SHROPSHIRE STRUCTURE PLAN
ELLESMERE, ELSON ROAD (SOUTH)

Agricultural Land Classification
ALC Map and Report

July 1999

Resource Planning Team
Northern Region
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AGRICULTURAL LAND CLASSIFICATION REPORT
SHROPSHIRE STRUCTURE PLAN
ELLESMERE, ELSON ROAD (SOUTH)

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 14.8 ha of land at Ellesmere. The site is situated to the west of the town centre and south of the Elson Road. The site is bounded to the north and east by residential housing and agricultural land is found to the south and west. 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 a dismantled railway line, an old trackway and a pond. The eastern field has remnant ridge and furrow.

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	7.0	49	47
3b	7.4	51	50
4	-	-	-
5	-	-	-
Agricultural land not surveyed	-	N/A	-
Other land	0.4	N/A	3
Total surveyed area	14.4	100	-
Total site area	14.8	-	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 fourteen 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 in the southern half of the site. The soils have a medium clay loam topsoil texture over medium clay loam, heavy clay loam and clay to depth, with occasional lenses of sandy clay loam, loamy medium sand and gravel in the subsoil.

10. The moderate quality land is located in the northern half of the site. The soils have a medium clay loam topsoil texture over heavy clay loam and clay to depth. In the north west corner of the site peaty textures are found in the subsoil.

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 390352
Altitude	m, AOD	95
Accumulated Temperature	day°C (Jan-June)	1374
Average Annual Rainfall	mm	747
Field Capacity Days	days	175
Moisture Deficit, Wheat	mm	93
Moisture Deficit, Potatoes	mm	81
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 90 to 100 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 Bunter Pebble Beds and Upper Mottled Sandstone. This is overlain with deposits of boulder clay and sand and gravel - British Geological Survey (1967).

19. The soils that have developed on this geology are generally of a clay loam texture over 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 7.0 hectares (47%) of the site area and is found in the southern half of the site.

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

23. The soils have a medium clay loam topsoil texture over medium clay loam, heavy clay loam and clay to depth, with occasional lenses of sandy clay loam, loamy medium sand and gravel in the subsoil. Generally there are few stones within the soil profile. The depths to gleying and the slowly permeable layer place these soils in Wetness Class III. In the south of the site where loamy medium sand and gravel are found in the subsoil, the soils are placed in either Wetness Class I or II and have a moisture balance limiting the soils to Subgrade 3a.

Subgrade 3b

24. Land of moderate quality occupies 7.4 hectares (50%) of the site area and is found in the northern half of the site.

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

26. The soils have a medium clay loam topsoil texture over heavy clay loam and clay to depth, with few stones within the soil profile. The depths to gleying and the slowly permeable layer place these soils in Wetness Class IV. In the north west corner of the site there is a low lying area where peaty and organic mineral textures are found in the subsoil.

27. In the south eastern corner of the site, on the bed of the dismantled railway, the soils have a medium clay loam topsoil texture over very stony medium clay loam to a depth of 350cm. Below this depth, there is the impenetrable base of the railway (hardcore and cinder). The moisture balance places these soils in Subgrade 3b.

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SOURCES OF REFERENCE

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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	SJ38903530	PGR	S	01	000	040	4	3B	167	75	121	42	1				WE	3B	OHZCLWET
1P	SJ38903510	PGR			026	048	3	3A	131	39	108	29	1				WE	3A	
2	SJ39003530	PGR	S	01	000		1	1	085	-7	089	10	3A				DR	3A	
3	SJ38803520	PGR	SE	01	030	038	4	3B	115	23	106	27	2				WE	3B	
4	SJ38903520	PGR	NE	01	027	035	4	3B	094	2	106	27	3A				WE	3B	
5	SJ39003520	PGR		01	055	075	2	2	114	22	101	22	2				WE	2	
6	SJ39103520	PGR	NW	02	030	045	4	3B	117	25	108	29	2				WE	3B	
7	SJ38803510	PGR	SE	01	030	035	4	3B	094	2	106	27	3A				WE	3B	
8	SJ38903510	PGR	SE	01	027	049	3	3A	118	26	109	30	2				WE	3A	
9	SJ39003510	PGR	S		000		1	1	082	-10	084	5	3A				DR	3A	DTA
10	SJ39103510	PGR	S		027	055	3	3A	134	42	111	32	1				WE	3A	CHK SPL
11	SJ38803500	LEY	S	02	027		2	2	107	15	110	31	2				WE	2	CHK
12	SJ38903500	LEY	S	01	055	055	3	3A	127	35	103	24	1				WE	3A	
13	SJ39003500	LEY	S		000		1	1	055	-37	055	-24	3B				DR	3B	OLDRAILWAY BED
14	SJ39103500	PGR	S		038	058	3	3A	123	31	114	35	1				WE	3A	

				----MOTTLES-----			PED		----STONES----				STRUCT/	SUBS			
SAMPLE	DEPTH	TEXTURE	COLOUR	COL	ABUN	CONT	COL.	GLEY	>2	>6	LITH	TOT	CONSIST	STR	POR	IMP	SPL	CALC
1	0-30	mcl	10YR42 00	10YR56 00	C			Y	1	0	HR	2						
	30-40	hcl	10YR42 43	10YR56 00	C			Y	0	0		0		M				
	40-60	hzcl	10YR52 53	10YR56 00	C			Y	0	0	HR	1		P			Y	
	60-100	ohzcl	10YR21 32					Y	0	0		0		P			Y	
1P	0-26	mcl	10YR43 00						1	0	HR	2						
	26-35	mcl	10YR42 54	10YR56 00	C			Y	0	0	HR	3	MDMSB	FR	G			
	35-48	hcl	75YR42 43	10YR56 58	C		75YR53 00	Y	0	0	HR	1	MDMAB	FM	P			
	48-120	c	05YR44 00	75YR54 58	M		05YR53 00	Y	0	0	HR	1	STCPR	VM	P		Y	
2	0-30	mcl	10YR32 00						2	0	HR	5						
	30-55	mcl	10YR33 00						0	0	HR	15		M				
	55-60	lms	10YR53 54						0	0	HR	15		M				
3	0-30	mcl	10YR43 00						1	0	HR	2						
	30-38	hcl	75YR53 54	10YR56 58	C			Y	0	0	HR	1		M				
	38-100	c	05YR53 44	75YR51 58	M			Y	0	0	HR	2		P			Y	
4	0-27	mcl	10YR33 00						1	0	HR	2						
	27-35	hcl	75YR53 54	75YR58 00	C			Y	0	0	HR	1		M				
	35-49	c	75YR53 54	75YR58 00	C			Y	0	0		0		P			Y	
	49-70	c	05YR44 00	75YR51 58	C		00MN00 00	Y	0	0	HR	1		P			Y	
5	0-35	mcl	10YR43 00						1	0	HR	3						
	35-55	mcl	10YR43 00						0	0	HR	10		M				
	55-75	lms	10YR62 00	10YR56 00	C			Y	0	0	HR	5		M				
	75-100	c	05YR53 44	75YR56 58	C			Y	0	0	HR	1		P			Y	
6	0-30	mcl	10YR42 43						2	0	HR	3						
	30-45	hcl	75YR53 54	10YR56 00	C			Y	0	0	HR	2		M				
	45-100	c	05YR53 44	75YR51 58	C		00MN00 00	Y	0	0	HR	1		P			Y	
7	0-30	mcl	10YR42 43						1	0	HR	2						
	30-35	hcl	75YR53 54	75YR56 00	C			Y	0	0	HR	2		M				
	35-70	c	05YR44 00	75YR51 56	C		00MN00 00	Y	0	0		0		P			Y	

				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	0-27	mcl	10YR43 00						1	0	HR	2						
	27-49	hcl	75YR53 54	10YR56 00		C		Y	0	0	HR	2		M				
	49-100	c	05YR53 44	75YR56 00		C	00MN00 00	Y	0	0	HR	1		P			Y	
9	0-29	mcl	10YR33 00						1	0	HR	3						
	29-55	scl	10YR42 43						0	0	HR	15		M				
10	0-27	mcl	10YR43 00						1	0	HR	2						
	27-55	hcl	75YR53 54	10YR56 58		M		Y	0	0	HR	1		M				
	55-120	c	05YR43 53	05YR51 58		C	00MN00 00	Y	0	0	HR	2		P			Y	
11	0-27	mcl	75YR42 43						2	0	HR	4						
	27-65	hcl	75YR53 54	75YR56 00		C	00MN00 00	Y	0	0	HR	1		M				
	65-85	lms	75YR52 53	75YR56 00		C		Y	0	0	HR	5		M				
12	0-27	mcl	75YR42 00						1	0	HR	2						
	27-55	scl	75YR44 43						0	0	HR	10		M				
	55-120	hcl	05YR44 53	75YR56 00		C	00MN00 00	Y	0	0	HR	5		P			Y	
13	0-29	mcl	10YR32 33						2	0	HR	5						
	29-35	mcl	10YR32 33						0	0	HR	50		M				
14	0-38	mcl	10YR43 44						1	0	HR	2						
	38-58	hcl	10YR53 54	10YR56 00		C		Y	0	0	HR	2		M				
	58-65	c	75YR53 54	75YR58 00		M		Y	0	0	HR	1		P			Y	
	65-100	c	05YR44 00	75YR58 00		C	00MN00 00	Y	0	0	HR	1		P			Y	