

COTSWOLD DISTRICT LOCAL PLAN: BLOCKLEY

AGRICULTURAL LAND CLASSIFICATION

Report of survey

1. INTRODUCTION

Five hectares of land around Blockley were graded under the Agricultural Land Classification (ALC) System in September 1992. The survey was carried out for MAFF as part of its statutory input to the draft consultation on the Cotswold District Local Plan.

The fieldwork was carried out by ADAS's Resource Planning Team (Taunton Statutory Unit) at a scale of 1:10,000 (approximately one sample point every hectare). The information is correct at the scale shown but any enlargement would be misleading. This survey supercedes the previous survey of this area at 1" being at a more detailed level and carried out under the Revised Guidelines and Criteria for grading the quality of agricultural land (MAFF 1989). A total of 5 borings and 1 soil pit were examined.

The ALC provides a framework for classifying land according to the extent to which its physical or chemical characteristics impose long-term limitations on agricultural use. The grading takes account of the top 120cm of the soil profile. A description of the grades used in the ALC System can be found in the appendix.

The distribution of ALC grades identified in the survey area is detailed below and illustrated on the accompanying map.

Table 1 Distribution of ALC grades: Blockley

Grade	Area (ha)	% of Survey Area	% of Agricultural Land
3A	5.1	100	100
TOTAL	5.1	100%	100%

All of the survey area was found to be Subgrade 3A.

2. CLIMATE

The grade of the land is determined by the most limiting factor present. The overall climate is considered first because it can have an overriding influence on restricting land to lower grades despite other favourable conditions.

To assess any overall climatic limitation, estimates of important climatic variables were obtained for the site by interpolation from the 5km grid Met Office/Maff Database (Met Office/MAFF/SSLRC 1989). The parameters used for assessing climate are accumulated temperature, (a measure of the relative warmth of a locality) and average annual rainfall, (a measure of overall wetness). The results shown in Table 2 reveal that there is a climatic limitation across the survey area. The land can be graded no better than Grade 2.

No local climatic factors such as exposure were noted in the survey area. Climatic data on Field Capacity Days (FCD) and Moisture Deficits for wheat (MDW) and potatoes (MDP) are also shown. This data is used in assessing the soil wetness and droughtiness limitations referred to in Section 5.

Table 2 Climatic Interpolations: Blockley

Grid Reference	SP163354
Height (m)	185
Accumulated Temperature ($^{\circ}$ days)	1297
Average Annual Rainfall (mm)	739
Overall Climatic Grade	2
Field Capacity (Days)	172
Moisture Deficit, Wheat (mm)	88
Potatoes (mm)	73

3. RELIEF

Blockley is situated high in the Cotswold Hills. The survey area is predominantly flat with a gentle rise from the east of 10 m from 175 m.

4. GEOLOGY AND SOILS

The extreme south-east corner of the survey area is underlain by Undifferentiated (mainly clays) geology. The remainder of the site is underlain by Cotswold Sands, as shown on BGS sheet 217.

The topsoils of the survey area are predominantly heavy clay loams with occasional heavy silty clay loams. The soils are free draining and become stonier with depth. The stone contents of the soil prevented deep penetration with a soil auger. The stone percentages were determined by sieving horizons in a soil pit. Volumes were calculated by

displacement in water. The topsoil content was found to be 20%, increasing to 55% in the subsoil.

5. AGRICULTURAL LAND CLASSIFICATION

The distribution of ALC grades identified in the survey area is detailed in Section 1 and shown on the accompanying ALC map. The information is correct at the scale shown but any enlargement would be misleading.

Subgrade 3a

The whole of the survey area has been classified as Subgrade 3a. The topsoil texture was slightly variable, with mainly heavy clay loams but sometimes heavy silty clay loams. These soils have similar workability characteristics. The subsoils become stonier and heavier (heavy clay loams and clays) with depth. A soil profile pit was dug and confirmed that the soils are free draining and show no evidence of wetness. The soils are therefore placed into Wetness Class I, and could be assigned to Grade 2 if there were no other limitations. The stone content of the soil was measured in the soil pit by sieving the soil and using displacement in water. All the stones were soft Oolitic Limestone. The topsoil stone content was found to be 20% increasing to 55% in the subsoil (below 27 cm) in the pit. However stone contents (stones >2cm) of the top 25cm were measured across the survey area. These were found to vary from less than 5% up to 20% at the pit. Most of the measurements were around 10%. The variability did not occur in areas large enough to be mapped, so the site was downgraded to 3a on the basis of the variable stone contents in the top 25cm. These measured levels of stoniness increase production costs by causing extra wear and tear on implements and tyres. Crop quality can also be reduced and crop establishment may also be impaired. Although the stones are limestone the variability justifies Subgrade 3a. The high percentages of stones slightly limit the available water to crops but the main limitation is the stoniness of the topsoil.

APPENDIX

DESCRIPTION OF THE GRADES AND SUB-GRADES

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

Descriptions of other land categories used on ALC maps

Urban

Built-up or 'hard' uses with relatively little potential for a return to agriculture including: housing, industry, commerce, education, transport, religious buildings, cemeteries. Also, hard-surfaced sports facilities, permanent caravan sites and vacant land; all types of derelict land, including mineral workings which are only likely to be reclaimed using derelict land grants.

Non-agricultural

'Soft' uses where most of the land could be returned relatively easily to agriculture, including: private parkland, public open spaces, sports fields, allotments and soft-surfaced areas on airports/airfields. Also active mineral workings and refuse tips where restoration conditions to 'soft' after-uses may apply.

Agricultural buildings

Includes the normal range of agricultural buildings as well as other relatively permanent structures such as glasshouses. Temporary structures (eg polythene tunnels erected for lambing) may be ignored.

Open water

Includes lakes, ponds and rivers as map scale permits.

Land not surveyed

Agricultural land which has not been surveyed.

Where the land use includes more than one of the above land cover types, eg buildings in large grounds, and where map scale permits, the cover types may be shown separately. Otherwise, the most extensive cover type will usually be shown.