SHROPSHIRE STRUCTURE PLAN
WEM, ELLESMERE ROAD

Agricultural Land Classification
ALC Map and Report

July 1999

Resource Planning Team
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AGRICULTURAL LAND CLASSIFICATION REPORT
SHROPSHIRE STRUCTURE PLAN
WEM, ELLESMERE ROAD

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 10.9 ha of land at Wem. The site is situated to the west of the town centre and south of the Ellesmere Road. The survey was carried out during June 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). The 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 land on the site was under grass which was either being grazed or growing for future mowing. Land mapped as 'Other Land' includes some old tin sheds and a small area of tree planting.

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)	% surveyed area	% site area
1	-	-	-
2	-	-	-
3a	10.0	93	92
3b	0.7	7	6
4	-	-	-
5	-	-	-
Agricultural land not surveyed	-	N/A	-
Other land	0.2	N/A	2
Total surveyed area	10.7	100	-
Total site area	10.9	-	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. In total one soil pit and ten borings were described.

8. The agricultural land on this site has been classified as Subgrade 3a (good quality) and Subgrade 3b (moderate quality). The key limitations to the agricultural use of this land are soil wetness and soil droughtiness.

9. The good quality land is mapped over the majority of the site. The soils have either a medium sandy loam topsoil texture over loamy medium sand and medium sand to depth or a clay loam topsoil texture over clay loam, sandy clay loam and clay to depth. To the north of Moss Side the subsoils may contain lenses of peaty textured soils.

10. The moderate quality land is located in the south of the site. The soils have a heavy clay loam topsoil texture over heavy clay loam, sandy clay loam and gravel.

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	SJ 506290
Altitude	m, AOD	80
Accumulated Temperature	day°C (Jan-June)	1391
Average Annual Rainfall	mm	700
Field Capacity Days	days	157
Moisture Deficit, Wheat	mm	97
Moisture Deficit, Potatoes	mm	87
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 (ATO, January to June), as a measure of the relative warmth of a locality. The site is climatically Grade 1.

Site

15. The site is relatively level and lies at an altitude of approximately 80 metres AOD.

16. The three site factors of gradient, microrelief and flooding are considered when classifying the land.

17. These factors do not impose any limitations on the agricultural use of this land.

Geology and soils

18. The solid geology of the area is comprised of Triassic Keuper Marl. This is overlain with deposits of sand and gravel - British Geological Survey (1967).

19. The soils that have developed on this geology are generally of either a sandy loam texture over loamy sand and sand or a clay loam texture over sandy clay loam, clay loam and clay (SSEW 1954, 1984).

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 10.0 hectares (92%) of the site area and is found across the majority of the site.

22. The main limitations to the agricultural use of this land are soil wetness and soil droughtiness.

23. To the west of the centre of the site the soils have a medium sandy loam topsoil texture over loamy medium sand and medium sand to depth, with few to common stones within the soil profile. Occasionally lenses of sandy clay loam and clay are found in the subsoil. The moisture balance places these soils in Subgrade 3a.

24. In the north and east of the site the soils have a clay loam topsoil texture over clay loam, sandy clay loam and clay to depth, with few to common stones within the soil profile. To the north of Moss Side the subsoils contain lenses of peaty textured soils. The depths to gleying and the slowly permeable layer place these soil in Wetness Class III.

25. In this unit there are occasional borings of Grade 2 quality. At this scale of mapping these borings cannot be shown separately.

Subgrade 3b

26. Land of moderate quality occupies 0.7 hectares (6%) of the site area and is found in the south of the site.

27. The main limitation to the agricultural use of this land is soil wetness.

28. The soils have a heavy clay loam topsoil texture over heavy clay loam, sandy clay loam and gravel. The depths to gleying and the slowly permeable layer place these soils in Wetness Class IV.

Martin Wood
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SOURCES OF REFERENCE

British Geological Survey (1967) *Sheet No. 138* Wem *Solid and drift Edition, Scale 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 (1954) *Sheet 138,The soils of the Wem District.* HMSO : London, SSEW: Harpenden.

Soil Survey of England and Wales (1984) *Sheet 3, Map of Midland and Western England.* 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	USE	ASPECT	GRDNT	GLEY	SPL	--WETNESS-- CLASS	GRADE	-WHEAT- AP	MB	-POTS- AP	MB	M.REL DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
1	SJ50502900	PGR			035	049	3	3A	000	0	000	0					WE	3A	CHK
1P	SJ50582890	PGR			025	050	1	1	124	27	108	21	2				WE	3A	
2	SJ50502890	LEY			065	075	2	1	118	21	086	-1	2				DR	2	CHK WE
3	SJ50602890	PGR			028	055	3	3A	120	23	110	23	2				WE	3A	
4	SJ50702890	PGR			000		3	2	206	109	193	106	1				WE	2	POACHED SURFACE
5	SJ50502880	LEY		01	036		1	1	117	20	106	19	2				DR	2	
6	SJ50602880	LEY			000		1	1	100	3	084	-3	3A				DR	3A	BDR 2
7	SJ50702880	LEY			045		1	1	110	13	110	23	2				WE	3A	POACH3A
8	SJ50502870	LEY		01	000		1	1	086	-11	088	1	3A				DR	3A	DTA STN
9	SJ50502860	PGR			000		4	3B	092	-5	097	10	3A				WE	3B	POACH
10	SJ50602860	PGR			000		1	1	066	-31	067	-20	3B				DR	3B	DTA STON

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC
1	0-35	mcl	10YR33 00						1	0	HR	2						
	35-49	mcl	10YR53 54	10YR56 00	C			Y	0	0	HR	1		M				
	49-100	c	25 Y41 00	10YR46 00	C			Y	0	0	HR	1		P			Y	
1P	0-25	mcl	10YR42 43						2	0	HR	3						
	25-38	mcl	10YR42 43	10YR46 56	C			Y	0	0	HR	5	MDMSB	FR G				
	38-50	scl	25 Y62 53	10YR56 00	C			Y	0	0	HR	15	WKMAB	FR M				
	50-80	hcl	10YR51 52	10YR56 00	C		75YR52 53	Y	0	0	HR	5	MDCPR	VM P			Y	
	80-120	lms	75YR53 54					Y	0	0	HR	5	DTA	FR M			Y	
2	0-39	msl	10YR33 00						2	0	HR	4						
	39-45	lms	10YR44 00						0	0	HR	3		M				
	45-65	ms	10YR64 00						0	0	HR	1		M				
	65-75	scl	75YR53 44	75YR56 00	C			Y	0	0	HR	2		M				
	75-120	c	75YR53 54	10YR56 63	C			Y	0	0	HR	1		P			Y	
3	0-28	mcl	10YR33 00	10YR56 00	F				1	0	HR	2						
	28-55	hcl	10YR41 42	10YR56 00	C			Y	0	0	HR	2		M				
	55-100	zc	10YR42 00	10YR56 00	C			Y	0	0		0		P			Y	
4	0-30	mcl	10YR33 32						1	0	HR	2						
	30-75	lp	10YR21 00						0	0		0		M				
	75-120	ms	75YR61 00						0	0	HR	1		M				
5	0-36	msl	10YR33 00						1	0	HR	3						
	36-60	scl	10YR53 54	10YR56 00	C			Y	0	0	HR	1		M				
	60-65	hcl	10YR53 54	10YR56 00	C			Y	0	0	HR	1		M				
	65-120	ms	10YR51 52					Y	0	0	HR	1		M				
6	0-36	msl	10YR33 00						1	0	HR	2						
	36-75	lms	10YR44 00						0	0	HR	2		M				
	75-120	ms	05 Y51 41						0	0		0		M				
7	0-35	mcl	10YR44 00						2	0	HR	5						
	35-45	mcl	10YR44 00						0	0	HR	5		M				
	45-65	scl	10YR53 54	10YR56 00	C			Y	0	0	HR	5		M				
	65-80	scl	10YR51 00					Y	0	0	HR	15		M				

				MOTTLES			PED		STONES				STRUCT/	SUBS				
SAMPLE	DEPTH	TEXTURE	COLOUR	COL	ABUN	CONT	COL.	GLEY	>2	>6	LITH	TOT	CONSIST	STR	POR	IMP	SPL	CALC
8	0-35	msl	10YR33 00						1	0	HR	2						
	35-55	msl	10YR44 00						0	0	HR	1		M				
9	0-25	hcl	10YR41 42	10YR56 00	M			Y	1	0	HR	2						
	25-35	hcl	05 Y41 00	10YR56 00	C			Y	0	0	HR	1		M				
	35-60	scl	10YR53 54	10YR56 00	C			Y	0	0	HR	1		M				
10	0-30	msl	10YR33 44						1	0	HR	2						
	30-55	lms	10YR44 00						0	0	HR	5		M				