8FCs 4796

95/92

AGRICULTURAL LAND CLASSIFICATION

WINNEYCROFT FARM, GLOUCESTER, GLOUCESTERSHIRE

Report of survey

1.0 INTRODUCTION

1.1 The site, an area of thirty hectares is being considered for development in the context of the Gloucester Local Plan. The survey work was completed on behalf of MAFF as part of its statutory input to the planning procedure. ADAS' Bristol based Resource Planning Team carried out a detailed Agricultural Land Classification (ALC) survey of the site in November 1992 at an auger boring density of approximately one per hectare. These borings were supplemented by a soil inspection pit in order to assess subsoil conditions.

1.2 On the published ALC Map sheet No. 143 (MAFF 1968) the site is mapped as Grade 3. The current survey was undertaken to provide a more detailed representation of the agricultural land quality using the Revised Guidelines and Criteria (MAFF 1988). These guidelines provide 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.

1.3 The distribution of ALC grades are shown in the table below and are illustrated on the accompanying map. A description of the grades used in the ALC system can be found in Appendix 1.

Table 1 Distribution of ALC grades: Winneycroft Farm

Grade	Area (ha)	% of Survey Area	% of Agricultural Land
3B	28.0	93.3	100% (28 ha)
Non Agric	1.5	5.0	
Urban	0.5	1.7	
TOTAL	30.0	100%	

The whole of the agricultural land in the survey area was found to be Subgrade 3B.

2.0 CLIMATE

2.1 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.

2.2 Climatic data for the site was interpolated from the published Agricultural Climate Dataset (Meteorological Office 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 indicate that there is no overall climatic limitation at this site.

Table 2: Climatic variables for Winneycroft Farm

Grid Reference	SO853142	SO853148
Height (m)	60	50
Accumulated Temperature (days)	1457	1468
Average Annual Rainfall (mm)	683	674
Overall Climatic Grade	1	1
Field Capacity (Days)	150	148
Moisture Deficit, Wheat (mm)	106	108
Potatoes (mm)	98	101

2.3 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.

3.0 RELIEF

3.1 The survey area is gently undultating and lies at approximately 55m AOD. Neither gradient nor altitude impose a limitation to the ALC grade.

4.0 GEOLOGY AND SOILS

4.1 The published 1:50,000 scale solid and drift geology map, sheet 234, (Geological Survey of England and Wales 1972) shows the whole survey area to be underlain by Lower Lias Clay.

4.2 The Soil Survey of England and Wales mapped the soils of the area in 1983, at a reconnaissance scale of 1:250,000. This map shows the soils to be of the Martock Association, comprising slowly permeable seasonally waterlogged stoneless soils over clay. During the recent field survey a single clayey soil type was identified.

4.3 There is a slight variation in topsoil textures across the site. To the north-west the topsoils are predominantly heavy clay loams; to the south-east mostly medium clay loams. These overlie very slightly stony clay subsoils.

5.0 AGRICULTURAL LAND CLASSIFICATION

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

Subgrade 3B

5.2 All of the agricultural land surveyed has been classifed as Subgrade 3B. The soils are slowly permeable immediately below the topsoil. The presence of strong gleying indicates that this severely limits the passage of water through the profile, placing the soils into Wetness Class IV. The combination of this Wetness Class, topsoil textures and the local Field Capacity value (150 days) imposes a moderately severe limitation on the versatility of these soils for agricultural use. Consequently the land is assigned Subgrade 3B.

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REFERENCES

GEOLOGICAL SURVEY OF ENGLAND AND WALES (1972). Solid and Drift edition. Sheet 234 Gloucester, Provisional 1:50,000 scale.

MAFF (1968). Agricultural Land Classification Map sheet 143 Provisional 1:63,360

MAFF (1988). Agricultural Land Classification of England and Wales (Revised Guidelines and Criteria for grading the quality of land). Alnwick

METEOROLOGICAL OFFICE (1989). Published climatic data extracted from the agroclimatic dataset, compiled by the Meteorological Office.

SOIL SURVEY OF ENGLAND AND WALES (1983). Sheet 5 Soils of South West England 1:250,000 scale.

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 an 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.