

TETBURY

AGRICULTURAL LAND CLASSIFICATION SURVEY

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 28.8 ha of land at Tetbury. Field survey was based on 24 auger borings and 1 soil profile pits, and was completed in May 1989 and July 1992. During the survey 2 samples were analysed for particle size distribution (PSD).
2. The survey was conducted by the Resource Planning Group of ADAS on behalf of MAFF in its statutory role in the preparation of the Cotswold Local Plan.
3. Information on climate, geology and soils, and from previous ALC surveys was considered. Part of the site was previously surveyed by ADAS in 1985 at a scale of 1:10 000. The current survey uses the Revised Guidelines and Criteria for grading the quality of agricultural land (MAFF, 1988) and supersedes any previous ALC survey. Grade descriptions are summarised in Appendix I.
4. The distribution of ALC grades is shown on the accompanying 1:10 000 scale ALC map. The detail of information shown at this scale is appropriate to the intensity of field survey but could be misleading if enlarged or applied to small areas. Areas are summarised in the Table 1.

Table 1: Distribution of ALC grades: Tetbury

Grade	Area (ha)	% Surveyed Area (27.5 ha)
1	8.0	29
2	4.0	14
3a	6.5	24
3b	6.2	23
4	0.7	3
5	2.1	7
Other land	1.3	
Total site area	28.8	

CLIMATE

5. Estimates of climatic variables for this site were derived from the published agricultural climate dataset "Climatological Data for Agricultural Land Classification" (Meteorological Office, 1989) using standard interpolation procedures. Data for key points around the site are given in Table 2 below.
6. Since the ALC grade of land is determined by the most limiting factor present, overall climate is considered first because it can have an overriding influence by restricting land to a lower grade despite more favourable site and soil conditions. Parameters used for assessing

overall climate are accumulated temperature, a measure of relative warmth and average annual rainfall, a measure of overall wetness. The results shown in Table 2 indicate that there is no overall climatic limitation.

7. Climatic variables also affect the ALC grade through interactions with soil conditions. The most important interactive variables are Field Capacity Days (FCD) which are used in assessing soil wetness and potential Moisture Deficits calculated for wheat and potatoes, which are compared with the moisture available in each profile in assessing soil droughtiness limitations.

Table 2: Climatic Interpolations: Tetbury

Grid Reference	3899 1943
Altitude (m)	128
Accumulated Temperature (day °C)	1387
Average Annual Rainfall (mm)	900
Overall Climatic Grade	1
Field Capacity Days	197
Moisture deficit (mm): Wheat	84
Potatoes	70

AGRICULTURAL LAND CLASSIFICATION

Grade 1

8. The Grade 1 land has well drained Wetness Class I profiles with MSZL and MCL topsoils. In places these soils are stony.

Grade 2

9. These soils have a minor wetness limitation imposed by slowly permeable layers deep in the profile. The soils are assigned to Wetness Class II. The topsoils are FSZL. Individual profiles may show no evidence of wetness but, partly because of a slight variation in profile depth no Grade 1 is shown in this area.

Subgrade 3a

10. The soils in this unit are typically deep FSZL which overlie clay in the lower subsoil. The clay forms a slowly permeable layer and results in evidence of wetness between 40-70 cm. Wetness Class III is therefore the prevailing wetness class and this combined with the light topsoil textures and the FCD value of 197 days results in Subgrade 3a. A soil profile pit was dug in this unit to confirm the presence of the SPL.

Subgrade 3b

11. ~~The land in this grade is limited by a moderate wetness limitation. The main block~~ occupies gently sloping land above the top of the river valley. Here the MCL topsoils are directly underlain by heavy clay. The clay acts as a SPL and there is clear evidence of wetness in the top 40 cm. The soils are Wetness Class IV.

Grade 4 and 5

12. The Grade 4 and 5 land occupies the steep slopes and base of the narrow river valley. The land has been assigned to an ALC category on the basis of the general slope of the landform. Part of the Grade 5 land includes the permanently wet area of the river course and environs.

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APPENDIX I

DESCRIPTION OF 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 include 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 and horticultural crops can usually be grown but on some land in the 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.

Grade 3 - good to moderate quality agricultural land

Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where 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 level of yields. It is mainly suited to grass with occasional arable crops (eg cereals and forage crops) the yields of which are variable. In most 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 very severe limitations which restrict use to permanent pasture or rough grazing,~~
except for occasional pioneer forage crops.

Source: MAFF (1988) Agricultural Land Classification of England and Wales Revised Guidelines and Criteria for Grading the Quality of Agricultural Land, MAFF Publications, Alnwick.