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Pound Lane, Weston-in-Gordano

Agricultural Land Classification

June 1997

Resource Planning Team
Bristol
FRCA Western Region

Job Number 43/97



POUND LANE, WESTON-IN-GORDANO

AGRICULTURAL LAND CLASSIFICATION SURVEY

INTRODUCTION

- 1.** This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 1.6 ha of land at Pound Lane, Weston-in-Gordano. Field survey was based on four auger borings, and was carried out in June 1997. During the survey one topsoil sample was analysed for particle size distribution (PSD).
- 2.** The survey was conducted by the Resource Planning Team of FRCA Western Region on behalf of MAFF in its statutory role in connection with an ad-hoc request by Wessex Water.
- 3.** Information on climate, geology and soils, and from previous ALC surveys was considered and is presented in the relevant section. Apart from the published regional ALC map (MAFF, 1977), which shows the site at a reconnaissance scale as Grades 2 and 3, the site had not been surveyed previously. The current survey uses the Revised Guidelines and Criteria for grading the quality of agricultural land (MAFF, 1988) and supersedes any previous ALC survey. Grade descriptions are summarised in Appendix I.
- 4.** At the time of survey the land cover was permanent grass.

CLIMATE

- 5.** Estimates of climatic variables for this site were derived from the published agricultural climate dataset "Climatological Data for Agricultural Land Classification" (Meteorological Office, 1989) using standard interpolation procedures. Data for the site are given in Table 1 below.
- 6.** Since the ALC grade of land is determined by the most limiting factor present, overall climate is considered first because it can have an overriding influence by restricting land to a lower grade despite more favourable site and soil conditions. Parameters used for assessing overall climate are accumulated temperature, a measure of relative warmth and average annual rainfall, a measure of overall wetness. The results shown in Table 1 indicate that there is no overall climatic limitation.
- 7.** Climatic variables also affect ALC grade through interactions with soil conditions. The most important interactive variables are Field Capacity Days (FCD) which are used in assessing soil wetness and potential Moisture Deficits calculated for wheat and potatoes, which are compared with the moisture available in each profile in assessing soil droughtiness limitations.

Table 1: Climatic Interpolations: Pound Lane

Grid Reference	ST 445 741
Altitude (m)	10
Accumulated Temperature (day °C)	1540
Average Annual Rainfall (mm)	861
Overall Climatic Grade	1
Field Capacity Days	193
Moisture deficit (mm):	
Wheat	97
Potatoes	88

GEOLOGY AND SOILS

8. The underlying geology of the site is shown on the published geology map (IGS, 1974) as Pleistocene Head deposits.

9. Soils were mapped by the Soil Survey of England and Wales at a reconnaissance scale of 1:250 000 (SSEW, 1983) as Whimple 1. This is described as consisting of reddish fine loamy over clayey soils with slowly permeable subsoils and slight seasonal waterlogging. They are associated with similar well drained soils, and it was these associated well drained soils that were encountered during the recent ALC survey.

AGRICULTURAL LAND CLASSIFICATION

10. The entire site was found to be Grade 1, and is shown on the accompanying 1:10,000 scale ALC map. The detail of information shown at this scale is appropriate to the intensity of field survey but could be misleading if enlarged.

11. The soils consist of a medium sandy loam topsoil over a sandy clay loam upper subsoil. Below approximately 60cm depth the subsoil is sandy clay or clay. The entire profile is well drained and no signs of wetness were observed, leading to Wetness Class I (see Appendix II). This wetness class, in conjunction with the prevailing field capacity days and the topsoil texture of medium sandy loam leads to a wetness grade of Grade 1. The soils are stone free and no droughtiness limitation was found. The entire site is therefore assessed as Grade 1.

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June 1997

REFERENCES

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APPENDIX I

DESCRIPTION OF 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.

Source: MAFF (1988) Agricultural Land Classification of England and Wales Revised Guidelines and Criteria for Grading the Quality of Agricultural Land, MAFF Publications, Alnwick.

APPENDIX II

DEFINITION OF SOIL WETNESS CLASSES

Soil wetness is classified according to the depth and duration of waterlogging in the soil profile.

Wetness Class I

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

Wetness Class II

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

Wetness Class III

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

Wetness Class IV

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

Wetness Class V

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

Wetness Class VI

The soil profile is wet within 40 cm 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.