

47/95

**South Somerset Local Plan
Ilton
Agricultural Land Classification**

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SOUTH SOMERSET LOCAL PLAN
ILTON
AGRICULTURAL LAND CLASSIFICATION

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SOUTH SOMERSET LOCAL PLAN

ILTON

AGRICULTURAL LAND CLASSIFICATION SURVEY

SUMMARY

The survey was carried out by ADAS on behalf of MAFF as part of its statutory role in the preparation of the South Somerset Local Plan. The fieldwork at Ilton was completed in September 1995 at a scale of 1:10,000. Data on climate, soils, geology and from previous Agricultural Land Classification (ALC) Surveys was used and is presented in the report. The distribution of grades is shown on the accompanying ALC map and summarised below. Information is correct at this scale but could be misleading if enlarged.

Distribution of ALC grades: Ilton

Grade	Area (ha)	% of Survey Area	% of Agricultural Land (61.0 ha)
3b	50.2	51.6	82.3
4	2.5	2.6	4.1
5	8.3	8.5	13.6
Urban	27.6	28.4	0.0
Non Agricultural	2.5	2.6	0.0
Agricultural Buildings	1.7	1.7	0.0
Not Surveyed	4.5	4.6	0.0
TOTAL	97.3	100.0	100.0

None of the site has been mapped as "best and most versatile". The Subgrade 3b and Grade 4 soils all suffer from moderate and severe wetness limitations respectively due to their poorly drained subsoils. The area of Grade 5 land has very severe restrictions due to its past use as part of the adjacent airbase. The block of land on the eastern edge of the village was not surveyed as access was not granted but it is probably not "best and most versatile".

1. INTRODUCTION

An Agricultural Land Classification (ALC) Survey was carried out in September 1995 at Ilton, Somerset on behalf of MAFF as part of its statutory role in the preparation of the South Somerset Local Plan. The fieldwork covering 97.3 ha of land was conducted by ADAS at a scale of 1:10,000 with approximately one boring per hectare of agricultural land. A total of 55 auger borings were examined and two soil profile pits used to assess subsoil conditions.

The published provisional one inch to the mile ALC map of this area (MAFF, 1977) shows the grade of the whole site at a reconnaissance scale to be Grade 3.

The recent survey supersedes this map having been carried out at a more detailed level and using the Revised Guidelines and Criteria for grading the quality of agricultural land (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 120 cm of the soil profile. A description of the grades used in the ALC system can be found in Appendix 2.

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 a lower grade despite other favourable conditions.

Estimates of climatic variables were interpolated from the published agricultural climate dataset (Meteorological Office 1989). The parameters used for assessing overall 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 1 indicate there is no overall climatic limitation.

Table 1: Climatic Interpolations: Ilton

Grid Reference	ST 251 181	ST 250 174
Altitude (m)	23	33
Accumulated Temperature (day °)	1554	1544
Average Annual Rainfall (mm)	903	926
Overall Climatic Grade	1	1
Field Capacity Days	190	196
Moisture deficit (mm):		
Wheat	105	103
Potatoes	98	96

Climatic data on Field Capacity Days (FCD) and Moisture Deficits for wheat and potatoes are shown. These data are used in assessing the soil wetness and droughtiness limitations referred to in later sections.

3. RELIEF AND LANDCOVER

The site covers land surrounding the village of Ilton, Somerset. The land is all gently sloping, with gradients of less than 7°, and altitudes rising from 21 m Above Ordnance Datum (AOD) near Ilton Business Centre to 33 m AOD on Church Road. At the time of the survey most of the land was under permanent pasture, with a few fields being used for cereal cultivation.

4. GEOLOGY AND SOILS

The geology of the site is shown on the published 1:50,000 scale drift geology map, sheet 311 (Institute of Geological Sciences, 1973). This shows that most of the site is underlain by valley gravel and rainwash. There is a band of Lower Lias running north-east from Pound Corner, and another area to the north of the village itself.

The soils were mapped by the Soil Survey of England and Wales in 1983 at a reconnaissance scale of 1:250,000. This shows the site to be split along a line running from the cemetery to the business estate. To the south of this line the site consists of soils from the Wickham 2 Association which are described as being slowly permeable seasonally waterlogged, fine loamy over clayey, fine silty over clayey and clayey soils. Small areas of slowly permeable calcareous soils may occur on slopes. In the northern part of the site the soils come from the Evesham 3 Association. These are slowly permeable calcareous clayey and fine loamy over clayey profiles. Some slowly permeable seasonally waterlogged non-calcareous clayey soils may also occur.

The soils found during the current survey were similar to those described by the Soil Survey. They were mainly deep medium clay loam and medium silty clay loam topsoils over heavy clay loam and heavy silty clay loam upper subsoils and clay lower subsoils. The profiles were poorly drained with slowly permeable lower subsoils. These lower horizons were also stony in places.

5. AGRICULTURAL LAND CLASSIFICATION

The distribution of ALC grades is shown in Table 2 and on the accompanying ALC map. This information could be misleading if shown at a larger scale.

Table 2: Distribution of ALC grades: Ilton

Grade	Area (ha)	% of Survey Area	% of Agricultural Land (61.0 ha)
3b	50.2	51.6	82.3
4	2.5	2.6	4.1
5	8.3	8.5	13.6
Urban	27.6	28.4	0.0
Non Agricultural	2.5	2.6	0.0
Agricultural Buildings	1.7	1.7	0.0
Not Surveyed	4.5	4.6	0.0
TOTAL	97.3	100.0	100.0

Subgrade 3b

Most of the agricultural land surveyed has been mapped as Subgrade 3b due to a moderate wetness limitation. The profiles are typically medium clay loams and silty clay loams over heavy clay loams and heavy silty clay loams, with clay lower subsoils. They have gleying starting above 40 cm and slowly permeable layers starting above 52 cm so they were assessed as Wetness Class IV (see Appendix 3). Within this mapping unit there are a few isolated Subgrade 3a profiles where the depth to gleying and slowly permeable layers is greater.

Grade 4

The small areas of land mapped as Grade 4 have a severe wetness limitation to their agricultural use. The profiles are very similar to those in the Subgrade 3b mapping units except that they have heavy clay loam topsoils with clay subsoils at shallower depths. They were also assessed as Wetness Class IV.

Grade 5

The land which has been mapped as Grade 5 can only be used for rough grazing. It is part of the old airbase and still has the concrete roads, paths and foundations of the base. These prevent any workable area from being cultivated. There may also be limitations due to underground cables and the build-up of certain chemicals and salts from when it was in use as an airbase.

Other land

Land mapped as urban includes gardens, roads and hard-core tracks. The areas of non-agricultural land include a sports field and areas of scrub while agricultural buildings have been mapped as such.

Not Surveyed

The block of land to the east of the village centre was not surveyed due to the wishes of the owner. At the time of the survey the land was in agricultural use but is probably not "best and most versatile".

Resource Planning Team
Taunton Statutory Unit
October 1995

APPENDIX 1

REFERENCES

INSTITUTE OF GEOLOGICAL SCIENCES (1976) Drift Edition, Sheet 311, Wellington, 1:50,000.

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 agricultural land), Alnwick.

METEOROLOGICAL OFFICE (1989) Climatological Data for Agricultural Land Classification.

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

APPENDIX 2

DESCRIPTION OF GRADES AND SUBGRADES

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 (e.g. cereals and forage crops) the yields of which are variable. In most 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 park land, 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 (e.g. 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 landcover types, e.g. buildings in large grounds, and where may be shown separately. Otherwise, the most extensive cover type will usually be shown.

Source: MAFF (1988) Agricultural Land Classification of England and Wales (Revised Guidelines and Criteria for Grading the Quality of Agricultural Land), Alnwick.

APPENDIX 3

DEFINITION OF SOIL WETNESS CLASSES

Wetness Class I

The soil profile is not wet within 70 cm depth for more than 30 days in most years.

Wetness Class II

The soil profile is wet within 70 cm depth for 31-90 days in most years or, if there is no slowly permeable layer within 80 cm depth, it is wet within 70 cm for more than 90 days, but not wet within 40 cm depth for more than 30 days in most years.

Wetness Class III

The soil profile is wet within 70 cm depth for 91-180 days in most years or, if there is no slowly permeable layer within 80 cm depth, it is wet within 70 cm for more than 180 days, but only wet within 40 cm depth for between 31 and 90 days in most years.

Wetness Class IV

The soil profile is wet within 70 cm depth for more than 180 days but not within 40 cm depth for more than 210 days in most years or, if there is no slowly permeable layer within 80 cm depth, it is wet within 40 cm depth for 91-210 days in most years.

Wetness Class V

The soil profile is wet within 40 cm depth for 211-335 days in most years.

Wetness Class VI

The soil profile is wet within 40 cm depth for more than 335 days in most years.

Notes: The number of days specified is not necessarily a continuous period. 'In most years' is defined as more than 10 out of 20 years.

Source: Hodgson, J M (in preparation), Soil Survey Field Handbook (revised edition).

SITE NAME		PROFILE NO.	SLOPE AND ASPECT	LAND USE	Av Rainfall: 926 mm	PARENT MATERIAL	
Ilton		Pit 2 (ASP 61)	1° South	Permanent Grass	ATO: 1544 day °C	Valley Gravel and Rainwash	
JOB NO.		DATE	GRID REFERENCE	DESCRIBED BY	FC Days: 196	SOIL SAMPLE REFERENCES	
47/95		15/9/95	ST 348 175	HLJ	Climatic Grade: 1		
					Exposure Grade: -		

Horizon No.	Lowest Av. Depth (cm)	Texture	Matrix (Ped Face) Colours	Stoniness: Size, Type, and Field Method	Mottling Abundance, Contrast, Size and Colour	Mangan Concs	Structure: Ped Development Size and Shape	Consistence	Structural Condition	Pores (Fissures)	Roots: Abundance and Size	Calcium Carbonate Content	Horizon Boundary: Distinctness and form
1	27	MCL	10YR43	2% HR TOTAL (VIS)	None	None	-	-	-	Good	MF + VF	-	Gradual Smooth
2	48	HCL	10YR53	2% HR TOTAL (VIS)	CDFO (10YR68)	Few	WCSAB	Friable	Moderate	Good	CF + VF	-	Clear Smooth
3	80 +	C	10YR64	< 1% HR TOTAL (VIS)	MDFO+G (10YR58,62)	None	WCAB	Firm	Poor	Poor	FVF	-	-

Profile Gleyed From: 27 cm

Depth to Slowly Permeable Horizon: 48 cm

Wetness Class: IV

Wetness Grade: 3b

Available Water Wheat: 132 mm

Potatoes: 109 mm

Moisture Deficit Wheat: 103 mm

Potatoes: 96 mm

Moisture Balance Wheat: 29 mm

Potatoes: 13 mm

Droughtiness Grade: 2 (Calculated to 120 cm)

Final ALC Grade: 3b

Main Limiting Factor(s): Wetness

Remarks: Augured to 120 cm

SITE NAME Ilton		PROFILE NO. Pit 1 (ASP 30)	SLOPE AND ASPECT 2° North	LAND USE Permanent Grass	Av Rainfall: 926 mm ATO: 1544 day °C	PARENT MATERIAL Valley Gravel and Rainwash
JOB NO. 47/95		DATE 15/9/95	GRID REFERENCE ST 348 178	DESCRIBED BY HLJ	FC Days: 196 Climatic Grade: 1 Exposure Grade: -	SOIL SAMPLE REFERENCES

Horizon No.	Lowest Av. Depth (cm)	Texture	Matrix (Ped Face) Colours	Stoniness: Size, Type, and Field Method	Mottling Abundance, Contrast, Size and Colour	Mangan Concs	Structure: Ped Development Size and Shape	Consistence	Structural Condition	Pores (Fissures)	Roots: Abundance and Size	Calcium Carbonate Content	Horizon Boundary: Distinctness and form
1	23	MZCL	10YR44	2% HR TOTAL (VIS)	FRRC	None	-	-	-	Good	MF + VF	-	Gradual Smooth
2	35	HCL	10YR53	2% HR TOTAL (VIS)	FDVFO (10YR56)	Few	WCSAB	Friable	Moderate	Good	CF + VF	-	Clear Smooth
3	70 +	C	10YR63	10% HR TOTAL (VIS)	CDFO+G (10YR68,62)	Common	WCAB	Firm	Poor	Poor	FF + VF	-	-

Profile Gleyed From: 35 cm

Depth to Slowly Permeable Horizon: 35 cm

Wetness Class: IV

Wetness Grade: 3b

Available Water Wheat: 122 mm

Potatoes: 101 mm

Moisture Deficit Wheat: 103 mm

Potatoes: 96 mm

Moisture Balance Wheat: 19 mm

Potatoes: 5 mm

Droughtiness Grade: 2 (Calculated to 120 cm)

Final ALC Grade: 3b

Main Limiting Factor(s): Wetness

Remarks: Augured to 120 cm. PSD results showed top soil texture on borderline MZCL (ZL).