8FCs 4913 9/93

CREWKERNE LOCAL PLAN

AGRICULTURAL LAND CLASSIFICATION

Report of survey

1. INTRODUCTION

Sixty nine hectares of land to the east of Crewkerne, Somerset were graded using the Agricultural Land Classification (ALC) System in January 1993. The survey was carried out for MAFF as part of its statutory role in the first review of the Crewkerne 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 this scale but any enlargement would be misleading. A total of 57 auger borings and 3 soil profile pits were examined.

The published Provisional 1" to the mile ALC map of this area (MAFF 1974) shows the site to be mostly Grade 2 with some Grade 3. The recent survey supercedes this map and the 1980 1:25,000 survey, having being carried out at a more detailed level and using the Revised Guidelines and Criteria for grading the quality of agricultural land (MAFF 1988).

The Agricultural Land Classification 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: Crewkerne

Grade	Area (ha)	% of Survey Area	% of Agricultural Land
1	20.2	29.4	30.2
2	16.2	23.5	24.2
3a	12.5	18.2	18.7
3b	6.1	8.8	9.1
4	11.9	17.3	17.8
Non Agric	1.9	2.8	100% (66.9ha)
TOTAL	68.8	100%	

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.

Estimates of climatic variables were obtained for the site by interpolation from the 5km grid Meterological Office Database (Meterological Office 1989) and are shown in Table 2.

The parameters used for assessing overall climatic limiatation are accumulated temperature, (a measure of the relative warmth of a locality) and average annual rainfall, (a measure of overall wetness). The values shown in Table 2 reveal that there is no overall climatic limitation.

No locally limiting 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. These data are used in assessing the soil wetness and droughtiness limitations referred to in Section 5.

Table 2 Climatic Interpolations: Crewkerne

Grid Reference	ST 458 096	ST 451 101
Height (m)	40	90
Accumulated Temperature (° days)	1534	1477
Average Annual Rainfall (mm)	854	896
Overall Climatic Grade	1	1
Field Capacity (Days)	179	185
Moisture Deficit, Wheat (mm)	100	92
Potatoes (mm)	92	81

3. RELIEF

The site is gently undulating in the south between 40m and 60m AOD. The land then rises steeply between Easthams Lane and Butts Quarry Lane to land at a much higher level, reaching a maximum of 90m. This area gently slopes towards Butts Quarry Lane, except for a valley opening out towards Easthams Gate Farm. The steep slopes limit the land to Subgrade 3b and Grade 4.

4 GEOLOGY AND SOILS

The published 1:50,000 scale solid and drift geology map, sheet 312 (Geological Survey of England and Wales 1973), shows the northern area to be underlain by Yeovil sands and the southern area, Fullers Earth Rock with small areas of Wattonensis Beds and Inferior Oolite.

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 three associations within the survey area. In the north soils are of the South Petherton Association which are deep, well drained stoneless fine sand and silt soils. To the south Denchworth Association soils are clayey and slowly permeable with seasonal waterlogging. The map indicates that there is a small area of Elmton 1 by Hellings Farm. These soils are shallow but well drained.

Several different types of soil were identified in the area during the recent ALC survey. Soils to the north of the stream coming from the sewage works are deep and well drained. Generally to the west these soils are lighter in texture, fine sandy silt loams, whilst to the east and south of this area medium clay loams are more typical. In the far south west of the survey area there are well drained medium clay loams. The rest of the survey area has heavier (Heavy clay loams) more poorly drained soils. These show varying degrees of restricted drainage.

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.

Grade 1

Two areas of Grade 1 were identified. These soils are well drained and are assigned to Wetness Class I. Some profiles have fine sandy silt loams throughout, whilst others have fine sandy silt loam topsoils and medium clay loam subsoils. The soils are virtually stone free. With no overall climatic or other limitation these soils are Grade 1.

Grade 2

Several areas of Grade 2 have been identified. These soils are also well drained but have have a slightly heavier topsoil than the Grade 1 areas. These topsoils are medium clay loams. The soils still qualify for Wetness Class I but the topsoil texture restricts the workability of the soils and so they are downgraded to Grade 2. These soils become heavier with depth.

Subgrade 3a

The blocks of Subgrade 3a land in the south have slightly restricted drainage in some areas. Here the topsoil textures are variable being either medium clay loams or heavy clay loams. There is evidence of poor drainage in the form of gleying, caused by slowly permeable layers at depth. The

variable depths at which these occur means that the soils are assigned to Wetness Classes II and III. A few profiles showed no evidence of poor drainage but have heavy clay loam topsoils. These soils are Wetness Class I. All these soils are limited to Subgrade 3a on the basis of the combination of their Wetness Class and topsoil texture for the FCD in this area.

Subgrade 3b

The area of Subgrade 3b in the centre and north of the site has been downgraded on the basis of restricting slopes. The gradients here are between 7 and 11 degrees. These gradients restrict the types of machinery that can be safely used and hence the versatility of the land.

Grade 4

The small area of Grade 4 identified south of Higher Easthams Farm has been downgraded on the basis of gradient. Here the slopes are between 11 and 18 degrees so the restriction on versatility is greater than that described for the Subgrade 3b land.

The larger area of Grade 4 land in the south of the site has more severe drainage problems than described for Subgrade 3a. Here the soils have heavy clay loam topsoils and show evidence of restricted drainage in the form of gleying near the surface. This is caused by shallow slowly permeable layers. These soils will remain wet for much of the year and are therefore restricted to Wetness Class IV. They can be graded no better than Grade 4.

REFERENCES

GEOLOGICAL SURVEY OF ENGLAND AND WALES (1973) Solid and Drift edition. Sheet 312 Yeovil, Provisional 1:50,000 scale

MAFF (1974) Agricultural Land Classification Map Sheet 177 Provisional 1:63,360 scale

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 Meterological Office

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

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 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.