

SOMERTON AND LANGPORT LOCAL PLAN : SOMERTON

AGRICULTURAL LAND CLASSIFICATION

Report of Survey

1. INTRODUCTION

Over two hundred and seventy hectares of land around Somerton, Somerset were graded under the Agricultural Land Classification (ALC) System in July 1992. The survey was carried out for MAFF as part of its statutory contribution to the preparation of the Somerton and Langport Local Plan.

The fieldwork was carried out by ADAS's Resource Planning Team (Wessex Region) 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 carried out in 1986 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 reduced boring density was carried out over areas that had been surveyed previously to assess those gradings. A total of 141 borings and 5 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: Somerton

Grade	Area (ha)	% of Survey Area	% of Agricultural Land
2	11.36	4.2	5.0
3A	8.96	3.3	3.9
3B	201.02	73.8	88.0
4	7.17	2.6	3.1
Non Agric	11.07	4.1	100% (228.51)
Urban	26.55	9.8	
Farm Buildings	1.20	0.4	
Water	4.80	1.8	
TOTAL	272.13	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 overall 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: Somerton

Grid Reference	ST 488 292	ST 473 289
Height (m)	10	55
Accumulated Temperature (days)	1559	1509
Average Annual Rainfall (mm)	708	754
Overall Climatic Grade	1	1
Field Capacity (Days)	155	161
Moisture Deficit, Wheat (mm)	115	108
Potatoes (mm)	109	102

3. RELIEF

The survey area is gently undulating except in the east where there are some steeper limiting slopes. The lowest land is also in the east on the flood plain, at 10m. The land in the west is the highest at 55m.

4. GEOLOGY AND SOILS

The majority of the survey area is underlain by clays with limestone. On the steep valley sides the geology is mainly clay, while the floodplain is underlain by alluvium as shown on BGS sheet 296.

The soils across the survey area become heavier with depth. The topsoils vary across the survey area. Many are clays and heavy clay loams , whilst there are some medium clay loams.

The soils are stoney in the south and west often with fractured parent rock in the profile. Many of the soils show evidence of impeded 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 2

Two small areas of Grade 2 have been identified in the survey area. The larger northern area is free draining with only around 1% hard limestone in the profile. These soils can be assigned to Wetness Class I. The heavy clay loam topsoils become clays in the subsoil to depth. These soils are limited to Grade 2 by a workability limitation. The combination of the Wetness Class, Topsoil texture and Local FCD level means that the soils can be graded no better than Grade 2. The limitation restricts the timing of cultivation and grazing. A soil pit was dug in this area and confirmed the findings.

The small area of Grade 2 in the south west has similar profiles except that the soils show slight evidence of restricted drainage. However, this is below 40cm and only in the form of gleying, so the soils can still be assigned to Wetness Class I, and hence Grade 2.

Subgrade 3a

Two areas of Subgrade 3a were identified. The area in the east has medium clay loam topsoils which become heavier with depth. The soils are well drained, but stoney. A soil pit showed that the limestone gradually increases from 1% in the topsoil to 30% at 45cm. The main limitation for these soils is droughtiness. The stones restrict the amount of water available to plant in the profile.

The second area of Subgrade 3a is in the south west. These soils showed little or no evidence of wetness but had variable topsoil textures, so Subgrade 3a was the most appropriate grade.

Subgrade 3b

The majority of the survey area has been placed in this grade. There are some locally limiting gradients in the east where the versatility of the land is therefore reduced. In the west and south of the survey area which has clay with limestone as the underlying geology the soils are shallow. Soil pits dug in these areas show that the stone content rises above 70% at variable depths but as shallow as 40cm in some places. Generally the fractured parent rock is found

around 60cm. Some of these profiles also show evidence of restricted drainage at variable depths. The high stone contents in the profile prevent slowly permeable layers developing, but gleying can be seen in some of the profiles. These soils are limited by droughtiness, that is the water available to plants. The limitation is more severe than the Subgrade 3a areas. The topsoils in these areas vary being either heavy clay loams or clays with clay subsoils. The areas of 3b in the northern part of the survey area show greater evidence of wetness. Here gleying can be seen in the profiles before 40cm and there are also shallow slowly permeable layers which restrict the drainage of the soil. These soils are therefore assigned to Wetness Classes III and IV. The topsoils vary in texture from a medium clay loam, heavy clay loam to a clay. These soils can therefore be graded no better than Subgrade 3b. Some of the profiles are stoney in addition.

Grade 4

There are some locally limiting areas of slope. Here the versatility of the land is reduced because of the restrictions on the safe use of some machinery and the risk of soil erosion after cultivation.

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.

ALC SURVEY INFORMATION

SITE NAME: Somerton

LOCALITY: S. Somerset

1:50,000 SHEET NO: 193

GRID REFERENCE: 490 285

JOB NUMBER: 52192

FILE NUMBER:

AREA (ha): 270 ha

AIR PHOTOS:

REASON FOR SURVEY: S. Somerset D.C.
local plan

CLIMATE: ATO:

AAR:

MD WHEAT:

MD POTS:

FCD:

BEST CLIMATIC ALC: Grade 1

ALTIITUDE: MAXIMUM:

MINIMUM:

GEOLOGY: SHEET/SCALE: 1:50,000 296

SOLID:

DRIFT:

ALC: PROVISIONAL 1" MAP:

OTHER SURVEYS:

SOILS: SHEET/SCALE: sheet 5 1:250,000

ASSOCIATION/DESCRIPTION:

ANCILLARY SOILS:

REQUESTED BY/VIA:

ACCESS OK?:

DEADLINE:

OWNER/OCCUPIER:

OTHER: