2/96

Taunton Deane Local Plan
1996

Agricultural Land Classification

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TAUNTON DEANE LOCAL PLAN

AGRICULTURAL LAND CLASSIFICATION

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TAUNTON DEANE LOCAL PLAN

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 Taunton Deane Local Plan The fieldwork covered sites at Taunton Road Bishops Lydeard and Mill Lane Wiveliscombe and was completed in February 1996 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 maps and is summarised below Information is correct at this scale but could be misleading if enlarged

Distribution of ALC grades Taunton Road Bishops Lydeard

Grade	Area (ha)	% of Survey Area	% of Agricultural Land (22 8 ha)
3a	15 5	61	68
3b	4 5	18	20
Other Land	2 5	10	
Not Surveyed	2 8	11	
TOTAL	25 3		

68 % of the agricultural land surveyed was found to be best and most versatile with moderate limitations due to wetness or droughtiness and is shown as Subgrade 3a The rest of the surveyed area has more serious moderate wetness limitations and is shown as Subgrade 3b

Distribution of ALC grades Mill Lane Wiveliscombe

Grade	Area (ha)	% of Survey Area	% of Agricultural Land (9 5 ha)
2	2 8	17	29
3a	6 7	42	71
Other Land	6 5	41	
TOTAL	16 0		

All the agricultural land surveyed was found to be best and most versatile A small area of Grade 2 had only minor limitations due to workability while the remaining area of Subgrade 3a was generally found to have a moderate limitation due to wetness

1 INTRODUCTION

An Agricultural Land Classification (ALC) Survey was carried out in February 1996 at Taunton Road Bishops Lydeard and Mill Lane Wiveliscombe on behalf of MAFF as part of its statutory role in the preparation of the Taunton Deane Local Plan The fieldwork covering 41 3 ha of land was conducted by ADAS at a scale of 1 10 000 with at least one boring per hectare of agricultural land A total of 33 auger borings were examined and 4 soil profile pits used to assess subsoil conditions

The published provisional one inch to the mile ALC maps of this area (MAFF 1966) show the grades of the sites at a reconnaissance scale as mainly Grade 3 with Grade 2 on higher ground at Wiveliscombe

The areas had not been surveyed previously although sites nearby will have been References are provided in Appendix 1

The recent survey supersedes the Provisional one inch map as it has 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 Tables 1 and 3 indicate there is no overall climatic limitation for either site

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

3 BISHOPS LYDEARD SITE

3 1 25 3 hectares of land either side of the bypass and the Taunton Road on the south side of Bishops Lydeard were surveyed at detailed density in February 1996 by examining a total of 20 auger borings and 2 soil profile pits

3 2 Climate

Climatic data for the site was interpolated as described in Section 2 The results are shown below and indicate that there is no overall climatic limitation In addition no local climatic limitations were noted

Table 1 Climatic Interpolations Taunton Road Bishops Lydeard

Grid Reference		ST166288	ST173289	ST168289
Altitude (m)		58	45	52
Accumulated Temperature (day °)		1512	1527	1519
Average Annual Rainfall (mm)		818	806	813
Overall Climatic Grade		1	1	1
Field Capacity Days		176	174	175
Moisture deficit (mm)	Wheat	100	102	101
	Potatoes	91	94	93

The boundary of 175 FC days is significant and runs through the site between auger borings 7 and 8 the higher values of FC days being to the west of this boundary

3 3 Relief and Landcover

Altitude ranges from 45 to 55m AOD with gentle slopes which are not limiting

Landcover at the time of survey was ley and permanent grass

3 4 Geology and Soils

The geology of the site is shown on the published 1 50 000 scale solid and drift geology map Sheet 295 British Geological Survey 1984 as Mercia Mudstone Group with patches of river terrace deposits and alluvium

The soils were mapped by the Soil Survey of England and Wales in 1983 at a reconnaissance scale of 1 250 000 as mainly Newnham Association These are described as well drained reddish coarse and fine loamy soils over gravel locally deep developed on river terrace drift

The recent survey found that as indicated by the description of geology the river terrace drift was absent in places although the majority of the site showed a variable depth of gravel drift which tends to improve drainage and can also increase the tendency to droughtiness

3 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 Taunton Road Bishops Lydeard

Grade	Area (ha)	% of Survey Area	% of Agricultural Land (22 8 ha)
3a	15 5	61	68
3b	4 5	18	20
Other Land	2 5	10	
Not Surveyed	2 8	11	
TOTAL	25 3		

Subgrade 3a

Much of the site has been shown as Subgrade 3a with moderate limitations mainly due to wetness where gravel is absent or shallow but due to droughtiness where the depth of gravel is greatest Where wetness is the limiting factor the depth to a slowly permeable layer can be variable but most frequently indicates Wetness Class III Where the depth of alluvial gravel is greatest drainage is improved and Wetness Class I is likely but a moderate droughtiness limitation can be found to operate and this is illustrated by pit 1

Being variable with respect to both limitations the mapping unit includes a range of soil profiles including some such as ASP 10 which may be of Subgrade 3b on wetness and others such as

ASP 21 and 22 which were found to be Grade 2 with only a minor limitation due to droughtiness If the survey extended to the south east it is likely that these borings would be included in a Grade 2 mapping unit

Subgrade 3b

Profiles in this area show mainly Wetness Class III or possibly IV with mainly heavy clay loam or heavy silty clay loam topsoil texture The depth to slowly permeable layer can be variable and the example at pit 2 showed that only the red clay (5YR46) met the definition of slowly permeable layer with low porosity and structural characteristics

Other Land

This category includes the area of Bishops Lydeard railway station and yard sections of main road and also an area around Tatham Farm which was not surveyed at the owner's request

4 WIVELISCOMBE SITE

4 1 An area of 16 0 hectares south of the A361 Taunton Road and east of Mill Lane to the south east of Wiveliscombe was surveyed at detailed density in February 1996 A total of 11 auger borings were examined and 2 soil profile pits were used to assess subsoil conditions

4 2 Climate

Climatic data for the site was interpolated as described in Section 2 The results are shown in the table below and indicate that there is no overall climatic limitation In addition no local climatic limitation was noted

Table 3 Climatic Interpolations Mill Lane Wiveliscombe

Grid Reference		ST086277	ST088275
Altitude (m)		95	90
Accumulated Temperature (day °)		1472	1478
Average Annual Rainfall (mm)		928	916
Overall Climatic Grade		1	1
Field Capacity Days		198	196
Moisture deficit (mm)	Wheat	88	89
	Potatoes	76	77

4 3 Relief and Landcover

Altitude ranges from 90 to 95m AOD with level and gentle slopes which are not limiting

Landcover at the time of survey was one field of ley grass one field of permanent grass and one field of winter cereals

4 4 Geology and Soils

The geology of the site is shown on the published 1 50 000 scale solid and drift geology map sheet 295 British Geological Survey 1984 as Wiveliscombe Sandstones overlain by Terrace Deposits and Alluvium on the lower ground

The soils were mapped by the soil survey of England and Wales in 1983 at a reconnaissance scale of 1 250 000 as mainly Enborne Association on the lower land with Crediton Association on the ridge Enborne Association is described as deep stoneless fine loamy and clayey soils variably affected by ground water on flat land with a risk of flooding Crediton Association is described as well drained gritty reddish loamy soils over breccia locally less stony This distribution was largely borne out by the current survey although the sandiest material derived from red sandstone was only found in the restored area around auger points 14 and 18

4 5 Agricultural Land Classification

The distribution of ALC grades is shown in Table 4 and on the accompanying ALC map This information could be misleading if shown at a larger scale

Table 4 Distribution of ALC grades Mill Lane, Wivelscombe

Grade	Area (ha)	% of Survey Area	% of Agricultural Land (9 5 ha)
2	2 8	17	29
3a	6 7	42	71
Other Land	6 5	41	
TOTAL	16 0		

Grade 2

A small area of Grade 2 was found on higher land next to the Taunton Road Topsoil texture was confirmed as medium clay loam or sandy clay loam indicating a minor limitation due to workability at Wetness Class I With mainly clay loam persisting to augered depth of 75-100cm droughtiness was not found to be a limitation in view of the relatively low potential moisture deficits despite stone contents of up to 50% in the lower subsoil

Subgrade 3a

The main part of the site although highly variable was assessed as Subgrade 3a overall typically with gleying evident within 40cm but no slowly permeable layer within 80cm This is illustrated by Pit 1 in undisturbed ground at ASP 11 This was found to be Wetness Class II with gleying from 24cm

The field with ASP 14 has been subject to the tipping of sandy material at some time in the past possibly when development took place on an adjacent site The profile at Pit 2 an additional soil observation point to the north of ASP 14 was considerably different from ASP 14 and ASP 18 It was assessed under the standard guidelines as Wetness Class III with a slowly permeable layer starting at 56cm After recent winter precipitation water was found to be standing at the surface in hoofmarks and other minor depressions all over this field while undisturbed fields adjacent were dry and firm at the surface Pit 2 showed that horizons 1 (0-11cm) 3 (32 56cm) and 4 (56-85+cm) were all slowly permeable with water running above them although only horizon 4 met the definition of slowly permeable layer Horizon 3 in particular was notable in that despite being borderline loamy medium sand/ medium sandy loam in texture the structure was assessed as weakly developed very coarse platy and had clearly been subjected to compaction when it was laid down Water was now running at the top of Horizon 3 and into the pit when this was opened

Other Land

The areas shown as other land include the sewage works a small industrial estate including an abattoir or bacon factory and an area of just over 2 hectares of waste land awaiting development

Resource Planning Team
Taunton Statutory Unit
February 1996

APPENDIX 1

REFERENCES

ADAS Resource Planning Team ADAS Bristol Reports of ALC survey for the following

1993 Tone Vale Hospital and Burge Farm Scale 1 10 000 Reference 62 94

1994 Bishops Lydeard Scale 1 10 000 Reference 54 93 and 55 93

1994 Taunton Deane Local Plan Wiveliscombe Scale 1 10 000 Reference 59 94

1995 Lydeard House Bishops Lydeard Scale 1 10 000 Reference 13 95

BRITISH GEOLOGICAL SURVEY (1984) Solid and Drift Edition Sheet 295 Taunton 1 50 000

MAFF (1966) Agricultural Land Classification Map Sheet 164 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 MAFF Publications 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 (eg 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

Land not surveyed

Agricultural land which has not been surveyed

Other land

Where other land is shown on recent ALC maps it may include any of the following categories which are no longer distinguished

> Urban land 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 or 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 including 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 including lakes ponds and rivers as map scale permits

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

Other land definition amended January 1996

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)