10/95

TAUNTON DEANE LOCAL PLAN

AGRICULTURAL LAND CLASSIFICATION 1995

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AGRICULTURAL LAND CLASSIFICATION SURVEY

SUMMARY

The survey was conducted by ADAS on behalf of MAFF as part of its statutory role in the preparation of the Taunton Deane Local Plan

New fieldwork was at semi detailed density and was carried out in March and April 1995 This has been combined with the results of previous ALC surveys where relevant and the distribution of grades is shown on the accompanying composite ALC map at a scale of 1 25 000 This information may also be shown at 1 10 000 scale but any further enlargement would be misleading Areas are summarised below

Distribution of ALC grades Taunton 1995 Composite

Grade	Area (ha)	% of Survey Area	% of Agricultural Land (2708 3 ha)
1	251 4	6 9	9 3
2	875 1	24 2	32 3
3a	911 4	25 2	33 7
3b	590 0	16 3	21 8
4	79 1	2 2	2 9
Urban	618 2	17 1	
Non Agricultural	164 4	4 5	
Agricultural Buildings	45 3	1 3	
Open Water	15 6	0 4	
Not surveyed	72 7	2 0	
TOTAL	3623 2		

57% of the agricultural land was found to be best and most versatile with minor and moderate limitations of droughtiness wetness and workability causing downgrading to Grades 2 and 3a More serious moderate and severe limitations of wetness and workability caused downgrading to Subgrade 3b and Grade 4

1 INTRODUCTION

An Agricultural Land Classification (ALC) Survey was carried out by ADAS in March and April 1995 of land around Taunton This was on behalf of MAFF as part of its statutory role in the preparation of the Taunton Deane Local Plan and was intended to fill gaps between previous survey areas to provide comprehensive ALC information on the land surrounding Taunton town

New fieldwork covering approximately 2240 ha of agricultural land was at semi detailed density with approximately one boring per 2 hectares of agricultural land A total of 1116 auger borings were examined and 54 soil profile pits used to assess subsoil conditions

The published provisional one inch to the mile ALC maps of the area (MAFF 1971 and 1974) show ALC grades at a reconnaissance scale as mainly Grade 3 with some Grade 2 to the south and north of the town and a small area of Grade 1 around Cheddon Fitzpaine However it does not show the areas of Grades 1 and 2 found by the latest survey around Silk Mills and Norton Fitzwarren

Previous ALC surveys are shown on the attached location plan Where these had used the Revised Guidelines and Criteria for Grading the Quality of Agricultural Land (MAFF 1988) the results have been included in the composite ALC map with only minor amendments possibly at the edge of a survey area Earlier surveys prior to 1989 have largely been resurveyed and the results of these surveys may have been extensively revised

Although the accompanying map and the relevant summary of areas combine information from previous surveys with the latest survey the remaining text of this report refers mainly to the latest fieldwork Commentary on previous surveys may be obtained by reference to the appropriate report

For operational reasons the survey area was divided into 3 sites North West (8 95) East (9 95) and South West (10 95) and the survey data has been recorded under these numbers as shown on the Sample Point Map for each site However as these site boundaries have little significance for ALC this report treats the new survey area as a whole

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 by 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 specimen results shown in Table 1 indicate there is no overall climatic limitation However there is a relevant boundary of 175 Field Capacity Days which runs approximately from Rumwell through Trull to Shoreditch This has been located precisely and has been used in the analysis of survey data to grade each soil observation

Table 1 Climatic Interpolations Taunton ALC 1995

Grid Reference		ST195245	ST230275	ST255237	ST210220
Altitude (m)		35	50	21	50
Accumulated Temperature (day)		1539	1520	1554	1523
Average Annual Rainfall (mm)		791	780	761	848
Overall Climatic Grade		1	1	1	1
Field Capacity Days		170	168	164	180
Moisture deficit (mm)	Wheat	106	104	111	103
	Potatoes	99	96	106	95

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 RELIEF AND LANDCOVER

Altitude ranges from 10 to 70 m AOD Slopes are mainly gentle to moderate with only very small areas which have strong or steeper slopes

Landcover at the time of survey was mainly grass and cereals with small areas of potatoes and fruit Although arable cropping occurs throughout the survey area it is perhaps most commonly found to the north of the town particularly around Cheddon Fitzpaine where much of the land under potatoes is found

Most of the land surveyed was in productive agricultural use with very little evidence of land which is abandoned or under utilised due to urban fringe problems

4 GEOLOGY AND SOILS

The geology of the area is shown on the published 1 50 000 scale geology maps for Wellington Sheet 311 and for Taunton Sheet 295 published by the British Geological Survey 1976 and 1984 These show the area to be mainly underlain by deposits of the Mercia Mudstone Group (Keuper marl) with variable and scattered deposits of valley gravel or river deposits and with alluvium along the main watercourses The latest ALC survey has shown that significant deposits of valley gravel are perhaps more widespread on the north side of Taunton than would be indicated on the published map

Soils were mapped by the Soil Survey of England and Wales in 1983 at a reconnaissance scale of 1 250 000 This shows much of the area particularly to the south of Taunton as Worcester Association with soils of the Newnham and Whimple 3 Associations to the north of the town and with Fladbury 1 and Compton Associations on the alluvial deposits of the main river flood plains

Worcester Association soils are described as slowly permeable non calcareous and calcareous reddish clayey soils over mudstone shallow on steeper slopes Associated with similar non calcareous fine loamy over clayey soils Slight risk of water erosion

Newnham Association soils are described as well drained reddish coarse and fine loamy soils over gravel locally deep with some similar soils affected by groundwater

Whimple 3 Association is described as reddish fine loamy or fine silty over clayey soils with slowly permeable subsoils and slight seasonal waterlogging Some similar clayey soils on brows Slowly permeable seasonally waterlogged fine loamy and fine silty over clayey soils on lower slopes

Compton Association is described as stoneless mostly reddish clayey soils affected by groundwater Flat land Risk of flooding Fladbury 1 Association is similar but calcareous in places

This distribution was largely borne out by the current survey although this also found extensive areas of the red clay soils typical of the Worcester Association in the north of the survey area where these are not indicated by the published reconnaissance map Where these soils were found in the north they were indistinguishable in ALC terms from those to the south of the town

5 AGRICULTURAL LAND CLASSIFICATION

The distribution of ALC grades is shown on the accompanying ALC map at 1 25 000 scale and is summarised on the table below This information may also be shown at 1 10 000 scale but any further enlargement would be misleading

Table 2 Distribution of ALC grades Taunton 1995 Composite

Grade	Area (ha)	% of Survey Area	% of Agricultural Land (2708 3 ha)
1	251 4	6 9	9 3
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Grade 1

The area shown as Grade 1 around Pyrland is marginal with sand or loamy sand in the lower subsoil and a variable stone content which includes both hard and soft rock as gravel so that the droughtiness calculation hovers around or just above the Grade 2 cut off

The areas of Grade 1 shown around Fideoak and to the west of Norton Fitzwarren are typically deep medium clay loams with no significant wetness limitation This area had not been recognised on the provisional 1 ALC published map

Another new and highly marginal area of Grade 1 is found to the south east of Fitzroy (ASP 81 to 230) This area shows signs of wetness and is also marginal on droughtiness with variable significant stone content and includes occasional Grade 2 profiles

Grade 2

The majority of the land shown as Grade 2 occurs in the north of the survey area where it is limited mainly by droughtiness with a variable stone content mainly small stones of both hard rock and shale Stone contents have been assessed by sieving at pit sites and the figures used in the visual assessment at auger borings Occasional profiles are found to have minor limitations due to wetness or workability

A large area of Grade 2 shown in the flood plain of the River Tone around Silk Mills shows minor limitations of workability with heavy clay loam topsoil textures or due to the risk of flooding The flood risk has been assessed in the light of information provided by Taunton Deane Borough Council in respect of the Back Stream and of the Halse Water/Norton Brook and in the light of information provided by the National Rivers Authority in respect of the River Tone This indicates that only flooding from the River Tone is likely to be significant to ALC grading and it is considered that areas shown as liable to flooding on the published Section 24 Map would not be classified higher than Grade 2 because of the likelihood of very short up to 24 hours duration but possibly frequent winter flooding This area contains many soil profiles which would otherwise be Grade 1

The extensive areas shown as Grade 2 on the Provisional 1 ALC map and in the earlier survey of land to the west of Staplehay (Taunton Appeal Sites 1982) has been much reduced by the latest survey under the Revised Guidelines

Subgrade 3a

Most of the area shown as Subgrade 3a has a moderate limitation due to wetness or workability Soils in the area with a red clay subsoil are frequently shown by detailed examination at pit sites to be Wetness Class II or III due to the presence of a slowly permeable layer occurring at variable depths which in combination with typically a medium clay loam topsoil gives a moderate wetness limitation However both lighter and heavier topsoil textures do occur in this subgrade and the presence of wetter climatic conditions as indicated by the higher Field Capacity Days in the extreme south west of the area means that even minor to moderate wetness limitations are additionally significant and lead to a more severe downgrading of land quality In this area it is possible for a Wetness Class I profile to be found with heavy clay loam topsoil which would be Subgrade 3a on workability

The Subgrade 3a mapping unit to the west of Staplehay shown by previous survey to be Grade 2 now includes several Grade 2 profiles although these do not form a substantiated and contiguous unit

Small areas particularly in the north of the site have a moderate limitation of droughtiness due to higher contents of small stones

Subgrade 3b

Land shown as Subgrade 3b has a more serious moderate limitation mainly due to wetness with a combination of Wetness Class due to a slowly permeable layer in the clay subsoil in combination with a heavier topsoil texture This subgrade is found mainly on soils of the Worcester Association where native Keuper Marl is found in the absence of superficial river gravel deposits or occasionally in areas of clay flood plain alluvium

Grade 4

Apart from minor areas assessed as Grade 4 due to moderately steep slopes which are indeed rare much of the Grade 4 occurs in the extreme south west of the area where under the published Guidelines Wetness Class IV in combination with heavy clay loam topsoil texture leads to assessment as ALC Grade 4 which implies a severe limitation due to wetness This grade occurs mainly at the tops of hills throughout the south of the area where raw clay soils are assessed as described However in many cases there is little or no evidence of actual wetness such as when a red clay soil with SPL is assessed by reference to Figure 7 and this is widely felt to indicate a limitation more serious than would be felt in farming practice and that these areas are not comparable with other areas classed as Grade 4

Other Land

Urban land includes areas developed since the base map was published and the Vivary Park Golf Course with extensive bunkers It also includes retail garden centres

Non agricultural land includes urban open space and sports fields where the topsoil is believed to be intact and small areas of woodland

Areas not surveyed include the Ministry of Defence land at Norton Camp and one area at Courtlands Farm where access was refused

Resource Planning Team
Taunton Statutory Unit
May 1995

APPENDIX 1

REFERENCES

BRITISH GEOLOGICAL SURVEY (1976 and 1984) Sheet 295 Taunton (Solid and Drift) Sheet 311 Wellington (Drift edition) 1 50 000 scale

MAFF (1971 and 1974) Agricultural Land Classification Map Sheets 164 and 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

NATIONAL RIVERS AUTHORITY Wessex Division Land Drainage Survey Report Somerset Local Land Drainage District Water Act 1973 Section 24(5)

ADAS Resource Planning Group ADAS Bristol Reports of survey for the following areas

In preparation Taunton Deane Local Plan Objector sites currently under survey

12 95 Land west of Bishops Hull Road
11 95 Long Run Farm Bishops Hull

August 1994 Taunton Deane Local Plan ALC

78 94 Staplegrove
77 94 Creech St Michael
76 94 Sherford
74 94 Ruishton
74 94 Maidenbrook Farm

May 1994 Taunton Deane Local Plan ALC

41 94 Trull various sites
61 94 Pyrland

February 1994 Taunton Deane Local Plan ALC

17 94 Creech Heathfield
16 94 Monkton Heathfield
15 94 Comeytrowe

Unpublished Reports of Survey and maps for the following areas

138 89 Hankridge Farm
13 89 Comeytrowe Manor
Norton Fitzwarren
Pool Farm
Priorswood
Staplegrove
13 87 Taunton Local Plan sites
51 Taunton and West Somerset Road Routes
52 Taunton Appeal Sites
Bishops Hull
Staplegrove
Staplehay

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

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 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)