

## CHARD AND ILMINSTER LOCAL PLAN

## AGRICULTURAL LAND CLASSIFICATION

## REPORT OF SURVEY

1. *Introduction*

In March 1991 a detailed Agricultural Land Classification (ALC) was carried out around Ilminster, Somerset, as part of MAFF's statutory input to the Chard and Ilminster Local Plan. The area had been surveyed previously under the Original ALC System at a scale of 1:25,000. This is considered inadequate for detailed planning purposes and the area was re-surveyed under the Revised Guidelines\*. The total area to be covered by the Local Plan was nearly 400 ha. Priority was given to certain areas according to the gradings found in the previous survey to, confirm the higher quality land and provide examples of alternative lower quality land for development. A total of 291 ha was surveyed.

The fieldwork was conducted by member of the Resource Planning Group at an approximate observation density of one auger boring per hectare which corresponds to a mapping scale of 1:10,000. A total of 192 borings and 9 soil pits were examined.

2. *Agricultural Land Classification*

2.1 The ALC provides a framework for classifying land according to the extent to which its physical or chemical characteristics impose long-term limitations on its use for agriculture. The distribution of grades is detailed below and illustrated on the accompanying ALC map. The information is accurate at the scale of mapping but any enlargement would be misleading.

Table 1: Distribution of ALC grades

Grade	Area (ha)	% of Survey Area	% of Agricultural Land
2	46.1	15.9	19.0
3a	97.5	33.8	40.3
	<u>143.6**</u>	<u>49.7</u>	<u>59.3</u> (143.6 ha)
3b	80.3	27.9	33.2
4	15.2	5.2	6.3
5	3.1	1.1	1.2
Non Agric	33.5	11.5	100% (242.2 ha)
Urban	13.6	4.7	
Ag Bdgs	1.3	0.5	
	<u>290.6</u>	<u>100%</u>	

\* Revised Guidelines and criteria for grading the quality of agricultural land, MAFF, 1989.

\*\* Grades 2 and 3a are considered 'best and most versatile' in Somerset.

A general indication of the amount of high quality land in Somerset compared to the South West Region and the national situation is attached, together with a general description of the five main ALC grades.

## 2.2 Climate

Estimates of important climatic variables were obtained for the survey area by interpolation from a 5 km grid Met Office/MAFF database\* in order to assess any overall climatic limitation affecting the area. The indicative parameters for assessing such a limitation 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 but that there is an important workability variation, related to field capacity days (FCD). FCD is a meteorological parameter which estimates the duration of the period when the soil moisture deficit is zero, that is when rainfall exceeds evapotranspiration. The FCD level and topsoil texture affect the soil workability. Thus, below 43 m at Ilminster where the FCD are below 176 a medium clay loam (MCL) topsoil in wetness I may qualify for grade 1 but, above 43 m, and hence 176 FCD, it may be no better than grade 2. No local climatic limitations such as exposure were observed in the survey area.

\* Climatological Data for Agricultural Land Classification, Met Office/MAFF/SSLRC 1989

Table 2: Climatic Interpolations

	ST 354 144	ST 355 153	ST 365 144	ST 354 139	ST 364 153	ST 369 139
Grid Reference						
Height	37	39	43	73	94	100
Accumulated Temperature (° days)	1538	1535	1531	1497	1473	1466
Average Annual Rainfall (mm)	844	842	853	890	897	914
Field Capacity (Days)	174	174	176	181	182	186
Moisture Deficit, Wheat (mm)	100	100	100	94	91	90
Potatoes (mm)	92	92	91	83	79	79
Overall Climatic Grade	1	1	1	1	1	1

## 2.3 Grade 2

Much of the land on the north-eastern fringe of the town has been placed in this grade. This map unit shows a mixture of Grade 2 and Grade 1 individual profiles, but the soil variation suggests Grade 2 as the most appropriate grade. The soils range from Wetness Class I profiles with light topsoils (SZLs, Grade 1), to similar profiles with MCL topsoils (Grade 2, workability) and light textured soils with evidence of wetness (WCII, Grade 2).

The Grade 2 in the south of the survey area and the small blocks to the west have deep well drained soils

showing little evidence of wetness. They qualify for wetness Class I and Grade 2 at the 181 FCD level. The medium silty clay loam topsoils over sandy silt loams and sandy loams are not droughty. A soil pit confirmed that there were no slowly permeable layers in this soil.

#### **Sub-grade 3A**

There are several areas of Sub-Grade 3A amounting to over one third of the agricultural land surveyed. The main 3A map unit in the north-east is downgraded as a result of a significant workability limitation. These soils show evidence of deep gleying in their clay subsoils, but still qualify for WCI. The topsoil textures, however, are heavy clay loams and limit the area to 3A (Pit 6 is typical of these soils)

The remaining areas have been classified accordingly because the soils experience a slight wetness limitation. Medium clay loams or medium silty clay loams, lie above heavier soils which have slowly permeable layers starting above 62 cm and gleying evident below 40 cm. The soils are allocated to wetness class 3 and thus Sub-Grade 3A.

#### **2.4 Sub-Grade 3B**

Soils have been classified as Sub-Grade 3B for two reasons. In some parts of the survey area there are locally limiting gradients, measured over a 25 m distance and found to be  $>7^\circ$  and up to  $11^\circ$ . The remaining blocks of Sub-Grade 3B land have a wetness limitation, more severe than those classified as Sub-Grade 3A. The medium silty clay loam topsoils, sometimes gleyed from the surface lie above heavier soils, heavy clay loams above clays. Soil pits showed that there are slowly permeable layers from 30 cm with moderately developed coarse angular blocky structures with low levels of porosity. The soils are placed into wetness class 4 and thus Sub-Grade 3B.

#### **2.5 Grades 4 and 5**

All these map units define areas where gradients are locally limiting.

## DESCRIPTION OF THE GRADES AND SUBGRADES

The ALC grades and subgrades are described below in terms of the types of limitation which can occur, typical cropping range and the expected level and consistency of yield. In practice, the grades are defined by reference to physical characteristics and the grading guidance and cut-offs for limitation factors in Section 3 enable land to be ranked in accordance with these general descriptions. The most productive and flexible land falls into Grades 1 and 2 and Subgrade 3a and collectively comprises about one-third of the agricultural land in England and Wales. About half the land is of moderate quality in Subgrade 3b or poor quality in Grade 4. Although less significant on a national scale such land can be locally valuable to agriculture and the rural economy where poorer farmland predominates. The remainder is very poor quality land in Grade 5, which mostly occurs in the uplands.

Descriptions are also given of other land categories which may be used on ALC maps.

### **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 includes 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: golf courses, 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.

##### **Woodland**

Includes commercial and non-commercial woodland. A distinction may be made as necessary between farm and non-farm woodland.

##### **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.