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Odstock Road, Odstock, Wiltshire

AGRICULTURAL LAND CLASSIFICATION
REPORT OF SURVEY

Resource Planning Team
Taunton Statutory Unit

November 1993

ADAS

ODSTOCK ROAD, ODSTOCK, WILTSHIRE

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Report of Survey

1. INTRODUCTION

Forty five hectares of land west of Odstock Road, Odstock, Wiltshire were surveyed using the Agricultural Land Classification (ALC) System in November 1993. The survey was carried out for MAFF as part of its statutory role in connection with a planning application made to Salisbury District Council.

The fieldwork was carried out by ADAS (Resource Planning Team, Taunton Statutory Unit) at a scale of 1:10,000. The information is correct at this scale but any enlargement would be misleading. The distribution of grades identified in the survey area are detailed below and illustrated on the accompanying ALC map.

Distribution of ALC grades: Odstock Road Odstock

Grade	Area (ha)	% of Survey Area	% of Agricultural land
3a	45.5	100	100
TOTAL	45.5	100	100

The entire site was found to of best and most versatile quality. The site is mapped as Subgrade 3a. The heavy silty clay loam topsoils impose a workability limitation. Chalk was found at varying depths.

2. INTRODUCTION

Forty five hectares of land west of Odstock Road, Odstock, Wiltshire were surveyed using the Agricultural Land Classification (ALC) System in November 1993. The survey was carried out for MAFF as part of its statutory role in connection with a planning application made to Salisbury District Council.

The fieldwork was carried out by ADAS (Resource Planning Team, Taunton Statutory Unit) at a scale of 1:10,000 (approximately one sample point every hectare). The information is correct at this scale but any enlargement would be misleading. A total of 44 auger sample points and one soil profile pit were examined.

The published Provisional one inch to the mile ALC map of this area (MAFF 1971) shows the site to be Grade 3 in the north and Grade 2 in the south on the lower land. 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 120cm 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 because it can have an overriding influence on restricting land to a lower grade despite other favourable conditions.

Estimates of climatic variables were obtained for the site by interpolation from the Agricultural Climate Dataset (Meteorological Office 1989). The data are shown in Table 1.

The parameters used for assessing overall climatic limitations are accumulated temperature, (a measure of the relative warmth of a locality) and average annual rainfall, (a measure of overall wetness). The values for site show there is no overall climatic limitation. 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 later sections. Descriptions of the Wetness Classes used can be found in Appendix 3.

No local climatic limitations were noted.

Table 1 Climatic Limitations: Odstock Road, Odstock

Grid Reference	SU 143 277	SU 142 271
Altitude (m)	96	55
Accumulated Temperature (deg days)	1447	1494
Average Annual Rainfall (mm)	838	813
Overall Climatic Grade	1	1
Field Capacity (days)	183	179
Moisture Deficit, Wheat (mm)	100	106
Potatoes (mm)	91	99

4. RELIEF AND LANDCOVER

The survey area is on the valley side sloping to the south west. There are no slopes which are limiting to agricultural use. The highest point in the north is at 96m AOD and the lowest point in the south is a 55m AOD.

At the time of survey the west of the site was under a grass ley whilst the rest of the site was fallow.

5. GEOLOGY AND SOILS

The geology of the site is shown on the published 1:50,000 scale drift geology map, sheet 298 (Geological Survey of England and Wales 1976). Similarly the soils were mapped by the Soil Survey of England and Wales in 1983 at a reconnaissance scale of 1:250,000.

The geology of the site is Cretaceous Upper Chalk. This is a soft chalk with flints.

The entire site has been mapped as the Andover 1 Soil Association. Andover 1 soils are described as shallow well drained calcareous silty soils over chalk on slopes and crests.

The recent survey found soils typical of the Andover 1 Association

6. AGRICULTURAL LAND CLASSIFICATION

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

Table 2 Distribution of ALC grades: Odstock Road, Odstock

Grade	Area (ha)	% of Survey Area	% of Agricultural land
3a	45.5	100	100
TOTAL	45.5	100	100

Subgrade 3a

The entire site has been mapped as Subgrade 3a. These soils are well drained and are Wetness Class I. The topsoils are heavy silty clay loam in texture. There is sometimes a heavy silty clay loam subsoil over the chalk. The depth to the chalk was found to be variable across the site. The soils do not have a droughtiness limitation greater than Subgrade 3a. In a soil profile pit roots were observed in the chalk in large numbers to 70cm and then fewer to depth. The soils are calcareous. The heavy silty clay loam soil has chalk and flint stones in it. The main limitation to the soils is workability caused by the combination of the topsoil texture and the number of days that the soil is at field capacity.

APPENDIX 1

REFERENCES

GEOLOGICAL SURVEY OF ENGLAND AND WALES (1976) Drift edition. Sheet 298 Salisbury 1:50,000 scale

MAFF (1971) Agricultural Land Classification Map sheet 167 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) 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

APPENDIX 2

DESCRIPTION OF THE 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 Gradeá1.

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 land cover types, eg buildings in large grounds, and where map scale permits, the cover types 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 70cm depth for more than 30 days in most years.

Wetness Class II

The soil profile is wet within 70cm depth for 31-90 days in most years or, if there is no slowly permeable layer within 80cm depth, it is wet within 70cm for more than 90 days, but not wet within 40cm depth for more than 30 days in most years.

Wetness Class III

The soil profile is wet within 70cm depth for 91-180 days in most years or, if there is no slowly permeable layer within 80cm depth, it is wet within 70cm for more than 180 days, but only wet within 40cm depth for between 31 and 90 days in most years.

Wetness Class IV

The soil profile is wet within 70cm depth for more than 180 days but not within 40cm depth for more than 210 days in most years or, if there is no slowly permeable layer within 80cm depth, it is wet within 40cm depth for 91-210 days in most years.

Wetness Class V

The soil profile is wet within 40cm depth for 211-335 days in most years.

Wetness Class VI

The soil profile is wet within 40cm 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
Odstock Rd	Pit 1	3° South	Set aside	Av Rainfall: 813 mm ATO: 1494 deg FC Days: 179 Climatic Grade: 1	Upper Chalk
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY		
101/93	18/11/93	ASP 21	GMS/HLJ		

Horizon Number	Lowest Av Depth (cm)	Matrix and Ped Face Colours	Texture	Stoniness: Size, Shape, Type, and Field Method	Mottling Abundance, Contrast, Size and Colour	Structure: Development Size and Shape	Pores and Fissures	Structural Condition	Consistence	Roots: Abundance, Size and Nature	Calcium Carbonate Content	Mangan Concs etc	Horizon Boundary: Distinctness and form
1	20	10YR53	HZCL	<1% >2cm HR + CH 20% >2 mm Total: 21% HR+CH	None	WFSAB	Good	-	V Friable	Common medium many fine + v fine	Yes	none	Smooth abrupt
2	80+	Chalk >70%	Well featured to depth forming stones up to 5 cm in size with light soil staining around each one even to depth. Large root masses to 70 cm then fewer v. fine roots to depth.										

Profile Gleyed From: not gleyed

Depth to Slowly Permeable Horizon: no SPL

Wetness Class: I

Wetness Grade: 3a

Available Water Wheat: 71)

Potatoes: 71)

Moisture Deficit Wheat: 106) Using 10% HR and 11% in the topsoil

Potatoes: 99)

Moisture Balance Wheat: -35)

Potatoes: -28

Droughtiness Grade: 3B

Final ALC Grade: 3B

Main Limiting Factor(s): Droughtiness

Remarks:

Soil lens extending to 45cm on one side of pit.

Soil pit dug at shallowest site of chalk. Rest of site will be 3A droughtiness.

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