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MAFF Ministry of Agriculture Fisheries and Food

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East Hampshire Local Plan
Pulens Lane, Petersfield
Agricultural Land Classification
ALC Map And Report
November 1993

EAST HAMPSHIRE LOCAL PLAN
PULENS LANE, PETERSFIELD
AGRICULTURAL LAND CLASSIFICATION REPORT

1. Summary

1.1 In November 1993, a detailed Agricultural Land Classification (ALC) was made on 3.2 hectares of land at Pulens Lane, Petersfield, which is located on the eastern side of Petersfield in Hampshire.

1.2 The work was conducted under ADAS sub-contracting arrangements by N A Duncan & Associates and was in response to a commission from MAFF's Land Use Planning Unit to provide information on the quality of agricultural land affected by the potential inclusion of this land in the East Hampshire Local Plan.

1.3 The classification has been made using MAFF's revised guidelines and criteria for grading the quality of agricultural land. These guidelines provide a framework for classifying land according to the extent to which its physical or chemical characteristics impose long-term limitations on its use for agriculture.

1.4 Four soil borings and one soil pit were examined.

1.5 The site has been identified as predominantly Grade 2, with an area of Non-Agricultural land alongside the stream and a small area of Agricultural buildings at the north-west of the site. The main limitation associated with the agricultural land is that of minor wetness and workability restrictions. The soils experience seasonal wetness as indicated by slight gleying in the subsoil horizons as a result of a fluctuating ground water table.

1.6 The ALC information is shown on the attached map and areas are given in Table 1 below. The map has been drawn at a scale of 1:5000 and is accurate at this level, but any enlargement would be misleading. This map supersedes any previous ALC information for this site.

Table 1 : Distribution of Grades and Subgrades

Grade	Area(ha)	% of Site
2	2.3	71.9
Farm Buildings	0.1	3.1
Non-Agricultural	0.8	25.0
Total area of site	3.2 ha	100%

1.7 A general description of the grades and subgrades is provided as an appendix. The main classes are described in terms of the type of limitation that can occur, the typical cropping range and expected level of consistency of yield.

2. Climate

2.1 Estimates of climatic variables relevant to the assessment of agricultural land quality were obtained by interpolation from a 5 km grid point dataset (Met. Office, 1989) for representative locations in the survey area.

Table 2 : Climatic Interpolation

Grid Reference	SU763239
Altitude (m, AOD)	50
Accumulated Temperature (°days, Jan-June)	1487
Average Annual Rainfall (mm)	938
Field Capacity Days	206
Moisture deficit, wheat (mm)	96
Moisture deficit, potatoes (mm)	88

2.2 Climatic factors are considered first when classifying land since climate can be overriding in the sense that adverse climatic conditions may restrict land quality irrespective of favourable site and soil conditions. The details in the table above show that there is no overall climatic limitation affecting this site. In addition, no local climatic factors such as exposure or frost risk affect the site.

2.3 However, climatic factors do interact with soil factors to influence soil wetness and droughtiness limitations. At this locality, the climate is relatively wet in a regional context. Field capacity days are high and crop adjusted moisture deficits are correspondingly low thereby giving rise to an increased risk of soil wetness problems.

3. Relief

3.1 The site lies at an altitude of approximately 50m AOD, falling gently from south-west to north-east. Nowhere on the site does gradient or microrelief act as a limitation to agricultural land quality.

4. Geology and Soils

4.1 British Geological Survey, (1975) Sheet 300, Alresford shows the site to be underlain by two geological deposits. The south eastern part of the site is underlain by the Sandgate Beds of the Lower Greensand, which generally comprises sandy silts and clays. The north western half of the site is mapped as the Hythe Beds, which are described as glauconitic sands with irregular bands of calcareous stone and chert.

4.2 The published soils information for this site, as shown on the Soil Survey map of South East England (SSEW, 1983, 1:250,000) maps soils of the Fyfield 4 Association. These soils are described as 'deep well drained often stoneless coarse loamy and sandy soils. Some fine loamy soils with slowly permeable subsoils and slight seasonal waterlogging. Some slowly permeable seasonally waterlogged fine loamy over clayey soils' (SSEW, 1983).

4.3 Detailed field examination of the soils on the site showed the presence of medium sandy loam topsoils over subsoils which become heavier with depth.

5. Agricultural Land Classification

5.1 Table 1 provides the details of the area measurements for each grade and the distribution of each grade is shown on the attached ALC map.

5.2 The location of the soil observation points are shown on the attached sample point map.

Grade 2

5.3 All of the agricultural land surveyed has been classed as Grade 2, very good quality land. The key limitations are slight soil wetness and soil workability. Profiles typically comprise a medium sandy loam topsoil over a similar textured upper subsoil. At approximately 55-65cm depth this passes into a sandy clay loam lower subsoil which is gleyed but not slowly permeable. In some of the profiles the soils become stonier with depth, becoming impenetrable to the auger between 80 and 100 cm depth. Pit 1, dug within this mapping unit, typifies such profiles.

The relatively wet location of this site (in a regional context) means that these profiles are assigned to Wetness Class II, since they are gleyed within 70 cm but not within 40 cm. This gleying is due to a fluctuating water table. The interaction between the medium sandy loam topsoils, soil drainage characteristics and the local climatic regime means that this land is subject to slight soil wetness and soil workability limitations. The land is classed as Grade 2 to reflect this. This land however is very versatile and would support a wide range of crops, though care would need to be taken in cultivating and trafficking them during the wetter parts of the year.

Non-Agricultural

5.4 A narrow strip of land adjacent to the stream has been classified as non-agricultural. This area comprises mixed woodland and scrub with areas of boggy vegetation.

Agricultural Buildings

5.5 A small stable block at the western end of the site has been mapped as agricultural buildings.

APPENDIX I

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 or horticultural crops can usually be grown but on some land of this 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 land.

Grade 3 : Good to Moderate Quality Land
Land with moderate limitations which affect the choice of crops, the timing and type of cultivation, harvesting or the level of yield. When 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 the 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 severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

Urban
Built-up or 'hard' uses with relatively little potential for a return to agriculture including: housing, industry, commerce, education, transport, religous buildings, cemetries. 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 parkland, public open spaces, sports fields, allotments and soft-surfaced areas on airports. 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, eg. buildings in large grounds, and where map scale permits, the cover types may be shown separately. Otherwise, the most extensive cover type will be shown.

APPENDIX II

REFERENCES

British Geological Survey (1971), Sheet 300, Alresford, 1:50,000.

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

Meteorological Office (1989) Climatological data for Agricultural Land Classification.

Soil Survey of England and Wales (1983), Sheet 6, Soils of South East England, 1:250,000 and accompanying legend.

APPENDIX III

DEFINITION OF SOIL WETNESS CLASS

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 180 days, but only wet within 40 cm depth for 31-90 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 present within 80 cm depth, it is wet within 70 cm for more than 180 days, but only wet within 40 cm depth for between 31-90 days in most years.

Wetness Class IV

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