



Ministry of
Agriculture
Fisheries
and Food

AGRICULTURAL LAND CLASSIFICATION
WEAR VALLEY DISTRICT LOCAL PLAN
COUNTY DURHAM
(FIELDON BRIDGE)
MARCH 1994

ADAS
Leeds Statutory Group

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SUMMARY

An Agricultural Land Classification survey of 38 ha of land at Fieldon Bridge, Bishop Auckland was carried out in March 1994. At the time of survey 97% of the site was in agricultural use of which 18.4 ha falls in Subgrade 3a. Soil profiles are either moderately well or imperfectly drained and stoneless to very slightly stony (in which case the land is limited to Subgrade 3a by soil wetness restrictions) or well drained and slightly to very stony (in which case soil droughtiness and topsoil stoniness limit the land to this subgrade).

9.5 ha of the site falls in Subgrade 3b. Most of this land is affected by high groundwater levels and is, thus, restricted to Subgrade 3b by soil wetness limitations. A small area of land in the south-west of the site, alongside the River Gaunless, is restricted to Subgrade 3b by flood risk.

8.8 ha of the site falls in Grade 4. Most of this land is low-lying and rush infested, and subject to very high groundwater levels. It is, therefore, restricted to Grade 4 by a severe soil wetness limitation. An area of land in the north-eastern corner of the site consists of thin medium-textured topsoils overlying shale and ash. The presence of building debris close to the soil surface makes regular ploughing impractical and this, as well as the thin soil, restricts this land to Grade 4.

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1. AGRICULTURAL LAND CLASSIFICATION

AGRICULTURAL LAND CLASSIFICATION REPORT: WEAR VALLEY DISTRICT
LOCAL PLAN: FIELDON BRIDGE, BISHOP AUCKLAND, CO DURHAM

1. INTRODUCTION AND SITE CHARACTERISTICS

1. Location and Survey Methods

The site lies approximately 2km south-west of Bishop Auckland town centre, around National Grid Reference NZ 196 266. It covers a total area of 37.9 ha, of which 36.7 ha were in agricultural use at the time of survey. Survey work was carried out in March 1994 when soils were examined by hand auger borings at 100m intervals predetermined by the National Grid. Two soil inspection pits were dug to allow the assessment of subsoil structure and stoniness and to allow samples to be taken for laboratory analysis. 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 survey 97% of the site was in agricultural use as arable land, permanent or rough grazing. The remainder consists of a small area of open water and some Non Agricultural land in the north-east. The site lies at approximately 100m AOD and is flat to gently sloping (0-3°) with variable aspect.

1.3 Climate

Grid Reference	: NZ 196 266
Altitude (m)	: 100
Accumulated Temperature above 0°C (January-June)	: 1266 day°C
Average Annual Rainfall (mm)	: 691
Climatic Grade	: 2
Field Capacity Days	: 189
Moisture Deficit (mm) Wheat	: 89
Moisture Deficit (mm) Potatoes	: 74

1.4 Geology, Soils and Drainage

The site is underlain by Carboniferous Coal Measures over which lie thick deposits of alluvium (alongside the River Gaunless) or glacial sand and gravel (over the remainder of the site). Much of the lower-lying land in the north and west of this site suffers from high groundwater levels and the soils are poorly or very poorly drained, falling in Wetness Classes IV or V. However, areas of higher land are generally well or moderately well drained, falling in Wetness Classes I or II.

The soils alongside the River Gaunless typically consist of stoneless to very slightly stony (0-5% hard stones) light or medium textured topsoils and subsoils. Soils over most of the rest of the site consist of slightly to moderately stony (typically 8-16% hard stones) light or medium textured topsoils overlying moderately to very stony (typically 20-50% hard stones) very light, light or medium textured subsoils.

A small area of restored land occurs in the north-east of the site where thin medium textured topsoils overlie deposits of shale and ash.

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		
3a	18.4	48.5
3b	9.5	25.1
4	8.8	23.2
5		
(Sub-Total)	(36.7)	(96.8)
Urban		
Non Agricultural	0.8	2.1
Woodland - Farm		
- Commercial		
Agricultural Buildings		
Open Water	0.4	1.1
Land not surveyed		
(Sub-Total)	(1.2)	(3.2)
 TOTAL	 <u>37.9</u>	 <u>100</u>

2.1 Subgrade 3a

Much of this site falls in Subgrade 3a. Two principal soil types fall within this subgrade - the first consists of stoneless to very slightly stony soils found in the alluvial deposits alongside the River Gaunless while the second consists of slightly to very stony soils developed in deposits of glacial sand and gravel.

In the case of the former medium clay loam, sandy loam, sandy clay loam or sandy silt loam topsoils typically overlie gleyed sandy loam, sandy clay loam or sandy silt loam subsoils. Profiles are moderately well or imperfectly drained (falling in Wetness Classes II or III) and although slowly permeable layers are usually absent, they do occur in places at around 50cm depth. This land is limited to Subgrade 3a by soil wetness restrictions and, in places, by topsoil texture.

In the case of the soils developed in glacial sand and gravel deposits, medium sandy loam or sandy clay loam topsoils overlie loamy sand, sandy loam or sandy clay loam subsoils. Topsoils are slightly stony (containing 8-12% hard stones in most cases) and subsoils are moderately to very stony (containing 35-50% hard stones). These soils are well drained (Wetness Class I) and the land is limited to Subgrade 3a by soil droughtiness and, in many places, by topsoil stoniness.

2.2 Subgrade 3b

Subgrade 3b land occurs in a number of areas across the site. In most cases the land is relatively low lying and high groundwater levels mean that the soil profiles are poorly drained, falling in Wetness Class IV. Typically sandy loam, sandy silt loam or medium clay loam topsoils (some of which are organic) overlie a wide variety of very light, light and medium textured subsoils. Topsoils are generally stoneless to slightly stony (containing up to 6% hard stones) while subsoils are stoneless to moderately stony (containing up to 25% hard stones). This land is limited to Subgrade 3b by soil wetness restrictions.

A small area of Subgrade 3b land in the south-west of the site is restricted to this grade by flood risk.

2.3 Grade 4

Grade 4 land occurs in two separate areas in the north-east and in the west of the site. Most of this land is low-lying and rush-infested, with very high groundwater levels leaving the soil profile wet within 40cm depth for most of the year. The soils are, thus, very poorly drained (falling in Wetness Class V), and the land is limited to Grade 4 by soil wetness restrictions.

The remainder of the Grade 4 land (which occurs in the far north-east of the site) consists of restored soils. Typically between 15cm and 25cm depth of medium clay loam topsoil overlies deposits of shale and ash. The presence of large amounts of building debris (including pipes, bricks and blocks of concrete) close to the soil surface make regular ploughing of this land impractical and it is this factor, along with limited soil depth, which restricts this land to Grade 4.

2.4 Non Agricultural

This category includes an area of scrubland in the north-east of the site, adjoining the dismantled railway.

2.5 Open Water

This refers to a small area of reeds in the north-east.

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MAP