

**Bolton House Farm OCCS,
Goldthorpe, South Yorkshire
Agricultural Land Classification
October 1996**

**Resource Planning Team
Leeds Statutory Group
ADAS Leeds**

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BOLTON HOUSE FARM, GOLDTHORPE AGRICULTURAL LAND CLASSIFICATION REPORT

Introduction

1 This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 9.2 ha of land at Bolton House Farm. The survey was carried out during August 1996.

2 The survey was commissioned by the Ministry of Agriculture, Fisheries and Food (MAFF) Land Use Planning Unit, Northallerton in connection with a proposal to extract coal by open cast methods. Land is not proposed to be restored to agriculture. The site was surveyed in 1993 for the Barnsley UDP (ref DE 19).

3 The work was conducted by members of the Resource Planning Team in the Leeds Statutory Group in ADAS. The land has been graded in accordance with the published MAFF ALC guidelines and criteria (MAFF, 1988). A description of the ALC grades and subgrades is given in Appendix I.

4 At the time of survey the agricultural land on the site was in grassland. Parts of the site are in non agricultural use - farm buildings and part of a disused brick works.

Summary

5 The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:5,000. It is accurate at this scale but any enlargement would be misleading.

6 The area and proportions of the ALC grades and subgrades on the surveyed land are summarised in Table 1.

Table 1 Area of grades and other land

Grade/Other land	Area (hectares)	% Total site area	% Surveyed Area
Subgrade 3a	4.0	43.5	44.9
Subgrade 3b	4.9	53.2	55.1
Other land	0.3	3.3	-
Total surveyed area	8.9	-	100
Total site area	9.2	100	-

7 The fieldwork was conducted at an average density of one boring per hectare. A total of nine borings and two soil pits were described.

8 Land in the north of the site is Subgrade 3a. Most of this land is subject to a soil wetness limitation although some areas are limited by droughtiness. Remaining land is Subgrade 3b and subject to a significant soil wetness limitation. Two small areas of other land occur, one in the west is part of a disused brickworks and in the east are some farm buildings.

Factors Influencing ALC Grade

Climate

9 Climate affects the grading of land through the assessment of an overall climatic limitation and also through interactions with soil characteristics.

10 The key climatic variables used for grading this site are given in Table 2 and were obtained from the published 5km grid datasets using the standard interpolation procedures (Met Office, 1989).

Table 2 Climatic and altitude data

Factor	Units	Values
Grid reference	N/A	SE 451 041
Altitude	m, AOD	35
Accumulated Temperature	day°C (Jan-June)	1387
Average Annual Rainfall	mm	634
Field Capacity Days	days	132
Moisture Deficit, Wheat	mm	105
Moisture Deficit, Potatoes	mm	97

11 The climatic criteria are considered first when classifying land as climate can be overriding in the sense that severe limitations will restrict land to low grades irrespective of favourable site or soil conditions.

12 The main parameters used in the assessment of an overall climatic limitation are average annual rainfall (AAR), as a measure of overall wetness, and accumulated temperature (AT0, January to June), as a measure of the relative warmth of a locality.

13 The combination of rainfall and temperature at this site means there is no climatic limit on ALC grade.

Site

14 The site has a southerly aspect and moderate to gentle slopes (up to 7°) Altitude ranges from 30 to 40 m A O D

Geology and soils

15 The site is underlain by Carboniferous Coal Measures consisting of interbedded sandstones and shales There is no drift cover on the site (with the exception of localised Head deposits) and the soils have formed directly over weathering bedrock Profiles are typically moderately well to imperfectly drained (falling in Wetness Classes II or III) although well drained (Wetness Class I) and poorly drained profiles (Wetness Class IV) occur in places

16 The soils are generally medium to heavy textured (consisting of medium clay loam topsoils and upper subsoils overlying heavy silty clay loam or silty clay lower subsoils) but light textured subsoils (consisting of medium sandy loam) occur in places

17 The soils on the site correspond to the Bardsey association as mapped by the Soil Survey and Land Resource Centre

Agricultural Land Classification

Subgrade 3a

18 Land in this subgrade occurs in the north of the site Profiles are well to imperfectly drained (falling in Wetness Classes I, II or III) and typically consist of medium clay loam topsoils overlying similarly textured upper subsoils and gleyed heavy silty clay loam or heavy clay loam lower subsoils The lower subsoils form slowly permeable layers and generally begin at around 50 cm depth The ALC grade of this land is limited by soil wetness and a pattern limitation

Where profiles are freely drained the soils have slightly stony medium sandy loam topsoils and subsoils This land is limited to Subgrade 3a by droughtiness

Subgrade 3b

19 This subgrade is found to the south of the 3a land Profiles are poorly drained (Wetness Class IV) and subject to a significant soil wetness and workability limitation

Other land

20 This includes farm buildings in the east and part of the former Goldthorpe Brickworks in the west

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SOURCES OF REFERENCE

British Geological Survey (1976) *Sheet No. 87, Barnsley, Solid and Drift* 1:50,000
BGS London

Ministry of Agriculture, Fisheries and Food (1988) *Agricultural Land Classification of England and Wales: Revised guidelines and criteria for grading the quality of agricultural land* MAFF London

Met Office (1989) *Climatological Data for Agricultural Land Classification*
Met Office Bracknell

Soil Survey of England and Wales (1983) *Sheet 1, Northern England*. 1:250,000
SSEW Harpenden.

Soil Survey of England and Wales (1984) *Soils and their Use in Northern England*
SSEW Harpenden

APPENDIX I

DESCRIPTIONS 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 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 or horticultural crops can usually be grown but on some land of this 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 land.

Grade 3: Good to Moderate Quality Land

Land with moderate limitations which affect the choice of crops, the timing and type of cultivation, harvesting or the level of yield. When 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 the level of yields. It is mainly suited to grass with occasional arable crops (e.g. 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 severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

APPENDIX II

SOIL WETNESS CLASSIFICATION

Definitions of Soil Wetness Classes

Soil wetness is classified according to the depth and duration of waterlogging in the soil profile. Six soil wetness classes are identified and are defined in the table below.

Wetness Class	Duration of waterlogging ¹
I	The soil profile is not wet within 70 cm depth for more than 30 days in most years ²
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 only wet within 40 cm depth for 30 days in most years
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 present within 80 cm depth, it is wet within 70 cm for more than 180 days, but only wet within 40 cm depth for between 31-90 days in most years
IV	The soil profile is wet within 70 cm depth for more than 180 days but not wet within 40 cm depth for more than 210 days in most years or, if there is no slowly permeable layer present 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

Assessment of Wetness Class

Soils have been allocated to wetness classes by the interpretation of soil profile characteristics and climatic factors using the methodology described in *Agricultural Land Classification of England and Wales Revised guidelines and criteria for grading the quality of agricultural land* (MAFF, 1988)

¹ The number of days is not necessarily a continuous period

² 'In most years' is defined as more than 10 out of 20 years