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South Somerset Local Plan
Castle Cary 1996
Agricultural Land Classification

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SOUTH SOMERSET LOCAL PLAN CASTLE CARY

AGRICULTURAL LAND CLASSIFICATION

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SOUTH SOMERSET LOCAL PLAN CASTLE CARY

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 covered two sites at Ansford Bridge to the north of Castle Cary and Abbey Gardens to the south It was completed in January 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 map and summarised below Information is correct at this scale but could be misleading if enlarged

Distribution of ALC grades Ansford Bridge

Grade	Area (ha)	% of Survey Area	% of Agricultural Land (19 5 ha)
2	3 8	19 5	19 5
3b	15 7	80 5	80 5
TOTAL	19 5		

Only 19% of the agricultural land surveyed was found to best and most versatile mainly Grade 2 with minor limitations due to wetness and workability

Distribution of ALC grades Abbey Gardens

Grade	Area (ha)	% of Survey Area	% of Agricultural Land	(16 2 ha)
2	12 3	75 0	75 9	
Not surveyed	3 9	23 8	24 1	
Other Land	0 2	1 2		
TOTAL	16 4			

All of the agricultural land surveyed was found to be best and most versatile Grade 2 with only minor limitations due to workability

1 INTRODUCTION

An Agricultural Land Classification (ALC) Survey was carried out in January 1996 at two sites at Castle Cary on behalf of MAFF as part of its statutory role in the preparation of the South Somerset Local Plan The fieldwork covering 35 9 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 36 auger borings were examined and 3 soil profile pits used to assess subsoil conditions

The published provisional one inch to the mile ALC map of this area (MAFF 1972) shows the grades of the sites based on reconnaissance survey at that time

Parts of the area were also surveyed in 1983 at a scale of 1 10 000 but the recent survey supersedes these previous surveys 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 Tables 1 and 3 indicate there is no overall climatic limitation at these sites

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 ANSFORD BRIDGE SITE

3 1 19 5 hectares of land at Ansford Bridge on the north side of Castle Cary was surveyed in January 1996 by examining a total of 22 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 Ansford Bridge

Grid Reference		ST 632 335	ST 638 338
Altitude (m)		40	40
Accumulated Temperature (day)		1520	1519
Average Annual Rainfall (mm)		796	798
Overall Climatic Grade		1	1
Field Capacity Days		172	172
Moisture deficit (mm)	Wheat	106	105
	Potatoes	99	98

3 3 Relief and Landcover

Altitude ranges from 38 to 45 m AOD Much of the land is virtually level flood plain and slopes are not limiting

At the time of survey land cover was mainly ley grass to the west and maize stubble to the east of the main road

3 4 Geology and Soils

The geology of the site is shown on the published 1 50 000 scale Solid and Drift Geology Map (Institute of Geological Sciences 1973) This indicates mainly Alluvial River Terraced deposits with Lower Lias clay and limestone on higher slopes mainly above the site The current survey found mainly alluvial clay over much of the site strongly influenced by the Lias Clay above A small area of river terrace gravel was found at the north eastern corner of the site

The soils were mapped by the Soil Survey of England and Wales in 1983 at a reconnaissance scale of 1 250 000 This indicates mainly Badsey 1 Association in the east of the site with Oxpasture Association in the west of the site Badsey 1 is described as well drained calcareous and non calcareous fine loamy soils over limestone gravel whereas Oxpasture Association is described as fine loamy over clayey and clayey soils with slowly permeable subsoils and slight seasonal waterlogging

This distribution is largely borne out by the current survey althought the Badsey 1 Association developed on river gravel was more limited that had been indicated

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 Ansford Bridge

Grade	Area (ha)	% of Survey Area	% of Agricultural Land (19 5 ha)
2	3 8	19 5	19 5
3b	15 7	80 5	80 5
TOTAL	19 5	100 0	100 0

Grade 2

This mapping unit is found as a fringe of better drained soils mainly Wetness Class II whereas good drainage induced by the river level some several metres below field level This mapping unit also contains some Grade 1 borings with medium clay loam topsoil and some with heavey clay loam topsoil limited only by a slight workability limitation Transitional Subgrade 3a profiles were also found at the edge of this mapping unit

Subgrade 3b

Most of the site was found to be Subgrade 3b mainly Wetness Class IV giving a more serious moderate wetness limitation with medium clay loam or heavy clay loam topsoil textures These wetter soils are illustrated by pit 2

In the north east of the site a small area underlain by river gravel was found to be limited by droughtiness to Subgrade 3b The stone content at pit 1 was assessed by sieving

Althought previous surveys indicate Grade 2 running down to the railway which bounds the south side of this site no evidence was found during the current survey of any better quality land along the southern edge of this site Therefore the railway and main road together up to 100 m wide have been taken as the grade boundary

4 ABBEY GARDENS, CASTLE CARY

4 1 An area of 10 hectares at Abbey Gardens Castle Cary was surveyed in January 1996 A total of 14 auger borings were examined and 1 soil profile pit was used to assess subsoil conditions The published provisional 1 inch to the mile ALC map of the area (MAFF 1972) shows the whole site at a reconnaissance scale to be Grade 1

4 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 3 Climatic Interpolations Abbey Gardens

Grid Reference		ST 636 313	ST 640 313
Altitude (m)		105	130
Accumulated Temperature (day)		1447	1418
Average Annual Rainfall (mm)		853	882
Overall Climatic Grade		1	1
Field Capacity Days		180	185
Moisture deficit (mm)	Wheat	97	93
	Potatoes	87	81

4 3 Relief and Landcover

The site occupies land on a west facing slope to the south of Castle Cary It rises from 100 m Above Ordnance Datum (AOD) on the western edge to 135 m AOD on the eastern edge The land is gently sloping with all gradients being less than 7° At the time of the survey the two fields involved were being used for fodder crops and permanent pasture

4 4 Geology and Soils

The geology of the site is shown on the published geology map (Institute of Geological Sciences 1973) as being mainly Upper Lias Yeovil Sands of the Upper Lias period

The soils were mapped by the Soil Survey of England and Wales in 1983 at a reconnaissance scale of 1 250 000 Most of the site is shown to consist of soils from the South Petherton Association They are being deep well drained silty soils sometimes over soft rock

The soils found during the current survey were clay loams over sandy loam and clay loam subsoils They were all deep and well drained

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 Abbey Gardens

Grade	Area (ha)	% of Survey Area	% of Agricultural Land	(16 2 ha)
2	12 3	75 0	75 9	
Not surveyed	3 9	23 8	24 1	
Other Land	0 2	1 2		
TOTAL	16 4			

Grade 2

All of the agricultural land surveyed in the site is mapped as Grade 1 with a minor workability limitations The profiles have medium clay loam topsoils over medium clay loam and fine sandy loam subsoils The profiles are all deep and well drained and are assessed as Wetness Class I (see Appendix 3) The workability limitation is due to the medium clay loam topsoils and the local Field Capacity Days value of 183

Other Land

A small area of land on the northern edge of the site was not in agricultural use at the time of the survey and was therefore not surveyed

Resource Planning Team
Taunton Statutory Unit
January 1996

APPENDIX 1

REFERENCES

ADAS RESOURCE PLANNING TEAM ADAS Bristol Reports of Survey for Agricultural Land Classification (1983) Castle Cary Scale 1 10 000
(1992) South Somerset Local Plan Castle Cary Scale 1 10 000
(1995) South Somerset Local Plan Castle Cary Scale 1 10 000

INSTITUTE OF GEOLOGICAL SCIENCES (1973) Solid and Drift Edition Sheet 296 Glastonbury 1 50 000 scale

MAFF (1972) Agricultural Land Classification Map Sheet 166 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

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)

SITE NAME	PROFILE NO	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Abbey Gardens Castle Cary	Pit 1 (Asp 6)	1° East	Bare Soil	Av Rainfall 882 mm ATO 1418 day °C FC Days 183 Climatic Grade 1 Exposure Grade	Upper Lias mainly sand
JOB NO	DATE	GRID REFERENCE	DESCRIBED BY		SOIL SAMPLE REFERENCES
72/95	15/1/96	ST 639313	HLJ		RPT/HLJ/192

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	32	MCL	10YR54	none	none	none				Good	CF + VF		Clear smooth
2	75	FSL	10YR56	none	none	none	MCSAB	Friable	Moderate	Good	FVF		Gradual smooth
3	100+	FSL	10YR76 75YR58	none	none	none	WCSAB	Friable	Good	Good	FVF		
4													

Profile Gleyed From Not gleyed

Depth to Slowly Permeable Horizon No SPL

Wetness Class I

Wetness Grade 2

Available Water	Wheat	199 mm
	Potatoes	126 mm
Moisture Deficit	Wheat	95 mm
	Potatoes	84 mm
Moisture Balance	Wheat	106 mm
	Potatoes	45 mm
Droughtiness Grade	1	(Calculated to 120 cm)

Final ALC Grade 2

Main Limiting Factor(s) Workability

Remarks