REPORT OF THE MAFF AGRICULTURAL LAND CLASSIFICATION SURVEY (1988) - BILSTHORPE

Summary

The land has been classified following the Agricultural Land Classification of England and Wales - Revised Guidelines and Criteria for Grading Quality of Agricultural Land (MAFF, 1988). Of the land surveyed 4% is classified as Grade 1 and 39% as Grade 2. A further 25% is classified as Sub-grade 3a and 8% as Sub-grade 3b. The remaining area, 24%, includes other land - used for tipping, a small area of woodland and an area of Forestry Commission land not surveyed.

1. Introduction

The survey work was carried out on several days during the period 12-23 March 1990. A 100 m grid auger boring survey was completed with supplementary borings as required and several soil pits were dug to examine soil structure.

2. Climatic Limitations

The main priorities used in the assessment of climatic limitations are average annual rainfall (AAR) as a measure of overall wetness and accumulated temperature (ATO) as a measure of the relative warmth of the locality. The figures of AAR and ATO indicate that there are no climatic limitations on this site.

3. Site Limitations

The assessment of site factors is primarily concerned with the way in which topography influences the use of agricultural machinery and hence the cropping potential of the land. Where site limitations operate reference will be made in section 7.

4. Soil Limitations

The main soil properties which effect the cropping potential and management requirements of the land are texture, structure, depth, stoniness and chemical fertility. These may act as limitations separately, in combination or through interaction with climate or soil factors. The physical limitations which result from interactions with climate or soil are soil wetness, droughtiness and erosion. Soil wetness, which expresses the extent to which the excess water imposes restrictions on crop growth is assessed in the field by identifying the depth to to any slowly permeable soil horizon, defined in terms of soil texture, structure and gleying and relating this to the texture of the top 25 cm. Combining the soil wetness and the field capacity days (FCD) a land classification grade is arrived at. Reference will be made to this limitation in Section 7 where appropriate.

5. Background Information

The underlying geology is mapped as Keuper Waterstones with some clay present (sheet 113, Ollerton, Geological Survey).

6. Agricultural Lane Use

At the time of the survey the site was under winter cereals, with a small area of fallow.

7. Agricultural Land Quality (Appendix 1)

Grade 1

Typically the soil has a sandy silt loam texture to 100 cm. Occasionally in places clay is present below 65 cm. There are no droughtiness limitations on this land and where clay is present the land falls into Wetness Class II and hence Grade 1.

Grade 2

The soil typically has a medium clay loam texture overlying soils of a variable texture including heavy and medium clay loams, clay, sand and sandy silt loam. The soils generally fall into Wetness Class II resulting in a land classification grade of 2. The main limitation to the agricultural use of this land is soil wetness.

Sub-grade 3a

Typically the soil has a medium clay loam texture with occasional sandy silt loam topsoils present, overlying variable subsoils of heavy clay loam or clay below 35 cm. Observations of the depth to the slowly permeable layer combined with the red soil colour and a field capacity day figure of 135 indicate Wetness Class III and Sub-grade 3a. The main limitation to the agricultural use of this land is soil wetness.

Sub-grade 3b

The soil typically has a heavy clay loam texture overlying clay below 30 cm. Observations of gleying and the depth to the slowly permeable layer combined with a field capacity day figure of 135 indicate Wetness Class IV and a classification of Sub-grade 3b. The main limitation to the agricultural use of this land is soil wetness.

On the eastern boundary of the site slopes of 9° impose a limitation on the agricultural use of the land and hence is given a classification of Sub-grade 3b.

Other Land

This includes non-agricultural land used for tipping, a small scrub/wooded area and Forestry Commission land not surveyed.

Resource Planning Group
April 1990

AGRICULTURAL LAND QUALITY - BILSTHORPE

Grade/Sub-grade	ha	as % of total area	as % of agricultural land
1	3.6	4	5
2	36.3	39	52
3a	23.4	25	33
3b	7.2	8	10
Non-agricultural	9.9	10	-
Woodland	0.9	1	-
Not surveyed	12.1	13	-
TOTAL	93.4	100	100

DESCRIPTION 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 and horticultural crops can usually be grown but on some land in the 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.

Grade 3 - good to moderate quality agricultural land

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

Descriptions of other land categories used on ALC maps

Urban

Built-up or 'hard' uses with relatively little potential for a return to agriculture including: housing, industry, commerce, education, transport, religious buildings, cemeteries. Also, hard-surfaced sports facilities, permanent caravan sites and vacant land; all types of derelict land, including mineral workings which are only likely to be reclaimed using derelict land grants.

Non-agricultural

'Soft' uses where most of the land could be returned relatively easily to agriculture, including: golf courses, private parkland, public open spaces, sports fields, allotments and soft-surfaced areas on airport/airfields. Also active mineral workings and refuse tips where restoration conditions to 'soft' after-uses may apply.

Woodland

Includes commercial and non-commercial woodland. A distinction may be made as necessary between farm and non-farm woodland.

Agricultural buildings

Includes the normal range of agricultural buildings as well as other relatively permanent structures such as glasshouses. Temporary structures (eg polythene tunnels erected for lambing) may be ignored.

Open water

Includes lakes, ponds and rivers as map scale permits.

Land not surveyed

Agricultural land which has not been surveyed.

Where the land use includes more than one of the above land cover types, eg buildings in large grounds, and where map scale permits, the cover types may be shown separately. Otherwise, the most extensive cover type will usually be shown.

SOILS UNITS REPORT FOR BILSTHORPE

Following the Agricultural Land Classification survey soils of a similar texture have been placed into soil units reflecting similarities in stripping, handling and storage requirements.

On the site 3 soil units are identified, the main one covering much of the site consisting of mainly medium clay loam/sandy silt loam soils and 2 smaller units consisting of heavier soil textures. Soil pits have been dug in each unit to record details of physical characteristics such as soil structure.

Unit I

This unit includes soils typically of a medium clay loam texture and sandy silt loam texture which have a similar clay content. Topsoil depth ranges from 30 to 40 cm and generally overlies a variable subsoil which includes textures of heavy silty clay loam, silty clay, silty clay loam, clay *loam and clay with shale and bands of sand. Typical soil* pit descriptions are given in Appendix I.

Unit II

This unit includes heavy textured soils typically clays to 25 cm overlying further depths of clay. A soil pit description is included in Appendix II.

Unit III

This small unit includes soils of a heavy clay loam texture to 30 cm overlying clay extending to 100 cm. A soil pit description is given in Appendix III.

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