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Forest of Dean Local Plan, Mannings Farm Drybrook

AGRICULTURAL LAND CLASSIFICATION REPORT OF SURVEY

Resource Planning Team
Taunton Statutory Unit

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ADAS

FOREST OF DEAN LOCAL PLAN:MANNINGS FARM, DRYBROOK

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Report of Survey

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AGRICULTURAL LAND CLASSIFICATION

Report of Survey

1. SUMMARY

Fourteen hectares of land at Mannings Farm, Drybrook were surveyed using the Agricultural Land Classification Survey (ALC) System in May 1994. The survey was carried out on behalf of MAFF as part of its statutory role in the preparation of the Forest of Dean Local Plan.

The fieldwork was carried out by ADAS (Resource Planning Team, Taunton Statutory Unit) at a scale of 1:10,000. The information is correct at this scale but any enlargement would be misleading. The distribution of grades identified in the survey area is detailed below and illustrated on the accompanying ALC map.

Distribution of ALC grades : Mannings Farm, Drybrook

Grade	Area (ha)	% of Survey Area	% of Agricultural Land
3a	6.7	46.7	47.4
3b	5	35.3	35.8
4	2.4	16.6	16.8
Agric Bdgs	0.2	1.4	100%
TOTAL	14.3	100%	(14.1ha)

The soils at the site were variable. The main limitation was wetness, although the south eastern part of the site is limited by gradient.

2. INTRODUCTION

Fourteen hectares of land at Mannings Farm, Drybrook were surveyed using the Agricultural Land Classification Survey (ALC) System in March 1994. The survey was carried out on behalf of MAFF as part of its statutory role in the preparation of the Forest of Dean Local Plan.

The fieldwork was carried out by ADAS (Resource Planning Team, Taunton Statutory Unit) at a scale of 1:10,000 (approximately one auger boring per hectare). The information is correct at this scale but any enlargement would be misleading. A total of 12 auger borings were examined.

The published provisional one inch to the mile ALC map of this area (MAFF 1974) shows the whole site to be Grade 4. The scale of this map is considered inadequate for the current purposes. The recent survey supersedes this map having been carried out at a more detailed level and using the Revised Guidelines and Criteria for grading the quality of Agricultural Land (MAFF 1988).

These Guidelines provide a framework for classifying the land according to the extent to which its physical or chemical characteristics impose long-term limitations on agricultural use. The grading takes account of the top 120cm of the soil profile. A description of the grades used in the ALC System can be found in Appendix 2.

3. CLIMATE

The grade of the land is determined by the most limiting factor present. The overall climate is considered first because it can have an overriding influence on restricting land to a lower grade despite other favourable conditions.

Estimates of climatic variables were obtained for the site by interpolation from the Agricultural Climate Dataset (Meteorological Office 1989). The data are shown in Table 1.

The parameters used for assessing overall climatic conditions are accumulated temperature, (a measure of the relative warmth of a locality) and average annual rainfall, (a measure of overall wetness). The values for the site mean that the land can be no better than Grade 2. Climatic data on Field Capacity Days (FCD) and Moisture Deficits for wheat (MDW) and potatoes (MDP) are also shown. These data are used in assessing the soil wetness and droughtiness limitations referred to in later sections. A description of the Wetness Classes used in quantifying the degree of wetness can be found in Appendix 3.

No local climatic limitations were noted in the survey area.

Table 1 Climatic Interpolations: Mannings Farm, Drybrook

Grid Reference	SO 647 176
Altitude (m)	195
Accumulated Temperature (day deg)	1306
Average Annual Rainfall (mm)	843
Overall Climatic Grade	2
Field Capacity Days	185
Moisture Deficit, Wheat (mm)	79
Moisture Deficit, Potatoes (mm)	62

4. RELIEF AND LANDCOVER

The survey area forms part of a small dry valley. The slopes are gentle except in the south east where gradients of up to 14 degrees were measured. The height range of the site is195m to 245m AOD.

At the time of survey all the fields were being used for grazing of sheep and cows.

5. GEOLOGY AND SOILS

The geology of the site is shown on the published 1:50,000 scale solid and drift geology map, sheet 233 (Geological Survey of England and Wales 1974). The site is mapped as being mainly underlain by Pleistocene Head. The steeper land in the south east is an outcrop of Trenchard Group Sandstone of the Carboniferous Upper Coal Measures.

The soils were mapped by the Soil Survey of England and Wales in 1981 at a scale of 1:25,000. The site is mapped as four different soils. From the High Street bands of Hallsworth, Dunkeswick, Kearby and Swindon Bank-Radyr are mapped. Of these only the last is described as a well drained soil. The others are all seasonally waterlogged.

The soils found during the recent survey are typical of the mapped soil series. The soils showed evidence of poor drainage on the lower land. In places this is caused by slowly permeable layers in the profile. Medium clay loam topsoils lie over heavy clay loam and sometimes clay subsoils. In places there are slightly sandier subsoils.

6. AGRICULTURAL LAND CLASSIFICATION

The distribution of ALC grades identified in the survey area is detailed in Table 2 and shown on the accompanying ALC map. The information is correct at the scale shown but any enlargement would be misleading.

Table 2 Distribution of ALC grades: Mannings Farm

Grade	Area (ha)	% of Survey Area	% of Agricultural Land
3a	6.7	46.7	47.4
3b	5	35.3	35.8
4	2.4	16.6	16.8
Agric Bdgs	0.2	1.4	100%
TOTAL	14.3	100%	(14.1ha)

Subgrade 3a

The soils within this unit are variable. Some profiles showed evidence of extended wetness caused by slowly permeable layers deep in the profiles. These soils are Wetness Class III. A small area was found to be Wetness Class II. All the soils had medium clay loam topsoils so both these types of soil are limited to Subgrade 3a. Within this mapping unit there are also some profiles which had insufficient evidence of wetness to be downgraded except by the combination of topsoil texture and the number of days that the site is at field capacity. These soils are Grade 2 but it was felt that overall the Grade 2 and 3a soils should be combined into a single unit because of the variability of the soils.

Subgrade 3b

A small area in the south west has been downgraded to Subgrade 3b because the gradient of the slope was 8 degrees.

The remaining land which is mapped as 3b has been downgraded because of a more severe wetness limitation that found in the 3a unit. These soils are also gleyed but have slowly permeable layers higher in the profile. These soils are Wetness Class IV, which in combination with the medium clay loam topsoil limits these soils to Subgrade 3b.

Grade 4

The area in the south east which has gradients of up to 14 degrees in downgraded to Grade 4. The versatility of this land will be restricted by the types of machinery that can be safely used on such slopes.

Other land

The buildings associated with the farm are marked as agricultural buildings.

APPENDIX 1

REFERENCES

GEOLOGICAL SURVEY OF ENGLAND AND WALES (1974) Solid and Drift edition. Sheet 233, Monmouth, 1:50,000 scale

MAFF (1974) Agricultural Land Classification Map sheet 142 Provisional 1:63,360 scale

METEOROLOGICAL OFFICE (1989) Published climatic data extracted from the agroclimatic dataset, compiled by the Meteorological Office

SOIL SURVEY OF ENGLAND AND WALES (1981) Sheet SO61, Cinderford 1:25,000 scale

APPENDIX 2

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 include 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 most 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: private park land, public open spaces, sports fields, allotments and soft-surfaced areas on airports/airfields. Also active mineral workings and refuse tips where restoration conditions to 'soft' after-uses may apply.

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.

Source: MAFF (1988) Agricultural Land Classification of England and Wales (Revised guidelines and criteria for grading the quality of agricultural land) Alnwick.

APPENDIX 3

DEFINITION OF SOIL WETNESS CLASSES

Wetness Class I

The soil profile is not wet within 70cm depth for more than 30 days in most years.

Wetness Class II

The soil profile is wet within 70cm depth for 31-90 days in most years or, if there is no slowly permeable layer within 80cm depth, it is wet within 70cm for more than 90 days, but not wet within 40cm depth for more than 30 days in most years.

Wetness Class III

The soil profile is wet within 70cm depth for 91-180 days in most years or, if there is no slowly permeable layer within 80cm depth, it is wet within 70cm for more than 180 days, but only wet within 40cm depth for between 31 and 90 days in most years.

Wetness Class IV

The soil profile is wet within 70cm depth for more than 180 days but not within 40cm depth for more than 210 days in most years or, if there is no slowly permeable layer within 80cm depth, it is wet within 40cm depth for 91-210 days in most years.

Wetness Class V

The soil profile is wet within 40cm depth for 211-335 days in most years.

Wetness Class VI

The soil profile is wet within 40cm depth for more than 335 days in most years.

Notes: The number of days specified is not necessarily a continuous period. 'In most years' is defined as more than 10 out of 20 years.

Source: Hodgson, J M (in preparation) Soil Survey Field Handbook (revised edition).

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