

# AGRICULTURAL LAND CLASSIFICATION

Milton Local Plan, Milton,  
Oxfordshire.



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MILTON LOCAL PLAN, OXFORDSHIRE

1. BACKGROUND

1.1 The 5.6 hectare site lies to the west of Didcot and to the south of Milton. The area is bounded to the north a railway line, to the east and south by the A4130, and to the west by the A34(T).

1.2 The area was surveyed on the 3rd December 1991 using 1.2 m Dutch soil augers with samples being taken at approximately 100 m intervals across the site. In addition a soil pit was examined to enable more detailed soil descriptions.

Land-use

1.3 At the time of survey the site had recently been ploughed.

2. PHYSICAL FACTORS AFFECTING LAND QUALITY

Relief

2.1 The altitude of the site is approximately 60 m A.O.D. The land is almost flat, with slight falls north, towards the railway line. No where on the site does gradient or altitude represent a significant limitation in terms of agricultural land quality.

Climate

2.2 Estimates of climatic variables were obtained by interpolation from a 5 km grid database (Met Office 1989) for a representative location in the survey area.

### Climatic Interpolation

Grid Reference	SU 487 915
Altitude (m AOD)	60
Accumulated temperature (° day Jan - June)	1552
Annual average rainfall (mm)	587
Field capacity days	124
Moisture deficit wheat (mm)	116
Moisture deficit potatoes (mm)	111

2.3 The important parameters in assessing an overall climatic limitation are average annual rainfall (a measure of overall wetness) and accumulated temperature (a measure of the relative warmth of a locality). Although average annual rainfall is relatively low in a national context, there is no overall climatic limitation affecting the land quality of this site. However climatic factors do affect interactive limitations between soil and climate, namely soil wetness and droughtiness.

### Geology and Soils

- 2.4 British Geological Survey Sheet 253 Abingdon (1981) shows the area to be underlain by Head and Coombe deposits over Gault Clay.
- 2.5 Soil Survey of England and Wales Sheet 253 Abingdon (1967) shows the site to comprise soils of the Hendred Series. These soils are described as "Surface Water Gleys which are identified as fine loamy or silty upper horizons, over silty clay or clay (SSEW 1973).
- 2.6 Detailed field examination of the soils indicates that there is one soil type present on the site.
- 2.7 Profiles typically comprise calcareous to non calcareous medium silty clay, or medium clay topsoils with occasional profiles comprising heavy clay loam. These overlie slowly permeable subsoils, of silty clay or clay. All profiles exhibit gleyic features between about 20 and 48 cm and are typically slowly permeable within 48 cm.

### 3. AGRICULTURAL LAND CLASSIFICATION

3.1 The ALC grading of the site is primarily determined by interactions between soil and climatic factors, namely wetness and droughtiness. In accordance with criteria for grading agricultural land (MAFF 1988).

3.2 ALC grade 3a has been mapped at this site.

<u>Grade</u>	<u>Area (ha)</u>	<u>% of total agricultural land</u>
3a	5.6	100
Total Agricultural Area	<u>5.6</u>	
Total Area of Site	<u>5.6</u>	

3.3 Appendix 1 gives a generalised description of the grades and subgrades.

#### Grade 3a

3.4 Land of this quality is mapped throughout the site. Profiles described in section 2.7 are typical of the soils found within this mapping unit.

Drainage imperfections caused by slowly permeable clay horizons, result in the allocation of these profiles to wetness class II and III. The major limitation to this land is wetness and workability restrictions, as a result land can not be graded higher than 3a.

January 1992  
Ref: 3304/030/91

NICOLA SHIRT  
Resource Planning Group  
Reading RO

SOURCE OF REFERENCE

BRITISH GEOLOGICAL SURVEY (1981) Geological Map Sheet 253 Abingdon.

MAFF (1988) Agricultural Land Classification of England and Wales: Revised guidelines and criteria for grading the quality of agricultural land.

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

SOIL SURVEY OF ENGLAND AND WALES (1967) Sheet 253 Abingdon.

SOIL SURVEY OF ENGLAND AND WALES (1973) Soils of the Wantage and Abingdon District.

# APPENDIX 1

## DESCRIPTION OF THE GRADES AND SUBGRADES

The ALC grades and subgrades are described below in terms of the types of limitation which can occur, typical cropping range and the expected level and consistency of yield. In practice, the grades are defined by reference to physical characteristics and the grading guidance and cut-offs for limitation factors in Section 3 enable land to be ranked in accordance with these general descriptions. The most productive and flexible land falls into Grades 1 and 2 and Subgrade 3a and collectively comprises about one-third of the agricultural land in England and Wales. About half the land is of moderate quality in Subgrade 3b or poor quality in Grade 4. Although less significant on a national scale such land can be locally valuable to agriculture and the rural economy where poorer farmland predominates. The remainder is very poor quality land in Grade 5, which mostly occurs in the uplands.

Descriptions are also given of other land categories which may be used on ALC maps.

### **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 includes 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 moist 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: golf courses, private parkland, 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.

##### **Woodland**

Includes commercial and non-commercial woodland. A distinction may be made as necessary between farm and non-farm woodland.

##### **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.

## APPENDIX 2

### FIELD ASSESSMENT OF SOIL WETNESS CLASS

#### SOIL WETNESS CLASSIFICATION

Soil wetness is classified according to the depth and duration of waterlogging in the soil profile. Six revised soil wetness classes (Hodgson, in preparation) are identified and are defined in Table 11.

Table 11 Definition of Soil Wetness Classes

Wetness Class	Duration of Waterlogging <sup>1</sup>
I	The soil profile is not wet within 70 cm depth for more than 30 days in most years <sup>2</sup> .
II	The soil profile is wet within 70 cm depth for 31-90 days in most years <i>or</i> , 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.
III	The soil profile is wet within 70 cm depth for 91-180 days in most years <i>or</i> , 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.
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 <i>or</i> , 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.
V	The soil profile is wet within 40 cm depth for 211-335 days in most years.
VI	The soil profile is wet within 40 cm depth for more than 335 days in most years.

<sup>1</sup> The number of days specified is not necessarily a continuous period.

<sup>2</sup> 'In most years' is defined as more than 10 out of 20 years.

Soils can be allocated to a wetness class on the basis of quantitative data recorded over a period of many years or by the interpretation of soil profile characteristics, site and climatic factors. Adequate quantitative data will rarely be available for ALC surveys and therefore the interpretative method of field assessment is used to identify soil wetness class in the field. The method adopted here is common to ADAS and the SSLRC.



**ADAS**

FOOD, FARMING, LAND &amp; LEISURE

**MEMORANDUM**

**TO** Allan Smith, LUPU Reading

**FROM** Michelle Leek, RPT Reading

**DATE** 31st January 1996

**SUBJECT** Oxfordshire Structure Plan, Land to the west of Didcot at Milton.

← 3304/001/96.

In the light of the recent survey work carried out by Nick Duncan to the west of Didcot, it has been decided that the grade distribution on a small site surveyed in 1991 should be amended slightly. The site now includes a small unit of Subgrade 3b, whereas it was previously mapped as entirely Subgrade 3a. The 1991 survey did find a single boring of Subgrade 3b in the eastern corner, but it was not considered appropriate to map it out given that it was only one boring in amongst generally better quality land. However, the more recent work by Nick Duncan indicates that the Subgrade 3b land does extend eastwards beyond the 1991 site area. Therefore, in order to edge match the two surveys, the 1991 survey has been amended slightly. I attach two copies of the revised ALC map, one for the MAFF file, and one to send to the appropriate planning authority should you consider it necessary.

Best Wishes,

Michelle.