

1502/228/93

1502/234/93



**A1**  
**East Hampshire Local Plan**  
**Lowsley Farm, Liphook**  
**Agricultural Land Classification**  
**ALC Map and Report**  
**November 1993**

**EAST HAMPSHIRE LOCAL PLAN  
 LOWSLEY FARM, LIPHOOK  
 AGRICULTURAL LAND CLASSIFICATION REPORT**

**1.0 Summary**

- 1.1 In November 1993, a detailed Agricultural Land Classification (ALC) was made on 2.1 hectares of land to the north and west of Lowsley Farm, which is located on the north western side of Liphook.
- 1.2 The work was conducted under ADAS sub-contracting arrangements by N A Duncan & Associates and was in response to a commission by 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 Seven soil borings and two soil pits were examined.
- 1.5 The most northerly site is predominantly non-agricultural, comprising an area of derelict farm buildings and scrub woodland. The north western corner of this site is in agricultural use, forming part of a larger field. This area has been mapped as Grade 2 with a minor wetness and workability limitation. The majority of the more westerly site has also been mapped as Grade 2 for the same reasons. The small area of higher land to the south of this site has a slightly more severe wetness and workability restriction so has consequently been downgraded to Subgrade 3a.
- 1.6 The ALC information is shown on the attached map the details of the areas of each grade are given in Table 1 below. The information is presented at a scale of 1:5,000 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**

<b>Grade</b>	<b>Area (ha)</b>	<b>% of Site</b>	<b>% of Agricultural Area</b>
2	0.9	42.8	60
3a	0.6	28.6	40
Non-Agricultural	0.6	28.6	100% (1.5 ha)
Total area of site	2.1 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 the expected level and 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 Interpolations

Grid Reference	SU833321	SU831320
Altitude (m, AOD)	100	98
Accumulated Temperature (°days, Jan-June)	1424	1427
Average Annual Rainfall (mm)	881	880
Field Capacity Days	193	193
Moisture deficit, wheat (mm)	98	98
Moisture deficit, potatoes (mm)	88	89

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 survey area adjacent to Lowsley Farm has a gentle slope to the west, the other area generally has a northerly aspect. The altitude of the two sites ranges from 95m to approximately 100m AOD. 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, (1978) Sheet 301, Haslemere shows both survey areas to be underlain by Bargate Beds of the Lower Greensand. These are described as glauconitic and calcareous sands, with hard calcareous sandstone and some 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) shows both areas to comprise soils of the Frilford Association. These soils are described as 'deep well drained sandy and

coarse loamy soils. Some ferruginous sandy and some coarse loamy soils affected by groundwater. Risk of water erosion (SSEW, 1983).

- 4.3 Detailed field examination of the soils on the site showed the presence of sandy and loamy soils which exhibit a slight impedance to drainage.

## 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 The majority of the agricultural land surveyed has been classed as Grade 2, very good quality land. The key limitations are soil wetness and soil workability. Topsoils comprise fine sandy loams, and occasionally fine sandy silt loams. These are underlain by fine sandy clay loam or medium clay loam upper subsoils. Lower subsoils pass into sandy clays at approximately 70 cm. Profiles are gleyed from approximately 60 cm as a result of impeded drainage through the sandy clay horizons which were found to be slowly permeable.

- 5.4 Pit 2, which typifies such profiles, confirmed the presence of slowly permeable sandy clay from about 70 cm depth. The resulting drainage impedance combined with the relatively wet local climate means that these profiles are assigned to Wetness Class II. Due to the interaction between the topsoil texture, soil drainage status and the local climatic regime this land is subject to slight soil workability and wetness limitations. Thus the land can be graded no higher than Grade 2 to reflect this. This land is however very versatile and capable of growing a wide range of crops, though cultivations and trafficking must be carefully controlled during the wetter periods of the year to prevent structural damage occurring.

### Subgrade 3a

- 5.5 A small area of moderate quality land, Subgrade 3a, has been mapped at the southern end of the site on the higher land. The key limitations are soil wetness and soil workability. Topsoils comprise medium clay loams which overlie gleyed heavy clay loam upper subsoils. Pit 1, dug within this mapping unit, showed these upper subsoils to have moderate structural condition with many coarse pores. Lower subsoils, which are present from approximately 65 cm depth, comprise sandy clays which have a poor structure and low porosity. Profiles are gleyed from approximately 25 cm and slowly permeable at 65 cm. Given the relatively wet climate (in a regional context) at this site soils with such a drainage status equate to Wetness Class III.

- 5.6 The interaction between topsoil textures, soil drainage characteristics and the local climatic regime means that this land can be graded no higher than Subgrade 3a. This

inhibits the development of a good root system. In addition, restrictions on cultivation, grazing by livestock and trafficking by machinery are imposed.

Non-Agricultural

- 5.7 The area marked as Non-agricultural comprises an area of derelict farm buildings together with an area of scrub woodland along the southern boundary.

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Resource Planning Team  
Guildford Statutory Group  
ADAS Reading

## 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, 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 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 316, Fareham, 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 for 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.