

62/94

Taunton Deane Local Plan

**AGRICULTURAL LAND CLASSIFICATION
REPORT OF SURVEY**

Resource Planning Team
Taunton Statutory Unit

May 1994

**AGRICULTURAL LAND CLASSIFICATION
TAUNTON DEANE LOCAL PLAN**

Report of Survey

CONTENTS		Page
1	SUMMARY	1
2	INTRODUCTION	4
3	CLIMATE	4
4	BISHOPS LYDEARD	5
5	LANGFORD BUDVILLE	6
6	MILVERTON	7
7	PYRLAND TAUNTON	8
8	TRULL TAUNTON	10
9	WIVELISCOMBE	12
APPENDIX 1	References	14
APPENDIX 2	Description of Grades and Subgrades	15
APPENDIX 3	Definitions of soil Wetness Classes	
MAPS		

TAUNTON DEANE LOCAL PLAN

Agricultural Land Classification

Report of Survey

1 SUMMARY

Land at six sites in the Taunton Deane area amounting to 61 ha was surveyed and graded in May 1994 using the Agricultural Land Classification (ALC) system (MAFF 1988). The surveys were undertaken on behalf of MAFF as part of its statutory role in the preparation of the Taunton Deane Local Plan.

Information on climate, soils, geology and previous ALC surveys is referred to in the report. The field work was carried out by ADAS at a scale of 1:10,000 providing information which is correct at this scale but which would be misleading if enlarged. The distribution of the ALC grades found in the survey areas is detailed below and is illustrated on the accompanying map.

Distribution of ALC grades - Bishops Lydeard

Grade	Area (ha)	% of Survey Area	% of Agricultural Land
2	1.7	25.6	25.6
3a	5.1	74.4	74.4
TOTAL	6.8	100	100

All of the land surveyed at Bishops Lydeard is best and most versatile. The whole site suffers from either minor or moderate wetness problems with gleyed horizons below 30-60 cm and on the lower slopes the presence in places of slowly permeable layers starting at 40-60 cm. The difference between the two grades is the depth to gleying and the presence of a slowly permeable layer.

Distribution of ALC grades - Langford Budville

Grade	Area (ha)	% of Survey Area	% of Agricultural Land
2	2.3	95.5	100
Urban	0.1	4.5	0
TOTAL	2.4	100	100

All of the agricultural land surveyed at Langford Budville is Grade 2. The profiles are freely draining and experience no droughtiness limitation. They only suffer a minor workability limitation due to the medium topsoil textures and the high local Field Capacity Days value.

Distribution of ALC grades Milverton

Grade	Area (ha)	% of Survey Area	% of Agricultural Land
1	1.6	75.3	75.3
2	0.1	6.6	6.6
3b	0.4	18.1	18.1
TOTAL	2.1	100	100

The soils that were surveyed at Milverton are all freely draining and only have a very small area with minor droughtiness problems. The droughtiness occurs where the sandy loam horizons overlie loamy sand subsoils and is Grade 2. The rest of the site has no limitations and is Grade 1 except for a small area where the gradient restricts the safe use of some agricultural machinery and it is Subgrade 3b. These profiles would be Grade 1 except for the gradient.

Distribution of ALC grades Pyriand Taunton

Grade	Area (ha)	% of Survey Area	% of Agricultural Land
2	14.1	78.8	80.5
3a	2.9	16.2	16.6
3b	0.5	2.8	2.9
Urban	0.4	2.2	0
TOTAL	17.9	100	100

Nearly all the agricultural land surveyed at Pyriand is best and most versatile with the majority being Grade 2. The profiles in the Grade 2 area are all fairly variable with areas suffering from minor workability, droughtiness and wetness limitations depending on the local stone content and whether the subsoils are slowly permeable or just gleyed. Where the stone contents increase the land is Subgrade 3a and suffers from a moderate droughtiness limitation. There is also a small area of land where the topsoil is heavier and slowly permeable subsoils are found closer to the surface leading to a moderate wetness limitation.

Distribution of ALC grades Trull Taunton

Grade	Area (ha)	% of Survey Area	% of Agricultural Land
2	7.5	27.3	27.3
3a	5.5	20.0	20.0
3b	14.5	52.7	52.7
TOTAL	27.5	100	100

The Grade 2 land is variable in its characteristics with localised areas suffering from minor droughtiness and wetness limitations. The majority of the site suffers from moderate wetness limitations with gleyed and slowly permeable subsoils. The differences between the Subgrade 3a and Subgrade 3b land are the depth to wetness, the topsoil texture and the local Field Capacity Days values.

Distribution of ALC grades Wiveliscombe

Grade	Area (ha)	% of Survey Area	% of Agricultural Land
2	0.3	6.9	6.9
3a	3.1	85.2	86.2
3b	0.2	6.8	6.9
Urban	0.0	1.1	0
TOTAL	3.6	100	100

The soil profiles at Wiveliscombe fall into two categories. On the flatter land they have gleyed and slowly permeable subsoils causing a moderate wetness limitation and being Subgrade 3b. The other type of soil is found on the sandstone geology and is well drained and only suffers from a minor workability limitation. The area of Subgrade 3b has a moderate limitation due to its gradient although the soils on their own would be Grade 2.

2 INTRODUCTION

Land at six sites in the Taunton Deane area amounting to 61 ha was surveyed and graded in May 1994 using the Agricultural Land Classification (ALC) system (MAFF 1988). The surveys were undertaken on behalf of MAFF as part of its statutory role in the preparation of the Taunton Deane Local Plan.

This report refers to surveys at Bishop's Lydeard, Langford Budville, Milverton, Pyrland, Taunton Trull, Taunton and Wiveliscombe. The field work was carried out by ADAS (Resource Planning Team, Taunton Statutory Unit) at a scale of 1:10,000 (approximately one auger sample point for every hectare of agricultural land). The 65 borings were supplemented by six soil inspection pits and were used to assess the subsoil conditions. The information is correct at the scale shown but any enlargement could be misleading.

A description of the published soils and geology information is included in a section for each site as well as any previous ALC survey information. The published provisional one inch to a mile ALC maps (MAFF 1971, 1974) show the grades of the sites at a reconnaissance scale and for some of the sites more detailed work had been carried out. However, these are considered inadequate for Local Plan purposes and the current surveys which supercede all previous work were undertaken to provide a more detailed representation of the agricultural land quality 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 its 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.

3 CLIMATE

The grade of the land is determined by the most limiting factor present. The overall climate is considered first as it can have an overriding influence on restricting land to lower grades despite other favourable conditions.

Estimates of climatic data for each site were interpolated from the published climatic dataset (Meteorological Office 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 1 indicate that there is no overall climatic limitation for any of the survey sites.

Climatic data on Field Capacity days (FCD) and Moisture Deficits for Wheat (MDW) and potatoes (MDP) are also shown. These data are used in assessing the soil wetness and droughtiness limitations referred to in Sections 4.4, 5.4, 6.4, 7.4, 8.4 and 9.4. Local climatic factors such as exposure were assessed in the survey area as having no effect on the grading. A description of the Soil Wetness Classes used as included in Appendix 3.

Table 1 Climatic Interpolations

	Bishops Lydeard	Langford Budville	Milverton	Pyrland
Grid Reference	ST 161 288	ST 112 226	ST 123 256	ST 225 273
Altitude (m)	55	115	63	37
Accumulated Temperature (day)	1516	1451	1509	1535
Average Annual Rainfall (mm)	818	915	828	775
Overall Climatic Grade	1	1	1	1
Field Capacity (days)	176	192	179	167
Moisture deficit Wheat (mm)	101	88	97	106
Potatoes (mm)	92	76	88	98

	Trull 1	Trull 2	Trull 3	Trull 4
Grid Reference	ST 203 232	ST 218 228	ST 212 222	ST 211 216
Altitude (m)	45	35	50	58
Accumulated Temperature (day)	1528	1540	1523	1514
Average Annual Rainfall (mm)	814	821	843	860
Overall Climatic Grade	1	1	1	1
Field Capacity (days)	174	175	179	182
Moisture deficit Wheat (mm)	105	106	103	102
Potatoes (mm)	97	99	95	93

	Trull 5	Wiveliscombe
Grid Reference	ST 214 212	ST 080 275
Altitude (m)	55	115
Accumulated Temperature (day)	1518	1450
Average Annual Rainfall (mm)	864	969
Overall Climatic Grade	1	1
Field Capacity (days)	182	204
Moisture deficit Wheat (mm)	102	83
Potatoes (mm)	93	70

4 BISHOPS LYDEARD

4 1 An area of 6.5 ha to the south west of Bishops Lydeard was surveyed in May 1994. The area is covered by sheet 164 (MAFF 1971) of the national 1 to the mile provisional ALC map series which shows the whole site to be Grade 3.

The area had previously not been surveyed in any detail so this survey carried out under the Revised Guidelines and Criteria for Grading the Quality of Agricultural Land (MAFF 1988) forms the only data. A total of seven auger borings and one soil inspection pit were examined.

4 2 Relief and Landcover

The site rises gently from 50 m AOD in the south to 56 m AOD near Greenway Farm on the northern edge of the site. At the time of the survey the whole site was under permanent pasture.

4 3 Geology and Soils

The published 1:50,000 solid and drift edition geological map of the area sheet 295 (British Geological Survey 1984) shows that the whole area is underlain by Mercia Mudstone.

The Soil Survey of England and Wales mapped the area in 1983 at the reconnaissance scale of 1:250,000. This shows that the site consists of soils from the Whimple 3 Association which are described as reddish fine loamy or fine silty over clayey soils with slowly permeable subsoils and slight seasonal waterlogging. There may also be slowly permeable seasonally waterlogged fine loamy and fine silty over clayey soils on lower slopes.

The soils found during the recent survey all had medium clay loam topsoils and then went into either clay or coarse sandy loam subsoils. The heavier soils were comparable to those of the Whimple 3 Association with the profiles being gleyed from 30-60 cm and having slowly permeable horizons starting at 40-60 cm. Where the profiles were coarser they had stone contents of 12% hard rock in the topsoil increasing to 60% hard rocks at depth and were better drained.

4 4 Agricultural Land Classification

The distribution of ALC grades identified in the survey area is detailed in Table 2 and illustrated on the accompanying ALC map. The information is correct at the scale shown but any enlargement could be misleading.

Table 2 Distribution of ALC grades Bishops Lydeard

Grade	Area (ha)	% of Survey Area	% of Agricultural Land
2	1.7	25.6	25.6
3	5.1	74.4	74.4
TOTAL	6.8	100	100

Grade 2

There is only a small area of Grade 2 land which is adjacent to Greenway Farm at the northern end of the site. These profiles are gleyed below 50 cm and are assessed as Wetness Class I. There is therefore a minor workability limitation due to the combination of topsoil textures and the local Field Capacity Days value of 176. There is also a minor droughtiness limitation due to the reduced available water content caused by the coarse textured subsoils and relatively high stone contents.

Subgrade 3a

The majority of the site is mapped as Subgrade 3a having a moderate limitation to its agricultural usage. The profiles are poorly drained with gleying above 40 cm and are assessed as being either Wetness Class II or III depending on the depth to a slowly permeable layer. With the medium clay loam topsoils this gives the land an overall wetness limitation.

5 LANGFORD BUDVILLE

5.1 The site consisted of 2.5 ha to the south of Langford Budville and was surveyed in May 1994. Sheet 164 (MAFF 1971) of the national 1 to the mile provisional ALC map series covers the area and shows that the whole site is Grade 2 land although there is a small area of predominantly urban land adjacent to the Martlett Inn.

The area had previously not been surveyed in any detail so this survey carried out under the Revised Guidelines and Criteria for Grading the Quality of Agricultural Land (MAFF 1988) forms the only data. A total of three auger borings and one soil inspection pit were examined.

5.2 Relief and Landcover

The site rises gently from about 105 m AOD on the south eastern edge to about 115 m AOD near the Three Ashes road junction to the west of the site. At the time of the survey the whole site was under permanent pasture.

5.3 Geology and Soils

The published 1:50,000 drift edition geological map of the area sheet 311 (Institute of Geological Sciences 1976) shows that the whole of the site is underlain by the Peeble Beds and Conglomerate.

The Soil Survey of England and Wales mapped the area in 1983 at the reconnaissance scale of 1:250,000. This shows that the site consists of soils from the Crediton Association which are described as being well drained, gritty, reddish loamy soils over breccia which can be locally less stony.

The soils found during the recent survey had very similar profiles. They were deep, well drained profiles with medium clay loam topsoils and a mixture of sandy loam, sandy clay loam and clay subsoils.

5.4 Agricultural Land Classification

The distribution of ALC grades identified in the survey area is detailed in Table 3 and illustrated on the accompanying ALC map. The information is correct at the scale shown but any enlargement could be misleading.

Table 3 Distribution of ALC grades Langford Budville

Grade	Area (ha)	% of Survey Area	% of Agricultural Land
2	2.3	95.5	100
Urban	0.1	4.5	0
TOTAL	2.4	100	100

Grade 2

All the agricultural land in the survey is mapped as Grade 2. The profiles experience a minor workability limitation to their agricultural use which is imposed by the combination of medium clay loam topsoils and the local Field Capacity Days value of 192.

Other Land

There is a small area of houses and domestic gardens in the northern corner of the site.

6 MILVERTON

6.1 Two hectares of land on the southern edge of Milverton were surveyed in May 1994. The area is covered by sheet 164 (MAFF 1971) of the national 1 to the mile provisional ALC map series which shows that the whole site is Grade 1 agricultural land.

The area was previously included in the 1:50,000 1978 survey for the North Devon Link Road but at this level of detail the site was shown as being predominantly urban. So this survey carried out under the Revised Guidelines and Criteria for Grading the Quality of Agricultural Land (MAFF 1988) forms the only detailed survey. A total of three auger borings and one soil inspection pit were examined.

6.2 Relief and Landcover

The site rises fairly steeply from about 65 m AOD in the south to about 75 m AOD in the north with an area of relatively steep gradients towards the eastern side of the site. At the time of the survey the whole site was being used for cereal cultivation.

6.3 Geology and Soils

The published 1:50,000 solid and drift edition geological map of the area sheet 295 (British Geological Survey 1984) shows that the whole site is underlain by Otter sandstone.

The area was mapped in 1983 by the Soil Survey of England and Wales at the reconnaissance scale of 1:250,000 and showed that the whole site consists of soils from the Hodnet Association. These soils are described as being reddish fine and coarse loamy soils with slowly permeable subsoils and slight seasonal waterlogging. There are also some areas of similar soils that are well drained. This recent survey found soil profiles that are very similar to the well drained Hodnet soils. The profiles consisted of deep sandy loams with heavy horizons at depth and the occasional loamy sand subsoil.

6 4 Agricultural Land Classification

The distribution of ALC grades identified in the survey area is detailed in Table 4 and illustrated on the accompanying ALC map. The information is correct at the scale shown but any enlargement could be misleading.

Table 4 Distribution of ALC grades Milverton

Grade	Area (ha)	% of Survey Area	% of Agricultural Land
1	1.6	75.3	75.3
2	0.1	6.6	6.6
3b	0.4	18.1	18.1
TOTAL	2.1	100	100

Grade 1

The majority of the site is Grade 1 agricultural land. This relates to the sandy loamy profiles which are well drained and assessed as Wetness Class I. These soils do not experience a droughtiness limitation.

Grade 2

There is a very small area in the east of the site which is mapped as Grade 2. These profiles have a minor droughtiness limitation where the sandy loam overlies a loamy sand subsoil causing a slight reduction in the amount of available water for the crops to utilise.

Subgrade 3b

There is a narrow band of land where the gradients are 9 which impose a moderate limitation on the agricultural versatility of the land because it reduces the safe use of some agricultural machinery. These profiles would have been Grade 1 except for the gradient.

7 PYRLAND TAUNTON

7.1 The sites at Pyrland on the northern edge of Taunton consist of 18 ha and were surveyed in May 1994. The area is covered by sheet 177 (MAFF 1974) of the national 1 to the mile provisional ALC map series. The small site adjacent to Pyrland Farm is mapped as Grade 1. On the main site the Grade 1 land continues to just north of Taunton Ladymead School and the ornamental ponds below Pyrland Hall. The southern part of the site is shown as Grade 2.

The northern part of the site was previously included in the 1:50,000 1978 North Devon Link Road which shows the land to be Grades 2 and 3. Land around Okehills to the west of the site was surveyed in 1989 at a detailed level using the Revised Criteria for Grading the Quality of Agricultural Land (MAFF 1988). The land here was assessed as Grade 2. For the current sites though this recent survey using the revised criteria (MAFF 1988) forms the only data. A total of 19 auger borings and one soil inspection pit were examined.

7.2 Relief and Landcover

The site is gently undulating with a high point of 50 m AOD near Pyrland Hall and a low point at the ornamental ponds of 35 m AOD. At the time of survey the southern part of the site was under potato cultivation while the rest of the fields were a mixture of barley, wheat and permanent pasture.

7.3 Geology and Soils

The area is covered by the published 1:50,000 solid and drift edition geological map sheet 295 (British Geological Survey 1984). This shows that the majority of the site is underlain by Mercia Mudstone with bands of river deposits along the western edge and Otter Sandstone along the northern edge. The small site in the east is underlain by Mercia Mudstone.

The Soil Survey of England and Wales mapped the area in 1983 at the reconnaissance scale of 1:250,000 which showed that the whole site consists of soils from the Whimble 3 Association. These are described as reddish fine loamy or fine silty soils over clayey soils with slowly permeable subsoils and slight seasonal water logging. On lower slopes the fine loamy and fine silty soils may be slowly permeable and on brows there may be similar clayey soils.

Similar soils were found during the recent survey with distinct gleying in the upper subsoils and slowly permeable layers below about 65 cm. There were also well drained non-droughty and droughty profiles. The droughty profiles have stone contents increasing down the profile to 50% hard rock in the lower sub-soil.

7.4 Agricultural Land Classification

The distribution of ALC grades identified in the survey area is detailed in Table 5 and illustrated on the accompanying ALC map. The information is correct at the scale shown but any enlargement could be misleading.

Table 5 Distribution of ALC grades Pyrland Taunton

Grade	Area (ha)	% of Survey Area	% of Agricultural Land
2	14.1	78.8	80.5
3a	2.9	16.2	16.6
3b	0.5	2.8	2.9
Urban	0.4	2.2	0
TOTAL	17.9	100	100

Grade 2

The majority of the site was mapped as Grade 2 although the profiles within this grade are very variable. Most of the profiles are well drained and have been assessed as Wetness Class I. A few of these have only 2% stones in the topsoil and have no limitation with their medium clay loam topsoils and the relatively low Field Capacity Days value. These are therefore Grade 1. The rest of the well drained profiles have increased stone contents of up to 10% in the topsoil and 50% in the subsoil which reduce the amount of available water and cause a minor droughtiness limitation. These droughty profiles are similar to some of those found during the 1989 survey on the adjacent land.

In places the profiles are gleyed from 35-40 cm and have slowly permeable layers below 65 cm. These soils are Wetness Class II which with the medium clay loam topsoil textures and relatively low Field Capacity Days cause a minor wetness limitation.

Subgrade 3a

A small area in the south west corner of the site was found to be well drained with medium clay loams over heavy clay loams. These had higher stone contents of 30% in the topsoil and 40% and 50% in the upper and lower subsoils which increase the droughtiness to a moderate limitation.

Subgrade 3b

In the corner of the site near Pyrland Hall Farm Taunton and Ladymead School is a area of wet profiles. They have heavy clay loam topsoils with red clays below 35 cm. These clays are slowly permeable layers and the profiles are assessed as Wetness Class III which with the heavy topsoils cause a moderate wetness limitation.

Other Land

In the south west corner of the site there is a small area of houses and domestic gardens which have been mapped as urban.

8 TRULL

8.1 Thirty hectares of land at five sites around Trull Taunton were surveyed in May 1994. The areas are covered by sheet 177 (MAFF 1974) of the national 1 to the mile provisional ALC map series. This shows that the sites at Sherford Camp and Spearcey Farm are Grade 2 and the sites at Gatchell House and Fuzbrook House are Grade 3. The site at Comeytrowe Manor is mapped as mainly Grade 3 with an area of Grade 2 on the higher land.

None of the sites have had detailed surveys carried out on them under the Revised Criteria for Grading the Quality of Agricultural Land (MAFF 1988) so these recent surveys form the only data. Surveys have been carried out in 1989 to the north of Comeytrowe Manor and to the south west of Staplehay while the large area between Dipford and Comeytrowe Manor was surveyed in February 1994.

8.2 Relief and Landcover

All of the sites have gentle gradients with heights rising from 32 m AOD to 62 m AOD. At the time of the survey most of the land was under permanent pasture with some other areas of cereals and cultivated land.

8.3 Geology and Soils

The geology of the area is shown on the published 1:50,000 drift edition geological map sheet 311 (Institute of Geological Sciences 1976) as being Keuper Marl underlying all of the sites. There are also two areas of valley gravels, one in the north east corner of the Comeytrowe Manor site and the other along the eastern edge of the Sherford Camp site.

The Soil Survey of England and Wales mapped the area in 1983 at the reconnaissance scale of 1:250,000. This showed that all of the sites except for the one at Spearcey Farm consist of soils from the Worcester Association. These are described as being slowly permeable, non calcareous and calcareous, reddish, clayey soils over mudstone. They are associated with similar non calcareous, fine loamy over clayey soils. The fifth site at Spearcey Farm has areas of soils from the Worcester Association along with soils from the Whimple 3 Association and a small area of soils from the Brockhurst 1 Association. The Whimple 3 soils are described as being reddish, fine loamy or fine silty soils over clayey soils with slowly permeable subsoils and slight seasonal water logging. On brows there may be similar clayey soils while on the lower slopes there may be slowly permeable, seasonally waterlogged, fine loamy and fine silty soils over clayey soils. The Brockhurst 1 soils are also slowly permeable, seasonally waterlogged, fine loamy over fine clayey soils.

A variety of soils were found during the recent survey ranging from deep, well drained profiles to shallow topsoils over red and grey slowly permeable clay subsoils. The soils at Comeytrowe Manor had heavy clay loam topsoils which overlaid red and grey clay subsoils. These subsoils were occasionally gleyed from about 30 cm and had slowly permeable layers below 30-50 cm.

The Sherford Camp site had a variety of profiles with some being well drained and others having gleying below 50 cm. The well drained profiles also had stone contents of 25% hard rock in the subsoils. All the topsoils were light textured, being medium clay loams, medium sandy silt loams or medium sandy loams.

The soils at Gatchell House were similar to those at Comeytrowe Manor having gleying from 45 cm and red slowly permeable layers below 45 60 cm The topsoil textures however were lighter medium clay loams The same type of profiles were found at Fuzbrook House

The profiles at Spearcey Farm were again similar to those at Comeytrowe Manor with gleying and red slowly permeable clay horizons below 30 45 cm These profiles also had heavy clay loam topsoils There was an area where the profiles were gleyed but did not overlie slowly permeable layers and these better draining profiles had medium clay loam topsoils

8.4 Agricultural Land Classification

The distribution of ALC grades identified in the survey area is detailed in Table 6 and illustrated on the accompanying ALC map The information is correct at the scale shown but any enlargement could be misleading

Table 6 Distribution of ALC grades Trull Taunton

Grade	Area (ha)	% of Survey Area	% of Agricultural Land
2	7.5	27.3	27.3
3a	5.5	20.0	20.0
3b	14.5	52.7	52.7
TOTAL	27.5	100	100

Grade 2

All of the land at of Sherford Camp is mapped as Grade 2 but there is some variation in the profiles The eastern half of the site is well drained over the valley gravel and is assessed as Wetness Class I The soils are medium textured topsoils over heavier subsoils but there are 25% stones in the subsoils reducing the available water content and causing a minor drought limitation The western part of the site experiences the same drought limitation but is also slightly wetter with some gleying and slowly permeable subsoils at depth There are also some areas of Grade 1 profile where the land is well drained and has no stones in it

There is a small area of Grade 2 land where the profiles are gleyed from 30 cm but the subsoil is not slowly permeable These Wetness Class II soils have medium clay loam topsoils At this site the FCD value is above 176 and the soils therefore have a minor wetness limitation

Subgrade 3a

The land at Gatchell House and Fuzbrook House has all been mapped as Subgrade 3a having a moderate wetness limitation These profiles had well drained topsoils of medium clay loam texture but were gleyed and slowly permeable below 45 55 cm This meant they were assessed as Wetness Class III and with over 176 Field Capacity days they are Subgrade 3a

Subgrade 3b

Most of the profiles at Spearcey Farm were found to have medium clay loam topsoils and wetness problems They are typically gleyed below 25 35 cm and have slowly permeable layers from 45 70 cm so they are assessed as Wetness Classes III and IV With over 176 Field Capacity Days they therefore suffer a moderate wetness limitation

The soils at Comeytrowe Manor fall into two groups but show the same limitations The south east corner consists of heavy clay loam topsoils over slowly permeable grey clays These are assessed as Wetness classes III and IV depending on the presence of gleying and the depth at which the slowly permeable layers start (20 45 cm) These soils are mapped as Subgrade 3b because even though they have heavy topsoils the Field Capacity Days are below 176 here

The eastern and northern sides of the site contain heavy clay loam topsoils which were gleyed in places over red clay subsoils. Due to their colour it can be difficult to see gleying in these red clays but because of their structure and low porosity the subsoils are slowly permeable layers. These slowly permeable clays start at 40-50 cm so the profiles are assessed as Wetness Class III and therefore have a moderate wetness limitation. This was confirmed by auger and pit data from the adjacent 1989 survey. The soils in the north east corner were noted to be slightly better drained where they are underlain by the valley gravels.

9 WIVELISCOMBE

9.1 An area of just less than four hectares on the southern edge of Wiveliscombe was surveyed in May 1994. The area is mapped by sheet 164 (MAFF 1971) of the national 1 to the mile provisional ALC map series. This shows the area to be north of the lane as Grade 3 while the steeper area to the south of the lane is Grade 4 and the southern tip of the site is Grade 2.

The area has no previous detailed survey so this recent survey forms the only data as it was carried out under the Revised Guidelines and Criteria for Grading the Quality of Agricultural Land (MAFF 1988). A soil inspection pit and four auger borings were examined.

9.2 Relief and Landcover

The northern part of the site is a flat area at a height of 105 m AOD which was under permanent pasture at the time of the survey. To the south of the lane the land rises steeply to a height of 122 m AOD and this area was under cereal cultivation when the survey was carried out.

9.3 Geology and Soils

The published 1:50,000 solid and drift edition geological map of the area sheet 295 (British Geological Survey 1984) shows that there are two types of geology in the area. To the north of the lane the site is underlain by terrace deposits while the southern part of the site is underlain by Wiveliscombe Sandstone.

The soils of the area were mapped in 1983 by the Soil Survey of England and Wales at the reconnaissance scale of 1:250,000. This showed that the whole site consists of soils from the Midford Association which are described as well drained reddish fine loamy soils over rock. During this recent survey however the soils were found to have clay loam topsoils with heavier subsoils which are gleyed and included slowly permeable layers. The soils on the higher ground to the south of the land are similar but are better drained.

9.4 Agricultural Land Classification

The distribution of ALC grades identified in the survey area is detailed in Table 7 and illustrated on the accompanying ALC map. The information is correct at the scale shown but any enlargement would be misleading.

Table 7 **Distribution of ALC grades Wiveliscombe**

Grade	Area (ha)	% of Survey Area	% of Agricultural Land
2	0.3	6.9	6.9
3a	3.1	85.2	86.2
3b	0.2	6.8	6.9
Urban	0.0	1.1	0
TOTAL	3.6	100	100

Grade 2

There is a small area of well drained clay loam soils in the southern part of the site on the sandstone outcrop which were assessed as Wetness Class I. The medium clay loam topsoils together with the local Field Capacity days value of 204 impose a minor workability limitation.

Subgrade 3a

The main area of the site to the north of the lane was assessed as Wetness Class III where the profiles are gleyed from 30 cm and have slowly permeable layers starting at 50-65 cm. With the medium topsoil textures and aforementioned Field Capacity Days these profiles suffer from a moderate wetness limitation and are Subgrade 3a.

Subgrade 3b

The small area of Subgrade 3b land has gradients of 8% which impose a moderate limitation on the agricultural versatility of the land due to the reduction in the various agricultural machinery which can be used safely. The soils here could also have been Grade 2 apart from this gradient limitation.

Other Land

There is a narrow lane acting as access to Culverhay Farm which crosses the site.

APPENDIX 1

REFERENCES

BRITISH GEOLOGICAL SURVEY (1984) Solid and Drift edition sheet 295 Taunton 1 50 000 scale

INSTITUTE OF GEOLOGICAL SCIENCES (1976) Drift edition sheet 311 Wellington 1 50 000 scale

MAFF (1971) Agricultural Land Classification Map sheet 164 Provisional 1 63 360 scale

(1974) Agricultural Land Classification Map sheet 177 Provisional 1 63 360 scale

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

METEOROLOGICAL OFFICE (1989) published climatic data extracted from the agroclimatic dataset compiled by the Meteorological Office

SOIL SURVEY OF ENGLAND AND WALES (1983) sheet 5 Soils of South west England 1 250 000 scale

APPENDIX 2

DESCRIPTION OF ALC 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.

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 (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 landcover types, eg buildings in large grounds and where they 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)

[fNL560]

SITE NAME		PROFILE NO	SLOPE AND ASPECT		LAND USE		Av Rainfall		818 mm		PARENT MATERIAL		
Bishops L deard		Pit 1 (Asp 3)	0°		Permanent Grassland		ATO		1516 day °C		River Gravel		
JOB NO		DATE	GRID REFERENCE		DESCRIBED BY		FC Days		176		SOIL SAMPLE REFERENCES		
62 94		19 5 94	ST 161288		P Barnett/H Lloyd Jones		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 Cones	Structure Ped Development Size and Shape	Consistence	Structural Condition	Pores (Fissures)	Roots Abundance and Size	Calcium Carbonate Content	Horizon Boundry Distinctness and form
1	30	MCL	75YR43	1% >2cm 11% <2cm 12% HR (S+D)	0	0					MF VF	0	Clear smooth
2	60	C	5YR46 (PF) 5YR54	5% HR (Vis)	CFFOM	F	MCSAB	FM	P	G	CF VF	0	Wavy smooth*
3	105+	CSL	5YR64	15% >2cm 45% <2cm 60% HR (S+D)	MDFOM	0	Too stony	Fr	M (assumed)	G	F VF	0	

Profile Glevelled From 30

Depth to Slowly Permeable Horizon No SPL

Wetness Class II

Wetness Grade 3a

VP336 13

Available Water Wheat 114 mm

Potatoes 101 mm

Moisture Deficit Wheat 101 mm

Potatoes 92 mm

Moisture Balance Wheat 13 mm

Potatoes 9 mm

Droughtiness Grade 2 (Calculated to 120 cm)

Final ALC Grade 3a

Main Limiting Factor(s) Wetness

Remarks

* Random clay lenses within H2 some of which may be a local SPL