



Ministry of  
Agriculture  
Fisheries  
and Food

AGRICULTURAL LAND CLASSIFICATION  
DONCASTER UDP  
SITE AT LOVERSALL  
SOUTH YORKSHIRE

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ADAS  
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## SUMMARY

A detailed Agricultural Land Classification (ALC) survey of 56.9 ha of land at Loversall (Doncaster UDP - Site at Loversall) was carried out in November 1995. At the time of survey, 51.3 ha was in agricultural use and 5.3 ha falls in Grade 2. These soils are well or moderately well drained with light to medium-textured topsoils and subsoils. The ALC grade limiting factors are either very slight soil droughtiness or soil wetness.

35.9 ha of land fall in Subgrade 3a. Two main soil types occur within this subgrade. The first consists of well drained soils with medium-textured topsoils and upper subsoils over heavy-textured lower subsoils, with limestone bedrock beginning at around 80cm depth. Soil droughtiness limits the ALC grade of this land. The second main soil type consists of imperfectly drained profiles where organic clay or organic silty clay topsoils overlie gleyed and slowly permeable clay or silty clay subsoils. Soil wetness limits this land to Subgrade 3a.

10.1 ha of land falls in Subgrade 3b. The soils are imperfectly drained with clay topsoils overlying gleyed and slowly permeable clay subsoils. Soil wetness and topsoil workability limitations restrict this land to Subgrade 3b. The remaining land on the site consists of Urban land (2.8 ha), Non-Agricultural land (0.3 ha) and Woodland (2.5 ha).

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AGRICULTURAL LAND CLASSIFICATION REPORT (ALC) ON LAND AT LOVERSALL,  
(DONCASTER UDP), SOUTH YORKSHIRE

1. INTRODUCTION AND SITE CHARACTERISTICS

1.1 Location and Survey Methods

This site lies approximately 3.5km south-south-east of Doncaster town centre, to the north-west of Junction 3 of the M18. Survey work was carried out in November 1995 when the soils were examined by hand auger borings at 100m intervals predetermined by the National Grid. In addition two soil profile pits were dug to allow the soils to be described in greater detail. A number of topsoil samples were also taken to allow the determination of their organic matter content and texture in the laboratory. The land quality was assessed using the methods described in "Agricultural Land Classification of England and Wales. Revised guidelines and criteria for grading the quality of agricultural land" (MAFF, 1988).

1.2 Land Use and Relief

At the time of the survey 90% of the site was in agricultural use, having been recently ploughed, in cereal stubble or under permanent grass. The remaining 10% of the site consists of Woodland, Urban land and Non-Agricultural land. The site altitude varies from 6m AOD in the north and east to 21m AOD in the west. Most of the land is level but in the west the land is gently sloping (2-3°) with a north-easterly aspect.

1.3 Climate

Grid Reference	: SK 581 995
Altitude (m)	: 10
Accumulated Temperature above 0°C (January - June)	: 1415 day °C
Average Annual Rainfall (mm)	: 595
Climatic Grade	: 1
Field Capacity Days	: 123
Moisture Deficit (mm) Wheat	: 110
Moisture Deficit (mm) Potatoes	: 103

#### 1.4 Geology, Soils and Drainage

Most of the site is underlain by deposits of Upper Magnesian Limestone, although in the east and far east the solid geology consists of Permian Marl and Bunter Sandstone respectively.

The Upper Magnesian Limestone outcrops to within 1m of the soil surface in the west of the site, where the soils have developed from weathering limestone or locally derived Head deposits. The soils in these areas are well or moderately well drained, falling in Wetness Classes I and II, with medium sandy loam, medium sandy silt loam, medium clay loam or medium silty clay loam topsoils overlying similar subsoils, although horizons of sandy clay loam, heavy clay loam or clay occur at depth in places.

In the centre and east of the site, the soils have developed in alluvial deposits of glaciolacustrine origin. Generally the soils are imperfectly drained, falling in Wetness Class III, with silty clay or clay topsoils (many of which are organic, as confirmed by laboratory analyses) overlying silty clay or clay subsoils. In the west of this area (north-west of Long Walk Plantation) sandy silt loam, sandy loam, loamy sand or sand subsoils are found.

The 1:25,000 scale soils map for the area (SK59, Maltby) shows the soils as belonging principally to the Bramham, Aberford and Foggathorpe Series.

## 2. AGRICULTURAL LAND CLASSIFICATION

The ALC grades occurring on this site are as follows:

<u>Grade/Subgrade</u>	<u>Hectares</u>	<u>Percentage of Total Area</u>
1		
2	5.3	9.3
3a	35.9	63.1
3b	10.1	17.8
4		
5		
(Sub total)	(51.3)	(90.2)
Urban	2.8	4.9
Non Agricultural	0.3	0.5
Woodland	2.5	4.4
Agricultural Buildings		
Open Water		
Land not surveyed		
(Sub total)	(5.6)	(9.8)
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TOTAL	56.9	100
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## 2.1 Grade 2

An area of Grade 2 land has been mapped in the west of the site. The soils are well or moderately well drained (Wetness Classes I and II) and consist of very slightly stony medium sandy loam or medium silty clay loam topsoils overlying medium sandy loam, medium silty clay loam or medium clay loam subsoils. Occasionally sandy clay loam subsoils occur below 60cm depth and these may be reddish and slowly permeable. The ALC grade of this land is limited by very slight soil droughtiness or, in a few cases, by very slight soil wetness.

## 2.2 Subgrade 3a

Three areas of Subgrade 3a land have been mapped on the site. The westernmost area consists of well drained (Wetness Class I) soils where medium silty clay loam topsoils and upper subsoils overlie heavy clay loam or clay lower subsoils. Weathering limestone bedrock begins at around 80cm depth and soil droughtiness is what limits the land to Subgrade 3a.

The central area of Subgrade 3a land consists of profiles which vary from well drained (Wetness Class I) to imperfectly drained (Wetness Class III). Topsoil textures range from medium sandy loam to heavy clay loam while subsoil textures vary from medium sand to sandy clay loam. Either soil droughtiness or soil wetness, depending on subsoil type, provide the grade limiting factor.

The easternmost area of Subgrade 3a land consists of imperfectly drained profiles (Wetness Class III) where organic silty clay or organic clay topsoils overlie gleyed and slowly permeable silty clay or clay subsoils at around 25cm depth. In this case soil wetness is the grade limiting factor.

### 2.3 Subgrade 3b

The centre of the site falls in Subgrade 3b. The soils are imperfectly drained (Wetness Class III) and consist of non-calcareous clay topsoils overlying gleyed and slowly permeable clay subsoils at around 25cm depth. These soils are less workable than those on the Subgrade 3a land to the east due to their lower organic matter content, and so the combination of soil wetness and topsoil workability restrictions limit this land to Subgrade 3b.

### 2.4 Urban

Urban land in the south-west and south-east consists of embankments adjoining the M18 motorway. A small area in the north-east has been mapped where builders rubble has been spread in the corner of a field.

### 2.5 Non Agricultural

A small area of scrub has been mapped off in the north.

### 2.6 Woodland

Woodland occurs in the three blocks in the west, south and north of the site.

MAP