

**LAND NORTH WEST OF MANSFIELD,
NOTTINGHAMSHIRE.
SITE A**

**Agricultural Land Classification
ALC Map and Report**

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**Resource Planning Team
Eastern Region
FRCA Cambridge**

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AGRICULTURAL LAND CLASSIFICATION REPORT

LAND NORTH WEST OF MANSFIELD, NOTTINGHAMSHIRE, SITE A

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of approximately 20 ha of land to the north west of Mansfield, Nottinghamshire, centred on grid reference SK 511 618. The bulk of the survey was carried out during October 1998. A small area to the north of Penniment Lane was surveyed in 1993 and the findings have been incorporated into this report.
2. The survey was carried out by the Farming and Rural Conservation Agency (FRCA) for the Ministry of Agriculture, Fisheries and Food (MAFF), in connection with the Mansfield Local Plan process. This survey supersedes previous ALC information for this land.
3. The work was conducted by members of the Resource Planning Team in the Eastern Region of FRCA. 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 land use on the site was predominantly cereal production. A small field in the south west had recently been ploughed and the small area to the north of Penniment Lane was sown to Oilseed Rape. The areas mapped as 'Other' include Penniment Lane and a small pond in the north west of the site.

SUMMARY

5. The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:10 000; 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)	% surveyed area	% site area
2	2.6	13.0	13.0
3b	17.3	87.0	86.5
Other land	0.1	N/A	0.5
Total surveyed area	19.9	100	100
Total site area	20.0	-	100

7. The fieldwork was conducted at an average density of one boring per hectare. A total of twenty borings and one soil pit was described.

8. The majority of the land within the site consisted of Subgrade 3b quality land (moderate quality agricultural land) with small areas of Grade 2 quality land (very good quality agricultural land) occurring in the north of the site. The limiting factor for the Subgrade 3b quality land was found to be wetness and workability whereas the Grade 2 quality land was restricted by droughtiness and/or climatic limitations.

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	SK 511 618
Altitude	m, AOD	146
Accumulated Temperature	day°C (Jan-June)	1278
Average Annual Rainfall	mm	718
Field Capacity Days	days	163
Moisture Deficit, Wheat	mm	90
Moisture Deficit, Potatoes	mm	76
Overall climatic grade	N/A	Grade 2

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 (ATO, January to June), as a measure of the relative warmth of a locality.

13. The combination of rainfall and temperature at this site mean that agricultural land quality is restricted to a maximum of Grade 2 even if all other factors are favourable.

Site

14. The site is gently undulating with gentle slopes. The land rises slightly in the north west and south to a maximum altitude of approximately 150 m AOD. Therefore there are no relief or gradient limitations to the quality of the agricultural land.

Geology and soils

15. The published 1:63 360 scale geology map of the area (Geol. Survey, 1971) shows the majority of the site to be covered by boulder clay drift. A band of Lower Magnesian Limestone is mapped along the western and northern parts of the site.

16. The 1:250 000 reconnaissance scale soil survey map for the area (Soil Survey, 1983) shows the majority of the site as soils of the Salop Association with a small area in the west and north mapped as the Aberford Association. The Salop Association is briefly described as slowly permeable seasonally waterlogged reddish fine loamy over clayey, fine loamy and clayey soils associated with fine loamy over clayey soils with slowly permeable subsoils and slight seasonal waterlogging. The Aberford Association is described as shallow, locally brashy, well drained calcareous fine loamy soils over limestone with some deeper soils in colluvium.

17. During the current, more detailed survey, two soil types have been identified and are described briefly below.

Soil Type I

18. This soil type covers the majority of the site and consists of a very slightly stony medium or heavy clay loam or occasionally clay textured topsoil overlying a slowly permeable red clay subsoil. Occasionally a thin upper subsoil of reddish or brown heavy clay loam or clay is found

Soil Type II

19. This soil type was very limited in extent and was found only in the north of the site. This soil type was variable but essentially consisted of well drained profiles with a medium clay loam or fine sandy silt loam topsoil usually overlying similar textured or slightly heavier subsoil horizons. The subsoil in turn overlies limestone material.

AGRICULTURAL LAND CLASSIFICATION

20. The details of the classification of the site are shown on the attached ALC map and the area statistics of each grade are given in Table 1, page 1.

21. The location of the auger borings and pits is shown on the attached sample location map.

Grade 2

22. Land of Grade 2 quality is restricted to small areas in the north of the site and is associated with Soil Type II (paragraph 19). Soils are well drained typically being assessed as Wetness Class I, occasionally II. The shallow soils are slightly droughty but equally limiting for areas of Soil Type II is a climatic limitation which restricts all the land within the survey area to a maximum of Grade 2 quality.

Subgrade 3b

23. The majority of the site is of Subgrade 3b quality and is associated with the relatively poorly drained Soil Type I (paragraph 18). This soil type is assessed as Wetness Class IV with a medium clay loam, heavy clay loam or clay textured topsoil and hence under the prevailing climate for the site these factors result in a significant wetness and workability limitation restricting such land to Subgrade 3b.

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SOURCES OF REFERENCE

British Geological Survey (1971) *Sheet No. 112, Chesterfield. Solid and Drift Edition*
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 3, Midland and Western 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.