

39/95

**South Somerset Local Plan
Yeabridge, South Petherton**

Agricultural Land Classification

*Prepared for MAFF by
N. A Done
ADAS Statutory Unit
Bristol*

SOUTH SOMERSET LOCAL PLAN
YEABRIDGE, SOUTH PETHERTON
AGRICULTURAL LAND CLASSIFICATION

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SOUTH SOMERSET LOCAL PLAN

YEABRIDGE, SOUTH PETHERTON

AGRICULTURAL LAND CLASSIFICATION SURVEY

SUMMARY

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

Distribution of ALC grades: Yeabridge

Grade	Area (ha)	% of Survey Area	% of Agricultural Land (29.5 ha)
1	29.5	77.8	100.0
Urban	5.9	15.6	0.0
Non Agricultural	2.5	6.6	0.0
TOTAL	37.9	100.00	100.00

All the agricultural land is of excellent quality and assessed as Grade 1. The deep well drained fine sandy silt loam profiles are moisture retentive, workable and impose no significant limitation on the agricultural use of the land.

1. INTRODUCTION

An Agricultural Land Classification (ALC) Survey was carried out in July 1995 at Yeabridge, South Petherton on behalf of MAFF as part of its statutory role in the preparation of the South Somerset Local Plan. The fieldwork covering 37.9 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 31 auger borings were examined and 2 soil profile pits used to assess subsoil conditions.

The published provisional one inch to the mile ALC map of this area (MAFF 1974) shows the grade of the site at a reconnaissance scale to be Grade 1 across the entire site.

The recent survey supersedes this map having been carried out at a more detailed level and using the Revised Guidelines and Criteria for grading the quality of agricultural land (MAFF 1988). These guidelines provide a framework for classifying land according to the extent to which its physical or chemical characteristics impose long-term limitations on agricultural use. The grading takes account of the top 120 cm of the soil profile. A description of the grades used in the ALC system can be found in Appendix 2.

2. CLIMATE

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

Estimates of climatic variables were interpolated from the published agricultural climate dataset (Meteorological Office 1989). The parameters used for assessing overall climate are accumulated temperature, a measure of the relative warmth of a locality, and average annual rainfall, a measure of overall wetness. The results shown in Table 1 indicate there is no overall climatic limitation.

Table 1: Climatic Interpolations: Yeabridge

Grid Reference	ST 440 160
Altitude (m)	36
Accumulated Temperature (day °)	1537
Average Annual Rainfall (mm)	771
Overall Climatic Grade	1
Field Capacity Days	166
Moisture deficit (mm):	
Wheat	106
Potatoes	99

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

The site occupies a gentle south easterly facing slope of between 51 and 31m AOD. At the time of survey the land was growing maize, barley and soft fruits.

4. GEOLOGY AND SOILS

The geology of the site is shown on the published 1:50,000 scale solid and drift geology map, sheet 312, (Institute of Geological Sciences 1973). This map shows the entire site to comprise Yeovil sands of the Upper Lias beds.

The soils were mapped by the Soil Survey of England and Wales in 1983 at a reconnaissance scale of 1:250,000. The mapped association is South Petherton which is described as deep well drained silty soils, some over soft rock and at risk from water erosion.

The soils found during the recent survey comprise fine sandy silt loam topsoils over deep well drained and stone-free clay loam and sandy silt loam subsoils. These occurred with little variation across the whole site.

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: Yeabridge

Grade	Area (ha)	% of Survey Area	% of Agricultural Land (29.5 ha)
1	29.5	77.8	100.0
Urban	5.9	15.6	0.0
Non Agricultural	2.5	6.6	0.0
TOTAL	37.9	100.00	100.0

Grade 1

All the agricultural land comprises deep well drained and moisture retentive profiles. In some areas the lower subsoils (below 60cm) are gleyed, as indicated by paler colours and ochreous mottling, however no evidence was found for a slowly permeable layer within 80cm so these soils are assessed as Wetness Class I (see Appendix 3) Grade 1.

Urban and Non-agricultural land

Areas of allotments and a large garden are shown as non-agricultural land on the accompanying map. Roads and residential areas are shown as urban.

Resource Planning Team
Taunton Statutory Unit
September 1995

APPENDIX 1

REFERENCES

INSTITUTE OF GEOLOGICAL SCIENCES (1975) Solid and Drift Edition, Sheet 312, Yeovil

MAFF (1974) Agricultural Land Classification Map, Sheet 177, Provisional 1:63,360 scale.

MAFF (1988) Agricultural Land Classification of England and Wales (Revised Guidelines and Criteria for grading the quality of agricultural land), Alnwick.

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

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

APPENDIX 2

DESCRIPTION OF GRADES AND SUBGRADES

Grade 1 - excellent quality agricultural land

Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly include top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.

Grade 2 - very good quality agricultural land

Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1.

Grade 3 - good to moderate quality agricultural land

Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where more demanding crops are grown yields are generally lower or more variable than on land in Grades 1 and 2.

Subgrade 3a - good quality agricultural land

Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.

Subgrade 3b - moderate quality agricultural land

Land capable of producing moderate yields of a narrow range of crops; principally cereals and grass, or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.

Grade 4 - poor quality agricultural land

Land with severe limitations which significantly restrict the range of crops and/or level of yields. It is mainly suited to grass with occasional arable crops (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 Yeabridge		PROFILE NO. Pit 1 (ASP 23-24)	SLOPE AND ASPECT 2° South East	LAND USE Parsnips	Av Rainfall: 771 mm ATO: 1537 day °C FC Days: 166 Climatic Grade: 1 Exposure Grade: 1	PARENT MATERIAL Yeovil Sands
JOB NO. 43/95		DATE 14/7/95	GRID REFERENCE ST 438 159	DESCRIBED BY NAD/HLJ		SOIL SAMPLE REFERENCES HLJ/166 + 168

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	30	FSZL	10YR44	None	None	None	-	-	-	Good	FF+VF	-	Gradual Smooth
2	60	FSZL	10YR54	None	FFO&GM 10YR53 75YR44	None	MDCAB	Friable	M	Good	CF+VF	-	Gradual Smooth
3	100	SCL	2.5YR53	None	MDOM 10YR58	None	MDCSAB	Friable	M	Good	FF+VF	-	-

Profile Gleyed From: 60

Depth to Slowly Permeable Horizon: No SPL

Wetness Class: I

Wetness Grade: I

Available Water Wheat: 183 mm

Potatoes: 144 mm

Moisture Deficit Wheat: 106 mm

Potatoes: 99 mm

Moisture Balance Wheat: 77 mm

Potatoes: 45 mm

Droughtiness Grade: 1 (Calculated to 120 cm)

Final ALC Grade: 1

Main Limiting Factor(s):

Remarks:

Augered to 120

SITE NAME Yeabridge		PROFILE NO. Pit 2 (ASP 4)	SLOPE AND ASPECT 1° South	LAND USE Maize	Av Rainfall: 771 mm ATO: 1537 day °C FC Days: 166 Climatic Grade: 1 Exposure Grade: 1	PARENT MATERIAL Yeovil Sands
JOB NO. 39/95		DATE 14/7/95	GRID REFERENCE ST 439 162	DESCRIBED BY N A Done		SOIL SAMPLE REFERENCES NAD/244

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	30	FSZL	10YR44	None	None	None	-	-	-	-	Many F (much ploughed in Organic matter)	-	Clear / Smooth
2	90	MCL	10YR46	None	None	None	MDCAB	Friable	M	Good	Many F+VF	-	Gradual /Smooth
3	120	MCL	25Y 54	None	CDOM 10YR68 + 10YR53	None	MDCSAB	Friable	M	Good	Common Fine	-	-

Profile Gleyed From: Slightly gleyed

Depth to Slowly Permeable Horizon: From 90cm

Wetness Class: I

Wetness Grade: I

Available Water Wheat: 168 mm

Potatoes: 130 mm

Moisture Deficit Wheat: 106 mm

Potatoes: 99 mm

Moisture Balance Wheat: 62 mm

Potatoes: 31 mm

Droughtiness Grade: 1 (Calculated to 120 cm)

Final ALC Grade: 1

Main Limiting Factor(s): -

Remarks: Pit dug to 100cm and Augered to 120cm