cultivation, harvesting or the level of yield. When more demanding crops are grown, yields are generally lower or more variable than on land in Grades 1 and 2.

Subgrade 3a: Good Quality Agricultural Land

Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.

Subgrade 3b: Moderate Quality Agricultural Land

Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass, or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.

Grade 4: Poor Quality Agricultural Land

Land with severe limitations which significantly restrict the range of crops and/or the level of yields. It is mainly suited to grass with occasional arable crops (e.g. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.

Grade 5: Very Poor Quality Agricultural Land

Land with severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

SAMPLE NO.	GRID REF	ASPECT USE	—WETNESS—		-WHEAT-		-POTS-		M.REL		EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS	
			GRDNT	GLEYSPL	CLASS	GRADE	AP	MB	AP	MB						DRT
1	S042808330	PGR		023	2	3A	129	38	121	44	1			WE	3A	WET 70
1P	S042708310	PGR		025 025	4	3B	098	7	109	32	2			WE	3B	
2	S042708320	PGR	01	027 035	4	3B	115	24	106	29	2			WE	3B	
3	S042808320	PGR	01	017 039	4	3B	100	9	103	26	2			WE	3B	
4	S042908320	PGR	01	000 025	4	3B	103	12	101	24	2			WE	3B	
5	S042608310	GRA	01	035 058	3	3B	119	28	121	44	2			WE	3A	
6	S042708310	GRA	01	030 038	4	3B	114	23	112	35	2			WE	3B	

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED COL.	----STONES-----			STRUCT/ CONSIST	SUBS					
				COL	ABUN	CONT		GLY	>2	>6		LITH	TOT	STR	POR	IMP	SPL
1	0-23	mzc1	10YR42 00					0	0	0							
	23-45	mzc1	10YR53 00	10YR56 00	M	10YR61 00	Y	0	0	0		M					
	45-70	mc1	10YR53 00	10YR56 00	M	10YR61 00	Y	0	0	0		M					
	70-90	mc1	10YR53 00	10YR56 00	M	10YR61 00	Y	0	0	0		M					
1P	0-25	mzc1	10YR43 00					0	0	HR	1						
	25-40	hc1	10YR52 00	10YR56 00	C		Y	0	0	HR	1	MDCSAB	FM	M	Y		Y
	40-70	c	10YR63 00	10YR56 00	M	10YR72 00	Y	0	0	HR	1	MDCAB	FM	P	Y		Y
2	0-27	mzc1	10YR32 00					2	0	HR	3						
	27-35	mc1	10YR42 00	10YR56 00	M		Y	0	0	HR	5		M				
	35-46	hc1	10YR42 00	10YR58 00	M		Y	0	0	HR	2		P	Y		Y	
	46-100	c	10YR62 00				Y	0	0	HR	1		P	Y		Y	
3	0-17	mc1	10YR42 00					0	0		0						
	17-39	mc1	10YR52 00	10YR56 00	C		Y	0	0		0		M				
	39-56	hc1	10YR63 00	10YR56 00	C		Y	0	0		0		P	Y		Y	
	56-80	hc1	10YR44 00	10YR58 00	C		Y	0	0		0		P	Y		Y	
4	0-25	mzc1	10YR42 00	10YR56 00	C		Y	2	0	HR	3						
	25-45	hc1	10YR53 00	10YR68 00	M		Y	0	0	HR	2		P				Y
	45-60	c	10YR52 00	10YR68 00	M		Y	0	0	HR	2		P	Y		Y	
	60-70	hc1	10YR51 00	10YR68 00	M		Y	0	0	HR	2		P	Y		Y	
	70-90	hc1	10YR51 00	10YR68 00	M		Y	0	0	HR	10		P	Y		Y	
5	0-35	mzc1	10YR43 00					0	0		0						
	35-58	hzc1	10YR52 00	10YR56 00	C		Y	0	0		0		M				
	58-85	c	10YR51 00	10YR56 00	M		Y	0	0		0		P	Y		Y	
6	0-30	mzc1	10YR43 00					0	0		0						
	30-38	hzc1	10YR53 00	10YR56 00	C		Y	0	0		0		M				
	38-75	c	25Y 52 00	10YR56 00	C		Y	0	0		0		P	Y		Y	
	75-90	c	10YR51 00	10YR56 00	C		Y	0	0		0		P	Y		Y	