MAFF Ministry of Agriculture Fisheries and Food

AGRICULTURAL LAND CLASSIFICATION
BOOTHFERRY LOCAL PLAN
HUMBERSIDE
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ADAS
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SUMMARY

Agricultural Land Classification surveys of 118 ha of land on five sites within Boothferry District were carried out in April 1994. At the time of survey almost 95 ha was in agricultural use of which 34.9 ha falls in Grade 2 on Site E2 (D) and the land west of Site E15. Profiles are stoneless and well or moderately well drained with either calcareous heavy-textured topsoils overlying gleyed but permeable and calcareous heavy-textured subsoils (in which case soil wetness and topsoil workability restrict the land to Grade 2), or organic or peaty, light to medium-textured topsoils overlying a wide range of subsoil textures (in which case soil droughtiness and a pattern limitation restrict the land to Grade 2).

28.8 ha of Subgrade 3a land was mapped on Site E3 (North), Site E8 and the land west of Site E15. In most cases the soils are well drained, with organic loamy sand, sandy loam, medium clay loam or heavy silty clay loam topsoils overlying loamy sand or sand subsoils. This land is restricted to Subgrade 3a by either wind erosion risk or soil droughtiness.

The remainder of the agricultural land surveyed (31 ha) falls in Subgrade 3b. On Sites E3 (North), E3 (South) and in the east of Site E8, this land consists of well drained, stoneless soils where loamy medium sand or medium sandy loam topsoils overlie medium sand subsoils. In this case severe soil droughtiness limits the land to this subgrade. In the west of Site E8 the soils are imperfectly or poorly drained with non-calcareous heavy clay loam or heavy silty clay loam topsoils overlying gleyed and slowly permeable heavy silty clay loam, clay or silty clay subsoils. This land is restricted to Subgrade 3b by soil wetness and topsoil workability limitations.

The remainder of the land surveyed consists of Urban land on Sites E3 (North), E3 (South) and the land west of Site E15 (totalling 8 ha); Non Agricultural land on Sites E3 (North), E3 (South) and E2(D) covering 14.8 ha in total; Agricultural Buildings on Site E3 (North) covering 0.3 ha.

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BOOTHFERRY LOCAL PLAN: AGRICULTURAL LAND CLASSIFICATION REPORTS

1. INTRODUCTION AND SITE CHARACTERISTICS

1.1 Survey Methods

Land covering an area of approximately 118 ha was surveyed on five sites within Boothferry District. The agricultural land quality on each of these sites is described in the following parts of this report.

Survey work was carried out in April 1994 when soils were examined by hand auger borings at points predetermined by the National Grid. Boring density was one per hectare for Sites E8, E2(D) and the land west of Site E15, and one per two hectares for Site E3 (North) and Site E3 (South). Extra borings were made where necessary to refine grade boundaries and a number of soil profile pits were dug in order to allow full descriptions to be made and to collect samples for laboratory analysis.

All assessments of land quality were made 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 about 80% of the land surveyed was in agricultural use; most of this land had either been recently ploughed or was under winter cereals. The remainder of the area surveyed was made up of Urban and Non-Agricultural land (principally on Sites E3 North and South), and Agricultural Buildings (on Site E3 (North)).

Site altitudes vary between 2 m and 5 m A.O.D. and the land is generally flat or very gently sloping (0 - 2°) with variable aspect.

1.3 Geology

Site E8 and the land west of Site E15 are underlain by Mercia Mudstone (formerly Keuper Marl), while Sites E3 (South and North) and Site E2 (D) are underlain by Bunter Sandstone.

All of the sites are covered by drift deposits, with blown sand on Sites E3 North and E3 South and in the west of the land west of Site E15. Site E2(D) is covered by deposits of alluvium, as are the west of Site E8 and the east of the land west of Site E15. There is also an area of sand and gravel deposits in the east of Site E8.

2.1 SITE E2(D)

2.1.1 Location

This site lies approximately 3 km west-south-west of Goole town centre, around Grid Reference SE 721225. It covers a total area of 20.5 ha of which 20.3 ha were in agricultural use at the time of survey.

2.1.2 Climate

Grid Reference	:	SE 721225
Altitude	:	5 m
Accumulated Temperature above 0°C (January - June)	:	1407 day °C
Average Annual Rainfall (mm)	:	594
Climatic Grade	:	1
Field Capacity Days	:	125
Moisture Deficit (mm) Wheat	:	113
Moisture Deficit (mm) Potatoes	:	106

2.1.3 Soils and Drainage

The soils on this site correspond to the Blacktoft Association as mapped by the Soil Survey and Land Research Centre. They were formed by warping, an artificial flooding and sedimentation process, and they are well or moderately well drained, falling in Wetness Classes I and II. The profiles are generally stoneless, with calcareous heavy silty clay loam topsoils overlying calcareous medium silty clay loam, heavy silty clay loam or silt loam subsoils. Horizons of loamy medium sand or peat are found at depths of greater than one metre in places.

2.1.4 Agricultural Land Classification Grades

Grade/Subgrade	Hectares	Percentage of Total Area
1		
2	20.3	99.0
3a		
3b		
4		
5		
(Sub total)	(20.3)	(99.0)
Urban		
Non Agricultural	0.2	1.0
Woodland - Farm		
- Commercial		
Agricultural Buildings		
Open Water		
Land not surveyed		
(Sub total)	(0.2)	(1.0)
TOTAL	20.5	100

2.1.5 Grade 2

All of the agricultural land on this site falls in Grade 2. The soils are stoneless and well or moderately well drained, falling in Wetness Classes I or II. Profiles typically consist of calcareous heavy silty clay loam topsoils overlying calcareous heavy silty clay loam, medium silty clay loam or silt loam subsoils. The subsoils begin at around 40 cm depth and are gleyed but permeable.

The land is limited to Grade 2 by slight soil wetness and topsoil workability restrictions.

2.1.6 Non Agricultural

This category includes a farm track in the south of the site.

2.2 SITE E3 (SOUTH)

2.2.1 This site lies around Grid Reference SE 753073, approximately 1 km south-east of the village of Sandtoft. It covers a total area of 14.8 ha of which 9.8 ha was in agricultural use at the time of survey. The remainder consists of disused runways (classified as Urban land), and Non Agricultural land.

2.2.2 Climate

Grid Reference	:	SE 753073
Altitude	:	5 m
Accumulated Temperature above 0°C (January - June)	:	1414 day °C
Average Annual Rainfall (mm)	:	582
Climatic Grade	:	1
Field Capacity Days	:	120
Moisture Deficit (mm) Wheat	:	113
Moisture Deficit (mm) Potatoes	:	107

2.2.3 Soils and Drainage

The soils on this site correspond to the Blackwood Association, as mapped by the Soil Survey and Land Resource Centre. Profiles are well, drained falling in Wetness Class I, and stoneless with a loamy medium sand topsoil overlying a medium sand subsoil in most cases.

2.2.4 Agricultural Land Classification Grades

Grade/Subgrade	Hectares	Percentage of Total Area
1		
2		
3a		
3b	9.8	66.2
4		
5		
(Sub total)	(9.8)	(66.2)
Urban	4.6	31.1
Non Agricultural	0.4	2.7
Woodland - Farm		
- Commercial		
Agricultural Buildings		
Open Water		
Land not surveyed		
(Sub total)	(5.0)	(33.8)
TOTAL	14.8	100

2.2.5 Subgrade 3b

All of the agricultural land on this site falls in Subgrade 3b. The soils are well drained, falling in Wetness Class I, with stoneless loamy medium sand topsoils overlying stoneless medium sand subsoils. These soils have a very low water-holding capacity and the land is, therefore, restricted to Subgrade 3b by soil droughtiness.

2.2.6 Urban

This category includes a number of disused runways and associated areas.

2.2.7 Non Agricultural

A small area in the south of the site, where the topsoil has been stripped prior to building, has been included in this category.

2.3 SITE E3 (NORTH)

2.3.1 Location

This site lies around Grid Reference SE 765084, approximately 2 km east of the village of Sandtoft. It covers a total area of 44.5 ha of which 28.6 ha was in agricultural use at the time of survey. The remainder consists of Non Agricultural land (scattered scrub) and Urban land (disused runways and a minor road).

2.3.2 Climate

Grid Reference	:	SE 765084
Altitude	:	5 m
Accumulated Temperature above 0°C (January - June)	:	1413 day °C
Average Annual Rainfall (mm)	:	585
Climatic Grade	:	1
Field Capacity Days	:	121
Moisture Deficit (mm) Wheat	:	113
Moisture Deficit (mm) Potatoes	:	107

2.3.3 Soils and Drainage

The soils on Site E3 (North) correspond to the Blackwood Association as mapped by the Soil Survey and Land Research Centre. Profiles are stoneless and well drained, falling in Wetness Class I. In most cases loamy sand topsoils (which are organic in parts of the north of the site) overlie sand subsoils.

2.3.4 Agricultural Land Classification Grades

Grade/Subgrade	Hectares	Percentage of Total Area
1		
2		
3a	21.2	47.6
3b	7.4	16.6
4		
5		
(Sub total)	(28.6)	(64.2)
Urban	1.4	3.1
Non Agricultural	14.2	31.9
Woodland - Farm		
- Commercial		
Agricultural Buildings	0.3	0.8
Open Water		
Land not surveyed		
(Sub total)	(15.9)	(35.8)
TOTAL	44.5	100

2.3.5 Subgrade 3a

Much of the north of this site falls in Subgrade 3a. Profiles are stoneless and well drained (Wetness Class I) with loamy fine sand topsoils (some of which are organic) overlying fine and medium sand subsoils. These soils are slightly to moderately droughty and are prone to wind erosion at certain times of year. Erosion risk is, therefore, the factor limiting this land to Subgrade 3a although some areas are also limited to this subgrade by soil droughtiness.

2.3.6 Subgrade 3b

The agricultural land in the south of the site falls in Subgrade 3b. Profiles are well drained. falling in Wetness Class I, and are generally stoneless. In most cases loamy medium sand topsoils overlie medium sand subsoils and soil droughtiness is the factor which restricts the land to Subgrade 3b.

2.3.7 Urban

This category includes disused runways and a minor road, both in the north-west of the site.

2.3.8 Non Agricultural

This category includes areas of hawthorn and gorse scrub which appear not to have been farmed for many years.

2.3.9 Agricultural Buildings

The farmhouse and outbuildings at Bridge Farm (in the south of the site) fall within this category.

2.4 SITE E8

2.4.1 Location

The site lies to the south of Junction 32 of the M62 motorway, around Grid Reference SE 873308. It covers a total area of 19.9 ha, all of which was in agricultural use at the time of survey.

2.4.2 Climate

Grid Reference	:	SE 873308
Altitude	:	5 m
Accumulated Temperature above 0°C (January - June)	:	1400 day °C
Average Annual Rainfall (mm)	:	622
Climatic Grade	:	1
Field Capacity Days	:	139
Moisture Deficit (mm) Wheat	:	111
Moisture Deficit (mm) Potatoes	:	103

2.4.3 Soils and Drainage

The soils on this site are formed in deposits of alluvium (in the west) and sand and gravel (in the east). The profiles formed in alluvial deposits are generally imperfectly or poorly drained, falling in Wetness Classes III or IV, with non-calcareous medium or heavy silty clay loam topsoils overlying non-calcareous heavy clay loam, heavy silty clay loam, clay or silty clay subsoils. Horizons of loamy sand, sand or peat loam occur at depth in places.

The profiles formed in sand and gravel are generally well drained (Wetness Class I) with loamy medium sand or medium sandy loam topsoils and upper subsoils overlying loamy medium sand or medium sand subsoils.

2.4.4 Agricultural Land Classification Grades

Grade/Subgrade	Hectares	Percentage of Total Area
1		
2		
3a	6.1	30.7
3b	13.8	69.3
4		
5		
(Sub total)	(19.9)	(100.0)
Urban		
Non Agricultural		
Woodland - Farm		
- Commercial		
Agricultural Buildings		
Open Water		
Land not surveyed		
(Sub total)		
TOTAL	19.9	100

2.4.5 Subgrade 3a

Two area of Subgrade 3a land occur on this site, one in the east and one in the south-west. The eastern area, which is the larger of the two, consists of medium clay loam or heavy silty clay loam topsoils overlying loamy medium sand and medium sand subsoils. These profiles are well drained, falling in Wetness Class I, but the land is restricted to Subgrade 3a by soil droughtiness. The western area consists of medium silty clay loam topsoils overlying either loamy medium sand or gleyed but permeable heavy silty clay loam subsoils. These profiles are well or moderately well drained (falling in Wetness Classes I or II) and the land is limited to Subgrade 3a by soil droughtiness and by a pattern limitation.

2.4.6 Subgrade 3b

Most of the west of this site and an area in the east fall in Subgrade 3b. In the west the profiles are imperfectly or poorly drained (falling in Wetness Classes III or IV) with non-calcareous heavy silty clay loam or heavy clay loam topsoils overlying heavy silty clay loam, clay or silty clay subsoils. The subsoils are gleyed at between 25 cm and 40 cm depth and become slowly permeable at between 25 cm and 60 cm depth. Soil wetness and topsoil workability limitations restrict this land to Subgrade 3b.

Land in this subgrade in the east of the site consists of medium sandy loam or loamy medium sand topsoils overlying loamy medium sand or medium sand subsoils. Profiles are well drained, falling in Wetness Class I, but soil droughtiness restricts the A.L.C. grade to Subgrade 3b.

2.5 LAND WEST OF SITE E15

2.5.1 Location

This site lies between the A18 Doncaster-Scunthorpe road and the Stainforth and Headby Canal, approximately 2 km south of the village of Crowle. It covers a total area of 18.1 ha of which 16.1 ha were in agricultural use at the time of survey.

2.5.2 Climate

Grid Reference	:	SE 778109
Altitude	:	5 m
Accumulated Temperature above 0°C (January - June)	:	1411 day °C
Average Annual Rainfall (mm)	:	593
Climatic Grade	:	1
Field Capacity Days	:	125
Moisture Deficit (mm) Wheat	:	115
Moisture Deficit (mm) Potatoes	:	109

2.5.3 Soils and Drainage

The soils on this site correspond to the Isleham 2 Association as mapped by the Soil Survey and Land Research Centre. Most profiles consist of light or medium-textured topsoils, most of which are organic or peaty, overlying alluvial subsoil horizons which vary in texture from sand to clay and silty clay. These soils are typically stoneless and well or moderately well drained, falling in Wetness Classes I or II.

An area of lighter-textured soils occurs in the west of the site, where loamy sand or sandy loam topsoils overlie loamy sand subsoils, with heavy clay loam or clay sometimes occurring at depth. These profiles are well drained, falling in Wetness Class I, and stoneless.

2.5.4 Agricultural Land Classification Grades

Grade/Subgrade	Hectares	Percentage of Total Area
1		
2	14.6	80.7
3a	1.5	8.3
3b		
4		
5		
(Sub total)	(16.1)	(89.0)
Urban	2.0	11.0
Non Agricultural		
Woodland - Farm		
- Commercial		
Agricultural Buildings		
Open Water		
Land not surveyed		
(Sub total)	(2.0)	(11.0)
TOTAL	18.1	100

2.5.5 Grade 2

Most of this site falls in Grade 2. Soil profiles are well or moderately well drained, falling in Wetness Class I or Wetness Class II, and both topsoils and subsoils are generally stoneless. In most cases organic medium sandy loam, organic medium clay loam or peaty loam topsoils overlie a variety of subsoil horizons which vary in texture from medium sand or loamy medium sand to silt loam, medium silty clay loam, heavy silty clay loam, clay or silty clay. Although most subsoils are gleyed from around 35 cm depth, they are nonetheless permeable, and contain common root channels of up to 5 mm in diameter. The A.L.C. grade of this land is limited by slight soil droughtiness in places and by a pattern limitation which prevents the Grade 1 profiles from being mapped out as a separate unit.

2.5.6 Subgrade 3a

An area of land in the west of the site falls in Subgrade 3a. Profiles here are well drained, falling in Wetness Class I, and stoneless, with medium sandy loam or loamy medium sand topsoils overlying medium sand subsoils. Heavy clay loam or clay occurs at depth in places but soil droughtiness is the factor which limits this land to Subgrade 3a.

2.5.7 Urban

This category includes a storage compound in the east of the site.

RPT Files: 2FCS 6868 - 72
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