

## COTSWOLD DISTRICT LOCAL PLAN: MORETON-IN-MARSH

## AGRICULTURAL LAND CLASSIFICATION

## Report of survey

## 1. INTRODUCTION

Twenty two hectares of land around Blenheim Farm and the railway line in Moreton-in-Marsh 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" and the 1985 survey, 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 20 borings and 2 soil pits 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: Moreton in Marsh

Grade	Area (ha)	% of Survey Area	% of Agricultural Land
1	9.4	42.2	44.1
2	0.5	2.2	2.3
3A	5.4	24.2	25.4
3B	6.0	26.9	28.2
Non Agric	1.0	4.5	100% (21.3ha)
TOTAL	22.3	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.

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 no climatic limitation across the survey area.

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: Moreton in Marsh

Grid Reference	SP210327	SP209322
Height (m)	130	125
Accumulated Temperature ( $^{\circ}$ days)	1360	1366
Average Annual Rainfall (mm)	722	727
Overall Climatic Grade	1	1
Field Capacity (Days)	166	167
Moisture Deficit, Wheat (mm)	95	95
Potatoes (mm)	83	83

## 3. RELIEF

The site at Blenheim Farm, which lies on the 130 m contour, is predominantly flat though towards the East of the survey area is slightly higher. The South site (adjacent to the railway line) is also flat but lies at 125 m above sea-level.

## 4. GEOLOGY AND SOILS

The site at Moreton-in-Marsh is underlain by three types of drift deposit. The Northern area consists of Boulder Clay whilst the rest is either Alluvium or Glacial Sand and Gravel.

The soils at Blenheim Farm are mostly medium clay loams becoming both sandier and lighter with depth with soils such as sandy clay loams, medium sandy loams and loamy medium sands. Near the central stream, however, the soils become wetter with heavy clay loam and clays at depth.

There is some evidence of stoniness on the soil surface, but on average this only accounts for 1% stone content.

## 5 AGRICULTURAL LAND CLASSIFICATION

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

### Grade 1

The majority of the survey area consists of Grade 1 soils with no climatic, wetness or droughtiness limitations. The topsoils in this grade consist of medium sandy loams, with the subsoils becoming sandier with depth.

### Grade 2

The area to the SW of Blenheim Farm has a medium silty clay loam topsoil and a clay subsoil. It shows signs of poor drainage with gleying and a slowly permeable layer (SPL) from 65cm downwards, hence limiting the overall ALC grade to Grade 2.

### Subgrade 3A

The areas NE and SE of Blenheim Farm, and the area adjacent to the railway line, have medium clay loam topsoils with heavy clay loam and clay subsoils at depth. The Field Capacity Days and poor drainage observed from 28cm depth dictate that these soils should be graded as Subgrade 3A.

### Subgrade 3B

The soils graded as Subgrade 3B SE of Blenheim Farm (close to a stream) and the area adjacent to the railway line both show more severe wetness limitations. There is a slowly permeable layer below 35cm which impedes both drainage and root penetration. The poorer drainage in these areas has resulted in gleying of the soil from the surface. With the FCD and the duration of waterlogging on this site these areas are graded as Subgrade 3b.

## 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.