

**SHROPSHIRE STRUCTURE PLAN  
BROSELEY, THE DUNGE**

**Agricultural Land Classification  
ALC Map and Report**

**June 1999**

**Resource Planning Team  
Northern Region  
FRCA Wolverhampton**

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**AGRICULTURAL LAND CLASSIFICATION REPORT  
SHROPSHIRE STRUCTURE PLAN  
BROSELEY, THE DUNGE**

**INTRODUCTION**

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 8.4 ha of land at Broseley. The site is situated to the south of Broseley around an area called "The Dunge". The survey was carried out during May 1999.
2. The survey was undertaken by the Farming and Rural Conservation Agency (FRCA)<sup>1</sup> 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 and wheat.

**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	-	-	-
3b	5.7	68	68
4	2.7	32	32
5	-	-	-
Agricultural land not surveyed	-	N/A	-
Other land	-	N/A	-
<b>Total surveyed area</b>	<b>8.4</b>	<b>100</b>	<b>-</b>
<b>Total site area</b>	<b>8.4</b>	<b>-</b>	<b>100</b>

<sup>1</sup> 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 two soil pits and nine borings were described on the site.
8. The agricultural land on this site has been classified as Subgrade 3b (moderate quality) and Grade 4 (poor quality). The key limitations to the agricultural use of this land are soil wetness and microrelief.
9. The moderate quality land is located in the north and east of the site. The soils have a clay loam topsoil texture overlying heavy clay loam and clay to depth.
10. The area of poor quality land is mapped in the south west of the site. The soils have either a clay loam or a silty clay loam topsoil texture over coal spoil at depths of between 20 and 30cm.

## 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 679 010
Altitude	m, AOD	155
Accumulated Temperature	day°C (Jan-June)	1314
Average Annual Rainfall	mm	753
Field Capacity Days	days	178
Moisture Deficit, Wheat	mm	84
Moisture Deficit, Potatoes	mm	68
Overall climatic grade	N/A	Grade 2

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. The site is climatically limited to Grade 2.

## **Site**

15. The site ranges in altitude from 145 to 155 metres AOD. The lowest land is in the south west of the site and the highest is found in the north by Dunge Farm.
16. The three site factors of gradient, microrelief and flooding are considered when classifying the land.
17. In the south west of the site previous mineral workings have resulted in complex changes in slope angle and direction over short distances, which severely limit the use of agricultural machinery. Here microrelief limits the agricultural use of the land to Grade 4.
18. The remaining factors do not impose any limitations on the agricultural use of this land.

## **Geology and soils**

19. The solid geology of the area is comprised of mudstones, siltstones, sandstones and marls of the Coalport and Hadley Formations. This is overlain with deposits of boulder clay - British Geological Survey (1978).
20. The soils that have developed on this geology are generally of clay loam texture overlying clay (SSEW 1984).

## **AGRICULTURAL LAND CLASSIFICATION**

21. 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 3b**

22. *Land of moderate quality occupies 5.7 hectares (68%) of the site area and is located in the north and east of the site.*
23. The main limitation to the agricultural use of this land is soil wetness.
24. The soils have a clay loam topsoil texture overlying 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.

### **Grade 4**

25. Land of poor quality occupies 2.7 hectares (32%) of the site area and is mapped in the south west of the site. This area has previously been worked for minerals and the soil profiles are disturbed.
26. The main limitation to the agricultural use of this land is microrelief.

27. The soils have either a clay loam or a silty clay loam topsoil texture over coal spoil at depths of between 20 and 30cm. The previous mineral workings have resulted in complex changes in slope angle and direction over short distances, which severely limit the use of agricultural machinery. Here gradient limits the agricultural use of the land to Grade 4.

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## SOURCES OF REFERENCE

British Geological Survey (1978) *Sheet No. SJ 60, 61, 70, 71 Telford Solid and drift Edition Scale 1:25 000.*

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 (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.